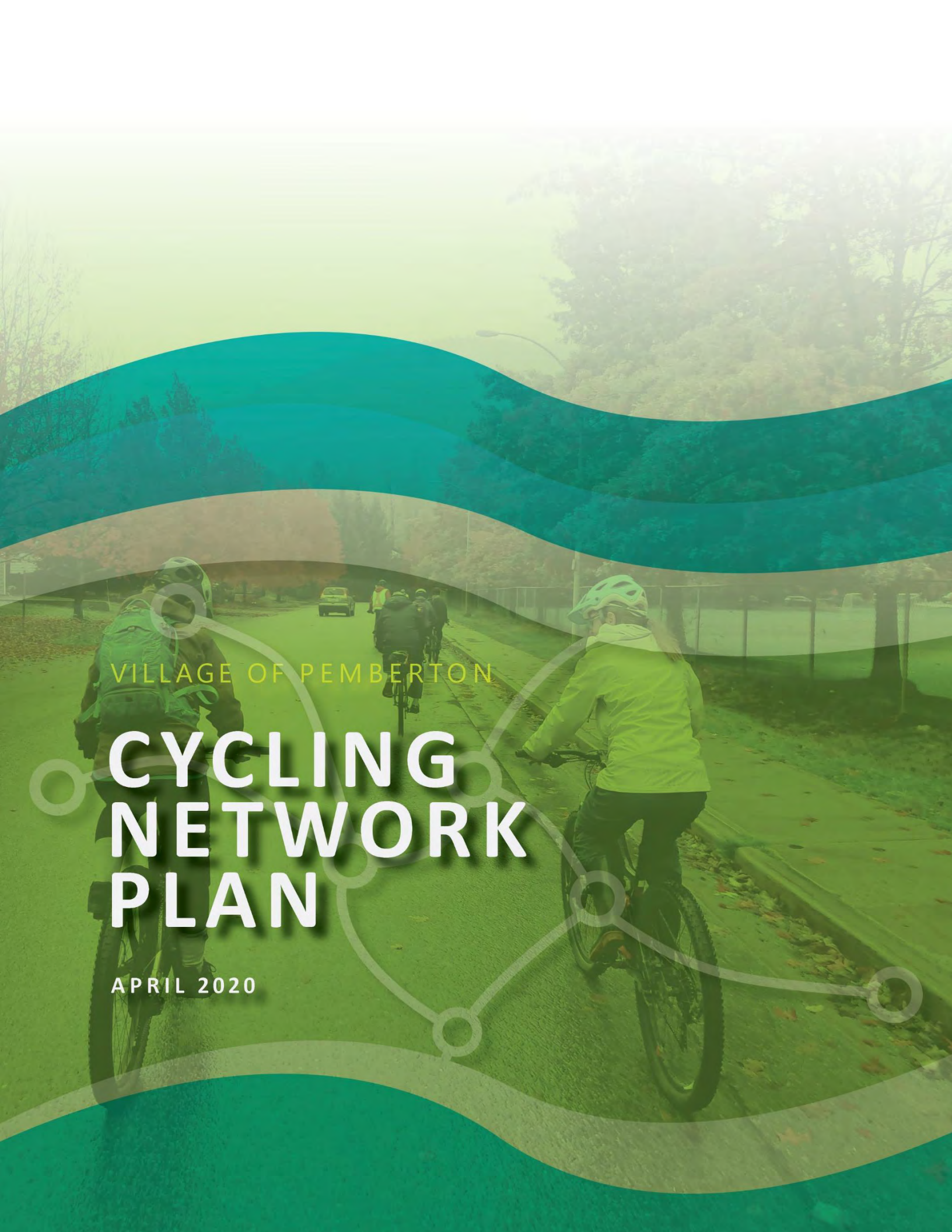

VILLAGE OF PEMBERTON

CYCLING NETWORK PLAN

APRIL 2020

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APPENDICES

SECTION 1: INTRODUCTION

The purpose of the Pemberton Cycling Network Plan is to make cycling in Pemberton safe, comfortable and convenient for residents and visitors of all ages and abilities (AAA). The Cycling Network Plan establishes a long-term vision for cycling in the Village, including identifying the bicycle network and focusing on maintenance, end-of-trip facilities, education and awareness. It also lays out steps to implement the Plan's action items, ultimately helping to increase transportation choices in Pemberton and better connect the Village to the surrounding region.

The Pemberton Cycling Network Plan is divided into four sections. Section 1 provides background on the Village of Pemberton, outlines the benefits of cycling and explains the planning objectives. Section 2 sets the context, providing key background on demographics, existing policies and current transportation conditions. Section 3 contains the planning themes and actions, which are divided into four themes: Building and Connecting the Network, Maintenance and Accessibility, End-of-Trip Facilities and Amenities and Education and Awareness. Finally, Section 4 outlines the Implementation Strategy, which is key for ensuring that the Plan's actions translate into real, on-the-ground results in Pemberton.

The Pemberton Cycling Network Plan was developed with support from the Provincial BikeBC Infrastructure Fund. The implementation of the Cycling Network Plan will improve safety for all road users, improve network accessibility, reduce barriers for people of all ages and abilities, promote multi-modal transportation and support cycling tourism.

BACKGROUND

The Village of Pemberton is a rural community located in the Sea to Sky Corridor, in the middle of the Squamish-Lillooet Regional District (SLRD). The Village core is small, compact, and connects to a number of existing trails, making it a relatively walkable and bikeable community. There is a strong existing cycling culture in Pemberton, with tourists and locals alike enjoying the Valley Loop Trail, Friendship Trail and the generally relaxed pace of Pemberton streets.

The Village's natural beauty and topography also support cycling. The valley floor provides relatively flat terrain, while the surrounding mountains provide a stunning backdrop to any cycling trip, with views of the northernmost summit of the Garibaldi Ranges, including Mount Currie. Pemberton is

known as a “Gateway to Adventure” due to its proximity to provincial parks and wilderness, making it popular for young adults and families.

The Village of Pemberton is located within the unceded territory of Líl’wat Nation and honours the language, culture and history of the Lil’wat7ul. At the centre of the Líl’wat Nation is the historical community of Mt. Currie. A key objective of this Cycling Network Plan is to prioritize connections to the Friendship Trail to ensure these communities are well connected.

Additional information about the Pemberton community, including demographics and existing cycling conditions, is provided in Section 2.

BENEFITS OF CYCLING

There are a number of reasons to support cycling in Pemberton through the creation of a Cycling Network Plan. Investment in cycling and other forms of active transportation result in a more balanced transportation system—one that is more accessible, cost-effective and efficient in terms of infrastructure investments. Promoting cycling as an attractive and convenient transportation choice can help reduce automobile dependence, increase physical activity levels, improve public health, reduce infrastructure demands and create a more livable and vibrant community. Some additional benefits of cycling are outlined below.

Health Benefits: Cycling for transportation and recreation increases physical activity levels, making it an effective way to enhance physical and mental health and build a healthier and happier community. The World Health Organization has identified physical inactivity as one of the main risk factors for global mortality and as an underlying factor for many chronic diseases. Providing cycling routes with direct access to schools and other community facilities can also help encourage and build cycling skills at a young age, which can promote healthy lifestyles that continue into adult life.

Environmental Benefits: Cycling instead of driving helps reduce congestion, air pollution and greenhouse gas (GHG) emissions. It also produces virtually no light or noise pollution and may reduce demand for impervious surface area (pavement) through more efficient use of existing road space.

Economic Benefits: Constructing bicycle facilities is less expensive per kilometer than motor vehicle infrastructure. By installing appropriate bicycle facilities, residents are provided a safe, comfortable and convenient cycling option, reducing vehicle congestion. In turn, fewer motor vehicles on the road

leads to a reduction in infrastructure wear and tear, which reduces the need for additional maintenance on roadways.

Equity: Upgrading cycling facilities can improve equity by providing transportation options for all community members, especially for those residents that do not have access to a motor vehicle. This includes children and youth, some seniors, people that may have a physical disability preventing them from driving, those that do not have access to a vehicle or are not interested in driving as a means of regular transportation.

Quality of Life: Communities that support cycling contribute to more vibrant streets, with improved social interactions. Bicycle-friendly communities promote livability, a stronger sense of place and the freedom of mobility.

Safety: Bikeable communities contribute to a safer overall transportation system by making cycling more visible and through improved cycling infrastructure. Streets that accommodate a cycling network are designed for slower vehicle speeds, provide a safer cycling environment and can reduce the risk of collisions. Furthermore, studies have shown that slower motor vehicle speeds exponentially increase survival rates for people cycling when they are involved in a collision with a motor vehicle. When cycling rates increase, rates of collisions with motor vehicles decrease as a result of the "safety-in-numbers" principle.

PLAN PROCESS

The Village of Pemberton's Cycling Network Plan was created following a five-step process that began in October 2019 and concluded in April 2020. This process is outlined below.

Step One: Assessing the Conditions (October 2019)

Existing cycling facilities, including marked bicycle lanes and bicycle parking locations, were inventoried and assessed based on data and expertise from Village Staff. This assessment revealed a lack of on-street bicycle facilities within the Village. However, there is an existing informal trail network that, although unsigned, offers safe connections to neighborhoods and community facilities. Existing municipal and region-wide policies were also reviewed to ensure the state of cycling in Pemberton was well understood.

Step Two: Day of Learning (October 2019)

The project team facilitated a community bicycle tour with various stakeholders, including Pemberton Valley Trails Association (PVTA), Pemberton Off-Road Cycling Association (PORCA), Squamish-Lillooet Regional District (SLRD), Village Staff from Operations, Administration and Development Services and interested members of the public. This allowed the project team to see firsthand the challenges and barriers facing the Village of Pemberton in regard to cycling infrastructure. The tour also highlighted opportunities for the Village to build on existing trail networks and neighborhood streets to improve the overall connectivity of the proposed network. In the afternoon, stakeholders were invited to join the project team to learn about different types of bicycle facilities, discuss the potential cycling network and create priorities for implementation.

Step Three: Preparing Draft Network and Policies (November – December 2019)

Once initial input was received from community stakeholders, the cycling network was developed along with policy-focused recommendations. The project team also reviewed best practice resources such as the British Columbia Active Transportation Design Guide and the Transportation Association of Canada's Geometric Design Guide for Canadian Roads to aid in the Plan development process. The proposed cycling network includes high level (Class D) cost estimates for the proposed cycling facility types.

Step Four: Community Engagement (January 2020)

Public engagement occurred following the development of the draft Cycling Network Plan. This offered residents and interested stakeholders the opportunity to provide comments on the draft Plan and proposed cycling network. Community engagement consisted of a Movie Night and Open House on January 21, 2020 and an online survey that was open from January 24 to 31, 2020.

The Open House included display boards explaining the draft Plan and used a 'dotmocracy' exercise to let attendees prioritize the draft actions, segments and connections. Attendees were also given the opportunity to fill out comment cards with additional feedback. The online survey, which received 46 total responses, asked similar prioritization questions and also sought to determine the top factors that are most important to people when choosing to cycle. Bicycle facilities, safety, all-season maintenance, reducing their carbon footprint and having access to bicycle route maps and signage stood out as the most important factors. **Appendix E** contains a detailed engagement summary for each of the two events.

Step Five: Finalizing the Network and Policies (February – April 2020)

The final phase of the Plan focused on refining and prioritizing the draft Cycling Network Plan, as well as creating an Implementation Strategy (see Section 4). The project team considered all suggestions provided through public engagement while finalizing the network and policies contained in the Plan. The draft Plan was also shared with key agency stakeholders for review, including the BC Ministry of Transportation and Infrastructure (MOTI) and Líl'wat Nation.

Once approved by Council, the Plan will establish the recommended cycling network in the Village of Pemberton. Further consultation should be considered as required on design treatments as the plan is implemented. Projects that are multi-jurisdictional or that directly impact other stakeholders are subject to further consultation and approval, as required.

Plan Objectives

The Cycling Network Plan is intended to make cycling in Pemberton a safe, attractive and convenient transportation option for people of all ages and abilities. The Plan sets out a number of key objectives, including:

- Providing guidance for the development of a safe, efficient and comfortable commuter network.
- Improving connections to the recreational cycling network and connecting to the general trail network, which will help to support cycling tourism.
- Connecting community facilities with the greater cycling network, supporting both recreational and commuting trips. This includes identifying safe cycling routes to schools.
- Promoting cycling both within the Village and between Líl'wat Nation and surrounding areas by identifying regional cycling connections.
- Integrating cycling facilities with the regional roadway network and transit services, ensuring that different transportation modes function safely and seamlessly.
- Reducing the number of motor vehicle kilometers travelled, in turn reducing traffic congestion and greenhouse gas emissions.
- Identifying policies and procedures for maintenance, installation of end-of-trip facilities, education and awareness.

SECTION 2: SETTING THE CONTEXT

This section describes the context for the Cycling Network Plan, including community context (demographics, land use and geography), relevant policies and bylaws and existing conditions for cycling in the Village. Combined, these elements have shaped the recommended improvement strategies for the Cycling Network Plan.

COMMUNITY CONTEXT

DEMOGRAPHIC CONSIDERATIONS

Pemberton is growing: The Village of Pemberton had a population of 2,574 in 2016, which represents a 5.8% increase over 2011. According to the SLRD Regional Growth Strategy (RGS), Pemberton's population is expected to reach over 4,200 residents by 2036. Pemberton is also the service hub for the surrounding area, including SLRD Area C, which can be considered within a cycling catchment for the Village. According to the RGS the total population of Area C (incorporated municipalities and electoral areas) in 2016 was 1,663 and is expected to experience slight growth to 1,697 by 2036. In addition, the population of the Lil'wat Nation in 2016 was 1,420. Looking back over the last 10 years, the Nation's on-reserve population grew by approximately 1.3% annually indicating minimal growth throughout the rest of the Village's cycling catchment area.

Pemberton is a youth-oriented community: According to the 2016 Census, the median age in Pemberton was 36.2 years, which is well below the provincial average of 44 years. Almost 40% of the population is under the age of 29 and nearly 25% of Pemberton's population is under the age of 15. Only 9% of the total population is over 65 years of age – less than half of the provincial average of 20%.

High density urban population: Pemberton has a land area of just more than 61 square kilometers with approximately 41 people per square kilometre. However, considering only Pemberton's population centre, with a population of 1,957 and a population density of 1,745 persons per square kilometer, this high density provides a great foundation for encouraging active transportation both within the community and throughout the region.

LAND USE CONSIDERATIONS

Neighbourhoods: Pemberton is made up of neighbourhoods that provide a range of living environments, from rural agricultural homes to multi-family residences. For the most part, Pemberton's neighbourhoods are medium density, single and multi-family neighborhoods. However, the Village policies support relatively dense development, which is expected to continue within Village boundaries.

Community Amenities and Land Use: The Sea to Sky corridor is a popular year-round destination for tourists accessing world-class recreational terrain. The Village's municipal boundaries are surrounded by vast agricultural lands and areas governed by the SLRD. A diverse network of mountain biking and hiking trails exists in the surrounding hillsides and much of the mountain biking originates from the Village core.

GEOGRAPHIC CONSIDERATIONS:

Challenging Topography: Pemberton's geography leads to physical barriers that create mobility challenges for people on bicycles. The majority of Pemberton's current neighborhoods and services are located along the valley floor, offering attractive and comfortable cycling opportunities. However, current and future development is occurring in areas where topography and steep grades may create challenges for people cycling between neighbourhoods and other key destinations. However, these hillside neighbourhood areas do offer unrivaled access to Pemberton's vast trail network, which is an important destination for cycling in Pemberton.

Gaps and Barriers: Highway 99 (the Sea to Sky Highway) is a major barrier that runs through the Village. The highway makes it challenging to connect through active means to certain community and regional destinations, including those along the community boundary (i.e., the One Mile Lake Park). In addition to Highway 99, the active CN Rail lines that bisect north-south through the Village present another barrier, especially for active transportation users trying to access the downtown core or the hillside mountain bike trails. The recommended cycling network proposes long-term improved connections across both the highway and rail line. However, it should be noted that addressing these barriers will require a future study. The dykes throughout the Village and region also present barriers. While some dykes are on publicly accessible land and host existing trails, connecting to these trails can be complicated from a municipal planning perspective due to jurisdictional challenges as other dyke segments fall on private property outside of the Village boundaries. Presently, the Pemberton Valley Dyking District is responsible for the dyking system despite whether the dyke is located on

public or private land, or whether it is within the Village's or Area C's boundaries.. Road jurisdictions can be found in **Appendix A**.

POLICY FRAMEWORK

LOCAL POLICIES

The Cycling Network Plan is closely linked to and was informed by many of Pemberton's key guiding policies and plans. The following policies, plans, bylaws and initiatives were reviewed to help inform the development of the Cycling Network Plan.

2011 VILLAGE OF PEMBERTON OFFICIAL COMMUNITY PLAN (OCP)

The OCP encourages multi-modal transportation and promotes "a range of transportation options," stating that "(a)s a compact community, transportation in Pemberton considers movement within the community and to regional destinations." The OCP includes several policies to encourage the community to reduce its automobile dependence in favour of walking, cycling and transit. Supporting policies also include accommodating the community's mobility needs, barrier-free access throughout the community, increased trail and road connectivity and expanding legal railway crossings to enhance transportation connections, among others.

2011 PARKS AND OPEN SPACES MASTER PLAN

The Parks and Open Spaces Master Plan provides policy directions, strategies and recommended actions to improve the Village's Parks and Open Spaces. Many of these recommendations relate to improving connections to park facilities and trail corridors. A supportive action for the development of a cycling network includes expanding an integrated park/trail corridor and open space network. The existing and proposed networks use existing publicly accessible sections of the dyke and, where opportunities arise, acquired dyke land, easements and rights-of-way to secure public access to waterways, trails and natural spaces.

Policies also include aligning networks with the Friendship Trail and Valley Loop Trail; expanding the network of hard surface, all season trails to the Downtown from nearby neighbourhoods; and working with SLRD to assist in the development of the Sea to Sky Trail. Each of these actions and others within the Parks and Open Spaces Master Plan, support the development of a comprehensive cycling network within the Village and connecting to regional destinations.

Zoning Bylaw (Bylaw No. 832, 2018)

The Village of Pemberton's Zoning Bylaw states that all multi-unit residential and mixed-use residential and commercial development shall provide bicycle parking at a rate of 20% of the required vehicle parking. Secure and covered bicycle parking is an important amenity that makes it easier to use cycling as a convenient and reliable mode of transportation.

2014 Trail Standard Guidelines

The Village's Trail Standard Guidelines address all trail users, including hikers, bikers (recreational and transportation), walkers, dog-walkers, runners, horseback riders and tourists. Most of the trails are multi-use, meaning that several different user groups may be enjoying the trail at the same time. According to the Pemberton Valley Trails Association, there are eighty-seven (87) trails in the greater Pemberton area, some of which are at least partially within the Village of Pemberton. Of those 87, 83 are recommended for biking, 48 for hiking and 29 for horseback riding. Consideration of all trail users should remain an important component to planning future cycling infrastructure within the Village.

The Trail Standard Guidelines include a recommended classification system for trails and provide general construction information, such as tread widths, clear widths and heights and grades. They also suggest appropriate levels of amenities, lighting and signage. This Cycling Network Plan focuses on cyclist travelling for daily transportation needs as opposed to recreational trail users. As a result, the cycling facility type recommendations do not include recreational pathway types such as single-track trails.

Subdivision and Development Control Bylaw (Bylaw No. 677, 2011)

The regulations outlined within the Village's Subdivision and Development Control Bylaw are intended to provide orderly, safe and aesthetically pleasing development, preserve the established amenities of the Village and ensure that subdivisions and developments are appropriately serviced and best suited to their long-term intended use. Currently, this Bylaw does not include bicycle facility standards. However, prior to commencing the detailed design process, the Bylaw requires that consulting engineers must consult the Village with respect to road classifications, road cross sections, parking and bicycle lane requirements for all streets in or adjacent to the subdivision or development. The Village plans to update this Bylaw in the near future.

Additional Local Policies

Other Village plans and policies that were reviewed as part of the Cycling Network Plan process included the Downtown Enhancement Strategy, Five-Year Financial Plan, One Mile Lake Park Master Plan and Frontier Street Design.

Regional Policies

Regional Growth Strategy

The Regional Growth Strategy (RGS) for the Squamish-Lillooet Regional District (SLRD) is an initiative of the SLRD, the District of Squamish, the Resort Municipality of Whistler, the Village of Pemberton and the District of Lillooet. The purpose of a regional growth strategy under Part 13 of the *Local Government Act* is to "promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources."

The RGS includes the mission "to enhance the quality of life of constituents through the facilitation of regional and community services for the benefit of present and future generations." The RGS includes region-wide transportation improvements that includes: seeking opportunities to implement pedestrian/bicycle infrastructure in conjunction with other capital projects, installing 'Share the Road' signage along highways and busy roadways and Highway 99 Cycling Infrastructure Enhancements, expanding bicycle storage facilities, completing the Friendship Trail and supporting Safe Routes to School programming. In addition, the RGS encourages 'Complete Streets' designs in all new development and road projects, among other recommendations.

Pemberton and Area C Service Area Trails Management Plan

This regional document includes directions from both local jurisdictions (Village of Pemberton and SLRD Area C) and identifies key trail improvements or connections that are important to meet community goals. A number of enhancements identified within this Plan are important to developing a cycling network that connects the Village of Pemberton to the surrounding areas. This includes secured access to proposed parks, public access to local rivers, safe and efficient links between important community nodes and new trail heads for cycling access. The intended use for existing or planned trails and connections are also included, such as the Valley Loop routing and rural road routing which considers rural roads and their potential for enhancing or complementing the trail and/or commuting experience. This plan is currently being updated in 2020.

Additional Regional Policies

The SLRD's Sea to Sky Trail Master Plan and Integrated Sustainability Plan (2013) were also considered as part of the Village of Pemberton Cycling Network Plan process.

Provincial Considerations

B.C.'s Active Transportation Strategy

"Move. Commute. Connect" is B.C.'s strategy for cleaner, more active transportation, part of the Province's CleanBC Plan to build a better future for all British Columbians.

This Provincial Active Transportation Strategy includes the following goals:

- Double the percentage of trips taken with active transportation by 2030;
- Inspire British Columbians of all ages and abilities to choose active transportation with incentives that encourage active transportation use—like the Scrap-It e-bike rebate, Learn to Ride programs and Active and Safe Routes to School;
- Build on the success of the BikeBC program, so communities can build integrated and accessible active transportation systems that work for all active transportation users; and
- Work together with communities to create policies and plans that enable and support complete active transportation networks across the province.

This strategy also supports several of the Village's goals and, as it is in its earliest stages of implementation, presents opportunities to engage with the Province.

British Columbia Active Transportation Design Guide (2019 Edition)

The British Columbia Active Transportation Design 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. The primary audience for the Design Guide is design professionals in the engineering, planning, landscape architecture and architecture fields. It may also be a valuable resource for elected officials, community groups and the general public.

The goals of the Design Guide are:

- To provide a reference that is useful for communities of all types, sizes and contexts;

- To create consistency in the design of active transportation facilities throughout the province;
- To provide a widely available resource to increase the quality of the design of active transportation facilities throughout B.C. and beyond; and
- To support provincial grant programs with design guidance specific to B.C. to clarify the provincial government's expectations for the design of active transportation facilities.

Some applicable design characteristics from this Design Guide were shared with the stakeholders and Village Staff during the Cycling Network Plan's Day of Learning.

CYCLING IN PEMBERTON TODAY

CYCLING MODE SHARE

Based on Journey to Work data from the 2016 Census, approximately 4% of Pemberton residents commute to work and/or school by bicycle. Additionally, conversations with community stakeholders have indicated that people cycle in Pemberton for recreational purposes more frequently than for commuting. This may be in part due to the long-distance nature of many residents' commute; approximately 60% of residents commute to a different census subdivision (beyond the Pemberton population centre). Furthermore, approximately 40% of commuters spend 30-44 minutes commuting. This indicates that many Pemberton residents' daily commute requires them to travel beyond a reasonable cycling distance.

KEY DESTINATIONS

When developing the Cycling Network Plan, it was important to consult the Village's land use designations and to identify key destinations. The key destinations below act as bicycle trip generators and destinations for people of all ages and abilities. A map of land use designations and key destinations can be found in **Appendix A**.

- Pemberton's Downtown Core
- Signal Hill Elementary
- Pemberton Secondary School
- Pemberton and District Community Centre , Public Library & Pemberton Children's Centre
- Future Pemberton & District Recreation Site and Multi-use Fields

- One Mile Lake Park
- Industrial/Business Park
- Recreational Trail Heads
- Key Regional Trails (Friendship Trail, Sea to Sky Trail and Valley Loop Trail)

EXISTING CYCLING NETWORK

The existing cycling network is made up of a few different types of cycling infrastructure that has been built over the years based off the direction of the existing and previous OCPs, as well as recreation and trails planning. Current cycling facilities (bicycle parking) and active transportation facilities are shown in **Appendix A**. Also included are off-street pathways[1] and painted accessible shoulders (unsigned) along Portage Road and Highway 99 and a small section along the Mackenzie Basin Forest Service Road.

The Village of Pemberton does not currently contain any on-street cycling facilities under its jurisdiction. The Highway 99 painted bicycle lanes fall under the jurisdiction of the BC Ministry of Transportation and Infrastructure (MOTI) and are therefore not considered to be Village cycling facilities. Still, these highway facilities play a role in connecting the overall cycling network.

Despite the limited network, existing on-street routes, combined with off-street pathways and trails, provide some useful cycling connections. Many of these routes, however, intersect with considerable barriers that are currently either being trespassed upon or offer unsafe cycling access.

Popular routes for on-road recreational cycling can be found in areas surrounding the Village – specifically, along Pemberton Meadows Road, which has posted "ride single file" signage. This route does not offer formal infrastructure to improve the safety of the people cycling but may expand cycling coverage for on-road recreational cyclists. Pemberton does not currently offer cycling facilities that would be considered "all ages and abilities" as described in the following section (Section 3, Planning Themes and Actions).

[1] Data from OpenStreetMaps was used to complete the off-street trail portion of the existing conditions map. OpenStreetMap is an open source mapping platform that uses data provided by online contributors. It is not official Village of Pemberton data, but it is a useful method of utilizing local knowledge to fill in data gaps in the trail network. To learn more, visit https://www.openstreetmap.org/about.

SECTION 3: PLANNING THEMES AND ACTIONS

The framework of the Cycling Network Plan consists of four overarching themes:

1. **Building and Connecting the Network**
2. **Maintenance and Accessibility**
3. **End-of-Trip Facilities and Amenities**
4. **Education and Awareness**

This section outlines detailed actions related to each theme that will help to improve cycling in Pemberton. The action items under each theme were identified through community group engagement and technical analysis. These actions address a variety of strengths, opportunities, challenges, concerns with cycling infrastructure, policies, standards and support programs. The implementation of these strategies and actions will support Pemberton in achieving the objectives of the Cycling Network Plan.

The implementation of this Plan will be dependent on financial resources and commitment from partners and stakeholders. While the Plan recommends the implementation of a long-term cycling network and priority projects, it is understood that identified projects and actions are dependent on resources and should be implemented through an opportunistic approach. A variety of funding mechanisms will likely be required for the Plan's implementation. Examples of funding sources have been identified in Section 4.

THEME 1: BUILDING AND CONNECTING THE NETWORK

Communities across North America are increasingly focusing on expanding their bicycle networks to increase levels of cycling. Providing a complete and interconnected network of bicycle routes throughout Pemberton is critical to supporting and encouraging cycling. Providing direct routes that connect to key destinations will ensure that cycling travel times are competitive with automobiles.

Expanding and enhancing Pemberton's bicycle network will require a combination of strategies, ranging from upgrading existing on-street spaces and pathways to addressing safety concerns, connecting gaps and providing additional bicycle routes. Bicycle facilities should be designed based on best practices and should be comfortable for people of all ages and abilities (AAA).

Expanding and enhancing the cycling network will require operating and maintenance budget increases for items such as snow clearing, vegetation management as well as signage and enforcement by Bylaw and RCMP to ensure reduced, posted limits are enforced. Allocated budget for these types of projects will be required even if grant opportunities are pursued, as contributions from local governments are often required.

ACTION 1.1: PROVIDE A CONTINUOUS BICYCLE NETWORK THROUGH A PHASED IMPLEMENTATION APPROACH

Developing a complete and connected network of bicycle routes is crucial to encouraging more cycling over the long-term. A well-designed cycling network needs to be visible, intuitive and provide links between destinations and neighbourhoods. Many cities within Canada and internationally have been moving towards providing 'All Ages and Abilities' (AAA) bicycle infrastructure that is safe, comfortable and attractive for a broad array of users, from children to seniors and everyone in between. These facilities should be comfortable to use for most bicycle users, regardless of their ability and experience. **Figure 1** shows the recommended bicycle facility types in Pemberton.

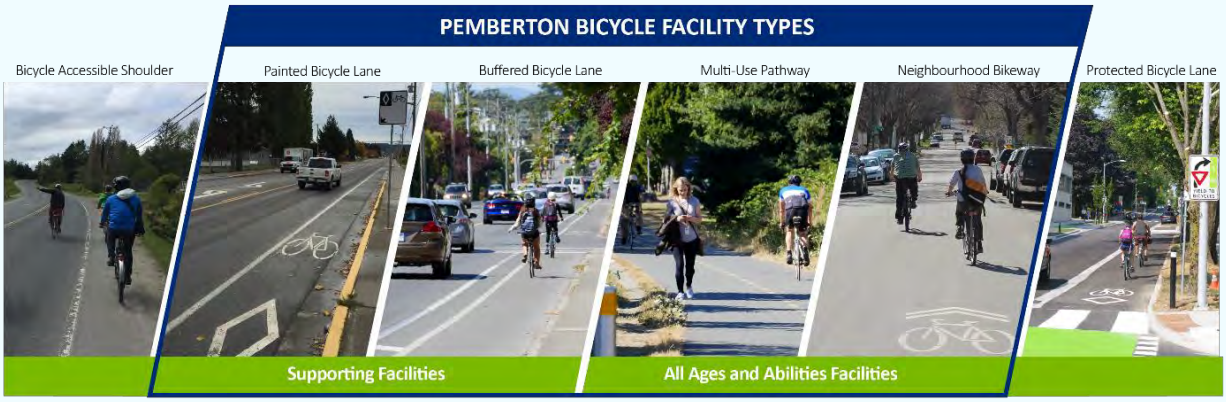

Figure 1: Recommended Bicycle Facility Types for Pemberton

The network should also provide Village-wide coverage, ensuring that most residents are within proximity of a designated bicycle facility. In addition, the network should provide direct routes to key destinations such as Downtown Pemberton and other commercial destinations, schools, parks and community facilities. Finally, an important component of improving the connectivity of the bicycle network is ensuring that existing routes are high quality and are well integrated into the proposed network.

WHAT ARE ALL AGES AND ABILITIES BICYCLE FACILITIES?

Cycling facilities that are comfortable, convenient, safe and attractive for everyone, regardless of age or ability, are often referred to as 'All Ages and Abilities', 'AAA', or 'Triple A' facilities. This best practice should be aspired to for all cycling facility design and network implementation. In addition, these facilities should be accessible at all times of day, in all seasons and in all weather conditions, with maintenance and operations considered at the outset of the planning and design process and on an ongoing basis.

Shown below in **Figure 2** and **Figure 3** (Village Core inset) are the recommended long-term cycling network for Pemberton. Full size versions of these maps are provided in **Appendix A**. By developing this complete network, the Village is helping to make cycling a competitive and viable transportation option. A key focus of the Cycling Network Plan is to identify opportunities to enhance existing infrastructure to improve comfort, safety and accessibility. Examples of existing popular but informal routes include the trails along Arn Canal, numerous dyke trails and Poplar Street.

Research conducted by the UBC Cycling in Cities Program suggests that three types of bicycle infrastructure are most effective at increasing ridership: off-street pathways (including Multi-Use Pathways), protected bicycle lanes and neighbourhood bikeways. These facility types are the most effective because they tend to be the safest and most accommodating, making them attractive to all cyclists.

The Cycling Network Map identifies three different bicycle facility types for Pemberton: multi-use pathways, painted or buffered lanes and neighborhood bikeways.[2] These bicycle facilities are shown and described in further detail below, with details based on the British Columbia Active Transportation Design Guide as described above in Section 2.

[2] Protected bicycle lanes were not included in the Plan at this time as they tend to be more appropriate in more urban contexts. Off-street pathways serve as a AAA alternative. However, protected bicycle lanes may be considered in the future.

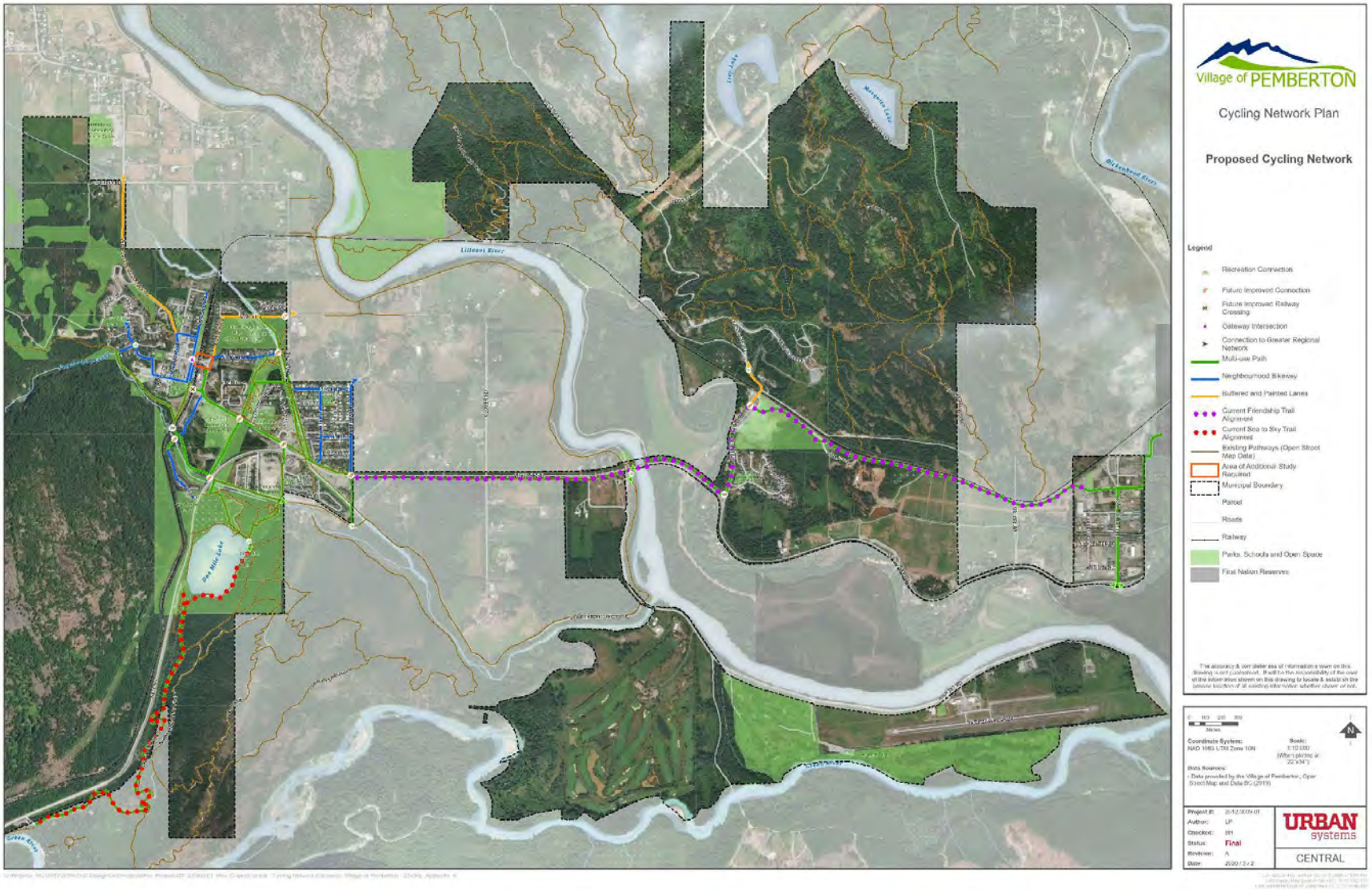

Figure 2: Proposed Cycling Network

Figure 3: Proposed Cycling Network (Village Core Inset)

Multi-Use Pathways (Off-Street Pathways) are off-street routes that are physically separated from motor vehicle traffic and can be used by any non-motorized user, including people cycling, walking, skateboarding and equestrians, among others. Multi-use pathways may also be referred to as off-street pathways or multi-use trails. Typically, multi-use pathways (MUPs) accommodate bi-directional travel for all users. Multi-use pathways can be accommodated in a variety of contexts and can be installed parallel to major roadways such as Highway 99 or Portage Road, within a park, along a linear park or natural feature, along a dyke, or along a utility corridor.

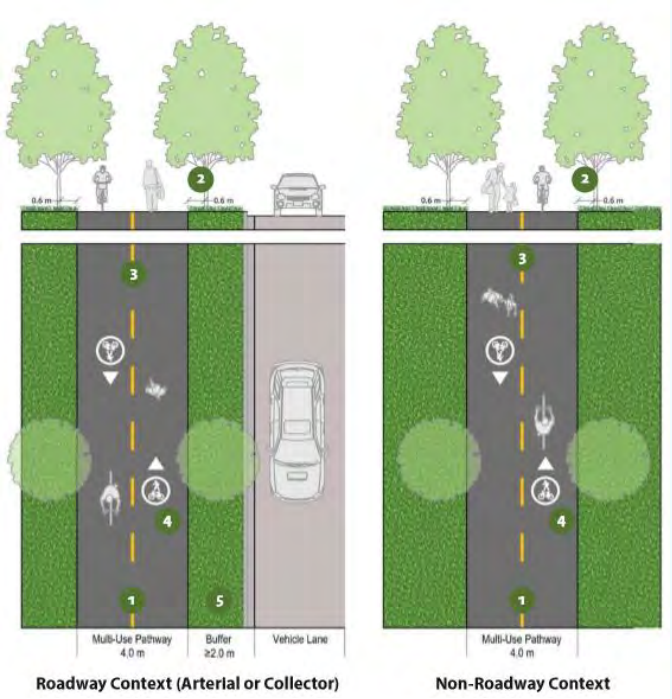

Figure 4: Multi-Use Pathway Cross-Section – Desired Widths and Key Features (Source: BC Active Transportation Design Guide 2019, Chapter E)

Multi-use pathways are typically considered AAA bicycle facilities and are hard surfaced to accommodate all abilities. However, during implementation phasing, often MUPs are hard-packed gravel prior to paving. Care should be taken to mitigate conflicts between active transportation users that are using different modes and travelling at different speeds. Lighting may be considered along certain segments of key trails to enhance user safety and encourage all-season use.

The following features of multi-use paths are highlighted in **Figure 4** and are applicable according to the characteristics of each proposed multi-use path such as available widths and align with the Province's design guidelines:

1. Desired width of 4.0 metres
2. Horizontal buffer of 0.6 metres on both sides of pathway
3. Optional dashed directional dividing line striping to separate direction of travel
4. Pavement markings providing guidance for types of users and direction of travel
5. Buffer from motor vehicle travel lanes

Neighborhood Bikeways are streets with low motor vehicle volumes and low speeds that have been enhanced to varying degrees to prioritize bicycle traffic. Because vehicle volumes and speeds are relatively modest, neighbourhood bikeways can be comfortable facilities for people of all ages and abilities. Neighbourhood bikeways should include signage and pavement markings to raise awareness to all road users that it is a shared facility between people cycling and driving.

Figure 5: Key Features of Neighborhood Bikeways (Source: BC Active Transportation Design Guide 2019,

The following features of neighborhood bikeways are highlighted in **Figure 5** and are applicable according to the characteristics of each proposed neighborhood bikeway route such as traffic volumes and posted speeds and align with the Province's design guidelines:

1. Signage and pavement markings
2. Curb extensions acting as traffic calming measures and traffic diversion measures to reduce vehicle speeds and volumes (unlikely to be a factor on Pemberton's proposed neighborhood bikeways)
3. Speed bumps/humps to reduce motor vehicle volumes
4. Diversion measures to facilitate bicycle movement and reduce vehicle volumes (unlikely applied within Pemberton)
5. Crossing treatments for people walking and cycling

Buffered and Painted Lanes are separate travel lanes on existing roads designated exclusively for bicycle use that are delineated by a painted line and, in some cases, a painted buffer area. Painted and buffered bicycle lanes allow uni-directional bicycle travel, with bicycle users travelling in the same direction as the adjacent motor vehicle lane. Painted bicycle lanes should not be installed next to on-street motor vehicle parking, as this puts cyclists at risk of 'dooring' (running into the open door of a parked motor vehicle). If bicycle lanes are desired on a street with existing on-street parking, options can include removing (or relocating) the parking, adding a painted buffer between the bicycle lane and the parking to increase separation between users, or considering an alternative corridor or bicycle facility type.

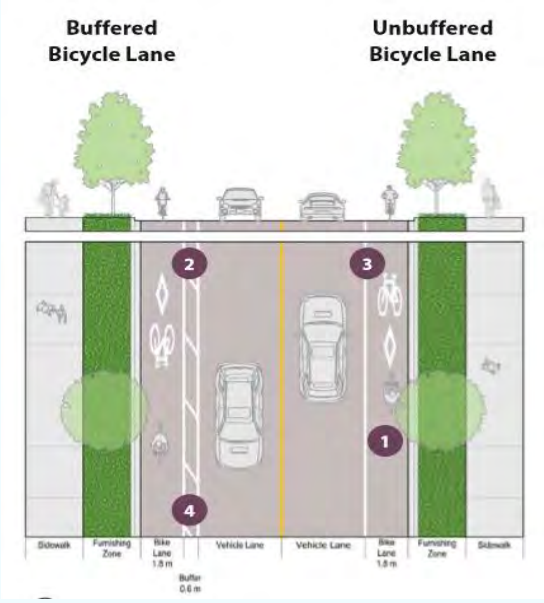

Figure 6: Curbside Bicycle Lane Cross-Section – Desired Widths and Key Features (Source: BC Active Transportation Design Guidelines, Chapter D)

The following features of buffered and unbuffered bicycle lanes are highlighted in **Figure 6** and are applicable according to the characteristics of each proposed buffered or painted bicycle lane such as traffic volumes and available roadway widths and align with the Province's design guidelines:

1. Desirable width of 1.8 metres
2. For widths greater than 1.8 metres, provide buffer between motor vehicle lane and bicycle lane
3. 100-200mm solid white longitudinal line
4. If buffer space is provided, diagonal hatch markings can be provided for buffers of at least 0.6 metres

In addition to the above facilities, there are several informal or recreational routes in Pemberton that are used primarily for recreational purposes. These routes have a certain amount of wayfinding signage, but no on-street pavement markings or regulatory signage. This Cycling Network Plan builds upon and formalizes, these informal cycling routes.

The Pemberton Cycling Network Plan should be implemented using a phased approach, taking advantage of existing infrastructure projects and funding to construct portions of the network. Key gaps and routes connecting important destinations should be prioritized. More information on plan implementation and prioritization can be found in Section 4.

ACTION 1.2: WORK WITH PARTNERS TO PROVIDE REGIONAL CYCLING CONNECTIONS TO ADJACENT COMMUNITIES

As previously noted, Pemberton is part of the Squamish-Lillooet Regional District (SLRD), with the closest communities being Mount Currie (7 kilometres to the north) and Whistler (33 kilometres to the south). Lílwat Nation will be connected to Pemberton by the Friendship Trail, one of two important regional trail systems that connects Pemberton to its regional neighbours. The other regional trail is the Sea to Sky Trail, which begins at the Squamish waterfront and runs 180 kilometres north to D'Arcy. Currently, sections of the Sea to Sky Trail in proximity to urban centres are paved, maintained year-round and in some cases, lit. The Sea to Sky Trail is an ongoing project.

Continued expansion and improvement to the Sea to Sky and Friendship Trails will be key to improving active transportation and tourism connections to locations outside the Village. Partnerships with neighboring jurisdictions as well as local volunteer organizations are critical to developing these connections. More information about these relationships is outlined in the Pemberton and Area C Service Area Trails Master Plan.

The Village of Pemberton should continue to work with partners to explore opportunities to extend the cycling network into communities and land outside of the Village boundaries. This action ties in closely with strategies outlined in the Trails Master Plan and the proposed off-street pathway routes identified in Map 2. Some of the key partners the Village should work with include the Squamish-Lillooet Regional District, Lílwat Nation and the Ministry of Transportation and Infrastructure (for potential cycling connections on highways or adjacent to Ministry infrastructure, as well as intersection improvements).

ACTION 1.3: ENSURE THE CYCLING NETWORK IS SEAMLESSLY INTEGRATED WITH THE TRAILS AND SIDEWALK NETWORKS

The implementation of the Cycling Network Plan will be accomplished through the design and construction of new and upgraded roads and other infrastructure projects. It should be noted that

other actions within this Plan can also support cycling and that capital projects should be implemented through an opportunistic approach and are dependent on available resources. This helps to ensure an efficient and cost-effective process, but it will require collaboration and integration between various internal departments and agencies, as well as external partners.

Therefore, it is important that when discussing any new active transportation project in the Village and SLRD, efforts are made to ensure that trails, sidewalks and multi-use facilities are seamlessly integrated. Additionally, working closely with the Pemberton Valley Trails Association and the Pemberton Off Road Cycling Association will ensure recreational opportunities are aligned and efforts can be capitalized on. This will be critical for the implementation of the Cycling Network Plan.

ACTION 1.4: INCORPORATE BEST PRACTICE BICYCLE FACILITY DESIGN GUIDELINES IN INFRASTRUCTURE PLANNING AND IMPLEMENTATION

The new British Columbia Active Transportation Design Guide was consulted throughout the planning process to ensure that best practices were incorporated into the Cycling Network Plan. The Design Guide was developed based on national and international best practices and provides detailed guidance for every step of the cycling network planning process, including corridor selection, facility type selection and geometric design guidance for designing high quality bicycle facilities and amenities.

Where feasible, the Village should follow the geometric design guidance set out in the BC Active Transportation Design Guide when installing new and/or upgrading bicycle facilities. This will ensure that cycling facilities are planned, designed and constructed using consistent treatments that have been successfully implemented elsewhere. Additionally, the Pemberton Subdivision and Development Control Bylaw should be updated to incorporate the specific geometric design recommendations for multi-use pathways, neighborhood bikeways and painted/buffered lanes. Engineering cross sections for new roads should be updated based on these provincial guidelines. In addition, end of trip facilities and bicycle parking requirements as identified in the Village's Zoning Bylaw (No. 832, 2018) should be updated to reflect best practices for bicycle parking.

ACTION 1.5: PRIORITIZE THE SAFETY OF ACTIVE TRANSPORTATION USERS AT INTERSECTIONS AND CROSSINGS

Intersections have the most potential for conflict between motor vehicles and cyclists (and other active transportation users). Crossings – where off-street pathways intersect with a roadway – present similar risks. Intersections and crossings are often the most significant real or perceived barrier to cycling. Therefore, these spaces must be carefully designed to ensure that active transportation users are able to safely navigate from one side to the other.

There are several design principles and considerations that can be applied to increase safety. The British Columbia Active Transportation Design Guide lists six key principles:

1. Design for all ages and abilities
2. Minimize conflicts between users
3. Ensure clarity of right-of-way
4. Reduce speed at conflict points
5. Ensure clear sightlines
6. Make intersection as compact as possible

A variety of design solutions can be applied to address these principles and make it safer for people cycling. This can include geometric design elements such as the alignment of the road, the profile of the road, altering the road's cross-section and adding signage and pavement markings. Additionally, providing lighting at important crossings can ensure that all road users are visible, supporting cycling at all times of day and in all seasons.

Figure 7: Example of a Cross-ride Pavement Marking with Conflict Paint and Cycling Stencils (Vancouver, BC)

Cross-ride markings and conflict zone pavement markings (see combined treatments in **Figure 7**) – two types of pavement markings – are two examples of intersection improvements. The application of green pavement marking does not legally indicate right-of-way, but these surfaces help to raise awareness and visibility of people cycling, making cycling movements more predictable, provide clarity of right-of-way and guide bicycle users and motorists through conflict zones or complex intersections.

ACTION 1.6: REVIEW DATA COLLECTED BY ICBC AND RCMP TO MONITOR CYCLING COLLISION LOCATIONS AND IDENTIFY SAFETY MITIGATION MEASURES

Every two years, the Village should review safety data to monitor cycling and pedestrian collision locations and identify safety mitigation measures to improve safety. Collision locations refer to locations with a higher concentration of reported collisions or incidents. Collision locations can include on-street corridors as well as specific intersections. Through the identification of collision locations, the Village can develop mitigation measures using engineering, education, or enforcement. When considering ICBC collision data, the only identified collision involving a cyclist was recorded at the roundabout at Portage Road and Aspen Boulevard.

SUMMARY: THEME 1

The actions that have been developed under the theme Build and Connect the Network are summarized below:

ACTION 1.1: PROVIDE A CONTINUOUS BICYCLE NETWORK THROUGH A PHASED IMPLEMENTATION APPROACH

ACTION 1.2: WORK WITH PARTNERS TO PROVIDE REGIONAL CYCLING CONNECTIONS TO ADJACENT COMMUNITIES

ACTION 1.3: ENSURE THE CYCLING NETWORK IS SEAMLESSLY INTEGRATED WITH THE TRAILS AND SIDEWALK NETWORKS

ACTION 1.4: INCORPORATE BEST PRACTICE BICYCLE FACILITY DESIGN GUIDELINES IN INFRASTRUCTURE PLANNING AND IMPLEMENTATION

ACTION 1.5: PRIORITIZE THE SAFETY OF ACTIVE TRANSPORTATION USERS AT INTERSECTIONS AND CROSSINGS

ACTION 1.6: REVIEW DATA COLLECTED BY ICBC AND RCMP TO MONITOR CYCLING COLLISION LOCATIONS AND IDENTIFY SAFETY MITIGATION MEASURES

THEME 2: MAINTENANCE AND ACCESSIBILITY

While the implementation of infrastructure to promote cycling is often viewed as a top priority, undertaking ongoing rehabilitation and maintenance and improving the accessibility of existing infrastructure is a core component of any successful cycling network. Cycling infrastructure should be well maintained and accessible for people of all ages and abilities throughout the year. Poorly maintained infrastructure (including off-street pathways and roadways with bicycle routes), poor pavement quality and accumulations of water, ice, snow, or debris, can make cycling much more difficult, undesirable and unsafe. It is important to note that the installation of more facilities – and of certain types of cycling facilities – will have an impact on the Village's operations and maintenance budget. This should be considered and prioritized when approving new capital projects or applying for grants.

ACTION 2.1: ENSURE STREETS DESIGNATED AS PART OF THE CYCLING NETWORK ARE MAINTAINED AND KEPT IN GOOD REPAIR

The Village should review road maintenance practices and include considerations of on-street bicycle infrastructure and routes when prioritizing roadway maintenance. This includes painting and resurfacing schedules as well as regular road maintenance, such as street sweeping and snow clearing and removal that maintains the functionality of bicycle facilities. The majority of Pemberton's proposed bicycle network is comprised of off-street facilities. It is important to ensure that crossings and access points are well maintained and integrated into maintenance schedules.

ACTION 2.2: ENSURE THE VILLAGE HAS THE EQUIPMENT TO MAINTAIN ALL TYPES OF PROPOSED BICYCLE INFRASTRUCTURE

Currently, the Village uses several types of snow removal equipment depending on the location. Sidewalks are maintained primarily with a Skidsteer, which has a width of 1.8 metres. Roads are cleared using a large truck, plow and wing (total width of 1.8 metres). In spaces where these clearing methods are not as effective, such as intersections or side roads, a loader will be used. Snow removal along MOTI roads does not require the Village's snow removal equipment, as the route is maintained by the Ministry's contracted services.

Bicycle facilities and other pathways may present challenges related to maintenance, especially if the appropriate equipment is not available. It is recommended that maintenance costs be factored into the approval process when considering potential cycling capital projects.

Maintenance costs will vary significantly based on the design of the bicycle facilities. The costliest facilities to maintain tend to be protected bicycle lanes (a rough order of magnitude cost of three to four times more expensive per kilometre than painted bicycle lanes). This Cycling Network Plan does not recommend this facility type, but the potential increased annual costs should be considered should this type of facility be identified as desirable in the future. In general, prioritizing the winter maintenance of bicycle facilities and sidewalks will result in increased maintenance costs, but it will result in a more accessible and inclusive active transportation network. It is also important to note that maintenance costs could be higher depending on expectations around clearing snow and debris, bicycle facility design, materials used and the selected routes, as each roadway presents unique challenges for maintenance.

ACTION 2.3: CONSIDER UPDATING THE VILLAGE'S SNOW AND ICE REMOVAL POLICY TO PROVIDE SNOW REMOVAL PROCEDURES FOR BICYCLE INFRASTRUCTURE

Currently, the Village has no requirements for debris, snow and ice removal on bicycle routes specifically, as the Village does not have any existing municipal bicycle facilities. However, the Village's Snow and Ice Removal Policy outlines priority areas for snow removal. The highest priority snow removal areas are main streets and sidewalks, school access roads and sidewalks, emergency services and all intersections as required. Trails are currently the lowest priority, along with snow build up locations. **Table 1** lists the on-street bicycle network priority streets for snow and ice removal.

Table 1: On-Street Bicycle Network Priority Streets by Neighborhood (Village of Pemberton, Snow Removal and Ice Removal Policy)

ON-STREET BICYCLE NETWORK PRIORITY STREETS BY NEIGHBOURHOOD (VILLAGE OF PEMBERTON, SNOW REMOVAL)	
STREETS	**AREA**
Prospect Street	Downtown
Aster Street	
Camus Road	
Frontier Street	
Dogwood Street	Benchlands
Hemlock Street to Laurel Street	The Glen
Pemberton Farm Road East	Plateau/Hillside
Sabre Way	
Industrial Way	Industrial Park
SCHOOL ACCESS TRAILS AND PATHWAYS	
Oak Street and Connecting Trail to Alder Drive	
Aspen Boulevard	
Portage Road (sidewalks)	
Arn Canal Trail (east side)	

Current snow removal practices for on-street routes are based on existing roadway snow removal requirements. However, the storage of snow in bicycle lanes can be a safety issue for people cycling. Once the cycling network is established, the Village should consider reviewing existing snow removal requirements and providing additional guidance for snow removal specific to the proposed bicycle network and identify a winter cycling network. Routes that are included in the winter cycling network

should have available space for snow storage to help facilitate removal. It is ideal that bicycle routes are plowed to bare pavement (0 to 4 centimetres of snow) to the edge of the curb.

Where bicycle facilities are prioritized for snow removal, any adjacent pedestrian facilities should also be prioritized. This ensures accessibility for all active transportation users while removing the temptation for pedestrians to walk in a clear bicycle facility.

SUMMARY: THEME 2

The actions that have been developed under the theme Maintenance and Accessibility are summarized below:

ACTION 2.1: **ENSURE STREETS DESIGNATED AS PART OF THE CYCLING NETWORK ARE MAINTAINED AND KEPT IN GOOD REPAIR**

ACTION 2.2: **ENSURE THE VILLAGE HAS THE EQUIPMENT TO MAINTAIN ALL TYPES OF PROPOSED BICYCLE INFRASTRUCTURE**

ACTION 2.3: **CONSIDER UPDATING THE VILLAGE'S SNOW AND ICE REMOVAL POLICY TO PROVIDE SNOW REMOVAL PROCEDURES FOR BICYCLE INFRASTRUCTURE**

THEME 3: END-OF-TRIP FACILITIES AND AMENITIES

Making cycling convenient focuses on integrating transit and cycling, as well as providing amenities such as bicycle parking and end-of-trip facilities. Investing in these areas will help to make cycling and other forms of active transportation a more practical option for day-to-day transportation needs.

ACTION 3.1: CONSIDER THE PROVISION OF BICYCLE PARKING WITHIN THE PUBLIC RIGHT-OF-WAY AT KEY CYCLING DESTINATIONS

Having safe and secure bicycle parking is critical, as most trips by bicycle require a place to park when the rider reaches their destination. At its most basic, this means locking a bike to something within the street right-of-way. The fear of theft or vandalism is a significant barrier to biking regardless of

the cost of an individual's bicycle. However, this may be of particular concern within Pemberton, where many residents have invested in high quality bicycles that are also being used for both transportation and recreation. There are different types of bicycle parking, each of which is suitable in different situations depending on the duration of the stay and trip purpose. As a result, providing safe and secure bicycle parking at key locations in Pemberton is important for facilitating cycling for various purposes (commuting, errands, tourism and recreation). There are two primary categories of bicycle parking: short-term and long-term.

Short-Term Bicycle Parking (typically referred to as Class II bicycle parking) often consists of bicycle racks distributed in the public right-of-way in commercial areas and at key destinations. Short-term bicycle parking can take a variety of forms, but the two most user-friendly designs are Inverted 'U' racks and Post-and-Ring racks. Bicycle racks should be located as close to destinations as possible in convenient and highly visible locations. It is desirable to provide a limited number of covered bicycle racks to provide protection from the elements. It also important to install bicycle racks properly using theft-resistant materials and to position them so as to allow the maximum prescribed number of bicycles to fit against each rack. Additionally, consideration should be given to position racks to allow longer bicycle, such as bicycle with trailers, to park securely without impeding the sidewalk or building entrances. Finally, bike rack placement should consider existing topography, ensuring that the rack is usable if installed on a hill. Examples of Post-and-Ring racks, Inverted 'U' racks and short-term covered bicycle parking in Toronto, Port Alberni and Victoria are provided below.

Post-and-Ring rack, Toronto

Inverted 'U' rack, Port Alberni

Covered bicycle racks, Victoria

Long-Term Bicycle Parking (typically referred to as Class I bicycle parking) is more secure than short-term bicycle parking. It may include bicycle lockers or larger secure facilities, such as bicycle rooms, bicycle cages, secure bicycle parking areas, or full-service bicycle stations. Long-term parking is generally oriented toward cyclists needing to park a bicycle for an entire day or longer. Major employment areas and multi-family residential buildings are ideally suited to long-term bicycle parking facilities. With the increasing prevalence of electric bicycles, it is also important to provide access to electric outlets for charging bicycles while they are parked. Additionally, a proportion of the bicycle parking spots should be large enough to accommodate non-standard bicycles that are longer or wider, such as cargo bicycles or bicycle with trailers.

Bicycle room (Vancouver General Hospital Cycling Centre), Vancouver

Bicycle cage, Victoria

Bike locker, Kelowna

The Village should consider the development of a formal program for the installation of bicycle parking at key cycling destinations. These destinations include parks, libraries and Village businesses, but also within the public right-of-way. When installing short-term bicycle parking on the sidewalk, care should be taken to ensure that a clear pedestrian through zone is maintained – the bicycle rack should not present a barrier or tripping hazard. There are a number of existing documents that provide guidance on the design and placement of bicycle parking, such as the Association of Pedestrian and Bicycle Professionals' Essentials of Bike Parking guide and the British Columbia Active Transportation Design Guide.

The Village may also want to consider a Bike Rack Sponsorship Program. Similar programs have been implemented in other communities across British Columbia. This program would invite individuals,

businesses, service clubs and other organizations to sponsor a bike rack in Pemberton. The Village can then work with sponsors to determine the best location for the bike rack.

Action 3.2: Review and update requirements for short-term and long-term bicycle parking and end-of-trip facilities

According to the Village's Zoning Bylaw, all multi-unit residential and mixed-use residential and commercial developments within Pemberton are required to provide bicycle parking at a rate of 20% of the required vehicle parking. Motor vehicle parking requirements are based on dwelling units and gross floor area. Parking requirements should be reviewed and changes incorporated to the designated zoning uses and classifications. These requirements should separate out the parking requirements more clearly for short- and long-term bicycle parking requirements. Additional demands for the high quality, end-of-trip facilities are likely as the bicycle network grows.

Other end-of-trip facilities, such as changing rooms, showers, bicycle repair stands and storage space for equipment can also make cycling more convenient and help build a culture for active transportation. This is particularly important in communities that experience variable weather conditions including rain and snow, as more gear is required at certain times of year. For certain developments, the Village should investigate reducing motor vehicle parking requirements where secure bicycle parking and end-of-trip facilities are provided.

Action 3.3: Investigate the provision of bicycle parking at all Village owned and operated facilities

Installing and improving existing bicycle parking and end-of-trip facilities at Village owned and operated buildings can help send a message to residents and businesses that the Village supports cycling as a means of transportation. Continuing these investments can benefit employees, residents and visitors by providing better access to facilities in Pemberton. This can include the provision of short-term facilities at locations that see a high amount of visitor activity and long-term bicycle parking and other end-of-trip amenities where there are high concentrations of employees or tourists and where space is available.

Possible locations for short-term facilities include:

- Pemberton Skate Park

- Pemberton Downtown Community Barn
- Pemberton & District Community Centre
- Municipal Hall

For any future municipal buildings, such as the proposed Pemberton & District Recreation Site and multi-sport playing fields, a longer-term end-of-trip facility is recommended to accommodate longer visits and provide protection from the elements. In addition, providing longer-term bicycle parking at any future transit facilities such as proposed park and ride locations, is recommended.

ACTION 3.4: CONSIDER THE ESTABLISHMENT OF A CENTRAL HUB FOR CYCLING

Pemberton's downtown is a hub of activity: being centrally located, it acts as a gateway to many of the area's recreational cycling routes. Establishing a central hub for cycling could include covered, long-term bicycle parking, a bike repair station (example shown) and maps and information regarding the on-street and off-street cycling network as well as other destinations within the region. The 'cycling hub' concept could be expanded to a multi-modal transportation hub, with information and services pertaining to transit, walking and cycling in particular. The Bike Co. Bicycle Shop acts as an existing informal cycling hub. The Tourism Information Centre or the Downtown Community Barn are potential spaces to be further developed into future transportation hubs. By exploring this concept, the Village can help to create areas for promoting cycling, sharing information and combining business, tourism and transportation interests.

ACTION 3.5: WORK WITH BC TRANSIT TO IDENTIFY OPPORTUNITIES TO IMPROVE BICYCLE-TRANSIT INTEGRATION

Pemberton should work with BC Transit to consider the provision of both short- and long-term bicycle parking at transit stops along the 99 Connector Route. This would help provide a safe and secure place for people to lock up their bicycle if they are travelling the rest of their journey by transit, or if there is no space available on the bike racks on the bus. The Village should also continue to work with BC Transit to look for opportunities to promote the benefits of multi-modal transportation through advertisements and engagement. Exploring future opportunities to increase carrying capacity of

bicycles on BC Transit buses could also be advantageous to encourage multi-modal commuting by transit and bicycle. This is challenging and would require ongoing work with BC Transit.

SUMMARY: THEME 3

The actions that have been developed under the theme End-of-Trip Facilities and Amenities are summarized below:

ACTION 3.1: CONSIDER PROVISION OF BICYCLE PARKING WITHIN THE PUBLIC RIGHT-OF-WAY AT KEY CYCLING DESTINATIONS

ACTION 3.2: REVIEW AND UPDATE REQUIREMENTS FOR SHORT-TERM AND LONG-TERM BICYCLE PARKING AND END-OF-TRIP FACILITIES

ACTION 3.3: INVESTIGATE THE PROVISION OF BICYCLE PARKING AT ALL VILLAGE OWNED AND OPERATED FACILITIES

ACTION 3.4: CONSIDER THE ESTABLISHMENT OF CENTRAL HUBS FOR CYCLING

ACTION 3.5: WORK WITH BC TRANSIT TO IDENTIFY OPPORTUNITIES TO IMPROVE BICYCLE-TRANSIT INTEGRATION

THEME 4: EDUCATION AND AWARENESS

Although 'hardscape' measures such as cycling facilities and amenities are critical to encouraging active transportation, a range of 'softscape' supporting measures are also recommended to encourage active transportation in Pemberton. These soft measures often include education and encouragement initiatives, which involves advertising the benefits of cycling, giving out information on cycling routes and providing programs that teach skills and awareness around road safety and cycling. Even recreational cycling courses are beneficial for encouraging active lifestyles and building cycling confidence. Education and encouragement initiatives are important and cost-effective measures to enable residents to feel safe and comfortable cycling throughout the region.

ACTION 4.1: DEVELOP AND IMPLEMENT A CYCLING WAYFINDING PLAN BASED ON BEST PRACTICES

A seamless, consistent and easy-to-understand Village-wide system of wayfinding signage for cycling is important to make the network easier to navigate. Wayfinding should be simple, easy to read and provide people cycling with a level of confidence that they are travelling the most efficient and accessible route.

As the Village works to provide more cycling infrastructure, it should consider developing and implementing a wayfinding program and guidelines. This can include a plan for the installation of wayfinding throughout Pemberton as well as agreed-upon protocols for route naming and the identification of destinations, including trailheads and regional connections. Currently, the Village's Trail Standard Guidelines include recommendations for signage and amenities depending on the trail type (including on-street bicycle lanes). Implementing these signage recommendations would support the overall connectivity and convenience of the proposed cycling network and would also benefit tourism.

There are several great examples of wayfinding guidelines the Village can build off, including:

- TransLink's Wayfinding Guidelines for Utility Cycling in Metro Vancouver (specific to cycling, available for free download online);
- District of Tofino Wayfinding Signage Report (for a comparable, recreation focused, small community); and or
- District of Squamish's Community Wayfinding Program Design Strategy.

Pemberton may want to consider partnering with other local organizations to implement a wayfinding program or to provide markers along select routes to improve location identification for emergency response purposes.

ACTION 4.2: DEVELOP AN ONLINE CYCLING NETWORK MAP SHOWING LOCAL ROUTES, REGIONAL CONNECTIONS AND SIGNED RECREATIONAL ROUTES

The Pemberton Valley Trails Association (PVTA) has developed and distributed maps showing various trail types and other important characteristics for recreational use. It is recommended that as the cycling network is implemented, the Village will upload the cycling network to a public GIS mapping

tool to ensure information about the cycling network is easily accessible, printable and in an easy to read format. This will ensure that people interested in cycling have access to the most accurate network information and can plan their trips accordingly.

The map could also display other information, including key destinations, transit stops, locations for bicycle parking and bicycle retailers. The Village could consider working in partnership with other organizations or groups to develop and update the map, such as the PVTA.

ACTION 4.3: CONTINUE TO SUPPORT AND DEVELOP CYCLING EDUCATION PROGRAMS

While improving infrastructure can make cycling safer and more attractive, it is also important to ensure that residents have the skills, information, confidence and support they need to cycle more. There are several education and awareness programs and initiatives that the Village can develop and support with its partners. This can include partnerships with agencies and organizations such as ICBC (i.e. road safety campaigns), RCMP, Vancouver Coastal Health and local groups and businesses. These partnerships can deliver 'share the road' and road safety campaigns, promote bike or walk to school/work week and cycling skills workshops. Educational information around active transportation can be delivered through a variety of formats, including an online active transportation webpage on the Village's website, or supporting community groups and recreational programming to help build awareness and bicycle safety skills.

Additionally, the Village can consider developing and maintaining an Active Routes to School program, which improves children's safety as they walk and bicycle to school. The initiative is built on five program elements, typically referred to as the "5 E's" of safe routes to school: engineering, education, encouragement, enforcement and evaluation. There are sometimes provincial grants available to help fund these types of programs and studies.

ACTION 4.4: CONSIDER THE IMPACT OF CHANGING TECHNOLOGIES AND DIFFERENT USERS ON THE CYCLING NETWORK

The Village should consider the impact of new technologies and the influence they may have on cycling infrastructure. For example, more people are now using electric bicycle (e-bikes), which has implications for bicycle facility design, user conflicts due to variations in speed and charging requirements. The placement of electric motor vehicle and e-bike charging stations should be considered in future designs and may need to be regulated though Village-wide policies or bylaws.

Ensuring e-bike charging is available at the proposed cycling hub would be a great way to incorporate technology into the cycling network. The Village may also want to consider working with a local bike rental business to increase resident and visitor access to e-bikes to visit and tour the Village and the region by bike.

Furthermore, new personal modes of transportation, such as electric scooters and other small, one-person electric vehicles, are beginning to emerge. According to the *BC Motor Vehicle Act*, these devices are not currently permitted to operate on the street network. However, MOTI has recently proposed changes to the *Motor Vehicle Act* that would establish a regulatory framework for these emerging mobility devices.

ACTION 4.5: CONTINUE TO ACTIVELY PROMOTE CYCLING IN PEMBERTON

Village-wide communications through various forums such as radio advertisements, bus shelter advertisements, websites, social media and other forms of engagement can be effective tools for reaching out to Pemberton residents and potential visitors, increasing awareness and interest in active transportation. The Village should also continue to support 'Bike to Work' weeks and other initiatives that promote cycling.

ACTION 4.6: CONSIDER THE DEVELOPMENT OF AN ACTIVE TRANSPORTATION ADVISORY COMMITTEE

Through the process of developing the Cycling Network Plan, various stakeholders were identified and input was requested from representatives from several existing groups, residents and agencies. This group could form an Active Transportation Advisory Committee, potentially as a sub-committee to an existing Council committee related to health or community safety (if any). The Village should consider creating this type of committee and convening them to advise on proposed projects, policies, standards, programs, events and other initiatives to implement the Cycling Network Plan or provide guidance on other active transportation projects.

SUMMARY: THEME 4

The actions that have been developed under the theme Education and Awareness are summarized below:

ACTION 4.1: DEVELOP AND IMPLEMENT A CYCLING WAYFINDING PLAN BASED ON BEST PRACTICES

ACTION 4.2: DEVELOP AN ONLINE CYCLING NETWORK MAP SHOWING LOCAL ROUTES, REGIONAL CONNECTIONS AND SIGNED RECREATIONAL ROUTES

ACTION 4.3: CONTINUE TO SUPPORT AND DEVELOP CYCLING EDUCATION PROGRAMS

ACTION 4.4: CONSIDER THE IMPACT OF CHANGING TECHNOLOGIES AND DIFFERENT USERS ON THE CYCLING NETWORK

ACTION 4.5: CONTINUE TO ACTIVELY PROMOTE CYCLING IN PEMBERTON

ACTION 4.6: CONSIDER THE DEVELOPMENT OF AN ACTIVE TRANSPORTATION ADVISORY COMMITTEE

SECTION 4: IMPLEMENTATION STRATEGY

The Village of Pemberton's Cycling Network Plan outlines both short- and long-term actions to enhance and encourage commuter cycling within the Village and region. Recognizing that the long-term vision will require significant investment, an Implementation Strategy has been created to identify priorities, timeframes and order-of-magnitude cost estimates for each capital project. More information on project prioritization and costs can be found in the sections below, as well as in **Appendix B** and **Appendix C**.

THEME AND ACTION SUMMARY

Strategies for implementing each of the actions identified in the Cycling Master Plan are summarized in **Appendix B**. This summary provides guidance with respect to:

- **Priority and Timeframe:** Each action is identified as either short term/high priority (within 5 years), medium term (within 10 years), or long term/low priority (10 years and beyond), including actions that may require substantial negotiation for implementation. Many actions will be implemented on an ongoing basis, in which case they are shown under each timeframe. It should also be noted that these priorities may change over time and should be adaptable to maximize funding opportunities as they arise.
- **Method of Implementation:** This column identifies how each action will be implemented: as a capital project, through ongoing operations and maintenance, or as a policy or programming initiative.
- **Champion:** This column suggests a leader, partner, or Village department 'champion' responsible for implementing each action. Many actions have identified the Village and a specific department as primarily responsible for these efforts, while some can be supported by external agencies and should be pursued with this in mind.

Through community engagement, it was determined that the largest emphasis for implementation should be placed on building and connecting the cycling network, with Theme 1.3 scoring highest at the open house. Additionally, there was public support for improving bicycle-transit integrations, as well as developing a cycling map for the Village. The full engagement summary can be found in **Appendix E**.

NETWORK PRIORITIZATION

SEGMENT AND CONNECTION PRIORITIZATION

A full list of identified projects is provided in in **Appendix C**. Each project has been assigned a priority and approximate timeframe. This helps indicate which projects should be implemented in the short term (0-5 years), medium term (5-10 years) and long term (> 10 years). The high priority, short-term projects were selected based on their importance to the overall network, their relative ease of implementation and their importance to the local community, as identified in community engagement. The recommended short-term/high priority projects can be seen in **Figure 8** (and a larger version can be viewed in **Appendix A**).

It is important to note that the Cycling Network Plan is intended to be a flexible, working document. For the proposed networks and infrastructure projects, there has been a level of flexibility assigned regarding the specific corridors, facility types and level of priority that are recommended. These priorities may also change over time. The Village will need to review the feasibility and desirability of each infrastructure project regarding changes to the overall transportation network and as the Village grows and develops.

If an opportunity arises to implement an action or infrastructure project identified as a longer-term priority, such as through a redevelopment or another capital project, the Village should seek to maximize that opportunity. Additionally, the list of projects provided in the Cycling Network Plan is not exhaustive and the Village recognizes the need to be flexible and adapt to change.

Once approved by Council, the Plan will establish the recommended cycling network in the Village of Pemberton. Further consultation should be considered as required on design treatments as the plan is implemented. Projects that are multi-jurisdictional or that directly impact other stakeholders are subject to further consultation and approval, as required.

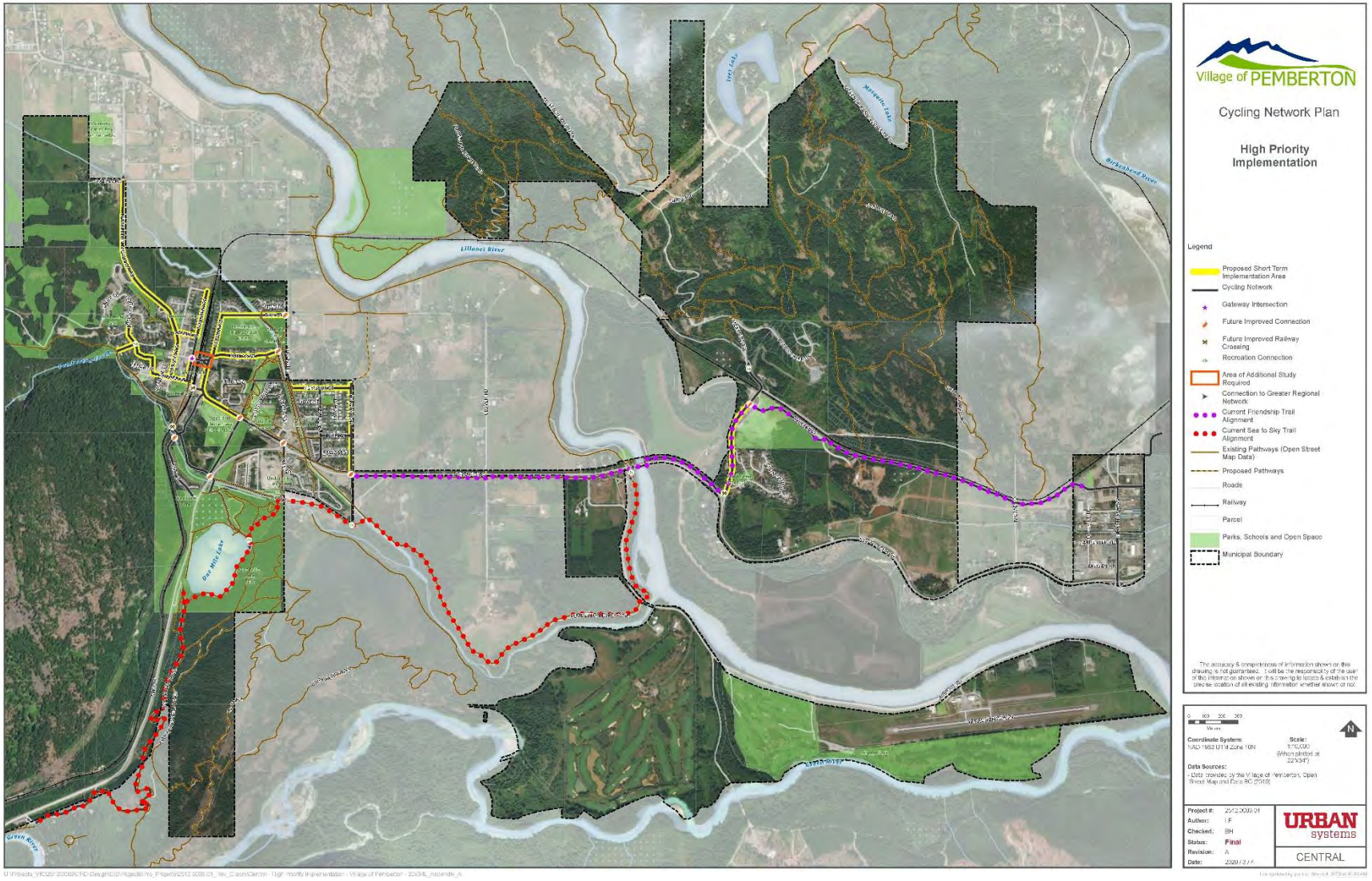

Figure 8: Proposed Short-term Cycling Network Priority Projects

Project Complexity

Appendix C also assigns a project complexity rating. This rating gives additional context for implementation that can help staff identify the level of effort required for each project and to identify 'quick wins.' The ratings are provided for comparison purposes only and may not capture all complexities that arise during the detailed design and implementation phases of a project. Complexity is rated on a four-point scale, as follows:

1. **Low Complexity:** relatively simple project under Village jurisdiction (e.g. painted on-street bicycle lane on a municipal road).
2. **Medium-Low Complexity:** more complex project under Village jurisdiction (e.g. roadway reconfiguration).
3. **Medium-High Complexity:** relatively low cost/low complexity projects that are not under the Village's jurisdiction or require multi-jurisdictional coordination (e.g. painted on-street bicycle lane on a Provincial road).
4. **High Complexity:** more complex or expensive projects that are not under the Village's jurisdiction or require multi-jurisdictional coordination (e.g. rail or dyke crossing improvements).

Future Connections and Additional Study

In addition to the segments and connections described above, the Proposed Cycling Network map includes 'future improved connections' and an 'area of additional study,'. The implementation of these areas is described below.

Future Improved Connections

Ten locations for improved connections have been identified. Generally, these proposed connections do not exist or are currently informal and require formalization such as marked crossings, access agreements with other jurisdictions, pedestrian or cyclist activated crossings and appropriate pavement markings. In some locations, such as Highway 99 and Portage Road, a connection exists, yet presents barriers such as undersized pedestrian refuge areas (or cyclist space), poor connectivity to existing trails or pathways, insufficient visibility and lighting, etc.

Other connection improvements are shown where multiple facility types intersect and present opportunities for wayfinding, place making, lighting and general formalization. Connections generally relate to overcoming a current, previously identified barrier such as Highway 99, Pemberton Creek and the existing rail line. The connection between Pemberton Farm Road East and the Friendship Trail was noted as particularly challenging in public engagement.

Area of Additional Study Required

The 'area of additional study' (see **Figure 8**) is located at the intersection of Aspen Boulevard and Pemberton Portage Road and continues along Portage Road across the rail corridor. This area is identified as a critical component of the overall cycling network and is currently a location of concern by Village emergency response staff and members of the community. This location offers the only access to the Village's core for both active transportation users and motor vehicles.

The proposed cycling network includes a multi-use path along Portage Road and painted or buffered lanes along Aspen Boulevard. Each of these proposed facilities will meet at this intersection, which currently does not offer facilities to accommodate cyclists beyond sharing the existing roundabout, which is not considered to be all ages and abilities and was identified as a safety concern during engagement. The roundabout is under the jurisdiction of MOTI, is in close proximity to an active rail corridor and presents complex challenges to all users.

A secondary access to the Village core could help alleviate conflicts between road users at this location; however, with bicycle facilities implemented leading to and through this 'area of additional study,' the Village should aspire to provide access that does not require cyclists to share the lane with motor vehicles. This may be accomplished through a continuous multi-use pathway along the north side of Portage Road between Aspen Boulevard and Frontier Street (see **Figure 9**). This could tie into the Village's Gateway Intersection with an improved active transportation crossing at Aspen Boulevard between Poplar Street and Portage Road, ensuring continuous access into the Village core. Further, more detailed study is required at this location, as will be early engagement and support from MOTI.

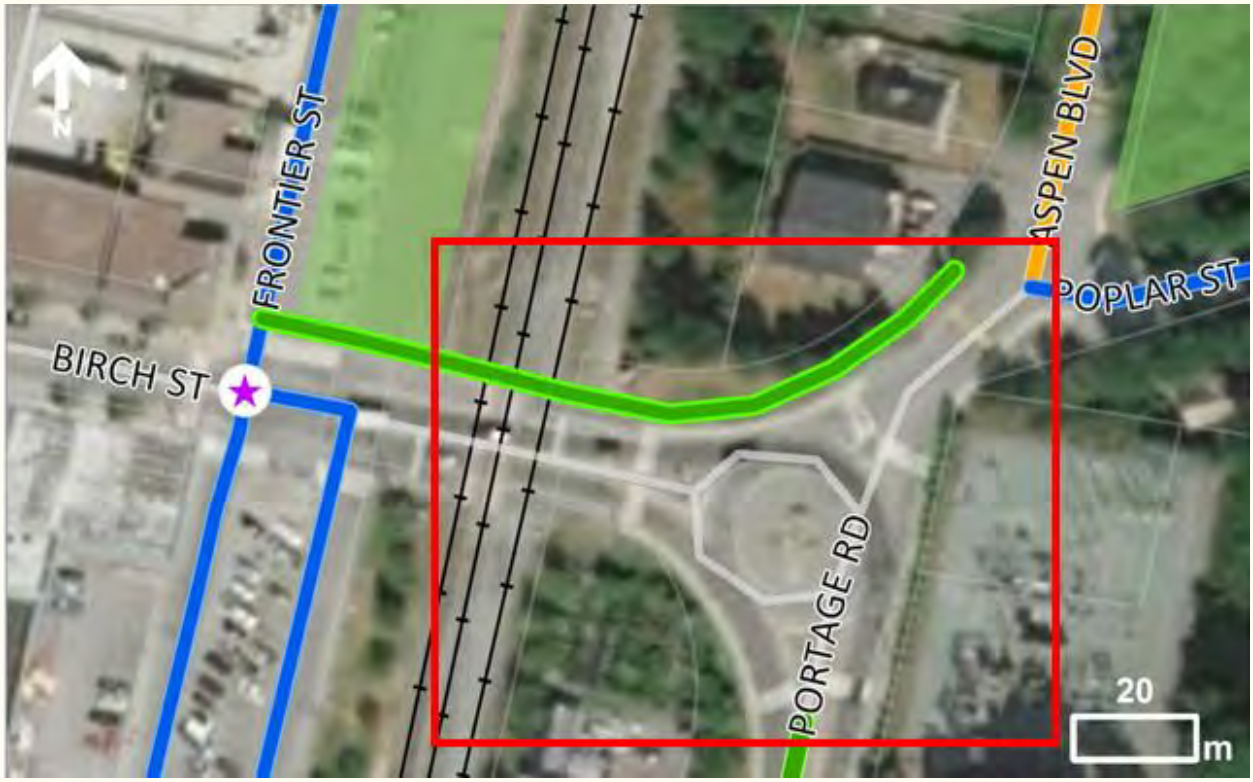

Figure 9: Area of Additional Study, Potential Portage Road Multi-Use Pathway Connection (Subject to Additional Study)

COST ESTIMATES

Conceptual order-of-magnitude capital cost estimates (Engineering D Level estimates in 2020 dollars) for each proposed project are provided in **Appendix C**. These conceptual costs were developed based on the unit cost assumptions shown in **Table 2**, which represent typical unit costs and recent construction pricing in other similar sized communities in British Columbia and do not include any detailed engineering. These cost estimates are based on retrofitting an existing right-of-way with a bicycle facility or installing a new multi-use pathway on an existing Village owned property with minimal additional surface preparation and grading required. **Any required land acquisition, structures, traffic control devices and further engineering studies have not been included in the cost.**

Table 2: Conceptual Capital Costs for proposed cycling facilities in Pemberton

FACILITY TYPE	UNIT RATE (COST PER KM)
Paved Multi-Use Pathway (3 metre wide)	$550,000
Neighbourhood Bikeway	$40,000
Painted/Buffered Bicycle Lane	$140,000

These costs are to be used to identify the relative cost between projects for planning purposes and should be refined for detailed budgeting. Projects such as intersection upgrades and grade separated crossings require a more detailed review to determine the cost for construction. As a result, the cost estimates for these projects have not been included. Wherever possible, the Village should work with other agencies and levels of governments to establish cost sharing agreements or to seek grant opportunities in order to off-set total project costs. Potential funding opportunities are outlined in the section below.

FUNDING STRATEGIES

Implementation costs for the improvements listed in the Village of Pemberton Cycling Network Plan can be greatly reduced by securing external funding sources and partnership opportunities. This section describes some funding strategies and potential funding sources the Village may consider to help leverage its investments and to maximize its ability to implement bicycle network improvements.

The Village should regularly check with all levels of government to keep up to date on current funding opportunities. Pemberton should pursue all available sources of funding for transportation facilities and programs, including the programs identified below. (Note: as funding opportunities change regularly, the information in this section is subject to change)

GENERAL REVENUES

Wherever possible, the Village should incorporate the recommendations from the Cycling Network Plan into its financial plans to ensure that the projects are accounted for in the Village's capital planning process. To accommodate this, the Village may seek changes to its capital budget to fund

the implementation of this plan over the medium and long term. The Village should also seek to integrate transportation improvements with utility projects, parks and trails, or other capital projects.

DEVELOPMENT

The Village should leverage transportation investments through the planning process and rezoning of new development. The implementation of projects in the Cycling Network Plan can be encouraged through a number of developer-funded implementation tools, including public realm or frontage improvements, Community Amenity Contributions (CACs), density bonusing contributions and requiring high-quality bicycle parking facilities in the Zoning Bylaw. Using revenues from parking cash in-lieu contributions is another mechanism to fund new active transportation and transit facilities.

The Village should also consider formalizing or enhancing policies regarding developer required frontage upgrades (typically within the Subdivision and Development Servicing Bylaw), as well as exploring the opportunities of requesting CACs on a per unit basis for walking/cycling/transit infrastructure at the rezoning stage.

PROVINCIAL PROGRAMS AND INITIATIVES

The Provincial Government administers the Active Transportation Infrastructure Funding program (previously known as BikeBC). Funded projects promote active transportation to work, school, or errands. Funded projects can also generate tourism-related traffic based on their proximity to amenities and points of interest for tourists and through linkages to other communities. To ensure maximum success at obtaining grant funding, the Village should have grant-ready concepts pre-developed for application.

The Provincial Government also administers the Rural Dividend Program, which is intended to help rural communities navigate changes to their economies and to recognize their contribution to the economic wellbeing of British Columbia as a whole. The Province is providing $25 million per year for four years to assist communities with fewer than 25,000 residents. The program funds a diverse range of projects that help build community capacity, develop the workforce, and promote community, economic and business sector development. The Rural Dividend Program is provided through the Ministry of Forests, Lands and Natural Resource Operations (note: intake for this program has been suspended; it is recommended that the Village stay up to date with this program should it reopen).

Federal Funding

There are several programs that provide funding for environmental and local transportation infrastructure projects in municipalities across Canada. Typically, the federal government contributes one third of the cost of municipal infrastructure projects. Provincial and municipal governments contribute the remaining funds and in some instances, there may be private sector investment as well.

Green Municipal Funds

The Federation of Canadian Municipalities manages the Green Municipal Fund, with a total allocation of $550 million. This fund is intended to support municipal government efforts to reduce pollution, reduce greenhouse gas emissions and improve quality of life. The expectation is that knowledge and experience gained in best practices and innovative environmental projects will be applied to national infrastructure projects.

ICBC

ICBC provides funding for road improvements, including pedestrian and bicycle infrastructure, particularly where these have the potential to reduce crashes, improve safety and reduce claims costs to ICBC. Funding is available through ICBC's Road Improvement Program. Other ICBC programs include the Speed Watch Program (through the Community Policing Centres), Speed and Intersection Safety Program, Counter Attack, Operation Red Nose and Road Sense Speaker Program for Schools.

Community Support and Programs

Community groups and local businesses and organizations may also support the implementation of the Cycling Network Plan. Programs such as 'adopt-a-rack', trail maintenance and clean up, as well as bicycle training or celebration events and parades can all be led by interested members of the community. Many small businesses and larger corporations also wish to be good corporate neighbours, to be active in the community and to promote environmentally beneficial causes.

NEXT STEPS

The Village of Pemberton's Cycling Network Plan provides a list of long-term infrastructure projects to enhance and encourage cycling within the Village. Implementing this vision will require capital investment, strategic partnerships and a shift in some policy directions. Once the cycling network is built out, there is still work to be done to support cycling in the Village of Pemberton. Many of these supporting measures were outlined in Themes 2 to 4 of the Plan, including maintenance, end-of-trip facilities, education and encouragement.

Additionally, the Village should monitor and evaluate progress as the network is built out. Monitoring cycling trips is important to understanding trip patterns, determining the impact of investment, provide insight on the usage of different facility types and identify areas in need of further improvement. The Village should establish a monitoring and evaluation strategy to ensure the recommendations in this Plan have the desired positive impact.

The Cycling Network Plan represents the Village of Pemberton's first steps towards creating a network that is safe, comfortable and convenient for people of all ages and abilities.

APPENDIX A:

MAPS

Village of PEMBERTON

Cycling Network Plan

Proposed Cycling Network

Legend

- Recreation Connection
- Future Improved Connection
- Future Improved Railway Crossing
- Gateway Intersection
- Connection to Greater Regional Network
- Multi-use Path
- Neighbourhood Bikeway
- Buffered and Painted Lanes
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Existing Pathways (Open Street Map Data)
- Proposed Pathways
- Area of Additional Study Required
- Municipal Boundary
- Parcel
- Roads
- Railway
- Parks, Schools and Open Space
- First Nation Reserves

0 100 200 300
Meters

N

Coordinate System:
NAD 1983 UTM Zone 10N

Scale:
1:10,000
(When plotted at 22"x34")

Data Sources:
- Data provided by the Village of Pemberton, Open Street Map and Data BC (2019)

Project #:	2512.0009.01
Author:	LP
Checked:	BH
Status:	Final
Revision:	A
Date:	2020 / 3 / 3

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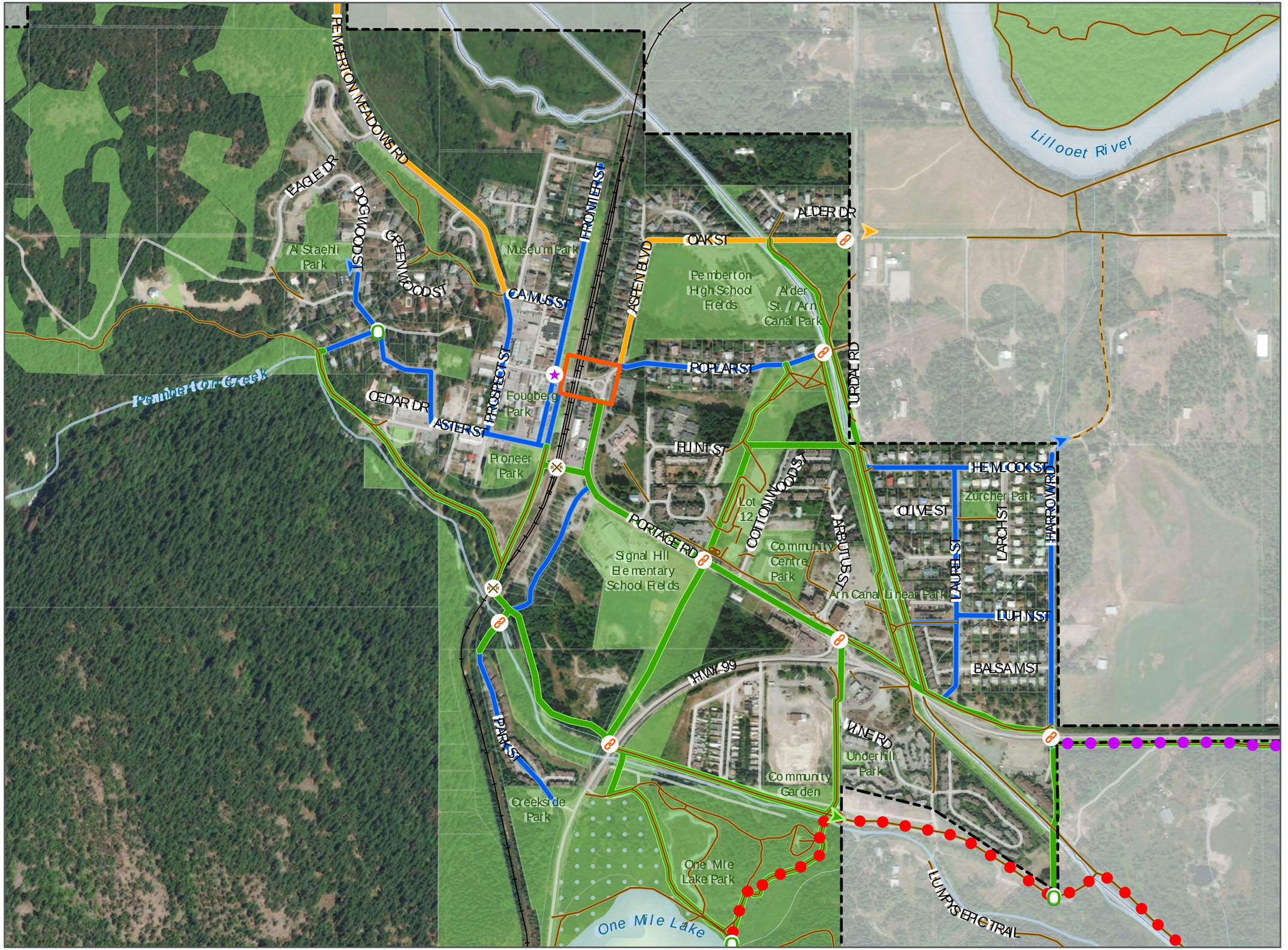

Village of PEMBERTON

Cycling Network Plan

Proposed Cycling Network (Village Core Inset)

Legend

- Recreation Connection
- Future Improved Connection
- Future Improved Railway Crossing
- Gateway Intersection
- Connection to Greater Regional Network
- Multi-use Path
- Neighbourhood Bikeway
- Buffered and Painted Lanes
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Existing Pathways (Open Street Map Data)
- Proposed Pathways
- Area of Additional Study Required
- Municipal Boundary
- Parcel
- Roads
- Railway
- Parks, Schools and Open Space

0 100 200 300
Meters

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Scale:
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(When plotted at 22"x34")

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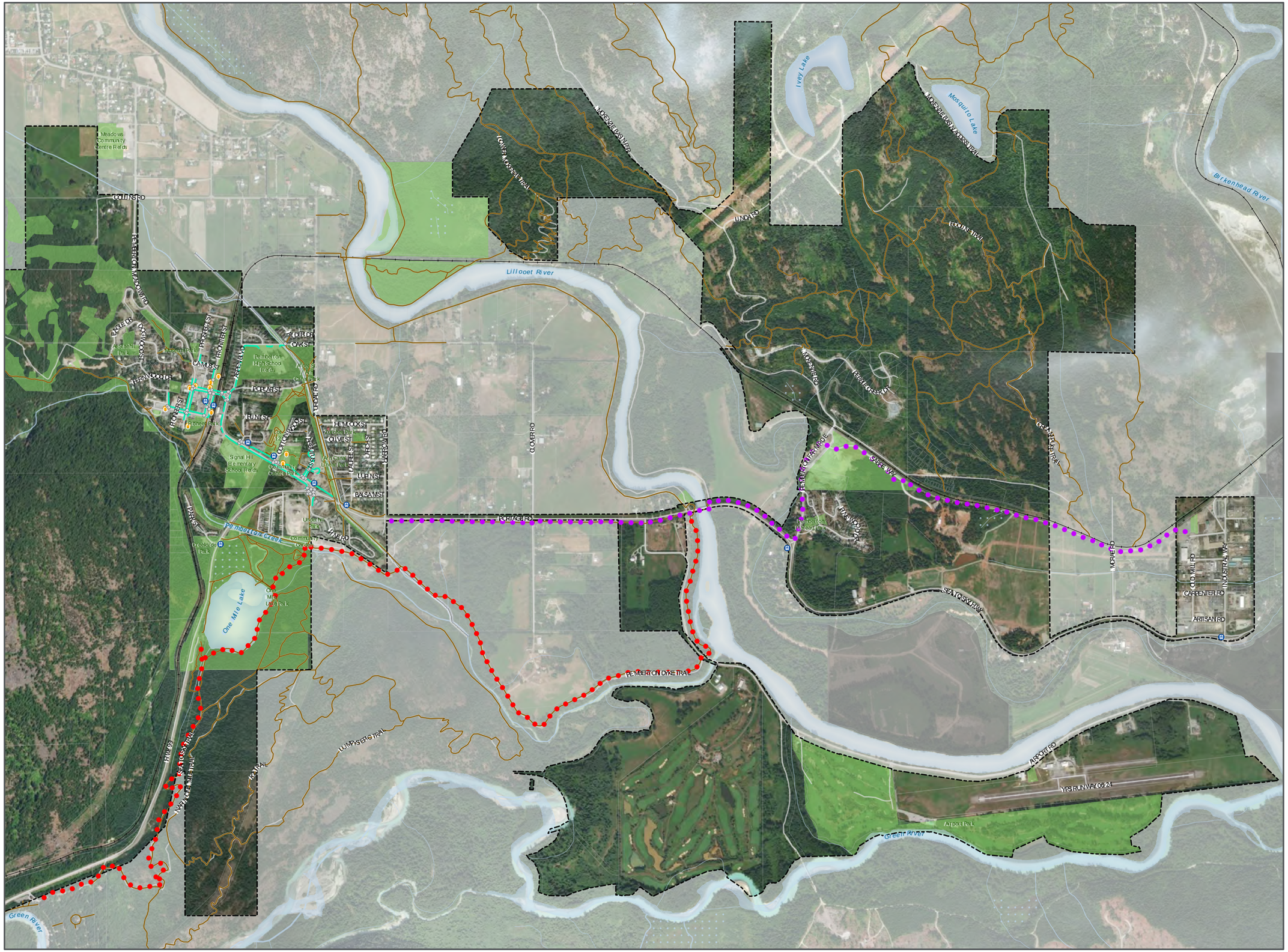

Village of PEMBERTON

Cycling Network Plan

Active Transportation Existing Conditions

Legend

- Municipal Boundary
- Bus Stops
- Crosswalks
- Bike Parking
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Existing Pathways
- Sidewalks
- Roads
- Railway
- Parks and Open Space
- First Nation Reserves
- Wetland
- Waterbody

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0 100 200 300
Meters

N

Coordinate System:
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Scale:
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(When plotted at 22"x34")

Data Sources:
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Project #:	2512.0009.01
Author:	LP
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Status:	Final
Revision:	A
Date:	2020 / 3 / 3

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Village of PEMBERTON

Cycling Network Plan

Active Transportation Existing Conditions (Village Core Inset)

Lillooet River

PEMBERTON MEADOWS RD
EAGLE DR
DOGWOOD ST
GREENWOOD ST
HERNWOOD DR
CEDAR DR
ASTER ST
PIONEER ST
PROSPECT ST
FRONTIER ST
CAMUS ST
ASPEN BLVD
ALDER DR
OAK ST
POPLAR ST
URDAL RD
FLINT ST
COTTONWOOD ST
ARBUTUS ST
HEMLOCK ST
OLIVE ST
LAUREL ST
LARCH ST
HARROW RD
LUPIN ST
BALSAM ST
HWY 99
PARK ST
VINE RD
PORTAGE RD
LUMPY LAKE TRAIL

Al Staehli Park
Museum Park
Pemberton High School Fields
Alder St. Arm Canal Park
Fougberg Park
Pioneer Park
Lot 12
Zurcher Park
Signal Hill Elementary School Fields
Community Centre Park
Arn Canal Linear Park
Underhill Park
Community Garden
Creekside Park
One Mile Lake Park
Pemberton Creek
One Mile Lake

Legend

- Municipal Boundary
- Bus Stops
- Crosswalks
- Bike Parking
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Existing Pathways
- Sidewalks
- Roads
- Railway
- Parks and Open Space
- Wetland
- Waterbody

0 100 200 300
Meters

N

Coordinate System: NAD 1983 UTM Zone 10N

Scale: 1:3,500 (When plotted at 22"x34")

Data Sources:
- Data provided by the Village of Pemberton, Open Street Map and Data BC (2019)

Project #:	2512.0009.01
Author:	LP
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Status:	Final
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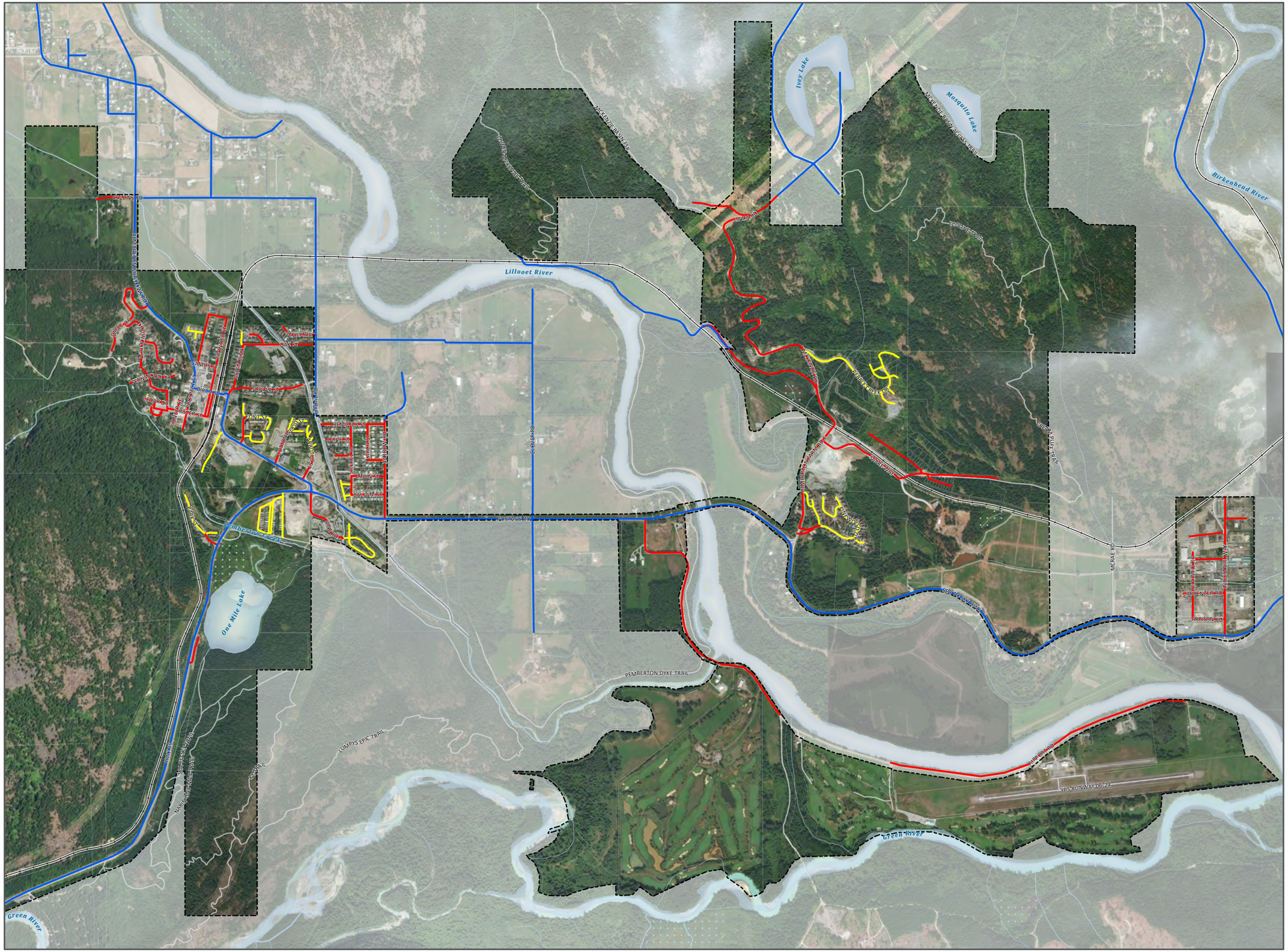

Village of PEMBERTON

Cycling Network Plan

Existing Road Jurisdiction

Legend

- Municipal Boundary
- MOTI Roads
- Village of Pemberton Roads
- Strata Roads
- Other Roads
- Railway
- First Nation Reserves

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Meters

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Coordinate System:
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Scale:
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(When plotted at 22"x34")

Data Sources:
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Project #:	2512.0009.01
Author:	LP
Checked:	BH
Status:	**Final**
Revision:	A
Date:	2020 / 4 / 17

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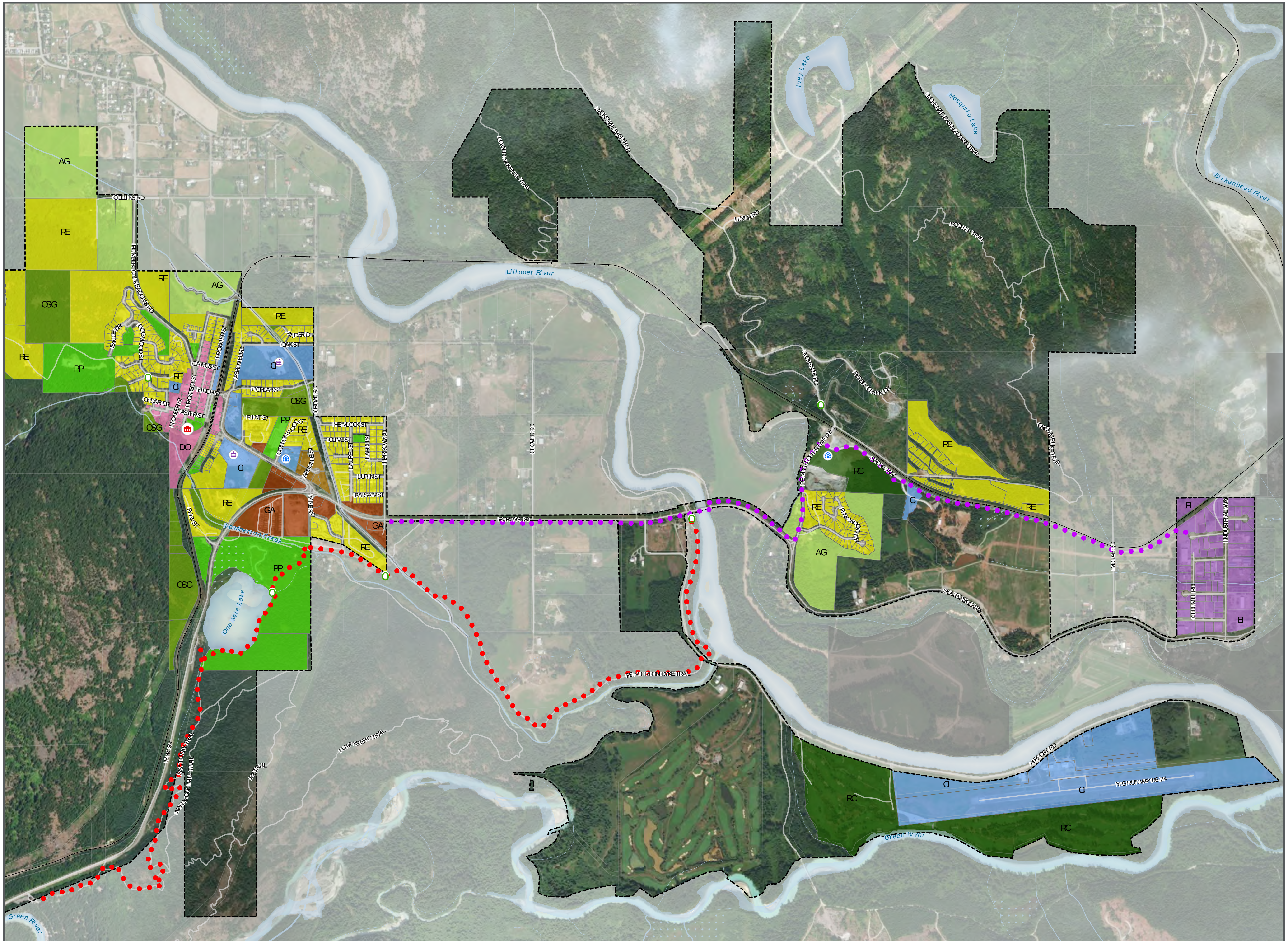

Village of PEMBERTON

Cycling Network Plan

Destinations

Legend

- Municipal Boundary
- Village of Pemberton
- School
- Community Centre
- Recreation Connection
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Agricultural
- Civic and Institutional
- Downtown
- Employment/Industrial
- Gateway Accomodation
- Gateway Portage
- Open Space and Greenways
- Public Parks
- Recreation
- Residential
- Parcel
- Roads
- Railway
- First Nation Reserves

0 100 200 300 Meters

N

Coordinate System: NAD 1983 UTM Zone 10N

Scale: 1:10,000 (When plotted at 22"x34")

Data Sources:
- Data provided by the Village of Pemberton, Open Street Map and Data BC (2019)

Project #:	2512.0009.01
Author:	LP
Checked:	BH
Status:	Final
Revision:	A
Date:	2020 / 3 / 3

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Village of PEMBERTON

Cycling Network Plan

High Priority Implementation

Legend

- Proposed Short Term Implementation Area
- Cycling Network
- Gateway Intersection
- Future Improved Connection
- Future Improved Railway Crossing
- Recreation Connection
- Area of Additional Study Required
- Connection to Greater Regional Network
- Current Friendship Trail Alignment
- Current Sea to Sky Trail Alignment
- Existing Pathways (Open Street Map Data)
- Proposed Pathways
- Roads
- Railway
- Parcel
- Parks, Schools and Open Space
- Municipal Boundary

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0 100 200 300
Meters

N

Coordinate System:
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Scale:
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(When plotted at 22"x34")

Data Sources:
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APPENDIX B:
THEMES AND ACTIONS SUMMARY

THEME 1: BUILD THE NETWORK	Priority and Timeframe	Method of Implementation	Champion
Action Description	*High (0-5 Years), Medium (5-10 Years), Low (>10 Years) "Ongoing" tasks will continue beyond allocated timeframe*	*Capital/Operations and Maintenance; Policy and Programming*	*Village (Department) / Stakeholders / Local Partners / Others*
Action 1.1: Provide a continuous bicycle network through a phased implementation approach	High (Ongoing)	Capital/ Operations and Maintenance	Village (Development Services and Operations) / Stakeholders / Local Partners
Action 1.2: Work with partners to provide regional cycling connections to adjacent communities	Medium (Ongoing)	Capital/ Operations and Maintenance	Village (Development Services) / Stakeholders
Action 1.3: Ensure the cycling network is seamlessly integrated with the trails and sidewalk networks	High (Ongoing)	Capital/ Operations and Maintenance	Village (Operations)
Action 1.4: Incorporate best practice bicycle facility design guidelines in infrastructure planning and implementation	High (Ongoing)	Policy and Programming	Village (Development Services)
Action 1.5: Prioritize the safety of active transportation users at intersections and crossings	High (Ongoing)	Capital/ Operations and Maintenance	Village (Operations) / Stakeholders / Local Partners
Action 1.6: Review data collected by ICBC and RCMP to monitor cycling collision locations and identify safety and mitigation measures	High (Ongoing)	Policy and Programming	Village (Office of the CAO) / Stakeholders

THEME 2: MAINTENANCE AND ACCESSIBILITY	Priority and Timeframe	Method of Implementation	Champion
Action Description	*High (0-5 Years), Medium (5-10 Years), Low (>10 Years) "Ongoing" tasks will continue beyond allocated timeframe*	*Capital/Operations and Maintenance; Policy and Programming*	*Village (Department) / Stakeholders / Local Partners / Others*
Action 2.1: Ensure streets designated as part of the cycling network are maintained and kept in good repair	High (Ongoing)	Operations and Maintenance	Village (Operations)
Action 2.2: Ensure the Village has the equipment to maintain all types of proposed bicycle infrastructure	Medium (as network is developed)	Capital	Village (Operations)
Action 2.3: Consider updating the Village's snow, ice, and rubbish removal bylaw to provide snow removal procedures for bicycle infrastructure	Low	Policy and Programming	Village (Development Services and Operations)

THEME 3: END-OF-TRIP FACILITIES AND AMENITIES	Priority and Timeframe	Method of Implementation	Champion
Action Description	*High (0-5 Years), Medium (5-10 Years), Low (>10 Years) "Ongoing" tasks will continue beyond allocated timeframe*	*Capital/Operations and Maintenance; Policy and Programming*	*Village (Department) / Stakeholders / Local Partners / Others*
Action 3.1: Provide bicycle parking within the public right-of-way at key cycling destinations	High (Ongoing)	Capital	Village (Operations)
Action 3.2: Review and update requirements for short-term and long-term bicycle parking and end-of-trip facilities	High	Policy and Programming	Village (Development Services)
Action 3.3: Investigate the provision of bicycle parking at all Village owned and operated facilities	High	Capital	Village (Operations) / Stakeholders
Action 3.4: Establish a central hub for cycling	Low	Capital/Policy and Programming	Village (Development Services, Operations and Recreation Services) / Stakeholders / Local Partners
Action 3.5: Work with BC Transit to identify opportunities to improve bicycle-transit integration	High (Ongoing)	Capital/Policy and Programming	Village (Development Services and Office of the CAO) / Stakeholders

THEME 4: EDUCATION AND AWARENESS	Priority and Timeframe	Method of Implementation	Champion
Action Description	*High (0-5 Years), Medium (5-10 Years), Low (>10 Years) "Ongoing" tasks will continue beyond allocated timeframe*	*Capital/Operations and Maintenance; Policy and Programming*	*Village (Department) / Stakeholders / Local Partners / Others*
Action 4.1: Develop and implement a cycling wayfinding plan based on best practices	Medium (as network is developed)	Capital/ Policy and Programming	Village (Development Services, Office of the CAO and Recreation Services) / Stakeholders / Local Partners
Action 4.2: Develop an online cycling network map showing local routes, regional connections, and signed recreational routes	High (Ongoing)	Policy/Programming	Village (Development Services and Office of the CAO) / Stakeholders / Local Partners
Action 4.3: Continue to support and develop cycling education programs	High (Ongoing)	Policy and Programming	Village (Development Services, Office of the CAO and Recreation Services) / Stakeholders / Local Partners
Action 4.4: Consider the impact of changing technologies and different users on the cycling network	High (Ongoing)	Policy and Programming	Village (Development Services and Operations)
Action 4.5: Continue to actively market and promote cycling in Pemberton	High (Ongoing)	Programming	Village (Development Services, Office of the CAO and Recreation Services)
Action 4.6: Consider the development of an Active Transportation Advisory Committee	Low	Policy/Programming	Village (Development Services and Office of the CAO) / Stakeholders

APPENDIX C:
DETAILED COST ESTIMATES

Segment Name	From	To	Length (m)	Facility Type	Unit Cost per metre	Total Cost	Priority and Timeframe	Complexity (Low=1, High=4)
Pemberton Meadows Road	Camus Road	Collins Road	500	Buffered and Painted Lanes (two sides)	$ 140.00	$70,000	High (0-5 Years)	3
Aspen Boulevard	Poplar Street	Oak Street	250	Buffered and Painted Lanes (two sides)	$ 140.00	$35,000	High (0-5 Years)	1
Oak Street	Aspen Boulevard	Urdal Road	400	Buffered and Painted Lanes (two sides)	$ 140.00	$56,000	High (0-5 Years)	1
Pemberton Farm Road*	**Highway 99**	**Sabre Way**	**660**	**Multi-Use Path**	**$ -**	**$306,000**	**High (0-5 Years)**	**2**
Portage Road	Existing Roundabout	Tiyata Boulevard	200	Multi-Use Path	$ 550.00	$110,000	High (0-5 Years)	4
Prospect Street	Camus Road	Aster Street	270	Neighborhood Bikeway	$ 40.00	$10,800	High (0-5 Years)	1
Aster Street	Frontier Street	Dogwood Street	200	Neighborhood Bikeway	$ 40.00	$8,000	High (0-5 Years)	1
Dogwood Street	Aster Street	Al Staeshli Park	380	Neighborhood Bikeway	$ 40.00	$15,200	High (0-5 Years)	1
Camus Road	Pemberton Meadows Road	Walnut Street	120	Neighborhood Bikeway	$ 40.00	$4,800	High (0-5 Years)	1
Fernwood Street	Dogwood Road	Pemberton Creek Trail	100	Neighborhood Bikeway	$ 40.00	$4,000	High (0-5 Years)	1
Frontier Street	Camus Road	Walnut Street	280	Neighborhood Bikeway	$ 40.00	$11,200	High (0-5 Years)	2
Harrow Road	Hemlock Street	Highway 99	500	Neighborhood Bikeway	$ 40.00	$20,000	High (0-5 Years)	1
Hemlock Street	Harrow Road	Arn Canal Multi-Use Path	370	Neighborhood Bikeway	$ 40.00	$14,800	High (0-5 Years)	1
Poplar Street	Arn Canal Bridge	Aspen Boulevard	400	Neighborhood Bikeway	$ 40.00	$16,000	High (0-5 Years)	1
Frontier Street	Aster Street	Portage Road	140	Neighborhood Bikeway (one way)	$ 20.00	$2,800	High (0-5 Years)	2
Sabre Way**	Pemberton Farm Road East	End of Sabre Way	600	Multi-Use Path	$ 550.00	$330,000	High (0-5 Years)	2
Rail Line Multi-Use Connection	Frontier Street Linear Park	Aster Street	85	Multi-Use Path	$ 550.00	$46,750	Medium (5-10 Years)	4
Multi-Use Connector Trail	Lupin Street	Arn Canal Multi-Use Path (east)	90	Multi-Use Path	$ 550.00	$49,500	Medium (5-10 Years)	1
Arn Connector Multi-Use Path	Hydro Trail Multi-Use Path	Arn Canal Multi-Use Path (west)	150	Multi-Use Path	$ 550.00	$82,500	Medium (5-10 Years)	1
Arn Canal North Multi-Use Path	Poplar Street	Oak Street	270	Multi-Use Path	$ 550.00	$148,500	Medium (5-10 Years)	2
Highway 99	Arn Canal Multi-Use Path	Harrow Road	350	Multi-Use Path	$ 550.00	$192,500	Medium (5-10 Years)	4
Lupin Street	Harrow Road	Laurel Street	180	Neighborhood Bikeway	$ 40.00	$7,200	Medium (5-10 Years)	1
Tiyata Boulevard	Portage Road	Dyke Access	290	Neighborhood Bikeway	$ 40.00	$11,600	Medium (5-10 Years)	2
Pemberton Farm Road	Sabre Way	Mckenzie Basin Forest Service Road	200	Buffered and Painted Lanes (two sides)	$ 140.00	$28,000	Medium (5-10 Years)	3
Pemberton Creek Trail	Rail Line	Highway 99	400	Multi-Use Path	$ 550.00	$220,000	Medium (5-10 Years)	2
Hydro Trail Multi-Use Path	Poplar Street	Highway 99	400	Multi-Use Path	$ 550.00	$220,000	Medium (5-10 Years)	4
Pemberton Creek Multi-Use Path	Vine Road Connection	Highway 99	430	Multi-Use Path	$ 550.00	$236,500	Medium (5-10 Years)	4
Highway 99	Tiyata Boulevard	Arn Canal Multi-Use Path	500	Multi-Use Path	$ 550.00	$275,000	Medium (5-10 Years)	4
Friendship Trail Segment 3***	Lillooet River	Pemberton Farm Road East	520	Multi-Use Path	$ 550.00	$286,000	Medium (5-10 Years)	2
Arn Canal South Multi-Use Path (east)	Poplar Street	Highway 99	680	Multi-Use Path	$ 550.00	$374,000	Medium (5-10 Years)	2
Arn Canal South Multi-Use Path (west)	Poplar Street	Highway 99	680	Multi-Use Path	$ 550.00	$374,000	Medium (5-10 Years)	2
Friendship Trail Segment 1***	Harrow Road	Clover Road	800	Multi-Use Path	$ 550.00	$440,000	Medium (5-10 Years)	2
Friendship Trail Segment 2***	Clover Road	Lillooet River	890	Multi-Use Path	$ 550.00	$489,500	Medium (5-10 Years)	2
Proposed Trail/Bridge Connection	Proposed Pemberton Creek Multi Use Path	Park Street	130	Multi-Use Path	$ 550.00	$71,500	Low (10+ Years)	2
Pioneer Park Multi-Use Path Connector	Aster Street	Proposed Pemberton Creek Multi Use Path	200	Multi-Use Path	$ 550.00	$110,000	Low (10+ Years)	4
Vine Road Connection Multi-Use Path	Highway 99	Pemberton Creek Trail	280	Multi-Use Path	$ 550.00	$154,000	Low (10+ Years)	2
Harrow Road South	Highway 99	Pemberton Creek Trail	300	Multi-Use Path	$ 550.00	$165,000	Low (10+ Years)	2
One Mile Lake Multi-Use Path (2)	One Mile Lake (Dog Beach)	Pemberton Creek Multi-Use Path	370	Multi-Use Path	$ 550.00	$203,500	Low (10+ Years)	2
One Mile Lake Multi-Use Path (1)	Pemberton Creek Multi-Use Path	One Mile Lake (Dog Beach)	380	Multi-Use Path	$ 550.00	$209,000	Low (10+ Years)	2
Signal Hill Proposed Multi-Use Path	Portage Road	Highway 99	400	Multi-Use Path	$ 550.00	$220,000	Low (10+ Years)	4
Industrial Way	Timber Way	Highway 99	420	Multi-Use Path	$ 550.00	$231,000	Low (10+ Years)	2
Pemberton Creek Trail	Fernwood Road	Rail Line	500	Multi-Use Path	$ 550.00	$275,000	Low (10+ Years)	2
Timber Way - Venture Place	End of Friendship Trail (east)	Venture Place	550	Multi-Use Path	$ 550.00	$302,500	Low (10+ Years)	2
Park Street	Proposed Trail Connection	Highway 99	320	Neighborhood Bikeway	$ 40.00	$12,800	Low (10+ Years)	2
Friendship Trail Segment 4***	End of Sabre Way	Timber Way	1670	Multi-Use Path	$ 550.00	$918,500	Low (10+ Years)	4

High Priority Total	**$ 1,020,000**
Medium Priority Total	**$ 3,490,000**
Low Priority Total	**$ 2,880,000**
Overall Build-Out Total	**$ 7,390,000**

*** Class B cost estimate provided by the Village of Pemberton for segment 4 on Pemberton Farm Road**
**** Project to be completed through development process**
***** Estimated costs for Friendship Trail upgrades include asphalt, pavement markings and related site preparation**

APPENDIX D:
DAY OF LEARNING PRESENTATION

Village of PEMBERTON

Village of Pemberton Bicycle Network Plan

COMMUNITY BICYCLE TOUR

OCTOBER 18, 2019

1

Morning Schedule

9:45: Introductions and Plan Process Overview

10:00: Explore Predetermined Routes and Adapt

10:10: Gather bicycles and necessary equipment

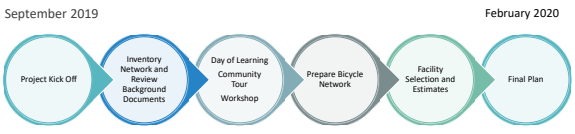
10:15: Depart Village Offices

10:15 – Noon: Community Tour

Afternoon

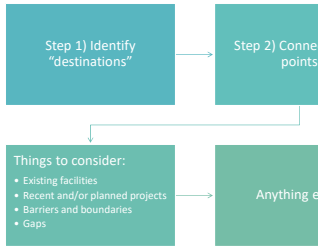
1:30-3:30: Workshop

2



Study Process

3



Routes

4

Logistics & Safety

- Elect a leader
- Wait for the "sweep"
- Follow rules of the road
- Pull as far out of the way as possible (trails and roadways) for discussions
- Allow time for conversations at stops
- Share openly and take mental notes
- Enjoy!

Depart: 10:15am

5

Village of PEMBERTON

Village of Pemberton Bicycle Network Plan

COMMUNITY WORKSHOP

OCTOBER 18, 2019

AFTERNOON SESSION

6

Agenda

- Welcome
- Introductions
- Study Overview and Purpose of Today
- Presentation
- Workgroups – Bicycle Network Planning
  - Part 1: Connections and Barriers
  - Part 2: Origins and Destinations
- Next Steps

7

Introductions

- Who are you?
- Why do you think you were invited to attend today?
- What do you like MOST about cycling in Pemberton?
- What do you like LEAST about cycling in Pemberton?
- If you don't cycle in Pemberton, why is it important to you?

8

What will the plan include?

- LONG TERM BICYCLE NETWORK WITH FACILITY TYPES
- SHORT, MEDIUM, AND LONG-TERM PRIORITIES
- POLICY RECOMMENDATIONS
- COST ESTIMATES AND FUNDING STRATEGIES

9

Study Process

10

Purpose of Today

Questions to consider and answer throughout the workshop today

- What does the long-term bicycle network look like?
- What is the long-term vision for cycling in Pemberton?
- What are the priority projects?
- How can policy support cycling?

11

Relevant Plans and Policies

There are a number of existing documents that support the promotion of cycling

… and others.

12

GHG Reduction Targets (OCP)

In order to fulfill the Village's commitment of reducing GHGs by 33% for 2012, the following targets for 2010 have been identified:

- 85% of all residences shall be within 1000 metres of the downtown core;
- Increase commuting trails within Village boundaries by 20%;
- Ensure a net gain of open spaces and trails;
- Increase transit ridership by 20%;
- Decrease single vehicle occupancy commuting to Whistler for employment by 10%.

- Observation stated: "The most significant gains in reducing GHGs within the community will be through reducing reliance on the automobile"

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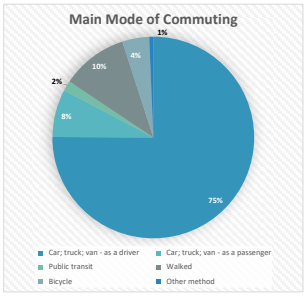

Mode Share and Bicycle Use

14% of trips to work and school are made by bike, based on 2016 National Household Survey Data

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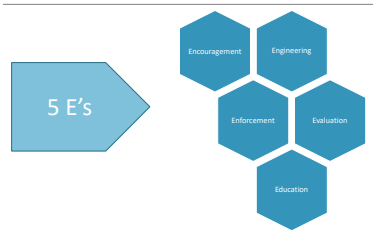
Bicycle Friendly Communities



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Network Planning Principles

- **Comfortable**

Safe and comfortable for people of all ages and abilities (AAA)

- **Connected**

A network that ensures all residents and visitors of Pemberton have access to bicycle facilities within a defined maximum distance from their homes and destinations

- **Convenient**

Ensures cycling is a convenient option and connects major destinations

16

All Ages and Abilities

- Persons ranging in age from children to elderly (8 to 80)
- A network where most people feel comfortable
- Interested but concerned
- High quality bicycle facilities
- Often separated from traffic
- If not separated then route with low vehicle volumes

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PEMBERTON HAS A YOUTHFUL POPULATION

SMALL SENIOR/RETIREMENT POPULATION

HIGH DENSITY URBAN POPULATION

Demographics: All Ages and Abilities

18

Existing Trail Standard Guidelines

New Provincial Guidelines

19

Facility Types and Selection Process

Shared Use Lane	Advisory Bicycle Lane	Shoulder Bicycle Lane	Painted Bicycle Lane	Buffered Bicycle Lane	Bicycle Boulevard	Protected Bicycle Lane	Off-Street Pathway

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Motivators and Deterrents

Motivators
Separated from vehicle noise and pollution
Beautiful scenery
Separated paths from traffic
Route is flat
Faster than other modes
Distance less than 5 km
Trip in daylight hours
Transit integration
Reflective centre line on pathways
Secure bike storage

Higher

Lower

Deterrents
Ice or snow
Lots of car, bus & truck traffic
Glass or debris
Vehicles drive faster than 50 km/h
Risk of unsafe drive behaviour
Risk of injury from car-bicycle crash
Snow
Slick surfaces
Poor lighting
Need to carry bulky or heavy items

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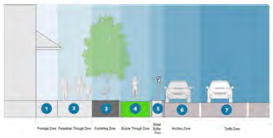
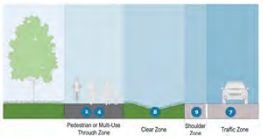
Urban Streets



Rural Roads



Street Zones

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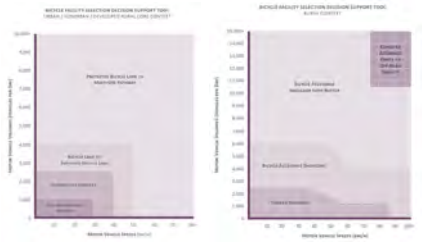
Facility Type: Selection Tool



Pemberton: Developed Rural Core and Rural Context

BC Active Transportation Design Guide, 2019

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Protected Bicycle Facility

24

Painted Bicycle Facility

25

Neighborhood Bikeway

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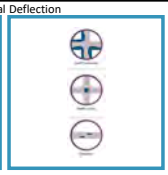
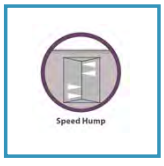
Horizontal Deflection





AAA Facilities

Neighborhood Bikeways Traffic Calming

Vertical Diversion

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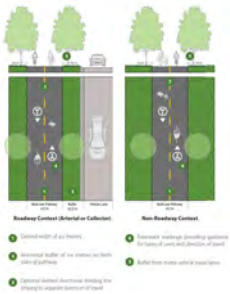
Multi-Use Path

28



AAA Facilities

Multi-Use Pathways

CONTEXT	DESIRABLE (M)	CONSTRAINED (M)
Highway Corridor		
See **Chapter F.1**		
Roadway Corridor (Arterial and Collector Roads)		
Pathway Width	4.0	3.0
Street buffer Zone Width*	≥ 2.0	0.8
Roadway Corridor (Local Roads)		
Pathway Width	3.0 – 4.0**	3.0
Street Buffer Zone Width*	≥ 1.5	0.8
All Other Contexts		
Pathway Width	3.0 – 4.0**	2.7
Lateral Clearance	0.8***	0.8

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Current Practices for Ministry Right-of-Ways

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Ministry Right-of-Ways

Facility Selection

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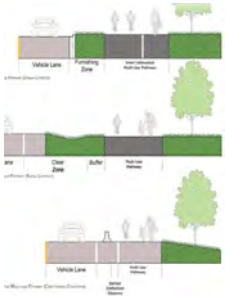

Ministry Right-of-Ways

AAA Facilities

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DO THESE "FIT" IN PEMBERTON?

Guideline Discussion

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WORKSHOP

Two topics
15 minutes each
Debrief

Topic One: Connections and Barriers

Topic Two: Origins and Destinations

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CONNECTIONS (Recreational Trends)

STRAVA RIDERSHIP DATA
BIKEMAPS.ORG

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Connections

- Network planning exercise – Connections to destinations and between neighbourhoods
- Identify preferred routes
- Missing connections between neighbourhoods and other destinations
- Barriers
- Gaps
- Other issues or considerations

Workshop – Topic One

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Origins & Destinations

- Network planning exercise – Origins and DestinationsIdentify preferred routes
- Identify trip generators
- How would you define a destination for cycling in Pemberton?
  - Where trips by bike start and where they end?
  - What is needed when a destination is reached?
- Other issues or considerations

Workshop – Topic Two

37

Combining to Complete the Network

38

What do the networks look like now?

39

Opportunities and Priorities

What are the biggest opportunities for building a connected bicycle network and making Pemberton a more "cycling friendly" community?

What projects/routes/policies would you identify as highest priority?

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Questions? Comments?

41

- Finalize Bicycle Network
- Prioritize projects
- Policy recommendations
- Estimates
- DRAFT PLAN

Next Steps

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Thank you!

ehurford@urbansystems.ca
bmcmurtry@urbansystems.ca

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Opportunities

Valley Loop (3-4 metres), reduced to 2m in some locations

Friendship Trail

Canal Routing

Dyke Routing

Rural Roads

Where to connect friendship trail

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Quick Quiz

FYI: On average Pembertonian's have 1.25 bicycles per household. The households most likely to own a bicycle are those with children under 19 years. (Source: 2010 Community Census)

FYI: There are 1.6 vehicles per household in Pemberton, whereby 44.4% are large trucks, SUVs or minivans, 27.5% are midsize cars and 25.5% are compact cars. Source: 2010 Community Census

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Parks and Open Spaces Master Plan (2011)

- Expand an integrated park/trail corridor and open space network which uses existing publicly accessible sections of the dyke and where opportunities arise, acquire dyke land, easements, and right of ways to secure public access to waterways, trails, and natural spaces.

Trail standards

According to the PVTA trail map, there are eighty seven (87) trails in the greater Pemberton area, most of which are at least partially within the Village of Pemberton. Of those 87, 83 are recommended for biking, 48 for hiking and 29 for horseback riding.

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SH1

Barriers

Provincial Highways The provincial government currently has jurisdiction over Highway 99 and Portage Road (including Birch Street and Pemberton Meadows Road). The Village, therefore, must seek approval from the Ministry of Transportation for a wide range of local planning and development initiatives including but not limited to: road standards, pedestrian and parking improvements, trail crossings, transit pullouts, transit shelters, banners and lighting standards. At this time the Ministry of Transportation has indicated that there are no major initiatives for improving the highway corridor in Pemberton, however, the Village has identified several matters that they would like addressed as contained in the Transportation Actions, notably upgrading of the Pemberton Creek Bridge; improving Portage Road/Birch Street (for eventual assumption) and lobbying for the Pemberton/ Harrison Highway upgrade.\

RAIL (CN)

Rivers/ Creeks

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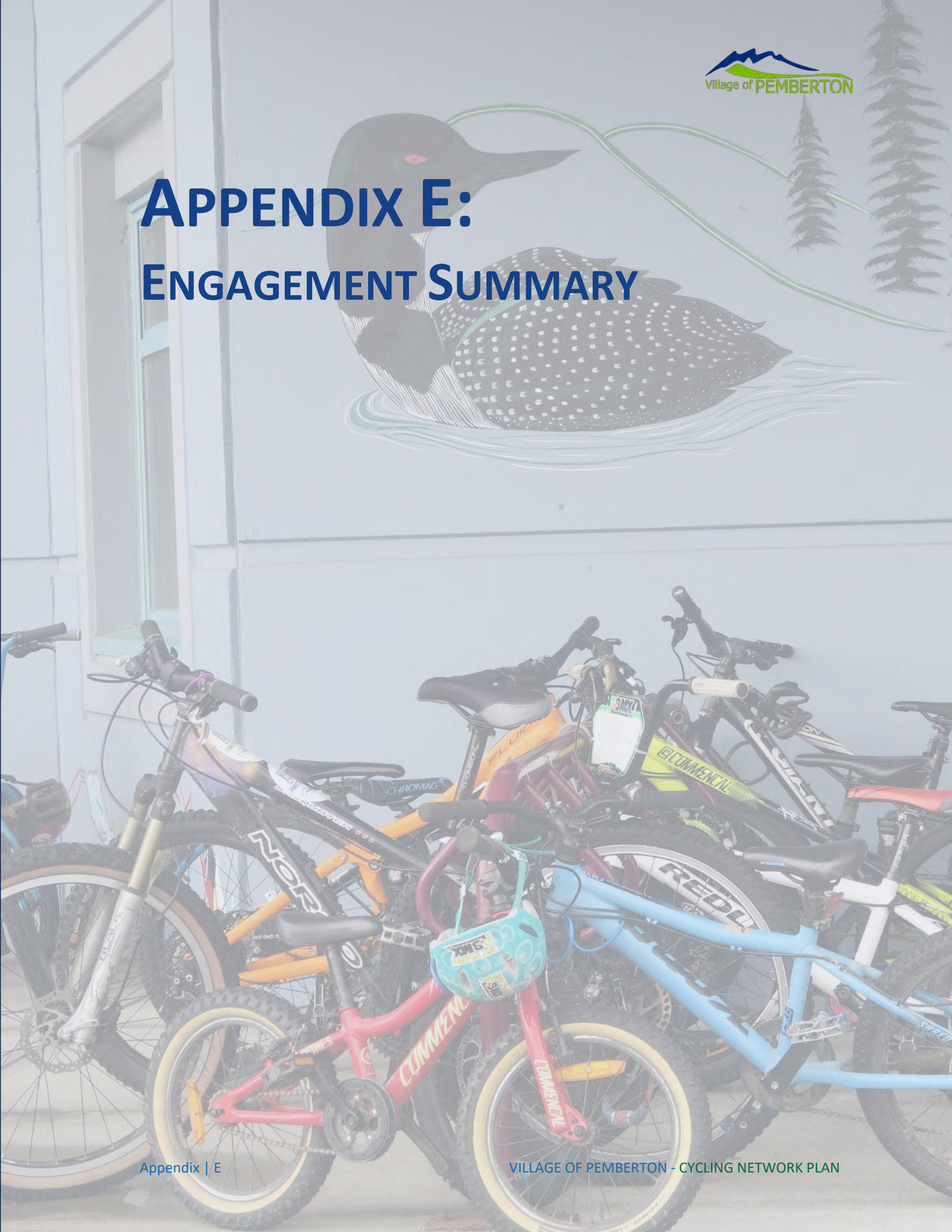
APPENDIX E:
ENGAGEMENT SUMMARY



Village of Pemberton Cycling Network Plan

Movie Night and Open House – January 21, 2020

Pemberton and District Public Library

Agenda

6:45pm – Doors Open
7pm – Movie Screening – "The Ride of Your Life"
7:30pm – Open House

Staff Present

Lisa Pedrini, Manager of Development Services
Jill Brooksbank, Senior Communications and Grants Coordinator
Joanna Rees, Planner
Matthew Rempel, Planning and GIS Technician

Number of Participants

25+

Priority Segments and Connections

Each participant was given three (3) blue stickers to attribute to a priority segment or connection. Participants were only able to place one sticker per category.

Priority Connections:

Proposed Connections	Blue dots
Pemberton Creek Trails at Highway 99	7
Rail Crossing at Pemberton Creek Trail	5
Rail Crossing at Aster to Highway 99	2
Pemberton Creek Trail Connector to Park Street	1
Harrow Road at Highway 99	1
Total	**16**

Priority Segments:

Proposed Segments Name	From	To	Blue dots
Pemberton Meadow Road	Camus Road	Collins Road	3
Prospect Street	Camus Road	Aster Street	3
Aster Street	Frontier Street	Aster Street	2
Dogwood Street	Aster Street	Al Staeshil Park	1
Pemberton Creek Trail	Fernwood Street	Rail Line	1
Pemberton Creek Trail	Rail Line	Highway 99	3
Highway 99	Tiyata	Arn Canal Path	1

Friendship Trail Segment 1	Harrow Road	Lillooet River	1
Friendship Trail Segment 2	Lillooet River	Pemberton Farm Road East	1
Pemberton Farm Road	Highway 99	Sabre Way	1
Sabre Way	Pemberton Farm Road East	End of Sabre Way	1
Friendship Trail Segment 3	End of Sabre Way	Timber Way	3
		Total	**21**

Summary of Findings:

Relatively there was a high emphasis on improving connections, specifically the Pemberton Creek Trails at Highway 99 and the Rail crossing at Pemberton Creek Trail. With 38 segments to choose from to prioritize, the dots prioritizing segments were more dispersed. The highest ranking segments to prioritize include Pemberton Meadow Road, Prospect Street and Pemberton Creek Trail.

Priority Actions

Each participant was given four (4) green stickers and four (4) red stickers to attribute to actions they were most and least favorable too, respectively. Participants were only able to place one sticker per category.

Theme 1: Building and Connecting the Network

Action	Green Dots	Red Dots
1.1 Provide a Continuous bicycle network through a phased implementation approach	7	
1.2 Work with partners to provide regional cycling connections to adjacent communities	4	1
1.3 Ensure the cycling network is seamlessly integrated with the trails and sidewalk networks	12	
1.4 Incorporate best practice bicycle facility design guidelines in infrastructure planning and implementation	2	2
1.5 Prioritize the safety of active transportation users at intersections and crossings	7	
1.6 Review data collected by ICBC and RCMP to monitor cycling collision locations and identify safety mitigation measures	1	
Total	33	3

Theme 2: Maintenance & Accessibility

Action	Green Dots	Red Dots
2.1Invest in equipment to maintain all types of proposed bicycle infrastructure	2	
2.2 Update the Village's Snow & Ice Removal Policy to provide snow removal procedures for bicycle infrastructure	6	7
Total	8	7

Theme 3: End-of Trip Facilities & Amenities

Action	Green Dots	Red Dots
3.1 Provide bicycle parking within the public right-of-way at key cycling destinations	2	
3.2 Review and update requirements for short-term and long term bicycle parking and end of trip facilities	2	
3.3 Ensure bicycle parking is provided at all Village-owned and operated facilities	1	
3.4 Establish a central hub for cycling		6
3.5 Work with BC Transit to identify opportunities to improve bicycle transit integration	8	
Total	13	6

Theme 4: Education and Awareness

Action	Green Dots	Red Dots
4.1 Develop and Implement a cycling wayfinding plan based on best practices	2	1
4.2 Develop an online cycling network map showing local routes, regional connections, and signed and recreational routes	8	2
4.3 Continue the impact of changing technologies and different users on the cycling network	3	
4.4 Consider the impact of changing technologies and different users on the cycling network	3	2
4.5 Continue to actively market and promote cycling in Pemberton	2	5
4.6 Consider the development of an Active Transportation Advisory Committee		1
Total	18	11

Summary of Findings:

The highest emphasis was placed on actions that contributed to building and connecting the network. The top priorities identified in Theme 1 include: 1.1 Provide a Continuous bicycle network through a phased implementation approach, 1.3 Ensure the cycling network is seamlessly integrated with the trails and sidewalk networks and 1.5 Prioritize the safety of active transportation users at intersections and crossings. Action 2.2 was controversial with mixed opinions regarding if maintaining bicycle facilities in the winter should be a high priority. There was high interest in Action 3.5, to work with BC transit to improve bicycle and transit integration. 3.4 Establishing a central hub for cycling, was lowly rated. This could have been in part due to a lack of understanding. Of Theme 4, Education and Awareness the highest importance was placed on developing an online cycling network map.

Additional Comments

Comment cards were available for addition feedback.

Mapping and Routes

- Missing bike/pedestrian path from the Winchester to the Library
- The Sea to Sky Trail continues to D'Arcy
- Consider Arn Canal to Valley Loop Trail, behind the lodge or between peaks and pioneer junction

Parking

- Please make bike parking big enough or at an angle to allow for trailers/chariots
- Consider reducing parking spot requirements if businesses create bike parking racks or end of trip facilities
- Can the use of Charriot be considered? people use to replace a car by leading with groceries/kids/bikes

Maintenance and Snow Removal

- Gravel and salt should be used on road in the village during the spring
- If the intent of a plan is to encourage safe cycling, whether for commuting or recreational, then some consideration should be given to the amount of gravel and salt that remains on the roadways, and shoulders, after the thaw. Each year I would like to be riding on the roads much sooner than they are cleared.
- Action 2.2 Snow removal looks contentious - I think improving these facilities should incorporate improving winter pedestrian access also, this may get more support
- Winter Maintenance – not all people ride in winter but I do! The snow blowing has really helped me stay on my bike. For non winter riders I think this maintenance will help get the rails clear earlier so I would encourage this to continue if possible (also multi use trail benefit all users)

Challenges

Safety

- Friendship Trail – Challenging corner getting on to Pemberton farm road east – most dangerous part of my commute
- Friendship Trail beside Highway from Lodge to Airport is too deep (sand/gravel) to ride. Also not lit which it needs to be for safety of pedestrians ands cyclists – even if solar powered only.
- Needs a solution to biking in the downtown core – streets are narrow and there is no space for bikes and cards – potential for accidents
- Safety and speed on highway 99 is a concern (lower to 60 km/hr in VOP)
- Consider lighting on fringe trail (i.e. industrial park so we can see the wildlife)
- On Prospect Road/Pemberton Meadows Road, especially between the Museum and Beechwood Road, there is a section with no option for cyclists to be on paved road without without being in the main traffic lane when traveling north. I have seen several vehicles, including large trucks and RCMP cruisers, drift onto the shoulder here. It is a curve with limited visibility where driver are commonly accelerating, yet seemingly has space for a protected buffered and painted bike lane on both sides of the road. This is an active road, within the VOP, for cyclists to enter the village from the north.
- On several occasions, I have had to swerve away from car doors being opened as a result of legitimate on-street parking within the VOP. Certainly motorist education is part of a solution,

but are there others, like cycling routes, with dedicated lanes, that minimize the likelihood of encounter?

Dykes

- It would be great to negotiate access through some sections of dyke trail that are blocked (i.e. south of rail bridge by Lillooet River)
- Why cant we use the dykes?

CN Rail

- Please keep harassing CN for access to the Urdal train bridge – it is much more direct route to Plateau and mountain biking
- Can something be worked out with CN rail to use the bridge ?

E-Bikes

- Another action could be to investigate the use of bikes for village business – there are some great e bikes
- E-Bike charging stations – 135 million are on the way in the next few years
- Will E-bikes be okay in this network ?

Cycling Hub

- The bike co. currently acts as a central hub
- Establish a transportation hub not just a cycling hub, the tourism office acts as one now

Recreation

- More funding for easy (green circle) rides including another access to 1 mile lake from behind the Elementary School
- The board walk around One-mile creek should be made wider to access both wheeled and walking visitors
- What do mountain bike races do for our region. Do they contribute other than economically to the region or just cause trail erosion?
- We need more toilets at the trail heads (i.e. gravel pot parking lot, bottom of Happy)

Miscellaneous

- Biking is part of the Culture in Pemberton
- Need clear idea of costing and price of lending
- Bike to work week would be fun to involve local businesses

Summary of Findings:

The draft plan mapping trail data is missing some trail segments and needs to be updated for the final plan, several additions were suggested. It was suggested the use of bike chariots is accounted for within the plan and bike parking. Additionally, that parking requirements be reduced for businesses that provide end of trip facilities. Snow removal was a contentious issue, there are some who feel strongly that this should be a priority. Themes of existing challenges of biking in Pemberton include safety, the

use of dykes and CN Rail. The prioritization activity showed a high disfavor for a cycling hub, this may have been to confusion, several commenters indicated existing hubs such as the Bike co. and the Tourism Information Centre. There was an interest in planning and supporting the use of E-bikes. Several comments were made to improve recreational cycling.

Movie Night and Open House – January 23, 2020

The REC

Agenda

4pm – 6pm
The Ride of Your Life Movie Screening
DIY Bike Crafts
Cycling Network Plan Open House

Staff Present

Joanna Rees, Planner
Matthew Rempel, Planning and GIS Technician
Maddy Hepner, Recreation Programmer

Number of Participants

2

Comments

Participants were excited to have bike lanes near their homes and were interested in having local rentable e-bikes. They also wanted to have access to better biking connections to whistler with BC transit and on the Sea-to-Sky.

Draft Cycling Network Plan Survey Results

Survey Dates: Friday January 24th to Friday January 31st

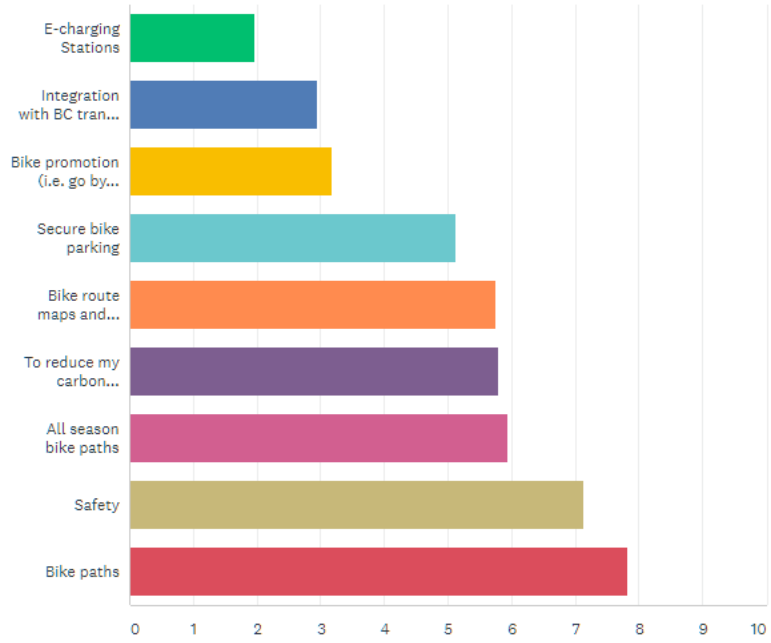
Total Respondents: 46

Age: Survey participants age ranged from 25 to 75+ years and the majority (75%) are between the ages 35 to 54.

Where do you live? 34 (74%) of the survey participants responded with the Village of Pemberton and 9 (20%) live in the SLRD.

When do you ride your bike? 50% of participants ride their bike for recreational purposes and over 30% indicated they ride their bikes to a number of destinations including work, going to community spaces, going to local businesses and for recreational use. None of the respondents indicated they do not ride a bike.

When deciding to cycle which factors are most important to you? Please rank the below, with number 1 being the most important.

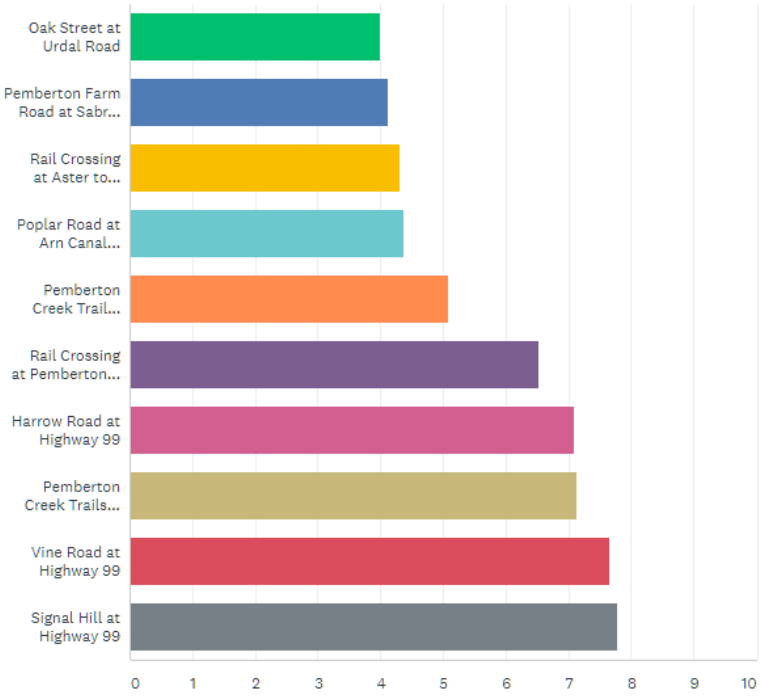


The top five factors that are most important to participants when deciding to cycle include bike paths, safety, all season bike paths, reducing their carbon footprint and having access to bike routes maps and signage.

Are there any additional factors that are not listed above? If so, list below:

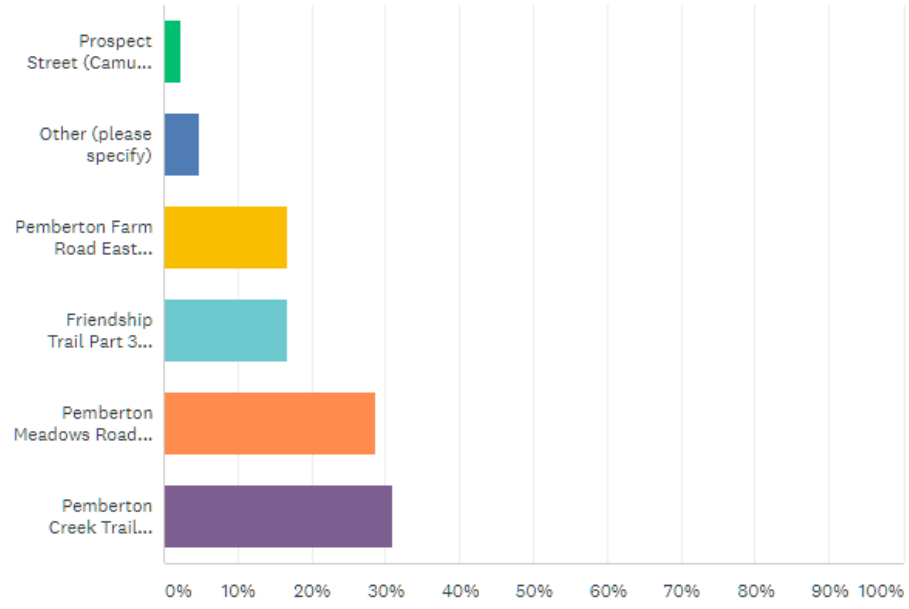
Additional factors that participants consider when deciding to bike include: health benefits and exercise, weather, lighting, biking with a chariot and biking with children.

Please rank the proposed cycling connections for improvement, with number 1 being the most important:



The top four connections that participants would like to be prioritized for improvement include Signal Hill at Highway 99, Vine Road at Highway 99, Pemberton Creek trails at highway 99 and Harrow Road at Highway 99.

Please select one segment that should be prioritized for completion. The following choices are based off feedback from the public open house on Tuesday January 21st :



The top two segments that participants would like to be prioritized for improvement include Pemberton Creek Trail (Rail line at Tiyata to Highway 99) and Pemberton Meadows Road (Camus Road to Collins Road). Friendship Trail Part 3 (End of Sabre Way to Timber Way) and Pemberton Farm Road East (highway 99 to Sabre Way) were tried for 3rd place.

Additional Comments:

Additional comments were made identifying specific segments and areas where cycling should be improved, considerations for biking infrastructure and maintenance requests. Key comments have been included below:

Segments to be improved

- Safe pedestrian and bike path in front of signal Hill Elementary school from Tiyata to where the sidewalk starts again after the entrance to school parking.
- Safe bike lane on Pemberton meadows
- Paving the friendship trail.
- The dykes should be expropriated and used as a community amenity for a world class bike and cross-country ski network.
- Railway bridge over Lillooet river should be improved
- The friendship trail exist onto Pemberton farm road East, it is dangerous to be spat out into oncoming traffic on that narrow shoulder with drop off – hope that street can also have a multi-use trail to keep walkers and cyclist safe from increasing traffic
- The Pemberton Farm Road East, whilst outside of main town, is a accident waiting to happen. There will be an increase in cyclist using the Friendship Trail, mostly to access the mountain bike trails and in future the Rec site. Currently there is not a safe passageway there. The newly paved FSR that leads up to the Ridge is also unsafe. People are driving way to fast, cyclists riding up and down, dogs off leash riding with the bikes, work trucks going up to build the houses - its a matter of time before someone gets hit. I think there needs to be some signage out there and some education in the community about the traffic in that area and the FSR parking lot.

Infrastructure

- Lighting at key intersections and at bike parking to support commuters when it is dark.
- Infrastructure that allow people with chariots to ride
- Address the bike rack with a slope outside the barn, its not actually usable
- Ensuring multi use trails are safe for all users including pedestrians.

Maintenance

- Maintain sea to sky trail in the winter