ACTIVE TRANSPORTATION NETWORK PLAN

Capital Regional District

Juan de Fuca Electoral Area

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Corporate Authorization

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INTRODUCTION

1.1 WHAT IS ACTIVE TRANSPORTATION?

Active transportation includes any form of human-powered transportation. It is often synonymous with cycling and walking, however there are many other forms of active transportation such as skateboarding, in-line skating, skiing, mobility scooters, horseback riding, and wheeling. Advancements in technology have introduced new forms of transportation, including pedal assist or fully electric bicycles, electric scooters and skateboards, and other mobility assistance devices, which are known as micro-mobility, and which are often considered forms of active transportation.

1.2 WHAT IS AN ACTIVE TRANSPORATION NETWORK PLAN?

An Active Transportation Network Plan (ATNP) is a document that helps guide the future development of active transportation infrastructure, and supporting amenities, services and programs. Active transportation infrastructure includes anything that supports active transportation use, such as bike lanes, trails, pathways, and wayfinding and regulatory signs. An ATNP typically recommends new or improved active transportation infrastructure in the short term (i.e., 1-10 years) or medium term (i.e., 10-20 years), and separates these recommendations into a list of projects. Projects vary in scale, estimated construction timeline, cost, and location, and are prioritized based on a variety of key factors. The objective of the prioritized list is to guide which projects should be considered first when allocating resources for improvements. An ATNP also provides best practices for active transportation design, which is used in conjunction with the prioritized project list to identify both where and what types of active transportation projects should proceed.

1.3 HOW IS THE ATNP FUNDED?

This Juan de Fuca Electoral Area (JdFEA) ATNP has been commissioned by the Capital Regional District's (CRD) JdFEA Community Parks and Recreation department. The ATNP is funded by the CRD, the Province of BC, and the Government of Canada through the Active Transportation Network Plan Grant and the Community Works Fund (i.e., the gas tax fund).

ACTIVE TRANSPORTATION NETWORK PLAN GRANT

The BC Active Transportation Infrastructure Grant Program offers two grant options for Indigenous governments, and local governments, the *Active Transportation Network Planning Grant* (ATNPG) and the *Active Transportation Infrastructure Grant* (ATIG). The ATNPG helps communities develop active transportation network plans to develop networks that are accessible and safe for all ages and abilities. The network design is for daily commuting to school, recreation, work, socializing, culturally relevant activities and errands. The ATNPG is only available to communities with populations under 25, 000 people and joint applications between partner governments is possible if all parties are individually eligible for the grant.

COMMUNITY WORKS (GAS TAX) FUND

The *Community Works Fund* (CWF) allocates funding to local governments based on a per capita formula that can be used for eligible projects. One eligible project the fund can be used for is the development and rehabilitation of local roads, bridges, cycling lanes, sidewalks, pedestrian pathways and hiking trails (active transportation infrastructure).

1.4 BENEFITS OF ACTIVE TRANSPORTATION

Active transportation can benefit the health, environment, safety, and socioeconomics of a community. A summary of key benefits is provided in **Table 1.1** below.

Table 1.1: Benefits of Active Transportation

FACTOR	BENEFIT
Health 	Physical activity is widely documented to improve both physical and mental well-being. Active transportation is both an affordable and accessible way to add exercise to a daily routine and increase face-to-face social interaction.
Environment 	Vehicle trips, noise pollution, and greenhouse gas emissions are reduced, which can help protect the environment and its resources for future generations.
Safety 	Increasing awareness and visibility of active transportation users and facilities have been shown to result in lower vehicle speeds, which leads directly to safety benefits for vulnerable road users (i.e., children, those with disabilities, the elderly).
Equity 	Transportation options are increased leading to equitable methods of travel for lower income individuals, youth, the elderly, and others who may not have or desire access to a vehicle.
Economy 	Increased walking and cycling can increase access to commercial areas in support of local businesses.

1.6 GOALS OF THE PLAN

The ATNP will aim to achieve the following:

2 JUAN DE FUCA ELECTORAL AREA CONTEXT

JUAN DE FUCA ELECTORAL AREA CONTEXT

The Juan de Fuca Electoral Area (JdFEA) encompasses a series of small communities on the southwest coast of Vancouver Island, including Port Renfrew, Jordan River, Shirley, and Otter Point. These communities are all located on an approximately 60-kilometre section of BC Highway 14. The JdFEA also includes the community of East Sooke, located across the Sooke Harbour from the District of Sooke and is accessed mainly from Gillespie Road via Highway 14, and the communities of Malahat and Willis Point, located on the west and east sides of the Finlayson Arm inlet, respectively. Although each of these communities has a small population, they extend across a large area and are themselves expansive across their unique geographies. **Exhibit 2.1** illustrates the jurisdictional boundary of the JdFEA and the communities within it.

The following section summarizes information about the JdFEA relevant to the development of the ATNP.

Juan de Fuca Electoral Area Context

Exhibit 2.1: Juan de Fuca Electoral Area Boundary

2.1 COMMUNITY PROFILE

The characteristics of a community guide the type and extent active transportation that is likely to be successful. The following subsections discuss the land use, geography, weather, demographics, economic drivers, travel patterns, public transit options, and tourist activity in the JdFEA; all of which are drivers of the plan direction.

LAND USE

Land use is an important factor in determining which types of residents and visitors will potentially be using active transportation facilities, and for determining where those residents and visitors will want to go.

The land use character of the JdFEA is rural. Most of the land in the JdFEA is designated as 'Rural Resource Lands', which are typically used for forestry activities. Within the communities, the most prominent land uses are rural residential, agricultural, agricultural forestry, and tourist commercial. The tourist commercial uses mostly being small properties with cabins or other boutique vacation properties catering to adventure tourism. The JdFEA also features several large regional parks, including East Sooke Regional Park, Jordan River Regional Park, Sea to Sea Regional Park, Sooke Hills Wilderness Regional Park, and others.

For the communities between and including Otter Point and Port Renfrew, land parcels are located near and along West Coast Road (BC Highway 14). Many residential and tourist commercial properties in these communities have direct or nearby access to the oceanfront and/or local hiking trails. The community of East Sooke is similarly distributed for ocean and park access.

Willis Point and Malahat are mostly rural residential communities. Much of the land within the boundaries of both communities is designated park land.

GEOGRAPHY

Geography impacts the constructability and usability of active transportation facilities. The geography of the JdFEA is varied and rugged. On the southwest coast, where the communities of East Sooke, Otter Point, Shirley, Jordan River, and Port Renfrew are located, the land slopes steeply towards the ocean. The oceanfront is dotted with both beaches and rocky outcroppings. Inland from these same communities, the land converts to hills and mountains. The geography of Willis Point is similarly coastal, with steep grades throughout. Malahat is organized along Highway 1, and while it does not feature ocean access it has similar coastal terrain characteristics as the other communities in the JdFEA.

Highly variable grades, cliffs, thick forests, mountainous terrain, and water crossings all present challenges for the construction and use of active transportation facilities in the JdFEA. However, these same features also contribute to the beauty of the JdFEA; the amount of oceanfront and the variety of terrain provide beautiful views and many recreational options.

CLIMATE AND WEATHER

The southwest coast of Vancouver Island experiences a coastal rainforest climate with mild temperatures. In Port Renfrew, the only community in the JdFEA for which Canadian Climate Normals (1981-2010) data is available[1], the daily average temperature ranged from approximately 4 to 16 degrees Celsius throughout the year. While these temperatures are mild, the coastal communities of the JdFEA often experience high winds and humidity due to their proximity to the Pacific Ocean, which can lead to temperatures feeling colder than indicated.

All the communities within the JdFEA experience high rainfall, especially those on the southwest coast (i.e., East Sooke, and those between Otter Point and Port Renfrew). Port Renfrew is one of the rainiest communities in Canada, averaging 3,455 mm of rainfall annually[1]. In addition, the communities are subject to high winds, especially in winter, and there have been numerous storm events impacting these communities in the last five years[2]. High rainfall and winds present flooding and windfall risks to the communities, which have direct impacts on the transportation network. Flooded areas and downed trees often require rapid response from maintenance and emergency service crews.

The climate of the JdFEA both benefits and challenges active transportation use. The typically mild temperatures and low likelihood of snowfall allow many people to use active transportation, with appropriate clothing and equipment, year-round. However, frequent rain and wind may discourage active transportation use. Extreme flooding and windfall events may also temporarily incapacitate active transportation infrastructure, which require action from maintenance crews to clear.

DEMOGRAPHICS

The population of the JdFEA was 5,132 in 2021, based on census data collected by Statistics Canada[3].

Demographic data is important for anticipating the potential travel patterns of existing residents. Approximately 23% of the population in the JdFEA is under 30 years of age. People in this age group tend to rely more on transit, walking, and cycling to access schools, employment, and services. In contrast, residents aged 60 and older (approximately 35%) in the JdFEA are often reliant on a differing range of mobility options. Understanding this data is therefore key to ensure that an aging population can participate in their communities at all stages of their lives, regardless of ability.

TRAVEL PATTERNS

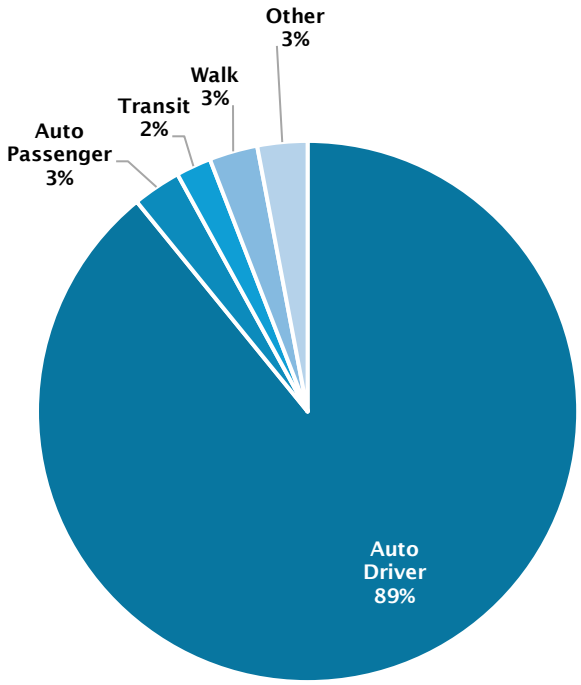
Key travel pattern metrics, as collected in 2021 by Statistics Canada[1], are summarized below. The total employed labour force is approximately 2,520 in JdFEA. Approximately 3% of all commuting trips in the JdFEA are made through active modes, all of which are attributed to walking. This active mode split is

[1] Government of Canada, "Canadian Climate Normals 1981-2010 Station Data" Government of Canada, Ottawa, ON, Canada, 2024. Accessed: February 20, 2025. [Online].
[2] Global News, "Bomb cyclone topples trees in Port Renfrew", Global News, Vancouver, BC, Canada, 2024. Accessed: February 21, 2025. [Online].
[3] Statistics Canada, "Census profile, 2021 Census of Population Profile table" Statistics Canada, Ottawa, Ontario, Canada, 2021. Accessed: February 11, 2025. [Online].

significantly lower than the provincial average of 11%. Furthermore, only 2% of trips are made by transit in the JdFEA. Together, the low of active and transit mode split demonstrates a key deficiency in sustainable transportation options and use.

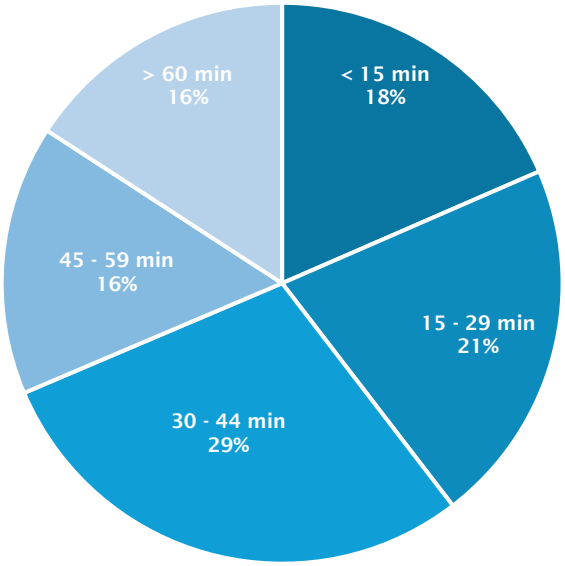
Figure 2.1 illustrates the mode split of the JdFEA, based on the main mode of transportation used for commuting.

Figure 2.1: Travel Patterns - Main Mode of Commuting (2021)



Building on the existing commuting travel patterns for the JdFEA, the 2021 Census also provides an overview of the average commuting duration for the employed labour force. Within the JdFEA, few commutes (18%) are less than 15 minutes long. This combined with the 92% auto split suggests most residents travel a significant distance to get to work. **Figure 2.2** illustrates the commuting duration split in the JdFEA.

Figure 2.2: Travel Patterns - Commuting Duration (2021)



Twenty-five percent (25%) of the labour force within the Regional District worked from home in 2021. The remainder of the employed labour force (75%) continued to work away from home. The number of people working away from home today is likely significantly higher, as the 'work from home' regulations of the Covid-19 pandemic are no longer enforced, though some workplaces still offer a balance of 'work from home' and at the workplace. Accordingly, commuters are anticipated to be a major driver of the transportation need in the JdFEA. However, as shown in Figures 2.1 and 2.2 above, most commuters drive long distances to work which decreases the viability of active transportation for commuting. In addition, 86% of JdFEA residents had a commuting destination outside of the JdFEA in 2021. As a result, active transportation use is anticipated to be driven by non-commuter trips, such as local trips within communities and trips between nearby communities for services and recreation.

These types of trips may include local errands, travel to school, school pick-up/drop-off, recreational trips, food, shopping, and visiting nearby communities. In addition, those with shorter commutes (i.e., the 18% of residents that have a sub-15-minute commute) are candidates for commuting by active transportation and could play a significant role in shifting the mode split away from private vehicles. **Figures 2.3** and **2.4** illustrate the place of work split and the commuting destination split, respectively, within the JdFEA.

Figure 2.3: Travel Patterns - Place of Work Status (2021)

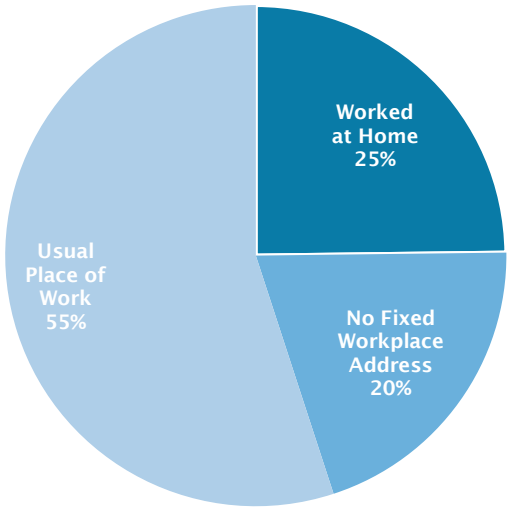
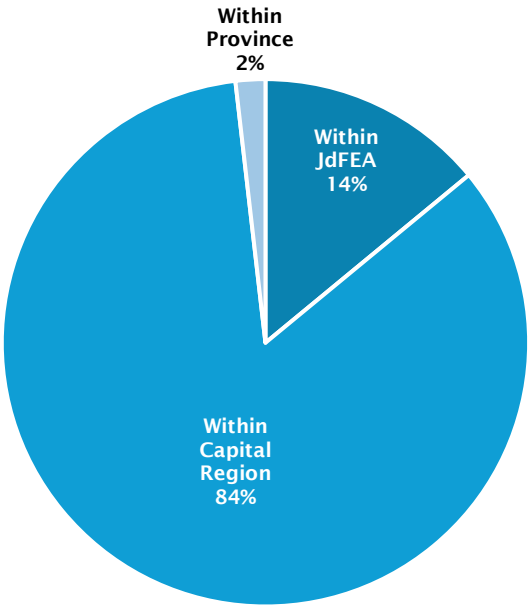


Figure 2.4: Travel Patterns - Commuting Destination (2021)



ECONOMIC DRIVERS

Historically, the economy of the JdFEA has been based on the logging industry. The JdFEA contains many active and inactive forestry cut blocks. More recently, the tourism industry has become a major economic driver, with dozens of small tourist accommodations and private campgrounds throughout the communities. Fishing charters are also a common business type, especially in Port Renfrew. There are also several iconic restaurants popular with locals and visitors alike.

TOURIST ACTIVITY

The JdFEA is popular with tourists owing to its long coastline, amount of coastal rainforest, numerous private and provincial campsites, boutique resorts and cabins, popular restaurants, extensive trail systems, recreational opportunities (e.g., hiking, backpacking, surfing, mountain biking, etc.), and its general isolation from urban areas. In addition, Juan de Fuca Provincial Park, which is accessed via the JdFEA, is a popular destination for hikers and campers. The *Juan de Fuca Marine Trail* and its six beach campsites alone had 455,209 visitors (58,795 camping, 396,414 day-use) from April 1 - December 6, 2024[4].

The popular tourist activities in the JdFEA are highly compatible with active transportation, considering that the main attractions centre on recreation and the area's natural beauty. Campers and those staying at small resorts and cabins could benefit from active transportation network options to visit local parks, beaches, and restaurants. Backpackers travelling via the Juan de Fuca Marine Trail or the Kludahk Trail wishing to continue west into Port Renfrew or east into Jordan River may also benefit from active transportation network improvements that allow them to safely continue their journeys on foot. Many backpackers starting or completing the Juan de Fuca Marine Trail at its western terminus spend a night in Port Renfrew at one of its many tourist cabins; some even continue from the trail through Port Renfrew and the Pacheedaht First Nation reserve to the *West Coast Trail* backpacking trail (located in Pacific Rim National Park).

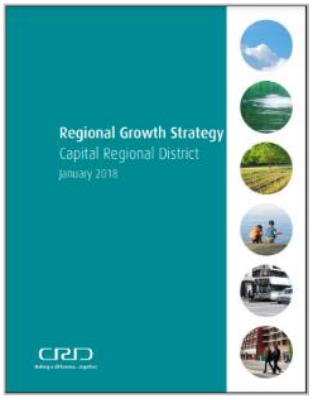
[4] BC Parks, "Visitor Use Attendance Interim Report 2024/25" BC Parks, Victoria, BC, Canada, 2024. Accessed: February 12, 2025. [Online].

2.2 STRATEGIC CONTEXT

REGIONAL PLANNING

This plan supports multiple planning goals of the Capital Regional District (CRD) and BC's CleanBC plan presented by the regional planning and strategy documents as listed below.

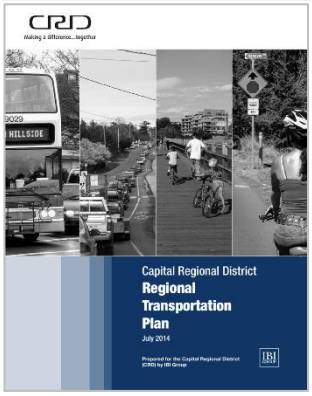
CRD Regional Growth Strategy (2018)



The Capital Regional District (CRD) Regional Growth Strategy (2018) is a framework developed by the CRD municipalities and the regional district to identify the social, economic, and environmental objectives of the district. Relevant goals include "Objective 3.1: Create Safe and Complete Communities" by having amenities accessible by a 10-minute walk or 15-minute bike ride, and "Objective 4.1: Improve Multi-Modal Connectivity and Mobility" by prioritizing active modes in community planning and in the design and implementation of infrastructure, facilities, and programs.

Image Source: Capital Regional District

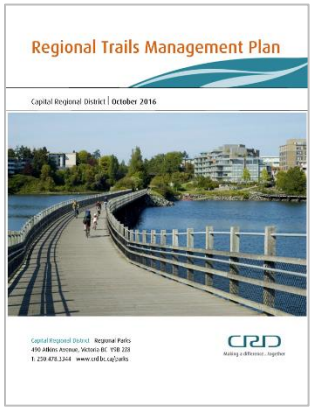
CRD Regional Transportation Plan (2014)



The Capital Regional District (CRD) Regional Transportation Plan (RTP) (2014) is a document developed by the district to guide transportation planning and development in the Capital Region over the next 25 years. One of the five main overarching themes of the RTP includes "creating exceptional environments for walking and cycling."

Image Source: Capital Regional District

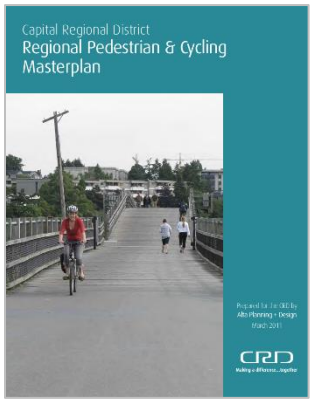
CRD Regional Trails Management Plan (2016)



The Capital Regional District (CRD) created a Regional Trails Management Plan (2016) to guide development, operations and management decision-making for Regional Trails. Overall goals of this plan include providing opportunities for active transportation and active recreation by maintaining regional trails as greenway corridors to accommodate a diversity of users and to connect communities. As part of this plan, 3 regional trails, including the Galloping Goose Trail will be prioritized for improvements.

Image Source: Capital Regional District

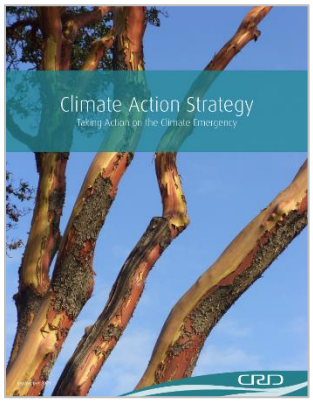
CRD Pedestrian and Cycling Master Plan (2011)



The Capital Regional District (CRD) Regional Pedestrian and Cycling Master Plan (PCMP) (2011) provides a strategic approach for achieving a positive significant shift in transportation throughout the region. The main goals of this plan include increasing active transportation mode share through education, encouragement, and infrastructure, increasing safety for active transportation, and increasing active transportation facilities.

Image Source: Capital Regional District

CRD Regional Climate Action Strategy (2021)



The Capital Regional District (CRD) has developed the Regional Climate Action Strategy to address climate change, reduce emissions, and increase resiliency against a rapidly changing climate. One of six main actions of this plan is "rapidly reducing corporate fleet emissions and supporting, endorsing and encouraging active, public and zero-emission transportation options.

Image Source: Capital Regional District

PROVINCIAL PLANNING

CleanBC – Roadmap to 2030 (2021)

CleanBC is the government of British Columbia's plan to lower climate-changing emissions by 40% by 2030. As transportation is the province's single largest source of GHG emissions (accounting for approximately 40% of BC's total emissions), key actions are to be taken to reduce these emissions. One of these key actions includes increasing mode shifts to more energy-efficient forms of transportation, which includes various forms of active transportation. This Active Transportation Network Plan can help facilitate the implementation of sustainable active transportation infrastructure and programs and thus assist with increasing the mode shift towards more active modes within the JdFEA.

Image Source: Government of BC

COMMUNITY PLANNING

This plan builds upon goals addressed in the Official Community Plans (OCPs) of the Juan de Fuca (JdF) Electoral Area communities and the adjacent District of Sooke planning documents. The OCPs were created to help guide local government land use decisions and support the goals of the Regional Growth Strategy. The planning documents are listed below:

- East Sooke Official Community Plan, Bylaw No. 4000 (2018)
- Malahat Official Community Plan, Bylaw No. 3721 (2013)
- Otter Point Official Community Plan, Bylaw No. 3819 (2021)
- Port Renfrew Comprehensive Community Development Plan, Bylaw No. 3109 (2017)
- Rural Resource Lands Official Community Plan, Bylaw No. 3591 (2010)
- Shirley-Jordan River Official Community Plan, Bylaw No. 4001 (2018)
- Willis Point Comprehensive Community Plan, Bylaw No. 3027 (2015)
- District of Sooke Official Community Plan, Bylaw No. 400 (2023)
- District of Sooke Transportation Master Plan (2020)

The OCPs for the JdFEA have a strong overlapping goal of establishing a network of multi-use trails that connect to both the regional trail network and local amenities. There is also a push to reduce dependency on motor vehicles by exploring active transportation modes to reduce GHG emissions. The District of Sooke strives to provide and promote convenient, safe, and sustainable multi-modal travel options with good connectivity within Sooke and elsewhere in the Capital Region. This plan will contribute to achieving these goals.

2.3 KEY CHALLENGES

TRAVEL DISTANCES

The JdFEA is comprised of eight (8) communities (from east to west):

- Chatham and Discovery Islands (near Oak Bay)
- Willis Point
- Malahat
- East Sooke
- Otter Point
- Shirley
- Jordan River
- Port Renfrew

Chatham, and Discovery Island are uninhabited. Willis Point and Malahat are both physically isolated from transportation hubs and the other areas of the Juan de Fuca Electoral Area. The communities on the southwest coast are distributed along over 70 kilometres of provincial highway. The distances between the communities of the JdFEA present significant challenges when planning a connected network; the viability of active transportation use decreases when travel distances are greater. The ATNP will aim to connect locations that are reliant on each other, rather than connect the entire JdFEA. For example, Otter Point and Shirley are significantly more reliant on each other for tourism, recreation, and shopping than Port Renfrew and Jordan River, and would likely be prioritized as needing a connection.

GEOGRAPHY

The roads in the JdFEA are narrow, with limited space along the travelled way to provide additional facilities. This is due to the geography of the area, which is heavily forested and populated with cliffs, steep slopes, and water features. Active transportation design guidance will need to consider these challenges, including in some cases recommending facilities that are less than all-ages-and-abilities (AAA) standard.

MULTI-JURISDICTION PLANNING

The JdFEA shares jurisdictional boundaries with (from east to west):

- District of Highlands
- City of Langford
- District of Metchosin
- Scia'new (Beecher Bay) First Nation
- District of Sooke
- BC Parks
- Pacheedaht First Nation

The Capital Regional District (CRD) serves as the local government for this area, while the BC Ministry of Transportation & Transit (MoTT) has jurisdiction over all public roads.

The ATNP must consider the needs and plans of jurisdictional neighbours. Recommendations should align with planned improvements in other jurisdictions; for example, a recommendation to provide road shoulders with painted fog lines on Otter Point Road should be planned in coordination with the District of Sooke to continue into Sooke. This requires research of existing policies and plans in other jurisdictions as well as identifying opportunities for collaboration regarding recommended projects that extend to the JdFEA boundary.

Planning active transportation improvements on roads or within the road rights-of-way is also a challenge in the JdFEA as all public roads are within MoTT jurisdiction. Historically, MoTT has expressed support for active transportation improvements along or beside its roadways if the roads can continue to be maintained per current practice. For example, MoTT can sweep and maintain roadways with wider shoulders, but vertical elements such as speed bumps or curbs to protect bikes lanes present significant maintenance challenges. Additionally, a License of Occupation (LOO) can be pursued to lease land within the road right-of-way from MoTT to construct a new facility. These additional requirements, and the requirement to collaborate with MoTT, must be considered in the ATNP.

2.4 BASELINE TRANSPORTATION ANALYSIS

An extensive data collection program was completed to develop the 'baseline' scenario of transportation in the JdFEA (i.e., the transportation network as it exists). The data collection program included site visits, information gathering from the CRD and community partners, acquisition of geospatial data for use in mapping, acquisition of collision data from ICBC, and review of existing transit services.

Once collected, the data was analyzed to develop and qualify 'gaps' in the active transportation network, that can be used to identify potential active transportation projects.

SITE VISITS

Two site visits were completed to observe and document existing transportation conditions in the JdFEA. Both site visits included members of CRD staff to provide guidance on local transportation activity and relevant policies and plans. The first site visit, on July 24, 2024, included East Sooke, Otter Point, Shirley, Jordan River, and the sections of West Coast Road (Highway 14) between these communities. The second site visit, on August 15, 2024, included the section of West Coast Road between Jordan River and Port Renfrew, and Port Renfrew itself along with neighbouring areas (i.e., Botanical Beach at the northern end of the Juan de Fuca Marine Park, Pacheedaht First Nation lands, etc.).

The objective of the site visits was to photograph and note existing conditions that could be relevant to the development of the ATNP. During the site visits, maps were used to mark the location of key observations. The general categories of findings included:

- Active transportation infrastructure
- Trails and parks
- Road conditions, widths, paint markings, and geometry
- Traffic operations, signage, signalization, and intersection geometry
- Types of vehicles and active mode users
- Vehicle and active mode user behaviour
- Signs
- Transit infrastructure
- Transportation amenities (e.g., bike racks, water stations, parking areas, maps, etc.)
- Key destinations
- Potential safety issues
- Planned and in-progress changes to the transportation network

Figures 2.5 – 2.13 provide a small sample of the photographs taken during the site visits, with brief descriptions of the relevant findings being captured.

Figure 2.5: Site Visit Observations - Parks

The JdFEA features many parks with varying types of scenery and terrain. These parks attract many active transportation users. From left to right: Sheringham Point Park, French Beach Provincial Park (BC Parks Jurisdiction), Otter Point Park.

Figure 2.6: Site Visit Observations - Road Shoulder and San Juan River Bridge

The road network of the JdFEA varies greatly by facility type and width. Pictured is a section of Highway 14 with a wide shoulder and a fog line (left), and the San Juan River Bridge which is wide enough for one vehicle per direction at a time and has limited active transportation facilities (right).

Figure 2.7: Site Visit Observations - Backpackers on Parkison Road in Port Renfrew

Figure 2.8: Site Visit Observations - Pedestrians in Port Renfrew

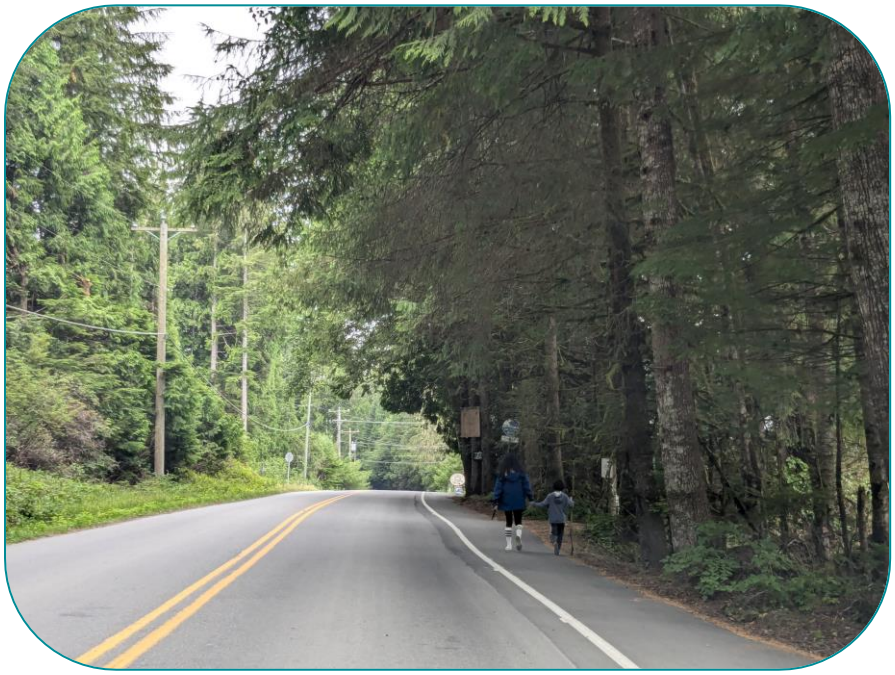


Figure 2.9: Site Visit Observations - Vehicle Passing a Cyclist on Highway 14

Due to the lack of formal active transportation infrastructure, active transportation users must use the road shoulder or the road itself to travel (outside of the trail network). As a result, active transportation users currently accept a certain level of risk when travelling. Last three photos, top to bottom: backpackers walking along the road shoulder from Botanical Bay to Port Renfrew, an adult and child on the shoulder of Parkinson Road in Port Renfrew, a cyclist on Highway 14 being passed by cars in both directions.

Figure 2.10: Site Visit Observations - Port Renfrew - Beach Camp to Marina Route

Just west of the Parkison Road & Deering Road intersection, a staircase connects Parkinson Road to a trail which connects from the Beach Camp neighbourhood to the Marina. The trail is not formalized with signage, and the path is not currently clear.

Figure 2.11: Site Visit Observations - Variability of Grades

The geography of the JdFEA is mountainous, with cliffs and water features throughout. As a result, the grades of the transportation network are highly variable, with both steep and flat sections. Roads and pathways wind to avoid vertical features. Horizontal and vertical curvature can create sightline issues and usability challenges.

Figure 2.12: Site Visit Observations - Loss Creek Bridge

The Loss Creek Bridge is an unsignalized single-lane bridge on Highway 14, between Jordan River and Port Renfrew. The approach to the bridge from both directions is curved, and the waiting areas used to yield to bridge traffic are not well defined. Due to the rural context and low traffic volumes of the JdFEA, many of its bridges are single lane.

Figure 2.13: Site Visit Observations - Port Renfrew School Access

The current access to the Port Renfrew School is via a single-lane road with no shoulders. In addition, there is no wayfinding signage to the school from Parkinson Road, and no signage indicating the presence of a school at the driveway access. Students currently use the road or the natural surface next to the road to walk to school.

The above figures represent a small sample of photos taken and the types of observations made during site visits. These observations, in combination with further baseline data collection, CRD staff input, public engagement, and public/community partner responses, were essential components in determining potential active transportation projects.

EXISTING ROAD NETWORK

All public roads in the JdFEA are within the Ministry of Transportation and Transit (MoTT) jurisdiction. As such, these roads must adhere to MoTT rural road standards for the implementation of active transportation related infrastructure.

Highway 14, also named West Coast Road, is the main vehicle route through the region; however, it is not a preferred route for active transportation due to high vehicle volumes, high vehicle speeds, variable sightlines, steep grades, and intermittent shoulders. The network of private roads and MoTT rural community roads are often used by cyclists and pedestrians. These roadways are typically two-lane rural roads with varying shoulder widths, including roads without shoulders.

EXISTING ACTIVE TRANSPORTATION NETWORK

The JdFEA features no formalized active transportation infrastructure (i.e., sidewalks, cycling facilities, or multi-use paths). Pedestrians and cyclists currently share the road with vehicles or travel on the road shoulder.

Existing active transportation facilities in the JdFEA consist mainly of trails. These trails are popular for hiking, backpacking, trail running, mountain biking, and horseback riding. The trail network also provides key local connections for JdFEA residents.

Within the JdFEA, the CRD maintains regional trails (i.e., trails within regional parks) and community trails. Regional trails, such as the extensive trail network of East Sooke Regional Park, provide a variety of terrain and difficulty options and attract visitors from across the Greater Victoria region and beyond. Community trails can serve as local connections, such as the trail between Beachview Drive and the General Store in Port Renfrew, and as local recreation options, such as the trail loop at Admiral's Forest Park in Otter Point.

The JdFEA also shares a jurisdictional boundary with Juan de Fuca Provincial Park, which is under the jurisdiction of BC Parks. This park has many access points from the JdFEA along Highway 14, between Jordan River and Port Renfrew, and is a major driver of visitors to the area. The Juan de Fuca Marine Trail, a 47-kilometre trail that connects from Jordan River to Port Renfrew via all six of the park's provincial campsites[5]. While the Juan de Fuca Marine Trail is popular for recreation, its length, terrain, and grades make it impractical as a connection for JdFEA residents. In addition, cyclists are not permitted on the trail, and multiple beach sections are impassible when the tide is high. As a result, the trail is not considered a multi-use connection between Jordan River and Port Renfrew.

Exhibits 2.2 – 2.11 illustrate the existing trail network in the JdFEA.

[5] BC Parks, "Visitor Use Attendance Interim Report 2024/25" BC Parks, Victoria, BC, Canada, 2024. Accessed: February 12, 2025. [Online].

Exhibit 2.2: Existing Transportation Network – Pacheedaht

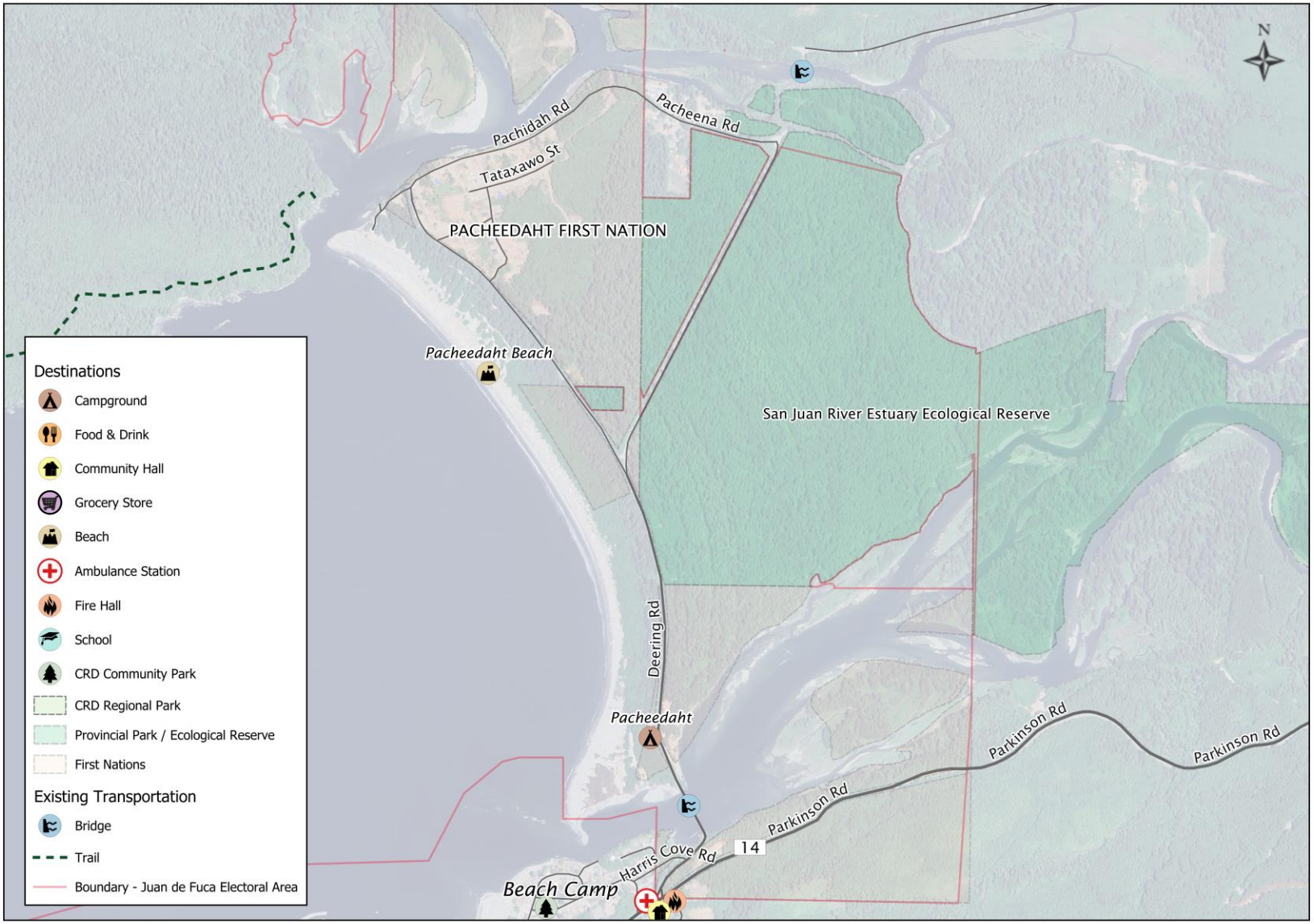


Exhibit 2.3: Existing Transportation Network – Port Renfrew

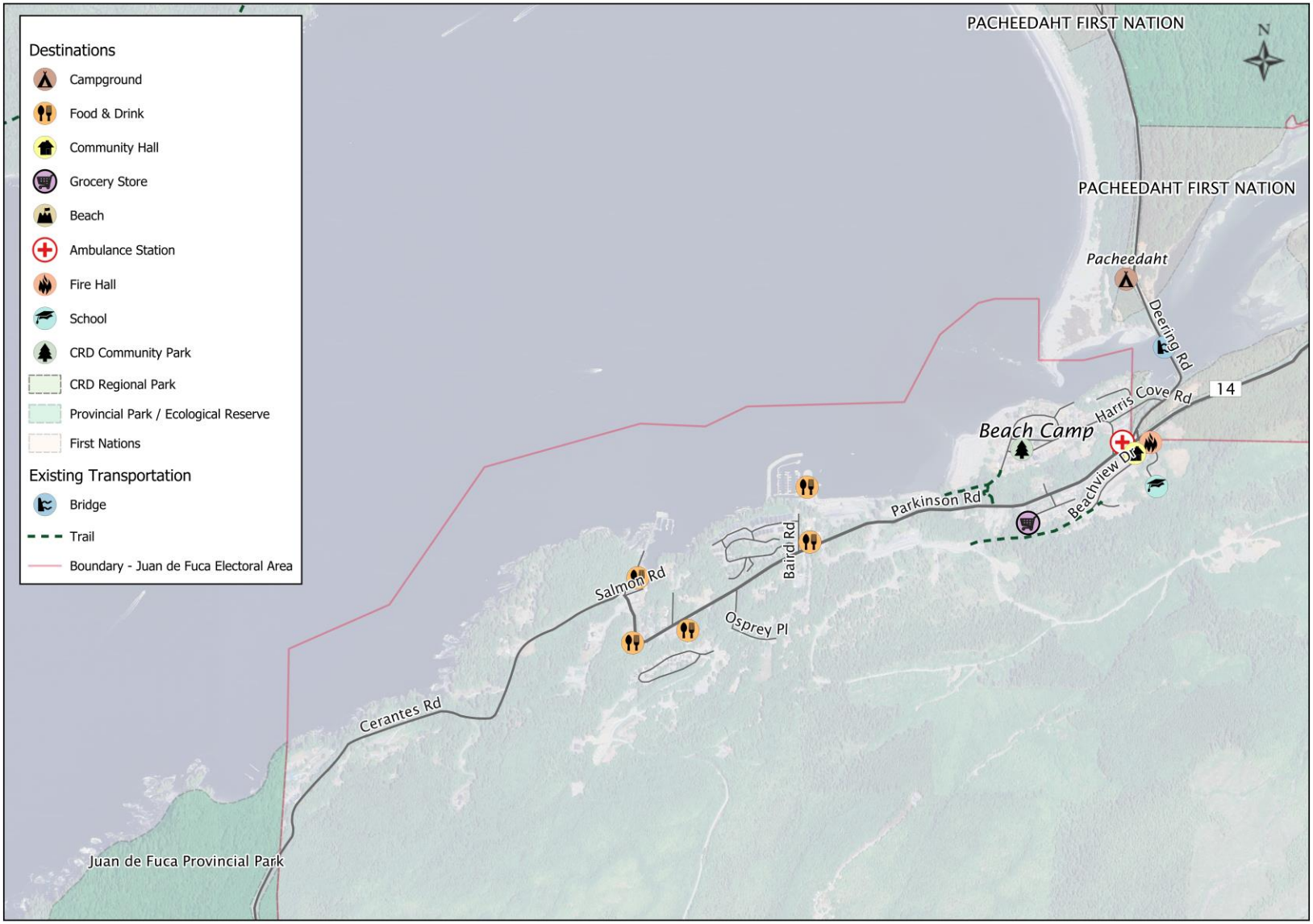


Exhibit 2.4: Existing Transportation Network – West Coast Road 1

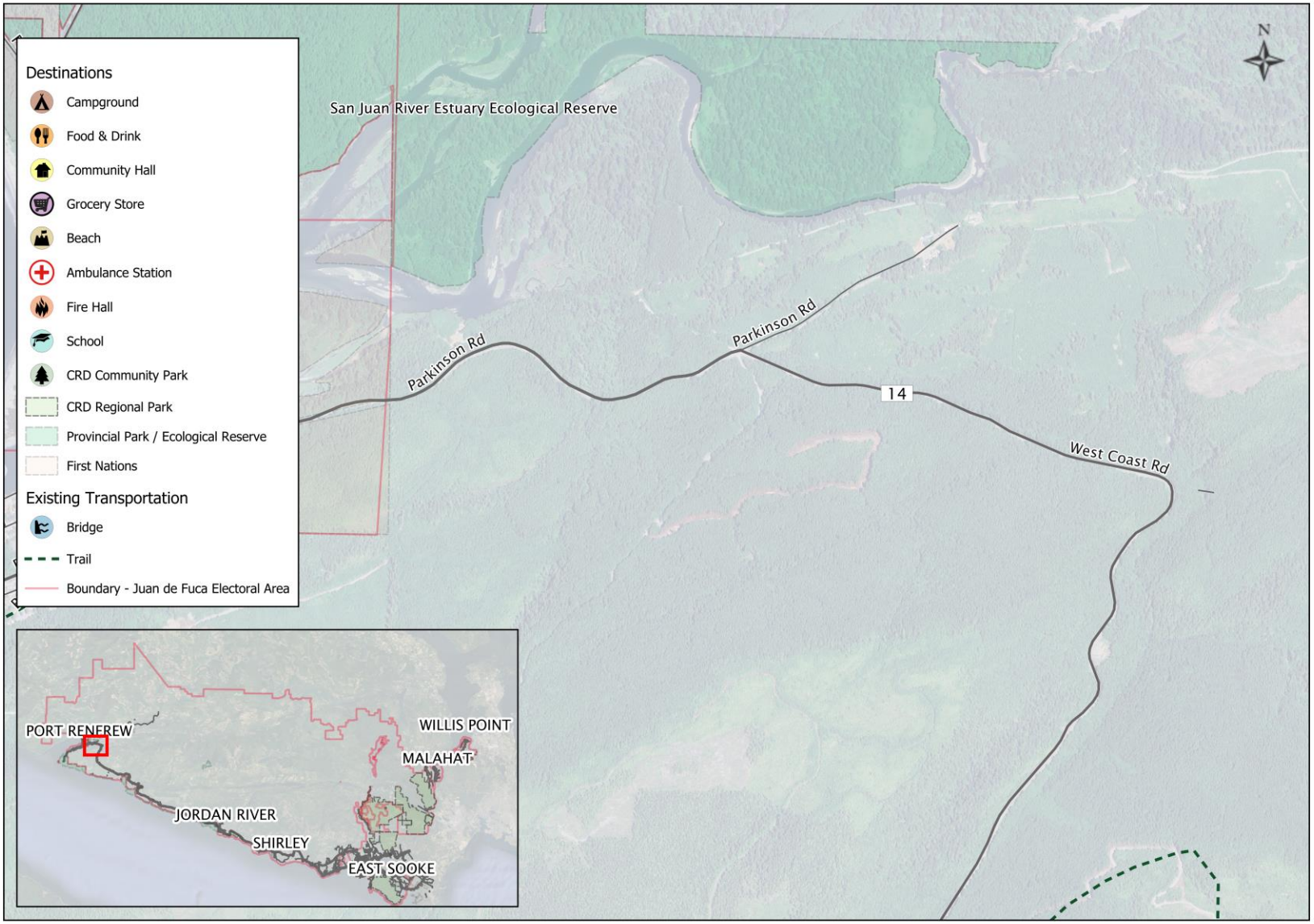


Exhibit 2.5: Existing Transportation Network – West Coast Road 2

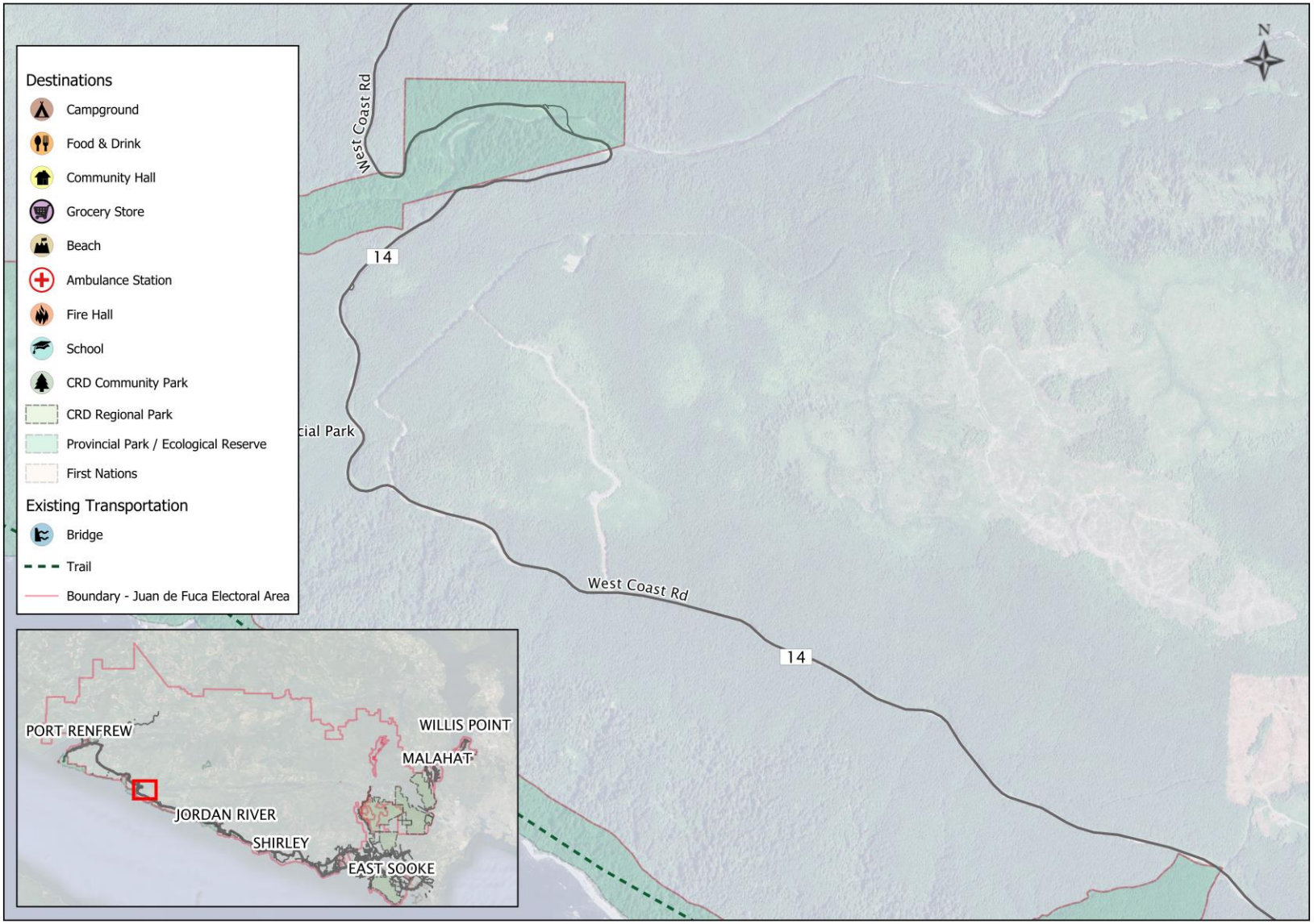


Exhibit 2.6: Existing Transportation Network – Jordan River

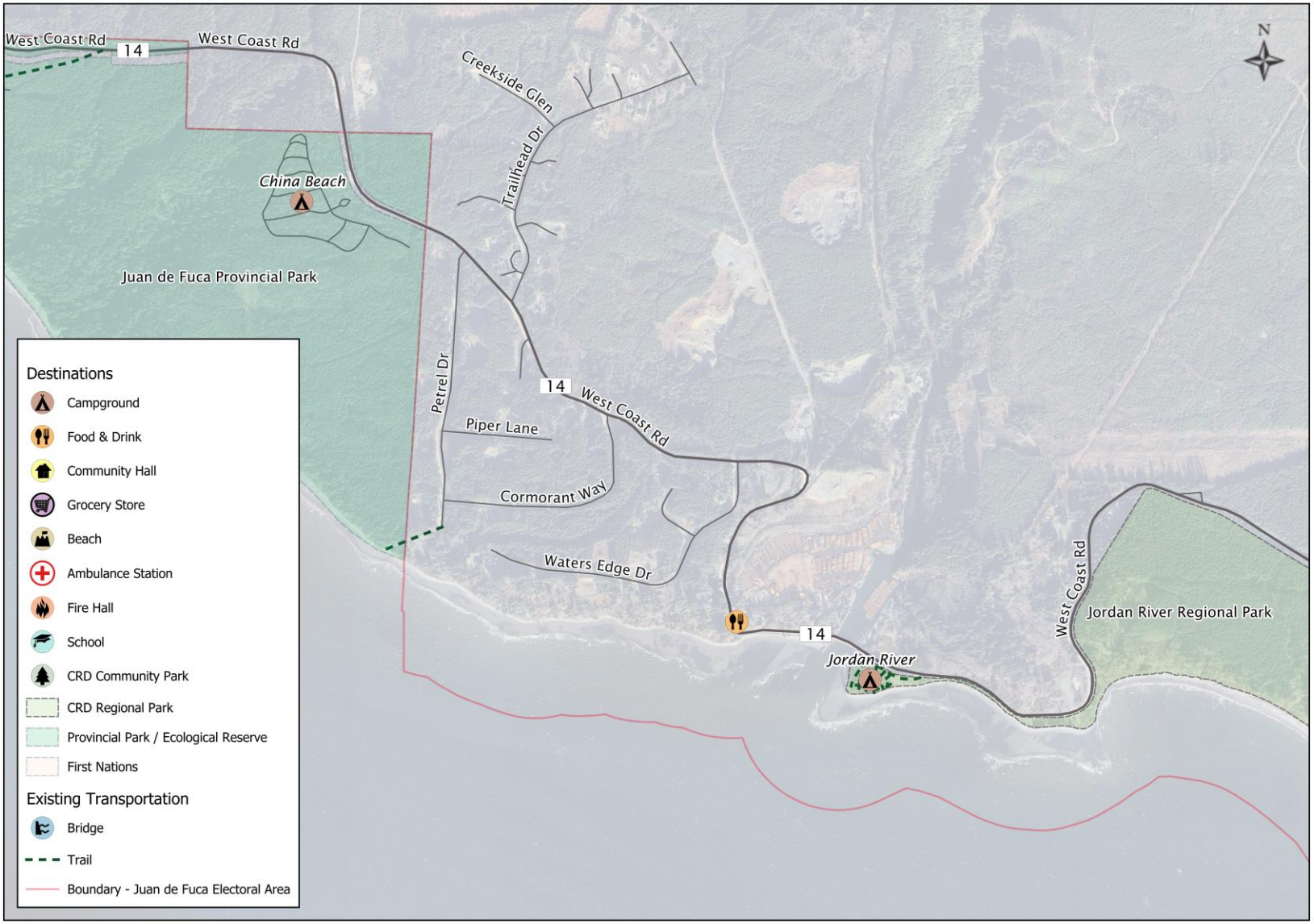


Exhibit 2.7: Existing Transportation Network – Shirley

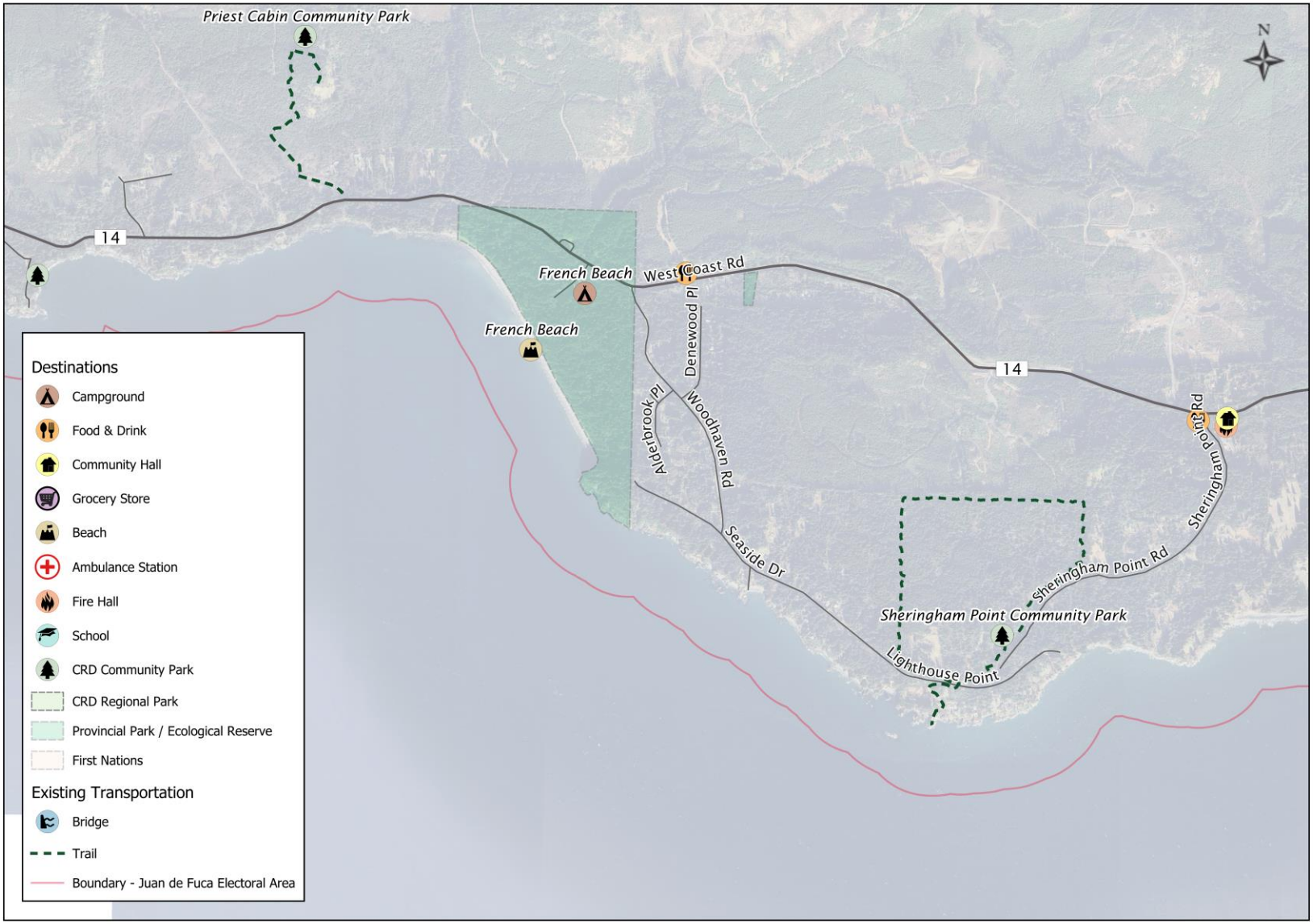


Exhibit 2.8: Existing Transportation Network – Otter Point

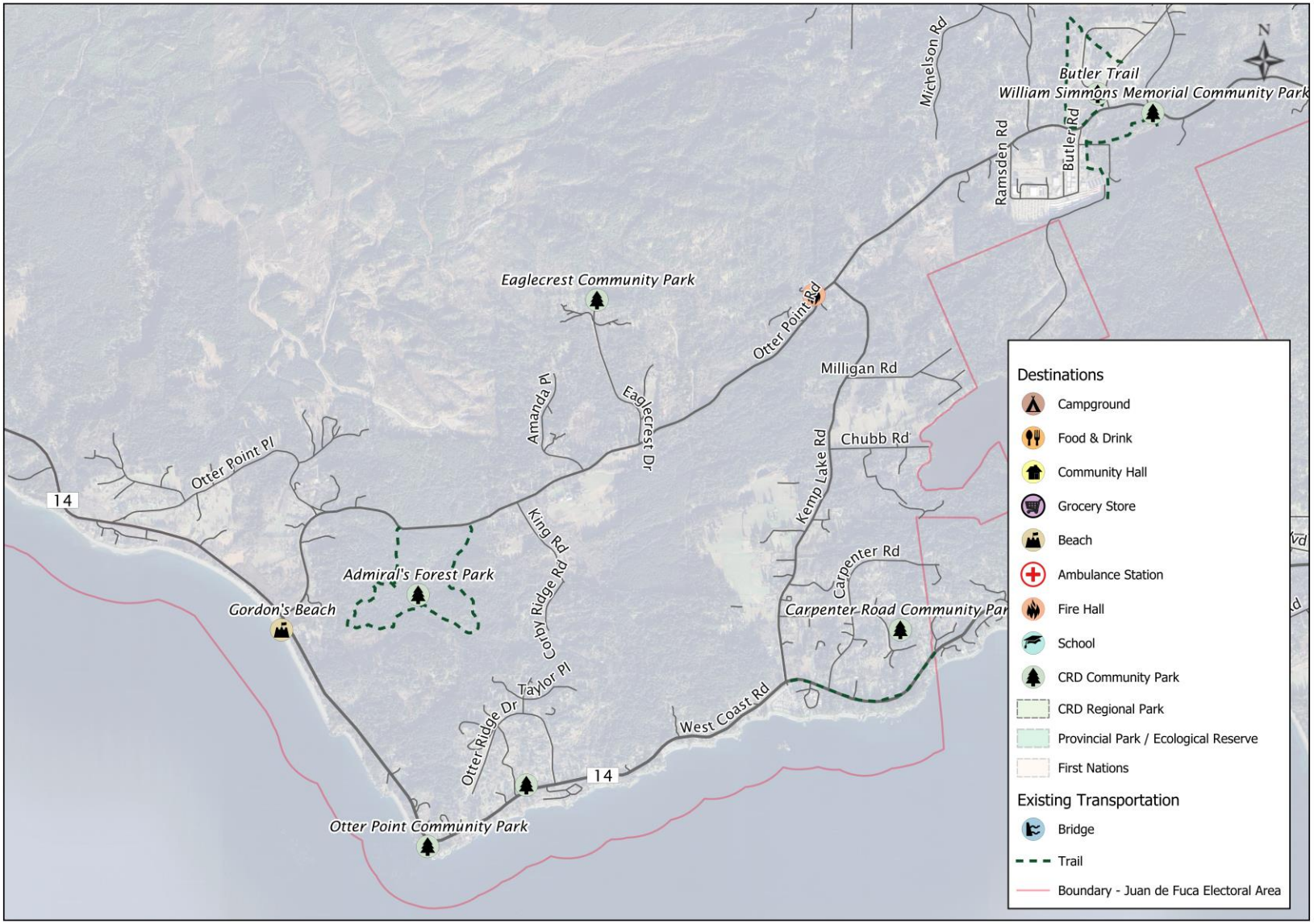


Exhibit 2.9: Existing Transportation Network – East Sooke

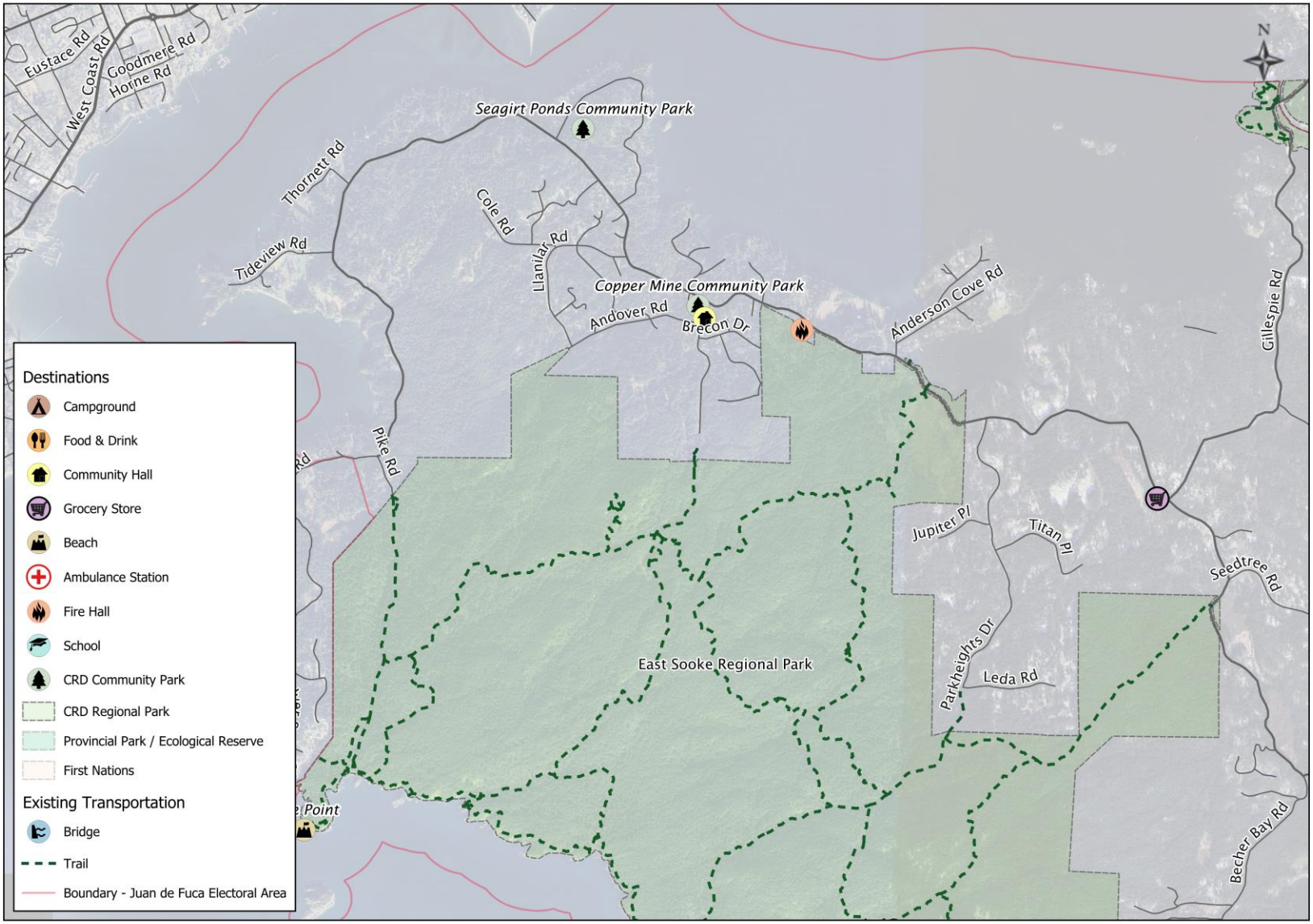


Exhibit 2.10: Existing Transportation Network – Malahat

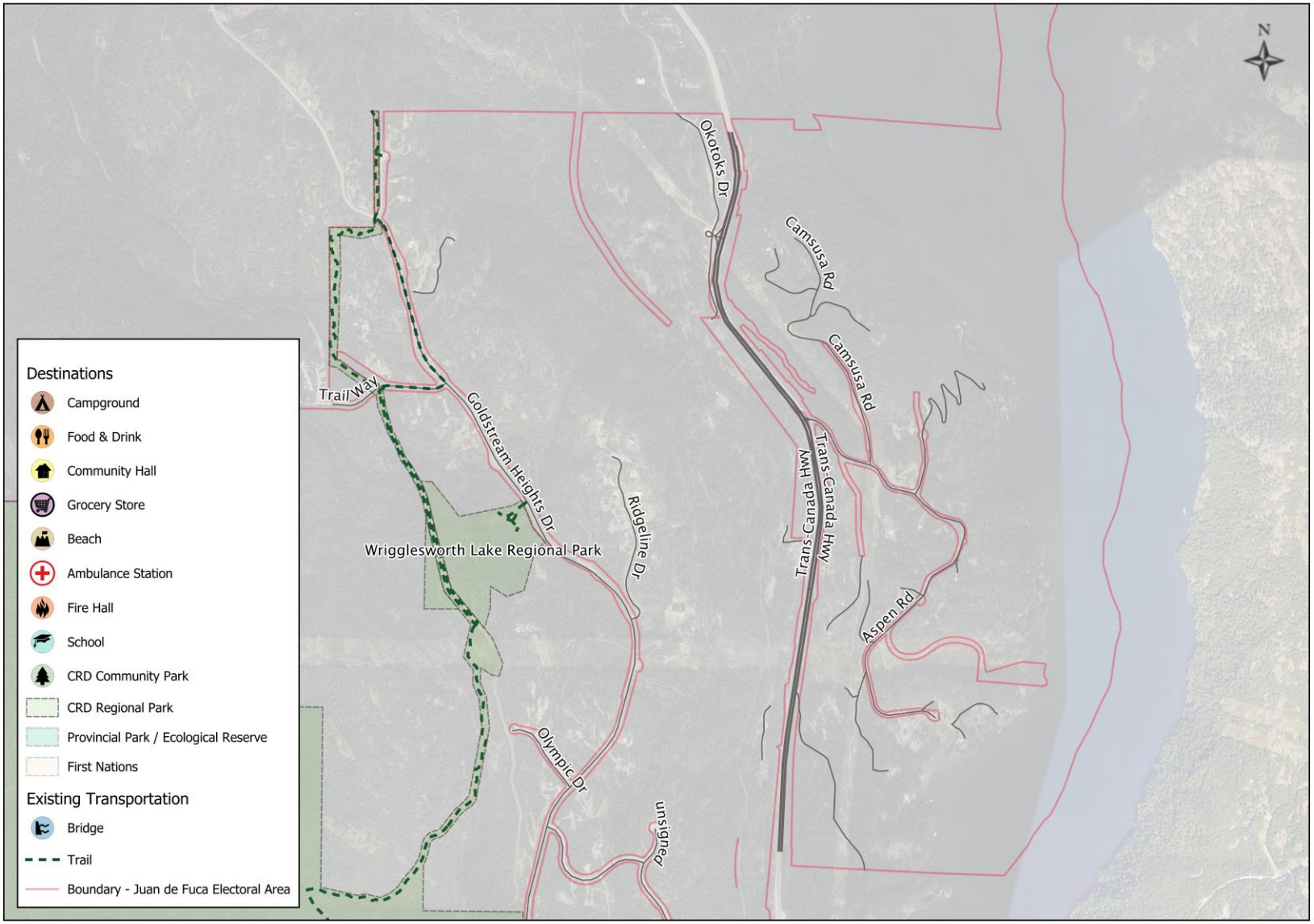
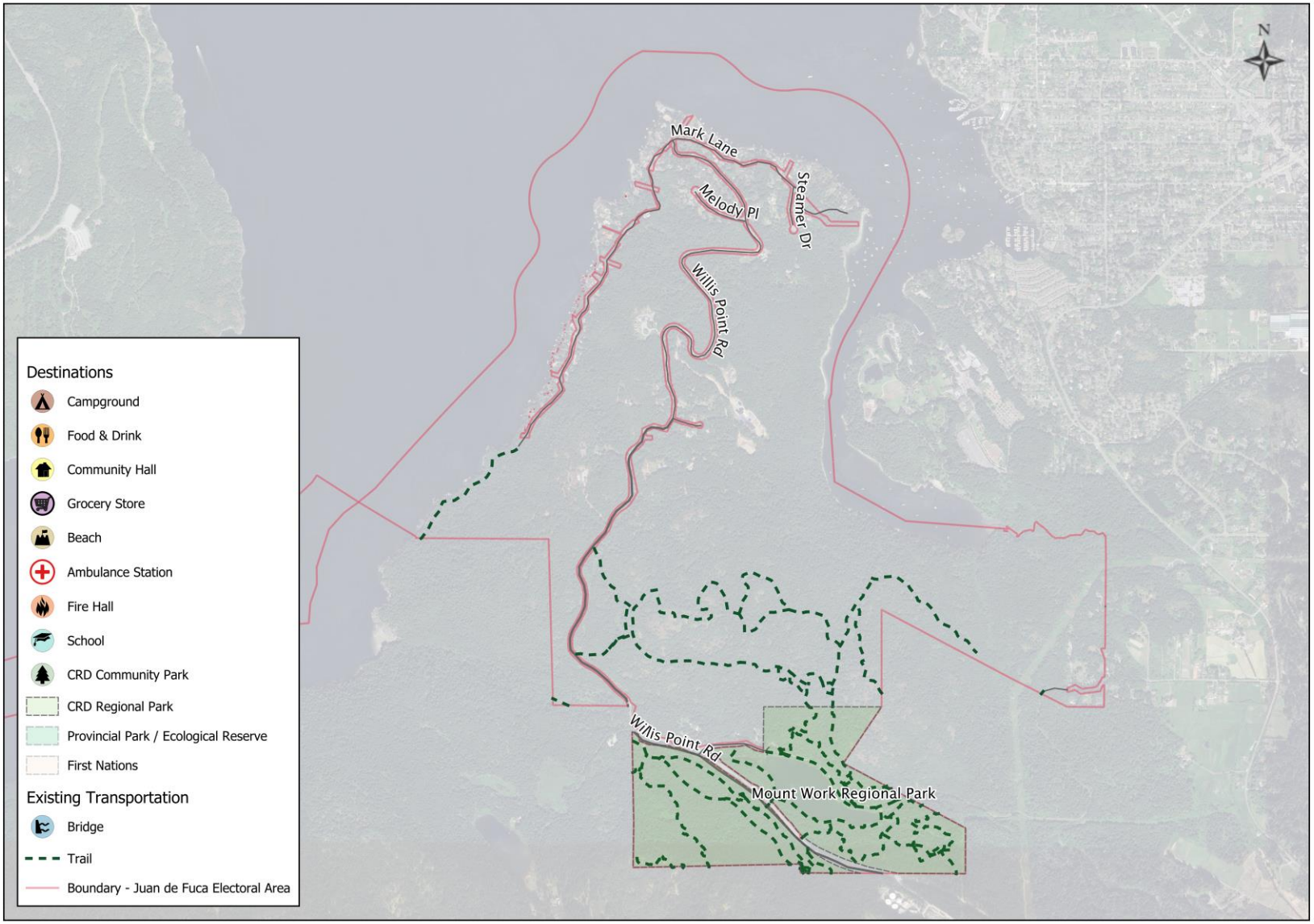


Exhibit 2.11: Existing Transportation Network – Willis Point



COLLISION DATA

Collision data is used to identify potential challenges related to speed, grade, visibility, lack of facilities, lack of signage, and/or road/intersection geometry. These potential challenges can inform the type and prioritization of active transportation projects. Collision data is publicly available via the ICBC *Interactive Crash Map* tool, which compiles all collisions reported to ICBC from 2019-2023. The data includes location information (latitude, longitude), severity (i.e., if the collision led to property damage only (PDO), injury, or fatality), collision type (e.g., rear end, side impact), road user type (vehicle, cyclist, or pedestrian), and other information such as weather and temporal data. This data was reviewed, mapped, and used as an input when identifying project type and priority for high-risk locations.

PUBLIC TRANSIT OPTIONS

There are four (4) public transit routes that connect to destinations within the JdFEA, all of which are part of the BC Transit *Victoria Regional Transit* system:

- 61 Sooke/Langford/Downtown
- 65 Sooke/Langford/Downtown via Westhills
- 63 Otter Point, and
- 64 East Sooke.

There are currently no transit stops in the communities of Willis Point, Malahat, Shirley, Jordan River, or Port Renfrew.

2.5 NETWORK GAP ANALYSIS

A network gap is a missing active transportation connection between two locations of interest. Identifying network gaps is a critical step in the development of an ATNP as gaps are used to determine the location of potential active transportation projects. The significance of the gap being addressed is also a key input in project prioritization.

NETWORK GAP IDENTIFICATION

A network gap is identified when a desire line overlaps with a lack of facilities. A 'desire line' refers to a route by which people want to travel but may not necessarily be able to do so, which can result in the creation of informal routes (i.e., well worn roadside foot paths).

For example, many residents and visitors to Jordan River may want to travel between China Beach Campground and Jordan River Campground by active modes. Therefore, there is an active transportation desire line between these two locations. However, there is a lack of facilities connecting these locations as the only route between them is Highway 14, which has no shoulders or separated pathways. As a result, a network gap is identified between China Beach Campground and Jordan River.

Desire lines were determined using information acquired during the site visits and from the public engagement responses (discussed in Section 3). The existing road and active transportation network maps created in GIS software were used to identify areas with missing active transportation facilities. Network gaps were then identified and mapped where the desire lines and lack of facilities overlapped.

NETWORK GAP EVALUATION CRITERIA

Not all network gaps are equally significant. The nature of the location being connected to, the density of the area being served, the existing level of risk, and the anticipated demand are all factors in determining which network gaps are most significant. The following criteria were used to evaluate network gaps:

- Gap Location
- Anticipated Demand
- Presence of Vulnerable Road Users

Each criterion and its method of evaluation is described in the subsections below.

Gap Location

Gaps were categorized into 'regional', 'community', or 'local' gaps. Regional gaps represent missing connections between communities (e.g., Highway 14 between Otter Point and Shirley). Community gaps represent missing connections for a large subset of one community (e.g., Parkinson Road in Port Renfrew). Finally, local gaps represent missing connections that would be used by a small subset of a community (e.g., a connection from Parkheights Drive to the East Sooke Grocer in East Sooke). Regional and community gaps are typically more significant than local gaps; however, the

significance of each of these gap types is also highly dependent on the other two criteria being evaluated.

Anticipated Demand

Gaps with higher anticipated demand were evaluated as more significant. Anticipated demand is a qualitative measure of how popular an active transportation connection is expected to be if it addressed the gap. This is based on the estimated popularity of the destinations, the length of the connection, the difficulty of the terrain, and the current popularity of the route as it exists for both active and non-active modes.

Presence of Vulnerable Road Users

Gaps that impact vulnerable road users were evaluated as more significant. Vulnerable road users are[6]:

- Pedestrians
- Cyclists
- Animals and animal-driven vehicles (e.g., horseback riding)
- Micro-mobility users
- People in wheelchairs and other mobility devices

Community focal points such as schools, community centres, medical facilities, and grocery stores are anticipated to see higher-than-average visits from vulnerable road users. As such, gaps to these types of destinations were attributed more significance.

NETWORK GAP EVALUATION

Once gaps were identified and subsequently reviewed using the three evaluation criteria, network gaps were able to be categorized into primary, secondary, and tertiary gaps. These are defined as:

- **Primary (Critical) Gap:** the network gap is at the regional or community level and is anticipated to be a high-demand route. Or the network gap impedes a key connection to a community focal point (i.e., high presence of vulnerable road users).
- **Secondary Gap:** the network gap is at the regional or community level and is anticipated to be a medium-demand route or is at the local level and is anticipated to be a high-demand route. Or the network gap impedes a connection to a popular destination that is not a community focal point (i.e., some presence of vulnerable road users is anticipated).
- **Tertiary Gap:** the network gap is at the regional or community level and is anticipated to be a low-demand route or is at the local level and is anticipated to be a low/medium-demand route. These gaps typically lead to recreational destinations or to an area used by a small subset of the community/region.

[6] Government of British Columbia, “Sharing the road safely”, Victoria, BC, Canada, 2024. [Webpage] Available: https://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/road-safety-rules-and-consequences/vulnerable

Exhibits 2.12 – 2.18 illustrate the active transportation network gaps identified in the JdFEA. The network gaps are shown as double arrows linking two locations and are coloured based on their location type (regional, community, or local). In addition, primary, secondary, and tertiary gaps are respectively indicated by a I, II, or III symbol.

Exhibit 2.12: Active Transportation Gaps – Pacheedaht

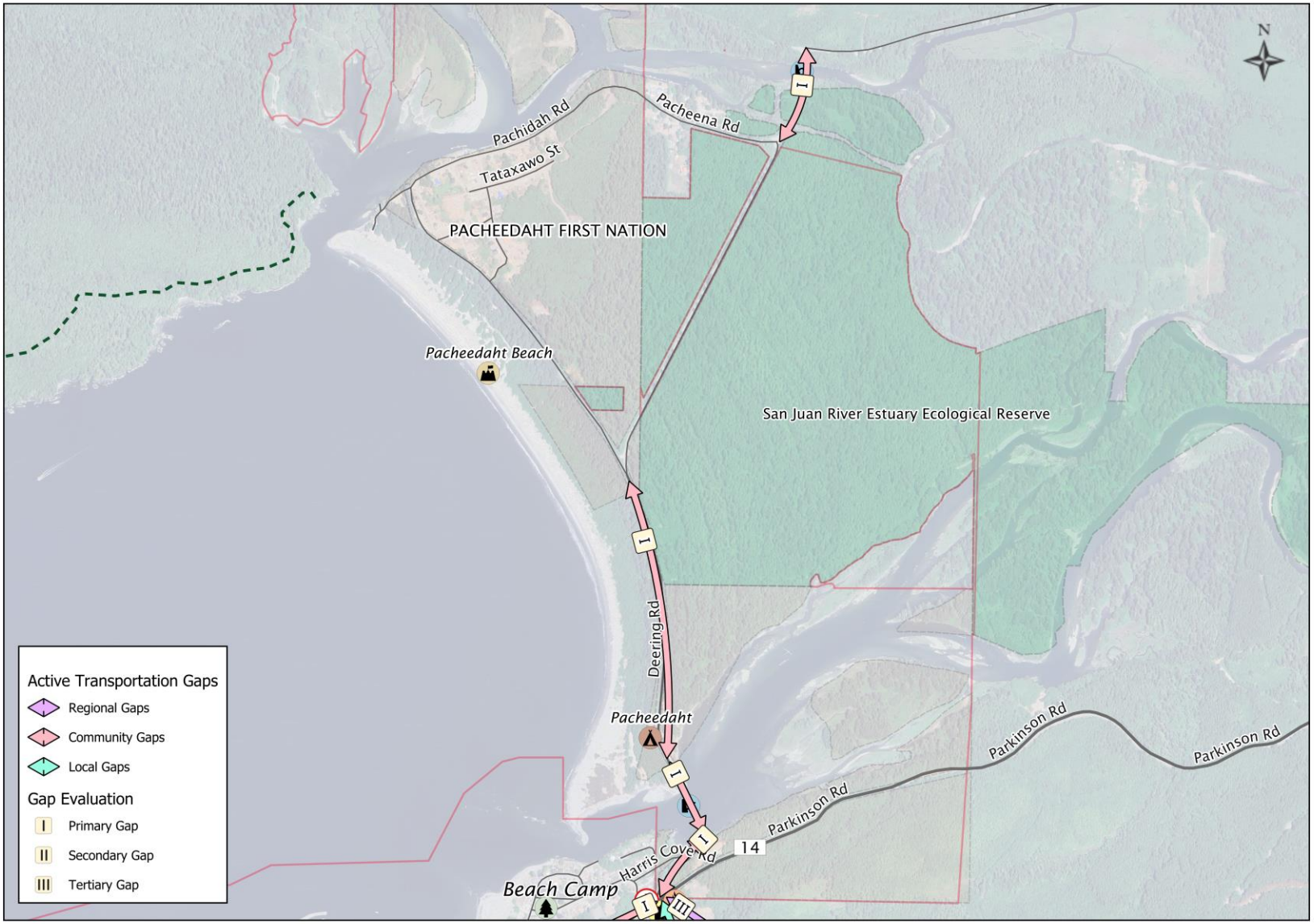


Exhibit 2.13: Active Transportation Gaps – Port Renfrew

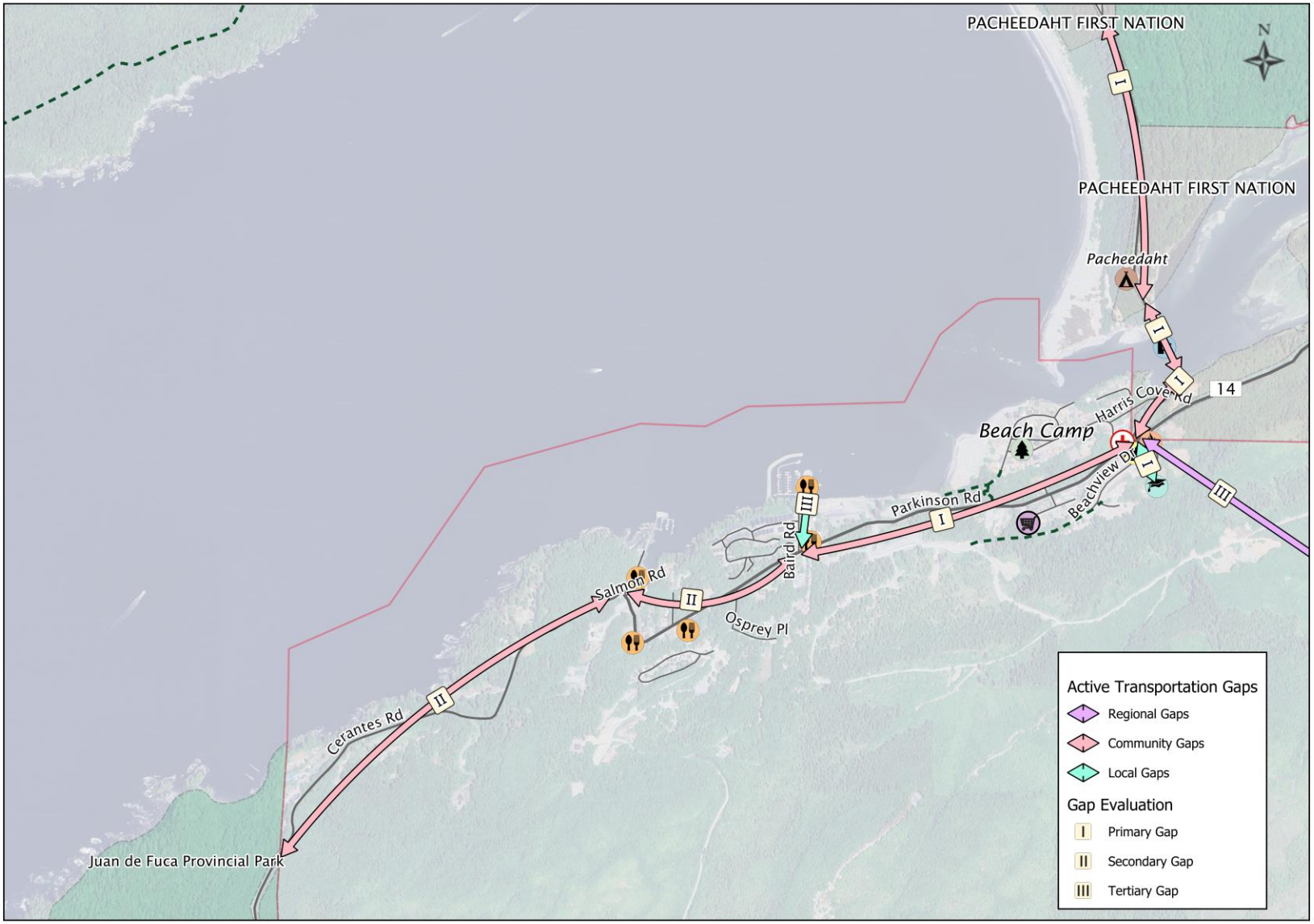


Exhibit 2.14: Active Transportation Gaps – West Coast Road (Port Renfrew – Jordan River)

Exhibit 2.15: Active Transportation Gaps – Jordan River

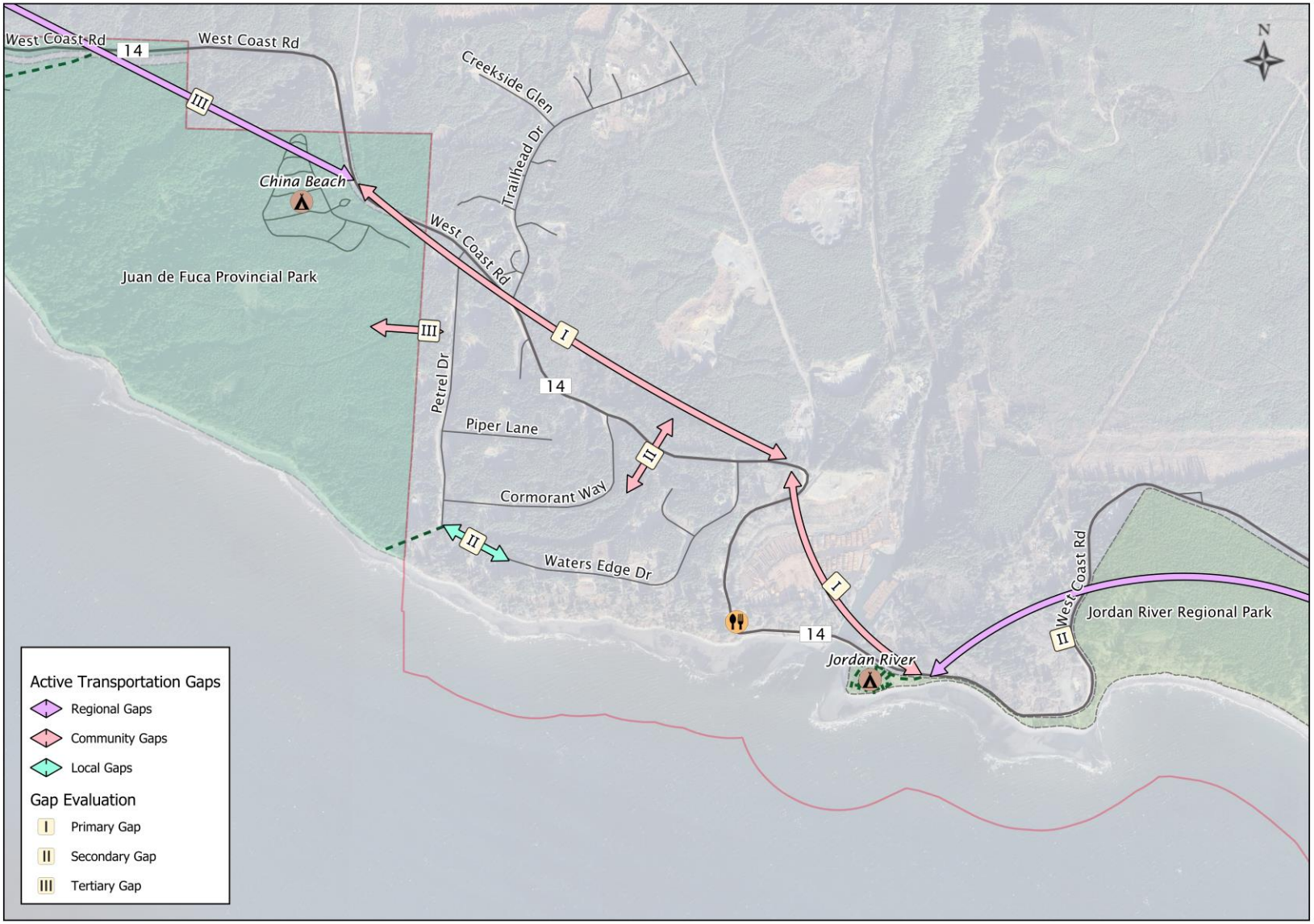


Exhibit 2.16: Active Transportation Gaps – Shirley

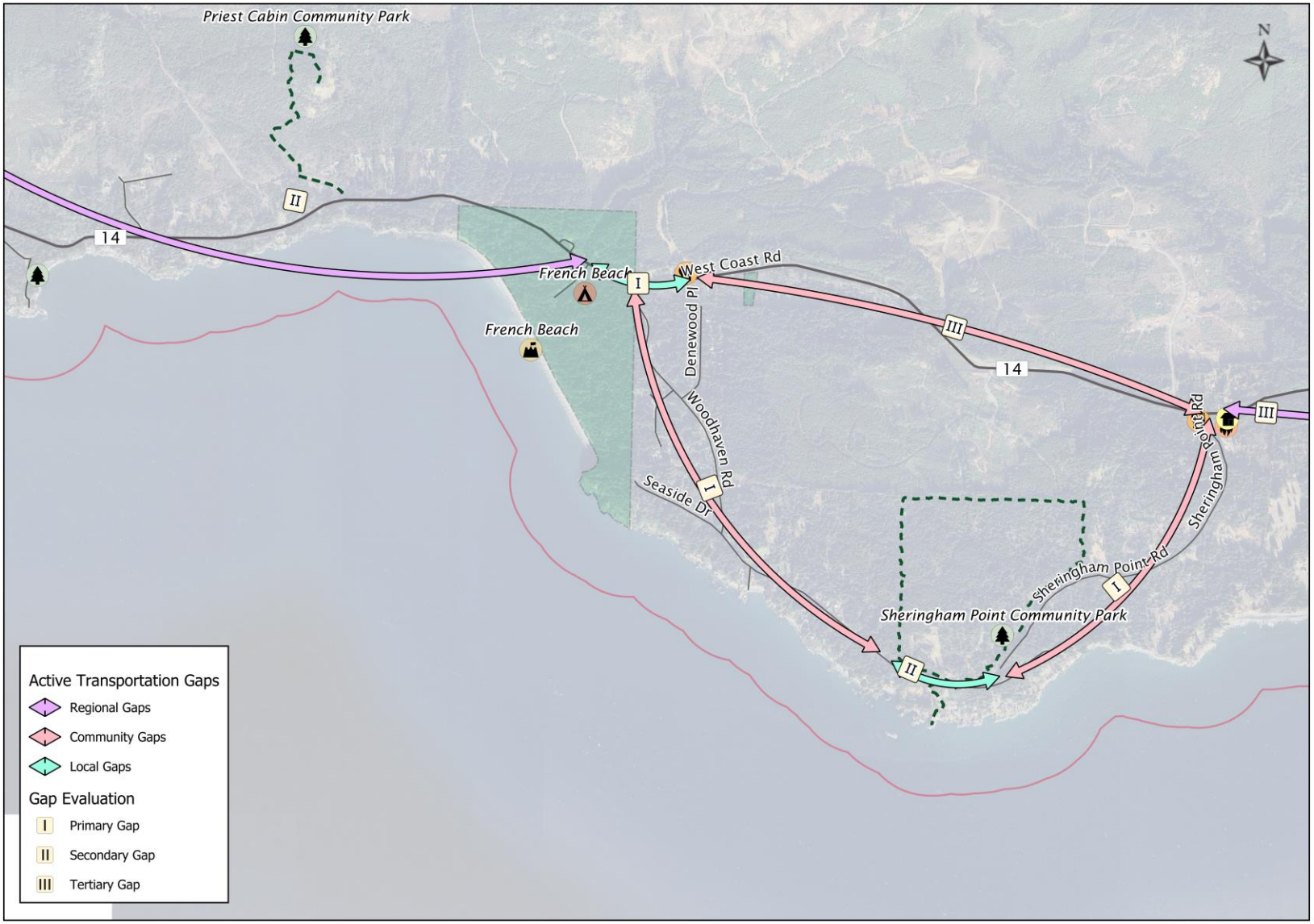


Exhibit 2.17: Active Transportation Gaps – Otter Point

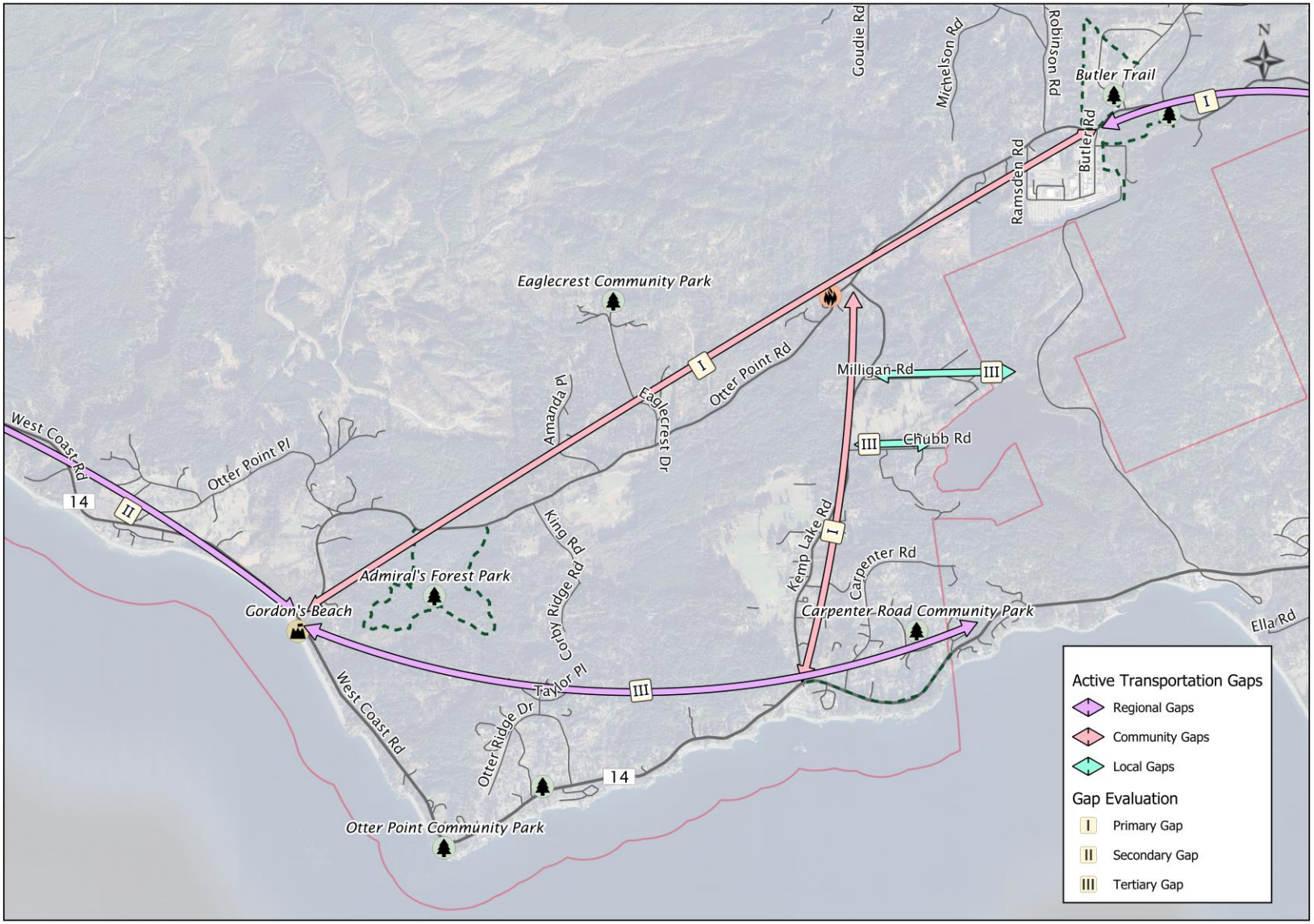
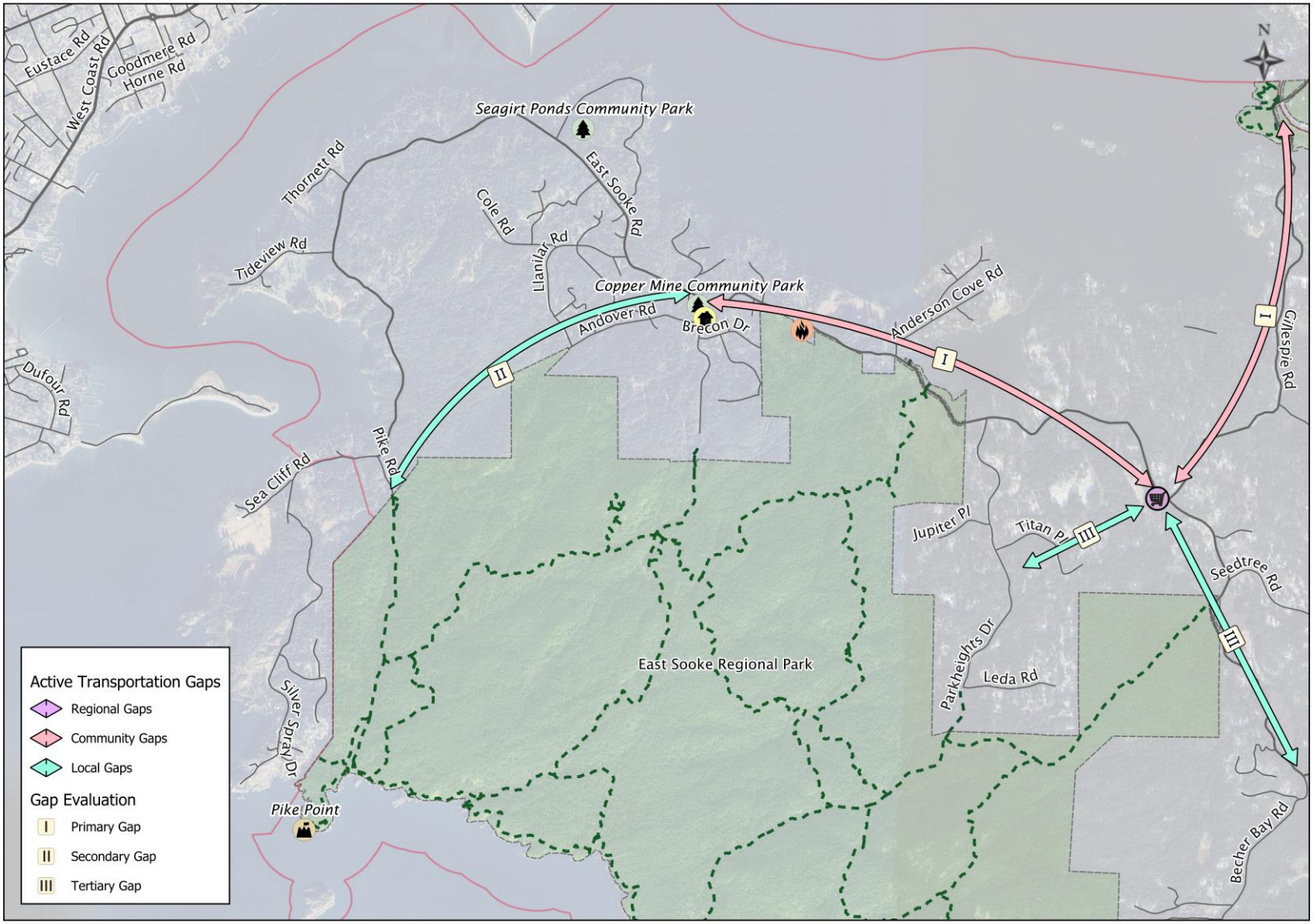


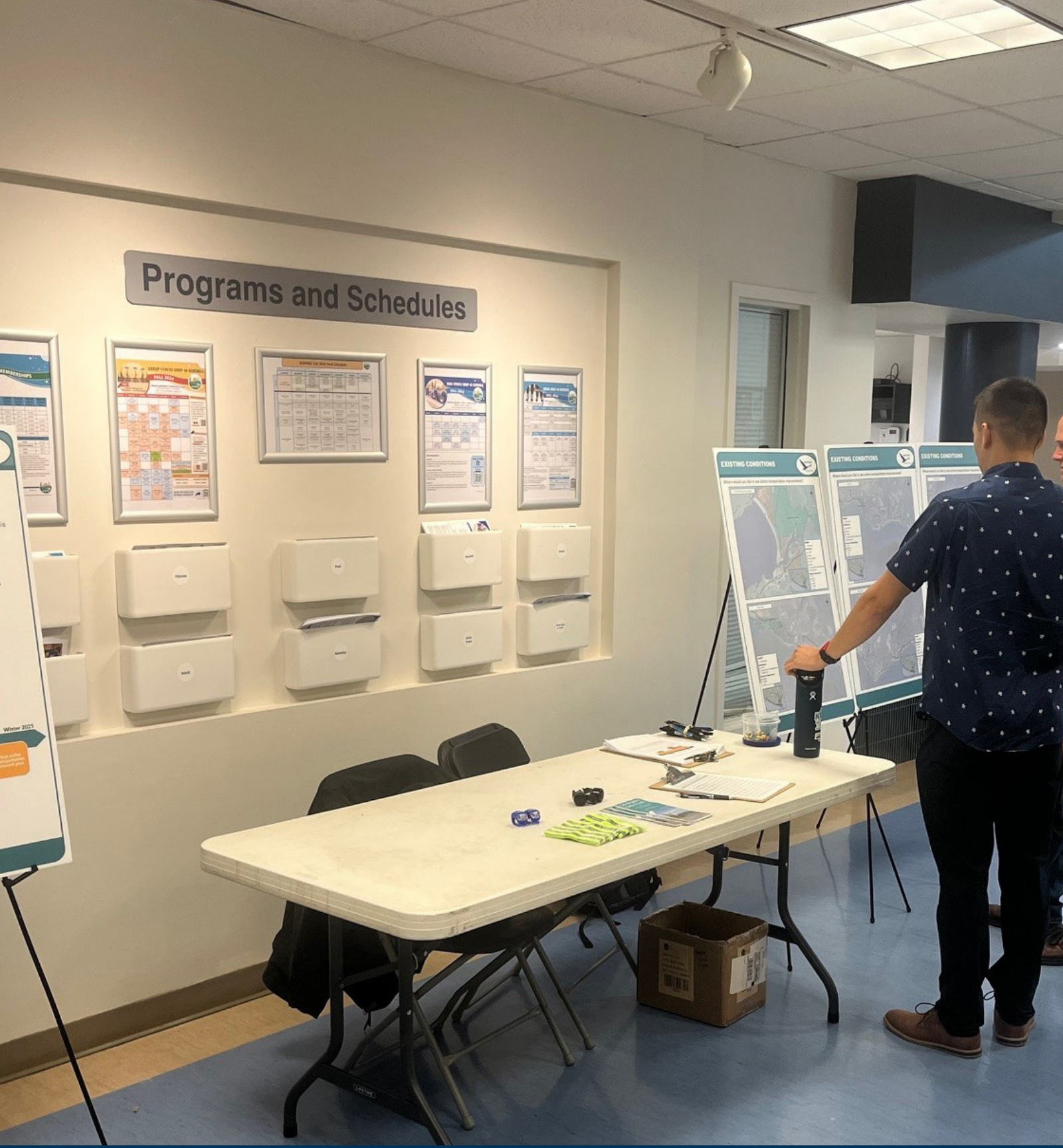
Exhibit 2.18: Active Transportation Gaps – East Sooke



2.6 POTENTIAL GHG EMISSIONS REDUCTION

Different forms of gas and diesel-powered transportation are one of the greatest contributors to greenhouse gas emissions in British Columbia, making up approximately 40% of the province's annual total emissions[7]. In comparison, active modes of transportation such as walking and cycling contribute significantly lesser amounts of GHG emissions. Additionally, the infrastructure associated with active transportation modes are typically less intrusive and destructive to the environment and could be integrated within the natural environment. For example, trails and walking paths allow for greenspace and natural areas to be preserved, requiring less space to be taken from the environment in comparison to introducing new roads and vehicle parking facilities. A summary of the potential GHG emissions reductions that could result from plan implementation is outlined in **Section 5.9.**

[7] Source: https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf



3 PUBLIC AND COMMUNITY PARTNER ENGAGEMENT

PUBLIC AND COMMUNITY PARTNER ENGAGEMENT

Key to developing the recommended JdFEA active transportation network was obtaining a variety of insights from people of all ages and abilities. The project team engaged in several activities and discussions aimed at understanding perspectives from the micro-level (community-specific) to a macro-level (regional integration). An engagement summary report was prepared to describe engagement activities, summarize responses, and identify key takeaways. The engagement summary report is provided in **Appendix A**. The following sections provide an overview of the engagement process, with more detail provided in the engagement summary report.

3.1 WHO WAS ENGAGED

The ATNP was informed by the community via a robust engagement effort that informed and consulted with many. Those engaged included:

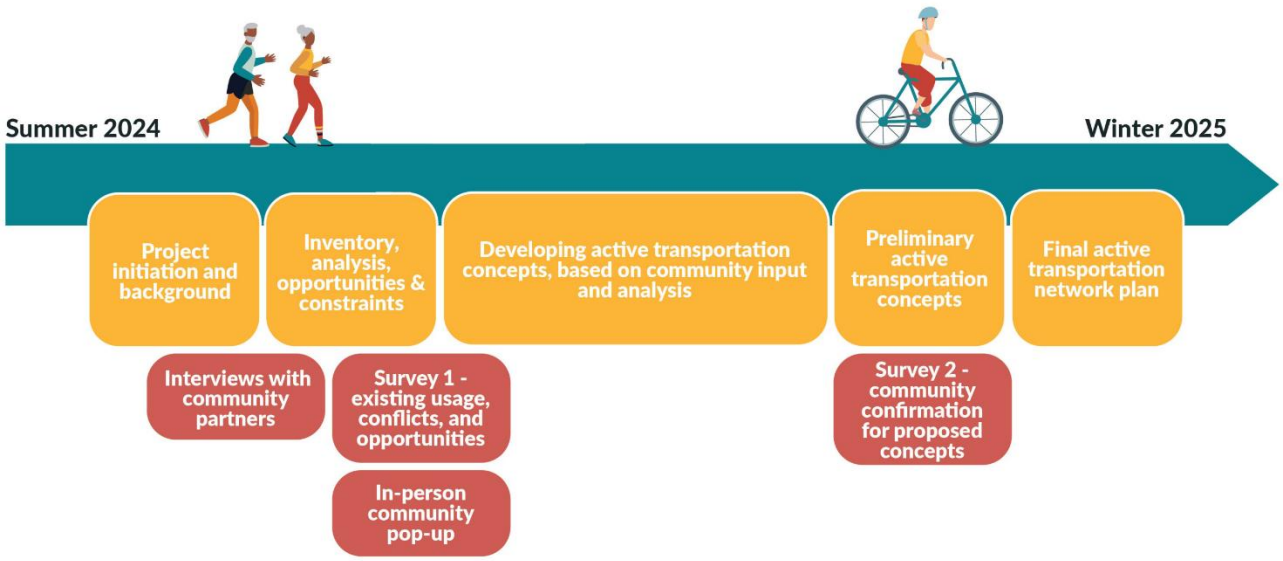
- Pacheedaht First Nation
- T'Sou-ke First Nation
- Scia'new First Nation
- BC Parks
- CRD Regional Parks
- MoTT
- District of Sooke
- Juan de Fuca Trails Society
- Sooke Mountain Bike Club
- Residents of the Juan de Fuca Electoral Area
- The public-at-large

A variety of engagement strategies were employed to gain insights from each of the above groups.

3.2 THE ENGAGEMENT PROCESS

Figure 3.1 below illustrates the engagement timeline, in parallel with the overall project timeline for the ATNP. The project stages are shown in yellow, and the engagement stages are shown in red. Each engagement stage is summarized in the following subsections. Further details are provided in the Engagement Summary Report in Appendix A.

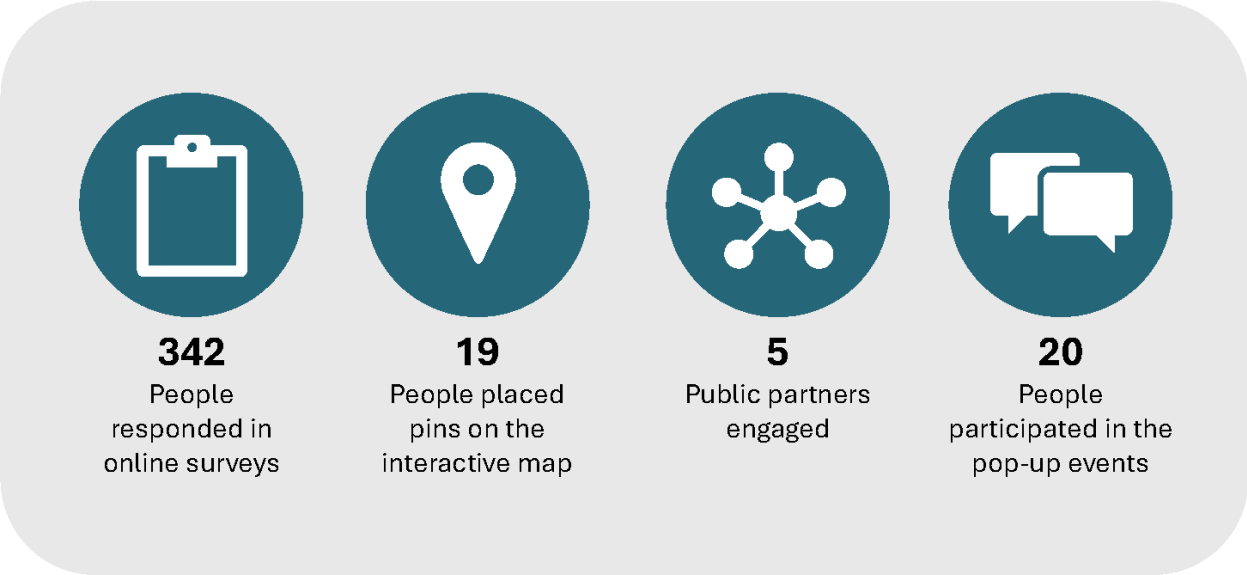
Figure 3.1: Engagement Timeline



PROJECT AWARENESS

Figure 3.2 illustrates the level of engagement received across the four main formats: online surveys, online interactive tools, public partners workshops, and pop-up events.

Figure 3.2: Engagement Participation Numbers



The level of project awareness received is consistent with the "consultation" level of engagement. This is defined in the International Association of Public Participation (IAP2) framework as: "[to] keep [interested groups] informed, listen to and acknowledge concerns and aspirations, and provide feedback on how the public input influenced decisions". In this case, a high number of responses were received[8], indicating that the audience was well informed. And importantly, responses contributed to the direction of the plan.

[8] The level of engagement with the online surveys (342 responses) is especially notable considering the population of the JdFEA (5,132 in 2021).

3.3 ENGAGEMENT STAGES

The following provides a summary of each engagement stage. Further details are provided in Appendix A.

INTERVIEWS WITH COMMUNITY PARTNERS

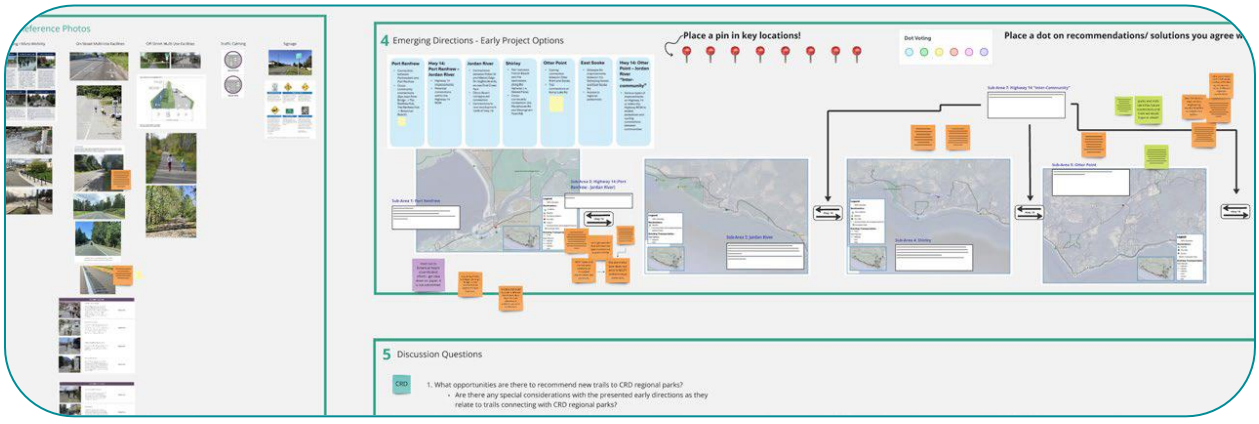
Public Partner Workshop

The project team hosted an online 'public partner workshop' via Microsoft Teams on November 20th, 2024. Representatives from BC Parks, BC MoTT, and the District of Sooke attended. A representative of CRD Regional Parks was not able to attend; however, they were informed of the meeting minutes and invited to provide feedback afterward.

Before the workshop, the attendees received a project 'backgrounder'. The backgrounder was a two-page, pamphlet-style document that contained information on the project, such as the context, the goals, and the work completed thus far. During the workshop, the attendees were invited to share their comments, questions, and concerns regarding the development of the ATNP. Importantly, the project team was able to discuss opportunities for collaboration with each public partner; this would become a key input into the project identification and prioritization process.

The online platform 'Miro' was used to facilitate discussion and record feedback. Miro is an online whiteboard platform where users can paste digital content and place digital pins, sticky notes, and other note-taking tools to quickly and easily provide and track feedback. **Figure 3.3** is a screenshot of the Miro board from the workshop.

Figure 3.3: Public Engagement - Partners Workshop Miro Board



Community Partners Email Interview

The project team conducted an email interview with two community organizations: the Juan de Fuca Trails Society and the Sooke Mountain Bike Club. The organizations were asked the following questions:

1. How does your organization interact with the JdFEA from an active transportation perspective? (e.g., where do you host events? How do your members travel by active transportation, and where/what areas do they travel to the most within the JdFEA?, etc.)

2. Are there any specific locations in the JdFEA your organization would like to identify as needing active transportation improvements? (Please specify the location(s), what are the issues, and what types of improvements would you like to see)

3. Are there any other active transportation-related items in the JdFEA your organization would like the project team to be aware of?

The Juan de Fuca Trails Society provided invaluable feedback to the above questions. The Sooke Mountain Bike Club responded that their concerns did not overlap with the scope of the ATNP, and did not provide direct feedback.

ONLINE SURVEY 1

Online survey 1 was active from October 7th – 27th, 2024. The survey was available to anyone but was targeted to JdFEA residents and residents of adjacent jurisdictions such as the District of Sooke. The survey sought feedback on current active transportation use, motivations, barriers, and suggestions on how to improve active transportation. Respondents were also encouraged to identify specific projects they would like to see implemented, through both an open-ended question and via an interactive map tool that accompanied the survey. The interactive map allowed respondents to place pins and leave a comment, identifying issues and suggesting improvements at specific locations. The intent of survey 1 was to gain insight into where active transportation gaps existed in the JdFEA, and what types of projects people would be supportive of.

The survey was promoted via two sets of posts on social media (Facebook, Instagram, and X) and through an article in the local news (Saanich News). A blank version of public survey 1 is provided in **Appendix B**. Public survey 1 received 235 responses.

COMMUNITY POP-UP EVENTS

At the same time as the launch of public survey 1, the project team hosted a set of community pop-up events to increase awareness of the ATNP and encourage people to take the survey. The project team prepared a set of eight 2'x3' boards, which described the project context, the importance of active transportation, types of active transportation improvements, and existing transportation conditions in the JdFEA. **Figure 3.4** provides a photo of the boards, as they were set up on the day of the pop-up events.

Figure 3.4: Engagement Pop-Up Boards at Shirley Community Hall

The pop-up events took place at Shirley Community Hall and SEAPARC Recreation Centre on October 5th, 2024. The project team asked passers-by about their experience with active transportation in the JdFEA, and sought feedback on how it could be improved. Importantly, the project team encouraged people to take the survey. **Figure 3.5** provides a photo of a conversation between a team member and a member of the public at the pop-up in SEAPARC Recreation Centre. The project team has discussions with 20 people during the pop-up events.

Figure 3.5: Engagement Pop-Up at SEAPARC Recreation Centre

ONLINE SURVEY 2

Online survey 2 was active from February 21st – March 7th, 2025. The survey was available to anyone but was targeted to JdFEA residents and residents of adjacent jurisdictions such as the District of Sooke. Survey 2 was scheduled to accompany the project prioritization phase of the ATNP. The survey sought feedback on all the projects identified by the project team through site visits, collaboration with the CRD and community partners, and the first rounds of public engagement. Respondents were asked if they were supportive of the projects identified in each community, and if there were any projects that were missing. For each set of community projects, the option to not respond was also provided for those who were not familiar with that area. The intent of survey 2 was to receive additional input into project prioritization; the priority of a given project could be adjusted higher or lower depending on the level of support received in the survey.

The survey was promoted via two sets of posts on social media (Facebook, Instagram, and X) and through an article in the local news (Saanich News). A blank version of public survey 2 is provided in **Appendix B**. Public survey 2 received 107 responses.

3.4 KEY TAKEAWAYS

The following subsections summarize the key takeaways from the engagement process.

COLLABORATION OPPORTUNITIES

The public partners workshop and community partners email interview resulted in the following key considerations:

- The District of Sooke OCP and TMP identifies improvements for Otter Point Road with District jurisdiction. The JdFEA ATNP should align with these plans.
- BC Parks is supportive of active transportation improvements within their jurisdiction if improvements in the JdFEA leading to the jurisdictional boundary can be completed.
- BC MoTT cannot commit to active transportation improvements on JdFEA public roads; however, they noted that the ATNP should identify improvements that are not intrusive to MoTT maintenance practices. In addition, MoTT noted they may be supportive of improvements within the public road right-of-way if: the improvements are off-street and maintained by the CRD, or if funding becomes available in the future.

PROJECT IDENTIFICATION

Public survey 1 and the community pop-up events resulted in the following key considerations:

- Strong support for an off-street multi-use path in many communities.
- In Jordan River, through survey responses, the importance of a campground-to-campground connection was identified and developed into a new project.
- In East Sooke, through survey responses, the importance of active transportation facilities along East Sooke Road and Gillespie Road to connect to the Galloping Goose Trail was identified and developed into a new project.
- In Shirley, some respondents were opposed to active transportation improvements due to potential environmental impacts and increased tourism.
- Support for other projects that the project team had already identified in the background.

Public survey 1 responses are summarized in further detail on pages 2 and 3 of Appendix A.

PROJECT PRIORITIZATION

Public survey 2 resulted in the following key considerations:

- Support for off-street multi-use paths along highways and arterials. Project prioritization: public input score adjusted upward.
- Some opposition to local trail connections. Project prioritization: public input score adjusted downward.
- Emphasis on widening roads and increasing separation of road users.

Public survey 1 responses are summarized in further detail on pages 6, 7, and 8 of Appendix A.

4 ACTIVE TRANSPORTATION NETWORK STRATEGY

ACTIVE TRANSPORTATION NETWORK STRATEGY

The **recommended active transportation network** is a series of potential future active transportation projects that have been identified based on findings from the baseline data collection, engagement process, and network gap analysis. These projects aim to address active transportation gaps and provide improved options for walking, rolling, bicycling, horseback riding, and using micro-mobility in the JdFEA.

Project prioritization was used to sort which projects are recommended to be considered first. As funds for active transportation improvements are allocated, the prioritized list will guide which projects should be considered for implementation. Project prioritization was completed using a scoring matrix, which scored each project in four categories: network gap analysis, potential impact to safety, feasibility, and input from the engagement process.

Active Transportation Design Guidelines specific to the JdFEA have also been developed. For each project, the design guidelines can be consulted for best practices concerning the recommended facility type.

The subsections below provide each of the above components, and detail how they were prepared.

4.1 PROJECT IDENTIFICATION

Exhibits 4.1 – 4.10 illustrate the recommended active transportation projects in the JdFEA. Thirty-seven (37) projects have been identified in total. Each line segment represents the general location of the recommended project, whether it be adjacent to an existing road or a new alignment. There are also rectangular line segments, which enclose an area where localized improvements (e.g., a new crossing) are recommended. The projects are colour-coded based on their facility type (see map legends for facility type).

In addition to the symbology above, each line segment is labelled with a unique ‘project code’ for ease of tracking. The letters in the code refer to the community or area the project applies to. For example, an “OP” project code is a project in the Otter Point area. The number in the code is used to distinguish projects in the same area from one other (e.g., S2 and S4 are the second and fourth projects in Shirley, respectively).

Note: the number has no bearing on the importance or priority ranking of the project (e.g., project S5 could be higher priority than S2, if evaluated as such). Further, some projects will have an additional lower-case letter at the end of their code; this indicates that the project relates to others with the same leading letters and number and should be completed near the same time (e.g., JR1a and JR1b rely on each other to complete the connection between China Beach and Jordan River campgrounds and are therefore linked).

Exhibit 4.1: Recommended Active Transportation Network – Partnership Projects

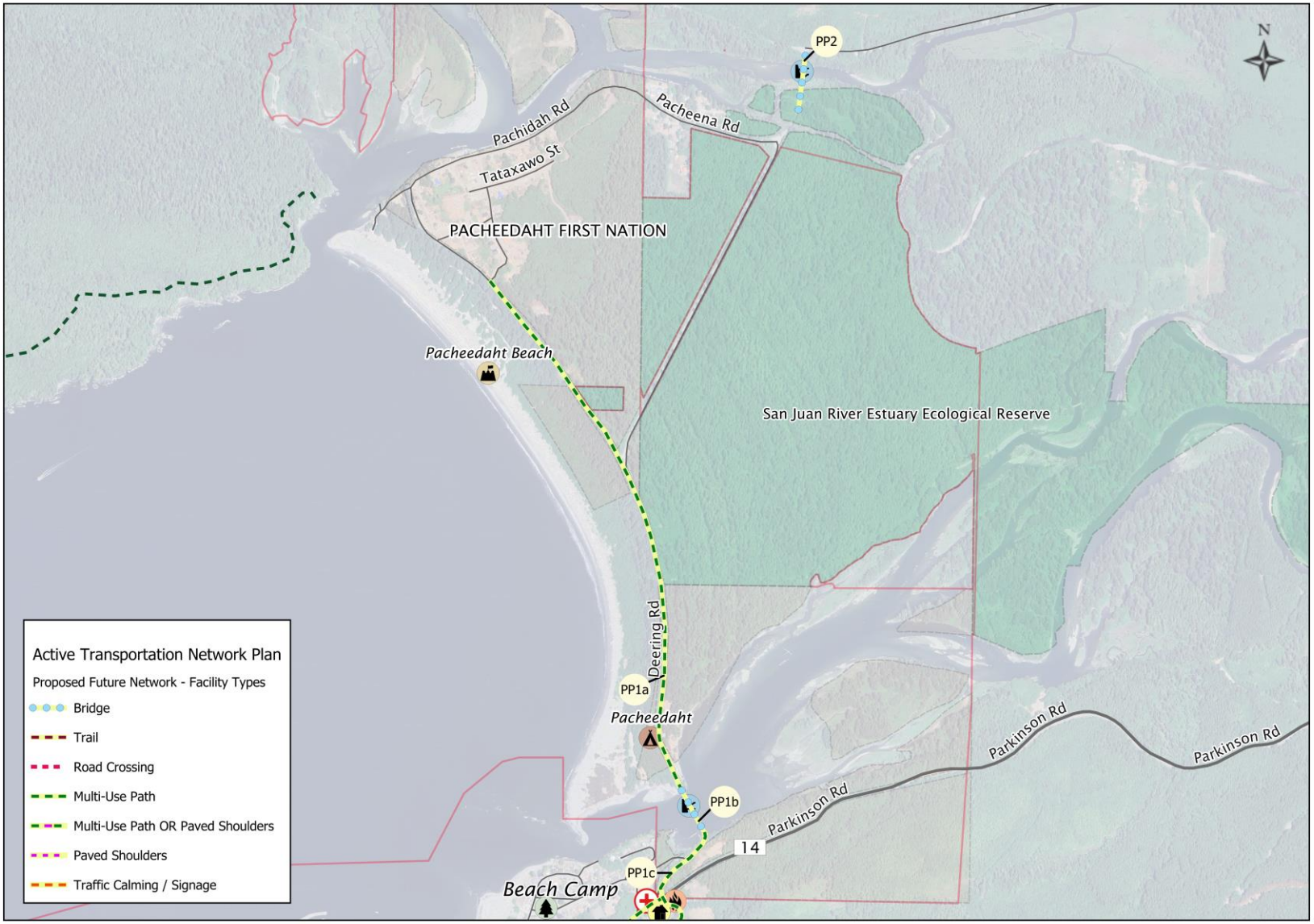


Exhibit 4.2: Recommended Active Transportation Network – Port Renfrew

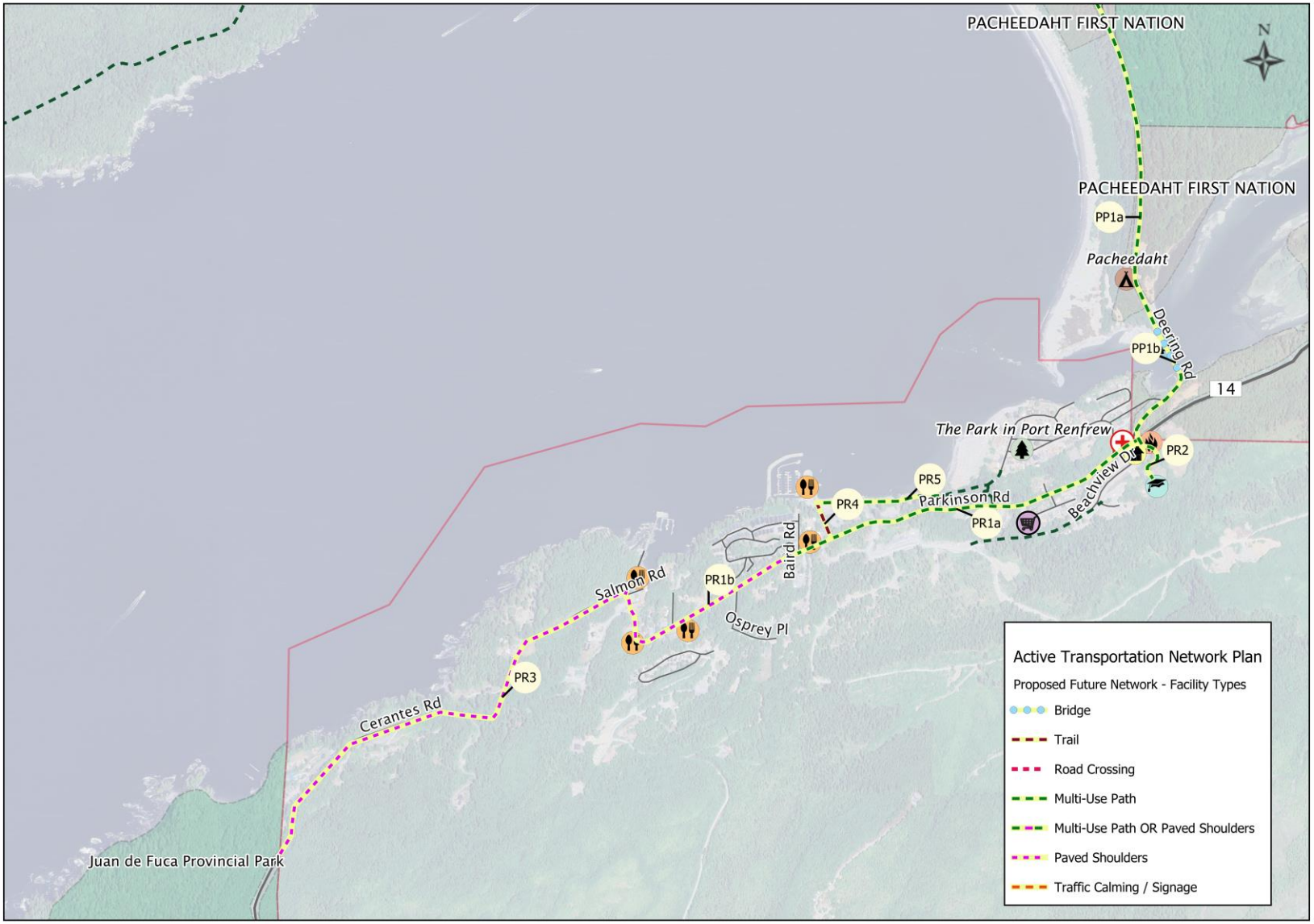


Exhibit 4.3: Recommended Active Transportation Network – West Coast Road 1

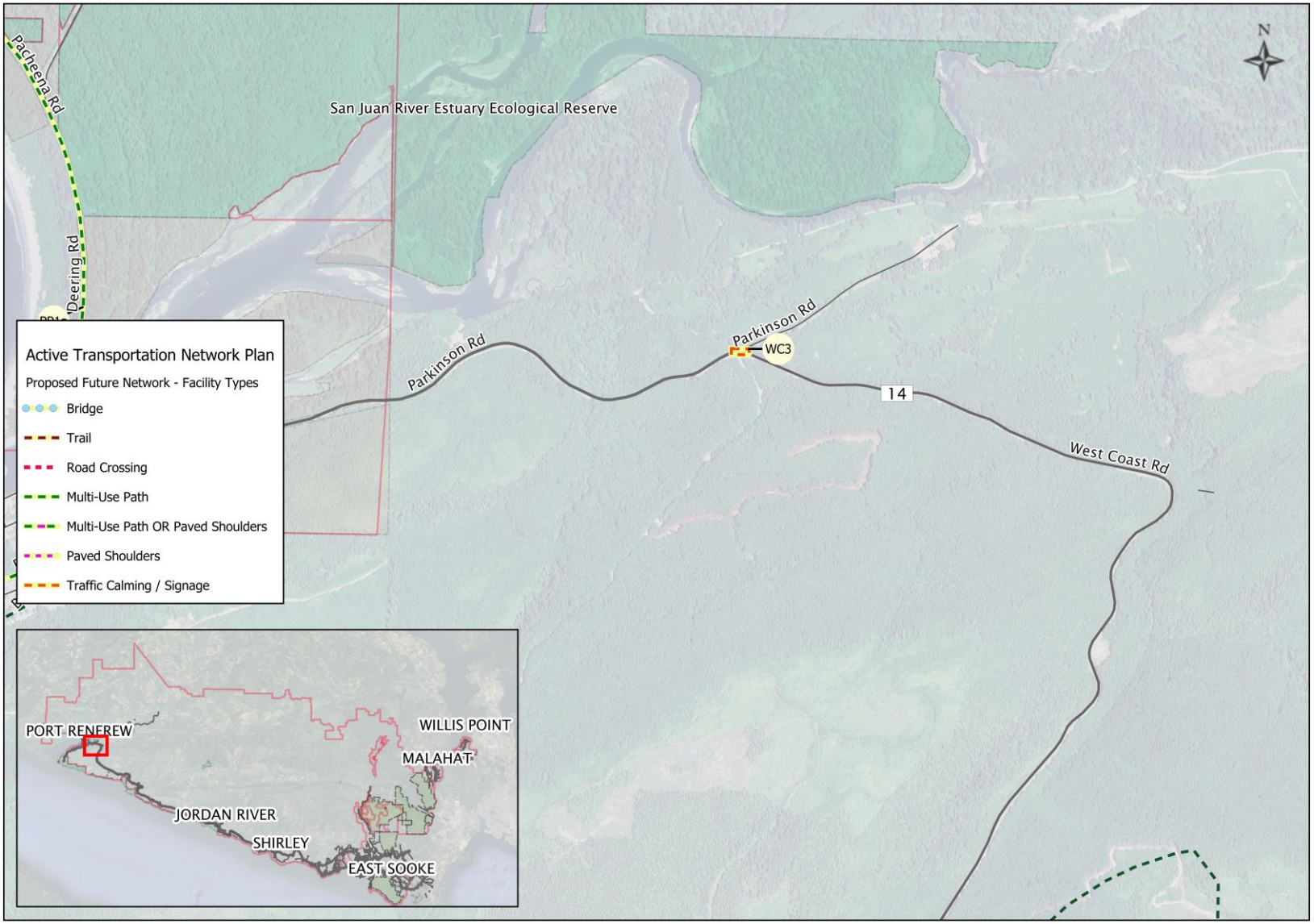


Exhibit 4.4: Recommended Active Transportation Network – West Coast Road 2

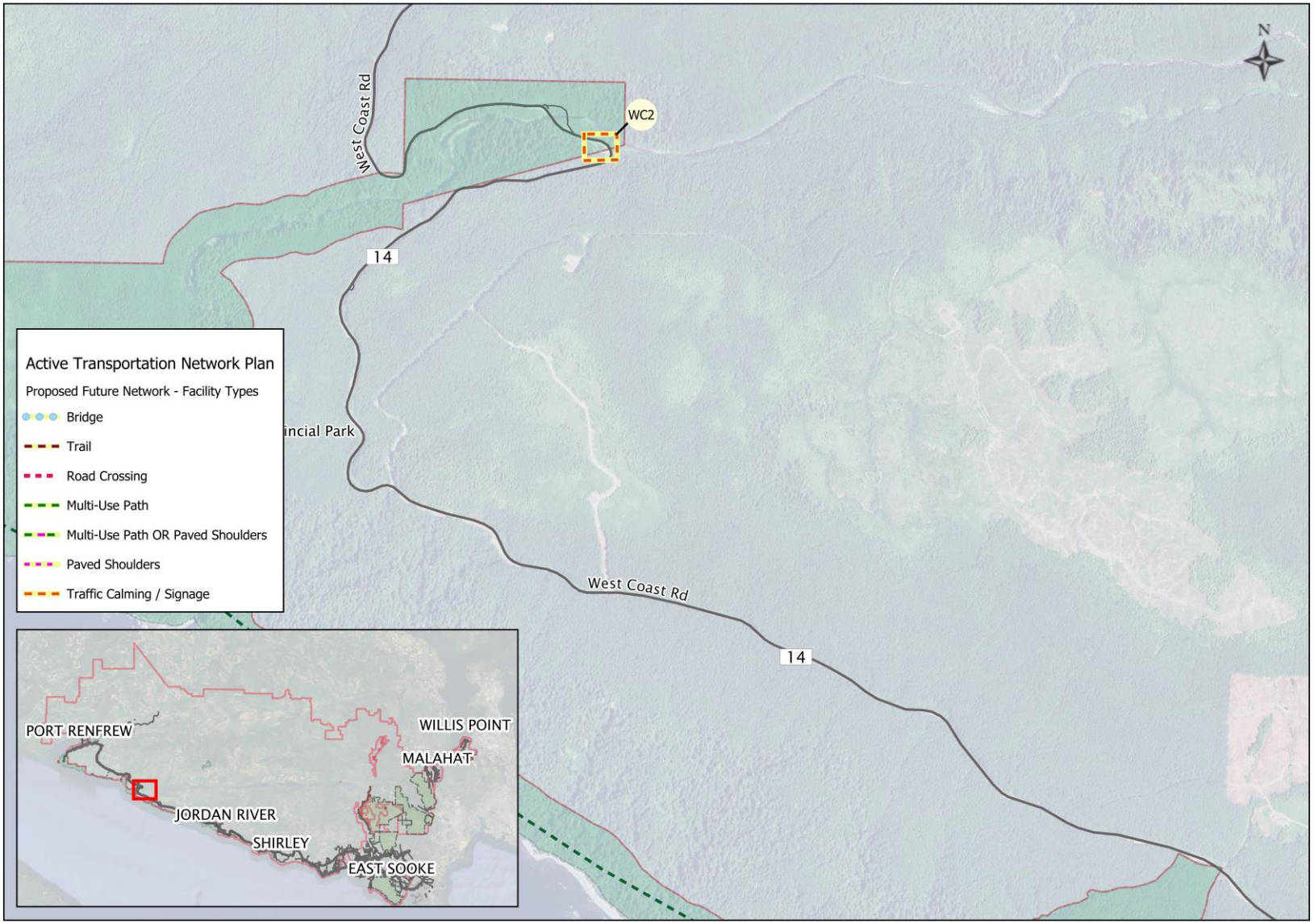


Exhibit 4.5: Recommended Active Transportation Network – Jordan River

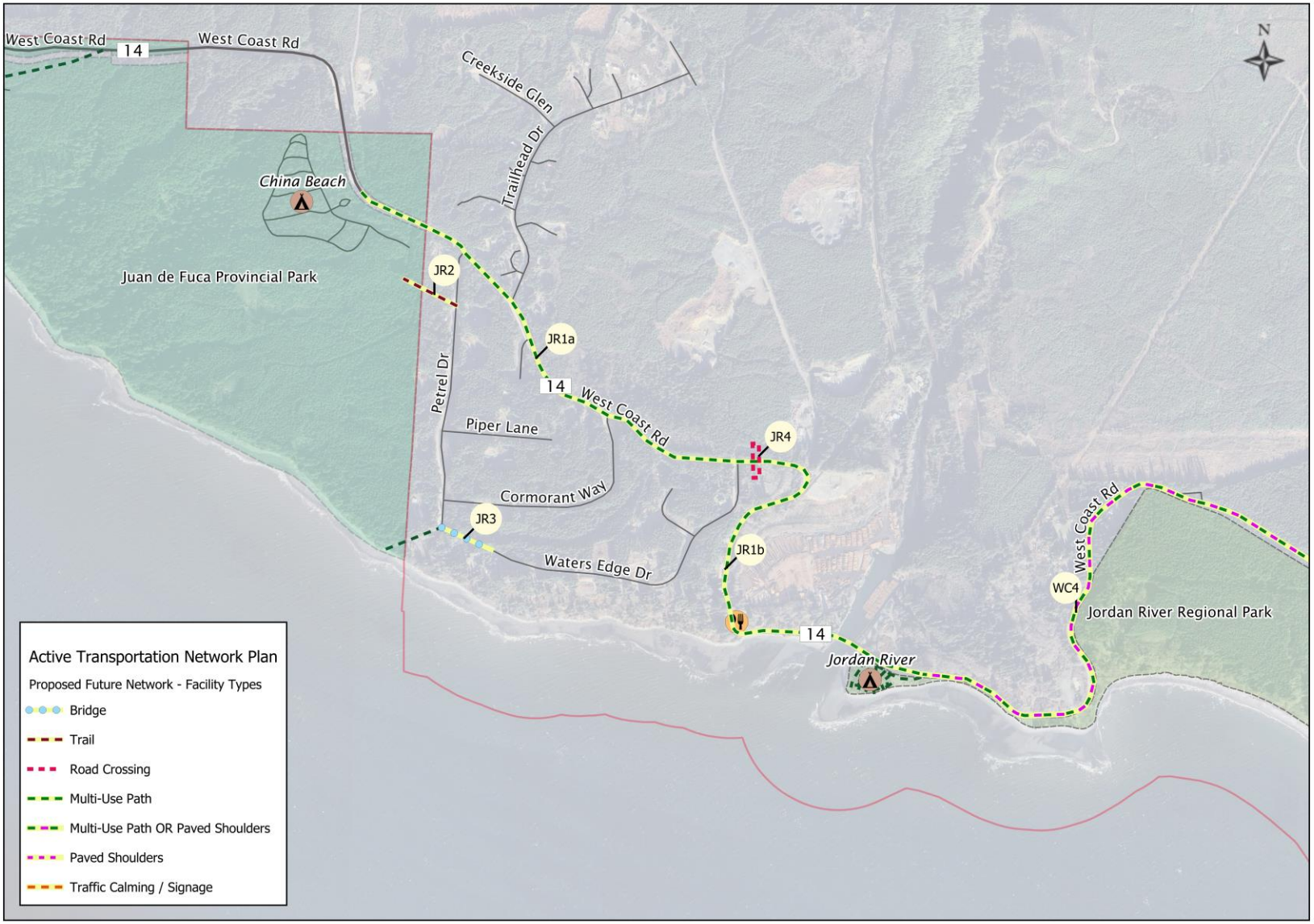


Exhibit 4.6: Recommended Active Transportation Network – Shirley

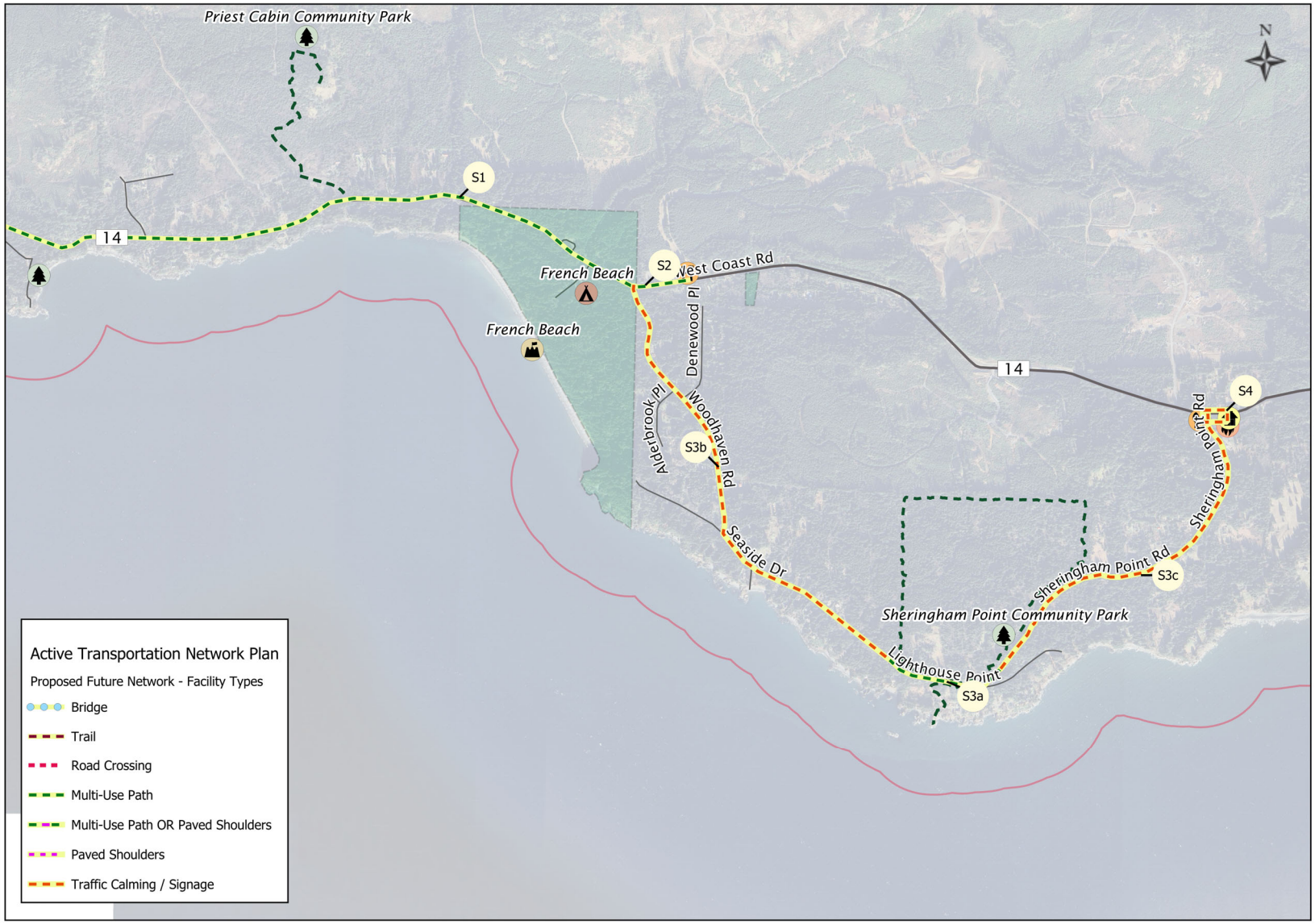


Exhibit 4.7: Recommended Active Transportation Network – Otter Point

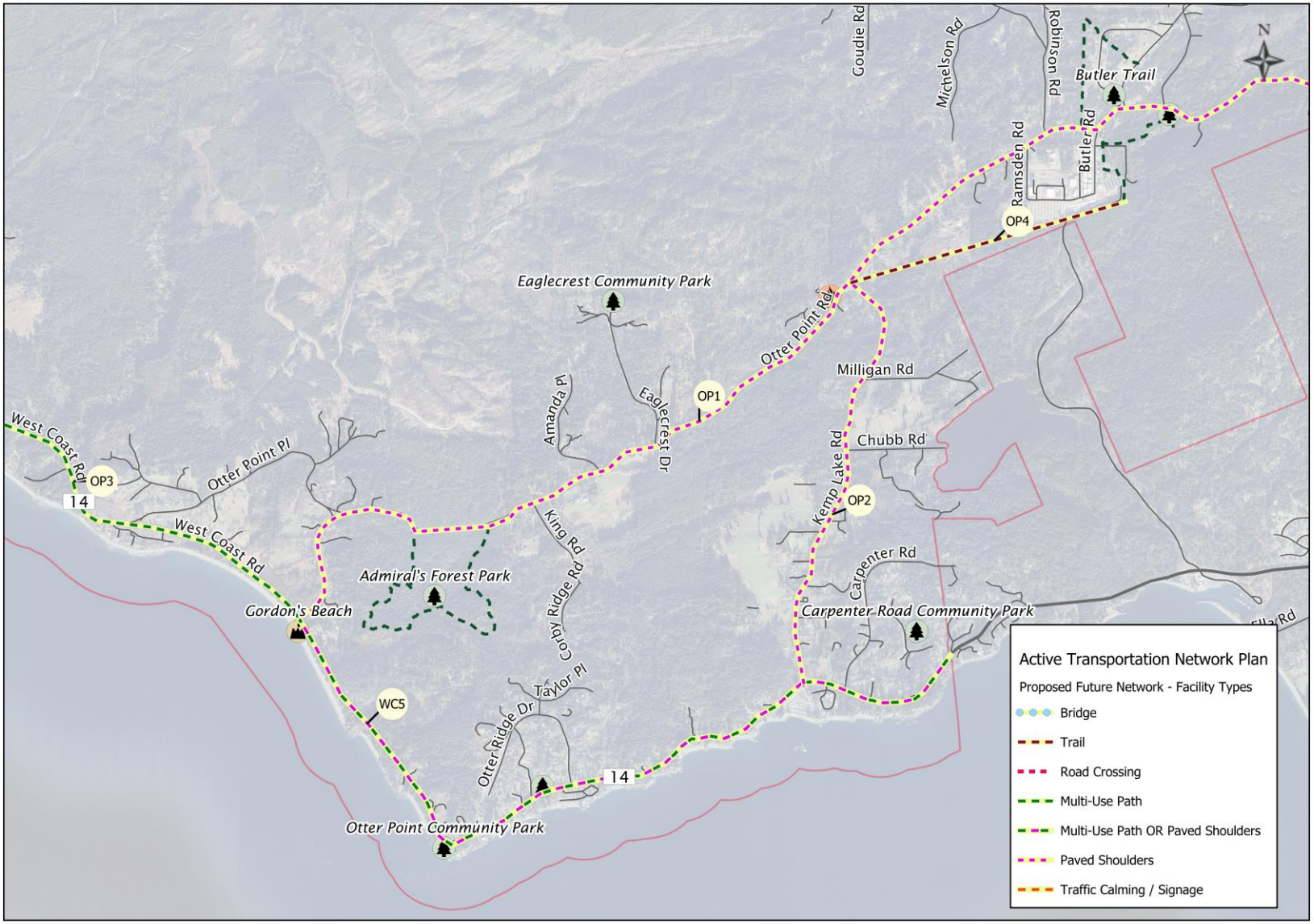


Exhibit 4.8: Recommended Active Transportation Network – East Sooke

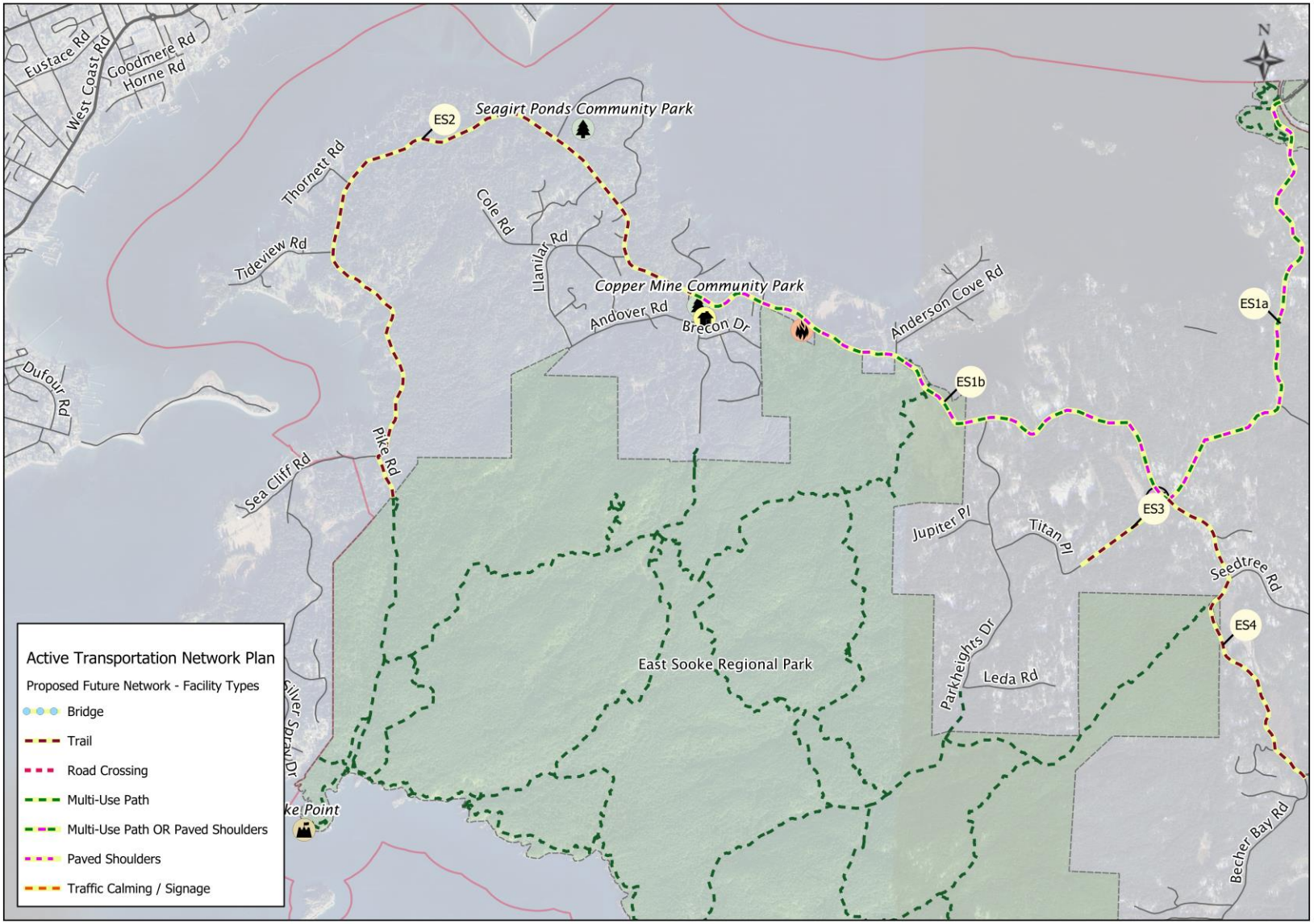


Exhibit 4.9: Recommended Active Transportation Network – Malahat

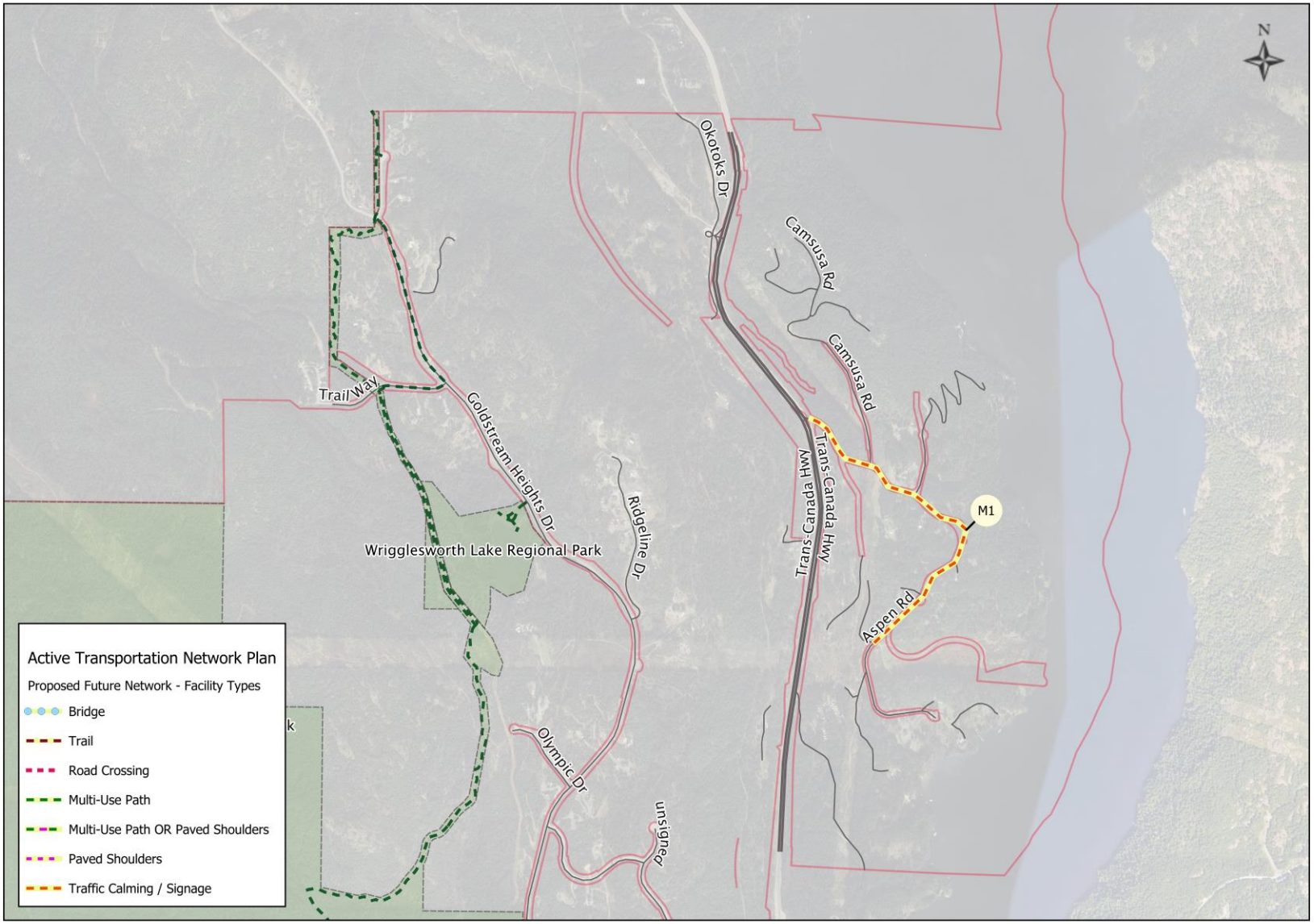
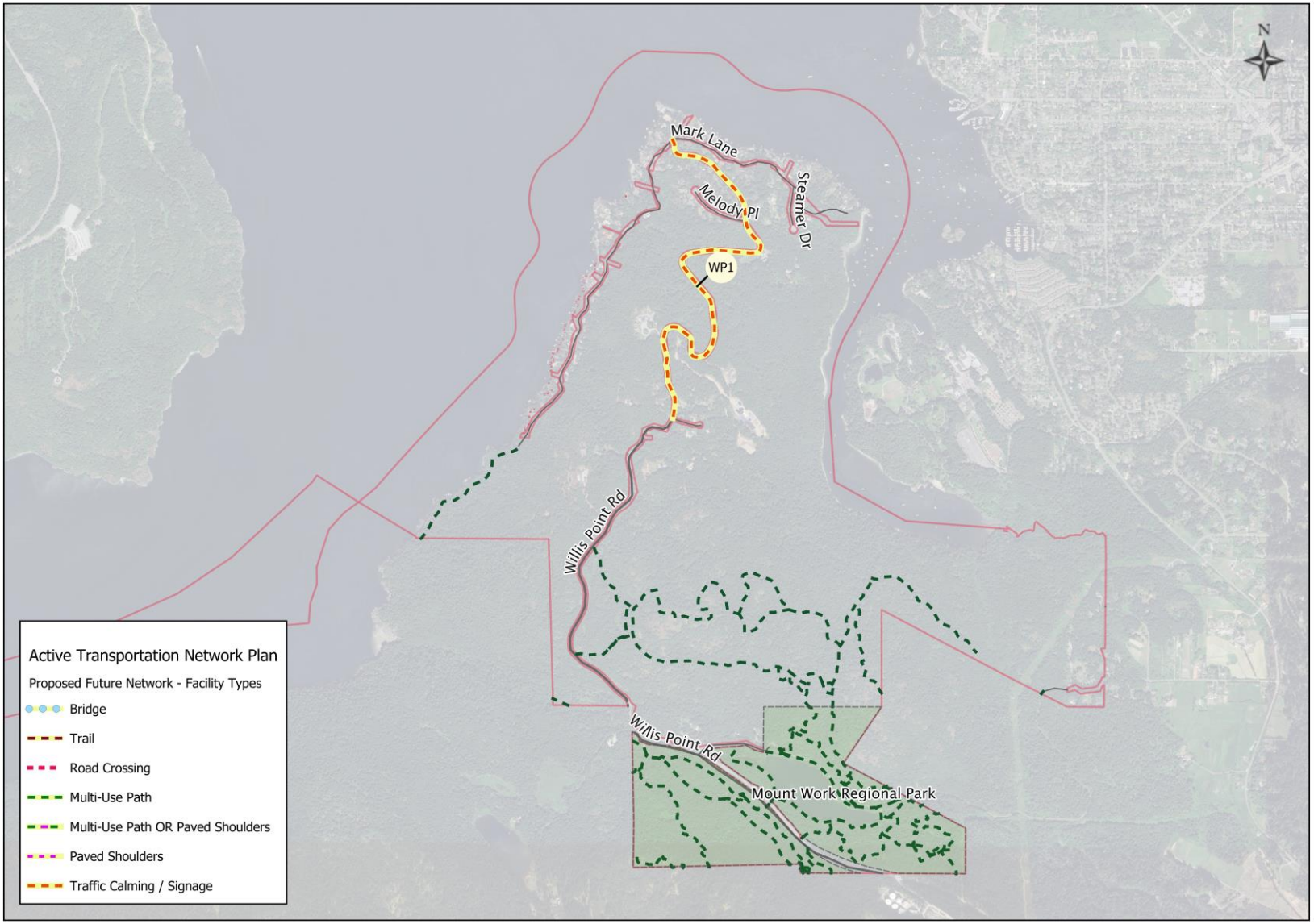


Exhibit 4.10: Recommended Active Transportation Network – Willis Point



4.2 PROJECT PRIORITIZATION

Once all projects were identified and mapped, a scoring matrix was used to evaluate the projects and sort them from highest to lowest priority. The scoring matrix and resulting priority project list are summarized below.

EVALUATION CRITERIA FOR PROJECT PRIORITIZATION

Each project in the recommended active transportation network was evaluated using a scoring matrix. The scoring matrix evaluates the projects in four categories: Connectivity, Community Benefit, Feasibility, and Engagement Input. Projects can score a maximum of 5 points in each category, for a total score out of 20. Projects with higher scores are considered higher priority. Each category, and how it is scored, is summarized below.

Connectivity

This category evaluates a project's ability to connect key destinations. This is measured by both the significance of the network gap being addressed and the anticipated level of vulnerable road user presence. This criterion is based directly on the network gap analysis as summarized in section 2.5.

This category is scored as follows:

0-2 The project creates tertiary connections.

3 The project creates secondary connections.

4-5 The project creates primary, or critical, connections.

Primary, secondary, and tertiary connections are defined in section 2.5.

Note that when there is a range of scores available for the same description (0-2, and 4-5), one value is selected based on engineering judgement (i.e., whether the project is a less or more significant example of that description).

Community Benefit

This category evaluates a project's ability to improve safety, with additional points given if the project is anticipated to be a noteworthy case of improving accessibility and/or the local economy.

The ability of a project to improve safety is based on the Transportation Association of Canada (TAC) *Vision Zero and the Safe Systems Approach: A Primer for Canada (2023)*[9]. The Safe Systems Approach defines six elements that should be targeted when improving road safety: safe land use planning, safe speeds, safe road users, safe vehicles, safe road design, and post-crash care. Projects that target these elements scored higher in this category.

[9] Transportation Association of Canada, "Vision Zero and the Safe Systems Approach: A Primer for Canada" Transportation Association of Canada, Ottawa, ON, Canada, 2023. Accessed: February 27, 2025. [Online].

This category is scored as follows:

0-2 No or low anticipated impact to safety (i.e., the project is in a location with low vehicle volumes and speeds, and there is minimal application of the safe systems approach). The project is not anticipated to improve accessibility or economy beyond the average project.

3 Medium anticipated impact to safety (i.e., the project is in a location with high vehicle volumes and/or speeds, and there is application of one element of the safe systems approach). Or the project has some features which target accessibility or economy beyond the average project.

4-5 High anticipated impact to safety (i.e., the project is in a location with high vehicle volumes and speeds, there is high collision history, or a notable safety issue, and there is application of multiple elements of the safe systems approach). Or the project has features that specifically target accessibility or economy.

Note that when there is a range of scores available for the same description (0-2, and 4-5), one value is selected based on engineering judgement (i.e., whether the project is a less or more significant example of that description).

Feasibility

This category evaluates a project's order of magnitude cost against its anticipated benefit. Cost forecasts were completed at the basic qualitative level (i.e., no specific cost-to-benefit ratios were calculated).

Projects were categorized as 'low', 'medium', or 'high' cost, which are defined as follows:

Low Costs are estimated to be less than $100,000.

Medium Costs are estimated to be between $100,000 and $1,000,000.

High Costs are estimated to be greater than $1,000,000.

These cost estimates are at the preliminary level and are based on cost estimates from other active transportation plans and the construction costs of completed projects. All recommended projects will need to undergo more refined costing before they are selected for detailed design.

Anticipated project benefit is based on a high-level estimate of the project's mode shift potential and its ability to impact travel operations.

Projects were categorized as 'low', 'medium', or 'high' benefit, which are defined as follows:

Low	Low mode shift potential. The project is anticipated to be used only recreationally.
Medium	Medium mode shift potential. The project is anticipated to allow some residents and visitors to make local trips without a car.
High	High mode shift potential. The project is anticipated to allow a large subset of the community to make local trips without a car and/or allow residents to commute via active modes.

Using the above criteria for level of cost and anticipated benefit, the Feasibility category is scored as follows:

0	The cost-benefit pairing is: high-low.
1	The cost-benefit pairing is: medium-low.
2	The cost-benefit pairing is: high-medium.
3	The cost-benefit pairing is: high-high, medium-medium, or low-low.
4	The cost-benefit pairing is: medium-high, or low-medium.
5	The cost-benefit pairing is: low-high.

Engagement Input

This category evaluates the level of engagement the project received. This includes input from First Nations, public agencies such as MoTT, CRD Regional Parks, BC Parks, and the District of Sooke, and the public via the two rounds of public engagement. Scores may be adjusted if public agencies expressed interest in collaborating on the project.

This category is scored as follows:

0-2	The project or network gap was not raised, minimally raised, or disagreed upon. There is little opportunity for collaboration.
3	The project or network gap was raised occasionally and mostly agreed upon. There may be some opportunity for collaboration.
4-5	The project or network gap was raised often and strongly agreed upon. There is clear interest in collaboration.

Note that when there is a range of scores available for the same description (0-2, and 4-5), one value is selected based on engineering judgement (i.e., whether the project is a less or more significant example of that description).

SCORING MATRIX AND PRIORITIZED PROJECT LIST

The projects in the recommended active transportation network were first grouped by community or area. This was done to ensure no community received higher priority than others. The communities of the JdFEA are far apart and fully or semi-independent from one another, and projects in one area may not benefit the residents and visitors of another. In the aim of equity across the JdFEA, each community's projects were prioritized independently to identify at least one top project for each group.

The scoring matrix is attached in **Appendix C.** The matrix includes all four categories, score descriptions in each category, and examples of project types that would fit into each score description. When applied to a project, the scoring matrix outputs a total score out of 20.

The projects were sorted from highest to lowest score in each community / area. This area-by-area prioritized project list is intended to guide which projects should be considered first when allocating funds for active transportation improvements.

The full prioritized project list is attached in **Appendix C**. Each project in the list includes an existing condition image and description, precedent images(s), the recommended project facility type(s), and a description of the recommended facility type(s). This is followed by the priority rank for that project within each area.

4.3 TOP PROJECTS

All thirty-seven projects were grouped first by community and then ranked within their community. There are eight communities (including one for Highway 14), and one group of 'partnership projects' (discussed in Section 4.4). The highest-ranking projects in each of the eight communities are summarized below. The full prioritized list project list is attached in Appendix C.

Port Renfrew: Parkinson Road Cross-Community Connection (PR1a, PR1b)

Existing Condition: Parkinson Road is the main route through the community of Port Renfrew. Most sections do not have a shoulder on either side, and active transportation users are forced to use the road. Vehicle speeds are reportedly frequently above 50 km/h. Sightlines are limited in some sections. A cross-community route is of high importance to the community. An alternate cross-community route exists via Tsonoqua Drive and the beach near the Marina; however, this route features limited connectivity to the wider community.

Recommended Facility Type(s): Paved multi-use path or paved shoulder with fog lines.

Project Description: An east-west multi-use path across the community along Parkinson Road, from the intersection with Deering Road to the Parkinson Road & Cerantes Road intersection. If the project is to be completed in phases, it is recommended that the section from Deering Road to Baird Road be completed first. The section from Deering Road to Baird Road should be a paved multi-use path, whereas the section from Baird Road to the Cerantes Road could be either a paved multi-use path or a section with upgraded paved shoulders with fog lines.

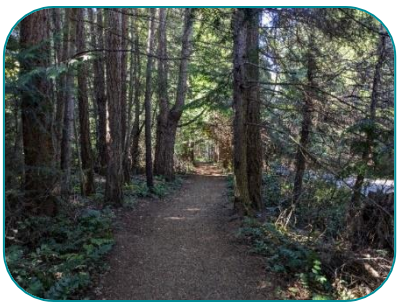
Image Source: Small Town and Rural Design Guide - ruraldesignguide.com

Jordan River: Campground-to-Campground Multi-Use Path (JR1a, JR1b)

Existing Condition: The existing route between China Beach Campground and Jordan River Campground is via Highway 14. This is undesirable as there are no shoulders on this section of the highway, vehicle speeds are high, and sightlines are poor in some locations. Active transportation users are forced onto the road. There are also steep sections, which introduce additional hazards such as high speeds, poor sightlines, and reduced control of vehicles and bicycles.

Recommended Facility Type(s): Paved / crusher fine / natural surface multi-use path.

Project Description: A multi-use path parallel to Highway 14, on the south (or west in sections) side of the highway, from the China Beach Campground access to Jordan River Campground. If this project is to be completed in phases, it is recommended that the section from China Beach Campground to Waters Edge Drive be completed first.



Shirley: Sandcut to French Beach Campground Multi-Use Path (S1)

Existing Condition: Highway 14 does not have a shoulder on either side, and there are high vehicle speeds in this section. Horizontal and vertical curvature creates poor sightlines at some locations. The section is used by recreational cyclists and by commuters travelling between communities.

Recommended Facility Type(s): Crusher fine surface multi-use path.

Project Description: A multi-use path, parallel to Highway 14, on the north side of the highway between Sandcut Beach access and French Beach campground access.

Otter Point: Otter Point Road Shoulder Improvements (OP1)

Existing Condition: In most sections of Otter Point Road, there are no shoulders on either side. Vehicle speeds are high (observed exceeding 50 km/h speed limit), and sightlines are variable. The road is a popular route with pedestrians and cyclists commuting between Otter Point and Sooke. Cyclists are currently forced to ride on the road, with vehicles crossing the centreline to pass them.

Recommended Facility Type(s): Paved shoulders with fog lines, and “share the road” signs.

Project Description: Widening of Otter Point Road to provide a paved shoulder on both sides, including fog lines to delineate shoulders from the vehicle travel lane (i.e., upgrade Otter Point Road to match its existing condition at Sarah Drive). Include "share the road" signage.

East Sooke: East Sooke and Gillespie Road MUP and Shoulder Improvements (ES1a, ES1b)

Existing Condition: East Sooke Road and Gillespie Road are two-lane collector roads that serve as the main routes into and through East Sooke. The roads are the main route for cyclists and other active transportation users, who use the route to access the Galloping Goose Regional Trail. East Sooke Road does not have shoulders on either side, but Gillespie Road does. Vehicle speeds are reportedly high, and sightlines are poor in some locations due to horizontal curvature. Cyclists and other active transportation users are forced to use the road; this is undesirable to the high vehicle speeds and poor sightlines, and vehicles being forced to cross the centreline to pass active transportation users.

Recommended Facility Type(s): Combination of Paved Shoulders with Fog Lines and Crusher Fine/Natural Surface Multi-Use Path.

Project Description: A continuous cycling route on or parallel to East Sooke Road and Gillespie Road that provides a connection from the Copper Mine Community Park to the Galloping Goose Trail. Cyclists should be able to ride on either a multi-use path or a paved shoulder, with transitions between the two facility types, along the entire length of this project. If this project is to be completed in phases, it is recommended that the section from Copper Mine Community Park to the East Sooke Road & Gillespie Road section be completed first, as Gillespie Road already has paved shoulders with fog lines.

West Coast Road (Hwy 14): Jordan River to Sandcut MUP and Shoulder Improvements (WC4)

Existing Condition: This section of Highway 14 features steep grades between the Jordan River Campground and Sandcut Beach. There are no shoulders on either side. Vehicle speeds are reportedly high. Sightlines are poor in some locations. From an active transportation perspective, section is reportedly used mostly by recreational cyclists.

Recommended Facility Type(s): Paved Shoulders with Fog Lines, or Crusher Fine/Natural Surface Multi-Use Path.

Project Description: When there is an opportunity to upgrade a section of Highway 14 (e.g., capital planning, routine maintenance, repairs), it is recommended that paved shoulders and a painted fog line be provided on both sides of the highway. Alternatively, where land in the CRD Parks jurisdiction abuts the highway, provide a multi-use path parallel to the highway within that abutting park land.

Malahat: Traffic Calming Signage on Aspen Road (M1)

Existing Condition: Aspen Road is a narrow winding road with no shoulders on either side. The vertical and horizontal curvature limits sightlines in some locations. Active transportation users on Aspen Road are at risk due to high vehicle speeds and poor sightlines.

Image Source: Google Street View

Recommended Facility Type(s): Traffic Calming Signage

Project Description: Various traffic calming improvements at locations with limited visibility and/or high speeds, which may include warning signs, speed readers, paint markings and/or wayfinding signs and may include physical measures such as speed humps.

Willis Point: Traffic Calming Signage on Willis Point Road (WP1)

Existing Condition: Willis Point Road is a narrow winding road with no shoulders on either side. The vertical and horizontal curvature limits sightlines in some locations. Active transportation users on Willis Point Road are at risk due to high vehicle speeds and poor sightlines.

Image Source: Google Street View

Recommended Facility Type(s): Traffic Calming Signage

Project Description: Various traffic calming improvements at locations with limited visibility and/or high speeds, which may include warning signs, speed readers, paint markings and/or wayfinding signs, and may include physical measures such as speed humps.

4.4 PARTNERSHIP PROJECTS

Some of the identified projects in the recommended active transportation network are outside of the JdFEA boundary but have significant enough impact on the JdFEA that they are still included within this strategy. These "partnership projects" have been included because they are anticipated to be impactful to the JdFEA active transportation network, and its residents; however, they are outside of the JdFEA jurisdiction and must therefore be facilitated by an agency other than the CRD, or in partnership with the CRD.

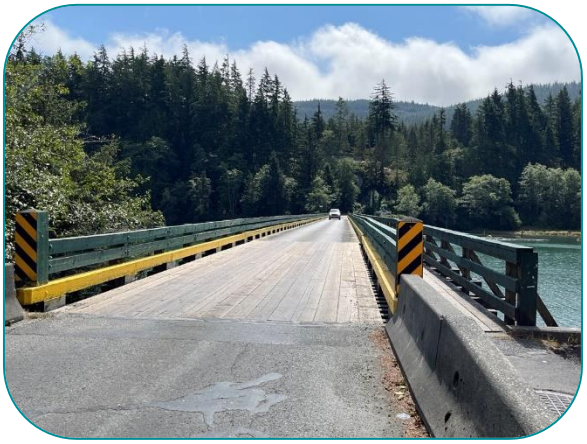
Partnership projects have been evaluated in the same way as the other projects in the recommended active transportation network plan. They are included in the prioritized project list as their own category.

The top project in the partnership projects area is summarized below.

Partnership Projects – Pacheedaht First Nation: Pacheedaht to Port Renfrew (PP1a, PP1b, PP1c)

Existing Condition

To travel between the Pacheedaht community and Port Renfrew requires travelling on Pacheena Road, the San Juan River Bridge, and Deering Road. Pacheena Road and Deering Road do not have shoulders on either side. Their road widths are insufficient to allow two-way vehicle traffic with a pedestrian or cyclist on the road. Both roads have high vehicle speeds and have poor sightlines in some locations. The San Juan River Bridge is one-lane (single-lane traffic). The west side of the bridge has a narrow footpath with railings on both sides; the footpath is insufficient for cyclists and mobility devices. In the existing condition, vehicles are forced to yield before the bridge to community members who use golf carts to travel to and from Port Renfrew. The route is of high desire and importance for Pacheedaht community members.



Recommended Facility Type(s): Paved / Crusher Fine Multi-Use Path, and an Active Transportation Bridge parallel to the San Juan River Bridge.

Project Description: A multi-use path along Pacheena Road, from the Pacheedaht community to the San Juan River Bridge. A bridge replacement, bridge upgrade, or new separate active

transportation bridge to introduce a multi-use path (suitable for active modes and golf carts) across the San Juan River. And a multi-use path along Deering Road, from the San Juan River Bridge to the Deering Road & Parkinson Road intersection.

Image Source: Small Town and Rural Design Guide - ruraldesignguide.com

Image Source: City of Courtenay

4.5 ACTIVE TRANSPORTATION DESIGN

An Active Transportation Design Guidelines document has been prepared to accompany the recommended projects. The guidelines provide general design principles for active transportation in the JdFEA. They also include best practices for the design of each facility type that is mentioned in the project list. When a project is selected to proceed, the guidelines can provide standards (e.g., widths, material types, cross-sections, etc.) for the recommended facility type(s) associated with that project.

The guidelines were developed using the following resources:

BRITISH COLUMBIA

- British Columbia Active Transportation Design Guide (2019)
- City of Coquitlam Bicycle Parking Design Guidelines
- Clean BC Move Commute Connect - B.C.'s Active Transportation Strategy
- Juan de Fuca Electoral Area Community Parks Trail Standards (2010)

CANADA

- Costing of Bicycle Infrastructure and Programs in Canada – Clean Air Partnership (2019)
- Federal Highway Administration (FHWA) - Bikeway Selection Guide (2019)
- National Active Transportation Strategy – Infrastructure Canada (2021)
- Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs (2020)

INTERNATIONAL

- Massachusetts Department of Transportation (MASSDOT) - Separated Bikeway Planning & Design Guide (2015)
- National Association of City Transportation Officials (NACTO) - Designing for All Ages and Abilities (2017)
- National Association of City Transportation Officials (NACTO) - Urban Bikeway Design Guide
- National Association of City Transportation Officials (NACTO) - Urban Street Design Guide
- The state of National Cycling Strategies in Europe (2021)

Two subsections are provided below: the first describes the design guidelines and their use, the second summarizes specific content from the guidelines that is relevant to the recommended projects.

ACTIVE TRANSPORTATION DESIGN GUIDELINES

The full Active Transportation Design Guidelines are attached in **Appendix D** When contemplating active transportation improvements in the JdFEA, the guidelines can be consulted for design principles, best practices, and considerations. The guideline content is structured as follows:

1. **Designing for Different Users:** discusses the differing needs and speeds of active transportation users.
2. **Emerging Trends:** micro-mobility, electric bicycles, and evolved bicycles.
3. **Pedestrian Facilities:** types of all-ages-and-abilities (AAA) and supporting pedestrian facilities and design considerations for pathways and crossings.

4. **Cycling Facilities:** types of all-ages-and-abilities (AAA) and supporting cycling facilities and design considerations for bikeways and bicycle parking.
5. **Facility Selection and Design:** considerations for selecting the appropriate active transportation facility and design considerations for each facility type, in the context of the JdFEA.
6. **Supporting Amenities:** lighting, bike parking, benches, wayfinding, and more.
7. **Traffic Calming and Signage:** traffic calming features and signs that aim to increase road user awareness, reduce speeds, and increase intuitiveness of roads.
8. **References**

FACILITY SELECTION AND DESIGN

For each of the thirty-seven projects identified, one or more facility types have been recommended. The subsections below describe each facility type, when and how it is applied, recommended design parameters (widths, materials, etc.), and other considerations. Additional details are provided in Section 5 of the full Active Transportation Design Guidelines (Appendix D).

The selection of bicycle and pedestrian facility types depends on vehicle speeds, volumes, and the anticipated popularity of the proposed route. Facilities need to provide higher levels of separation and width as risk and popularity rises. The facilities described below are ordered from highest to lowest degree of physical separation, as well as highest to lowest level of user comfort.

MULTI-USE PATHS (MUPs)

Multi-use paths or MUPs are off-street paths that accommodate more than one type of active transportation user (i.e., pedestrians, cyclists, and other rolling active modes). To achieve this, MUPs must be wide enough to allow for two-way travel, and for users to pass one another if they are travelling at different speeds. MUPs are the preferred improvement option in the JdFEA as they provide separation from vehicle traffic and can accommodate the most active modes; however, they are also more onerous to implement than other facility types due to the increased infrastructure and cost required to build them.

Use Case

Multi-use paths are recommended in the following conditions:

- The proposed alignment follows a major route or connection; and/or,
- There is significant vehicle collision risk (speeds, collision history, and/or volumes)

Widths and Clearances

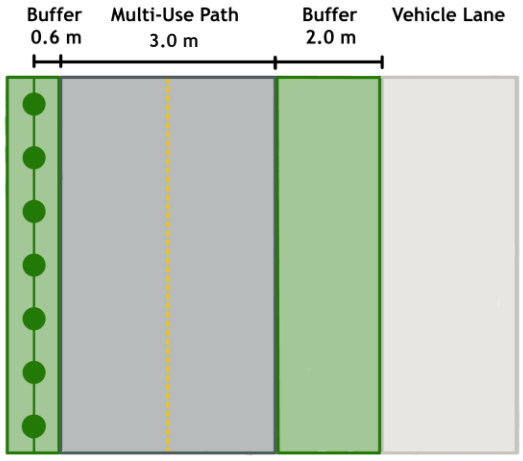
Multi-use paths have the following characteristics: a travelled way, horizontal buffers from obstructions on either side, and a horizontal buffer between the travelled way and the nearest vehicle lane. The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads (2017 Edition)* recommends the following for multi-use paths:

- The travelled way should be at least 3.0 metres wide to accommodate one cyclist in each direction, or a cyclist passing another cyclist or a pedestrian.

- A horizontal buffer from obstructions on either side of the travelled way of at least 0.6 metres.
- A horizontal buffer from motor vehicle lanes of at least 2.0 metres.
- A vertical buffer above the highest point on the travelled way of at least 3.5 metres.

Figure 4.1 illustrates the widths specified above.

Figure 4.1: Multi-Use Path Characteristics



Material

In the JdFEA, three material types are recommended for the travelled way on a MUP:

- **Asphalt**: Recommended for main routes in community contexts. Highest level of user comfort and durability. Suitable for all-ages-and-abilities.
- **Crusher Fines**: Also known as crusher dust, is a byproduct of rock crushing that comprises only the fine rock particles and dust; provides a smooth surface that is resistant to pooling water. Recommended for main inter-community routes (i.e., along Highway 14). High level of comfort and durability. Suitable for all-ages-and-abilities.
- **Natural Surface**: Relies on the natural qualities and composition of the ground. Rocks, roots, and other natural obstacles on the travelled way should be removed. Recommended for local routes, or long community routes (for ease of implementation). Medium level of comfort. Susceptible to weather conditions.

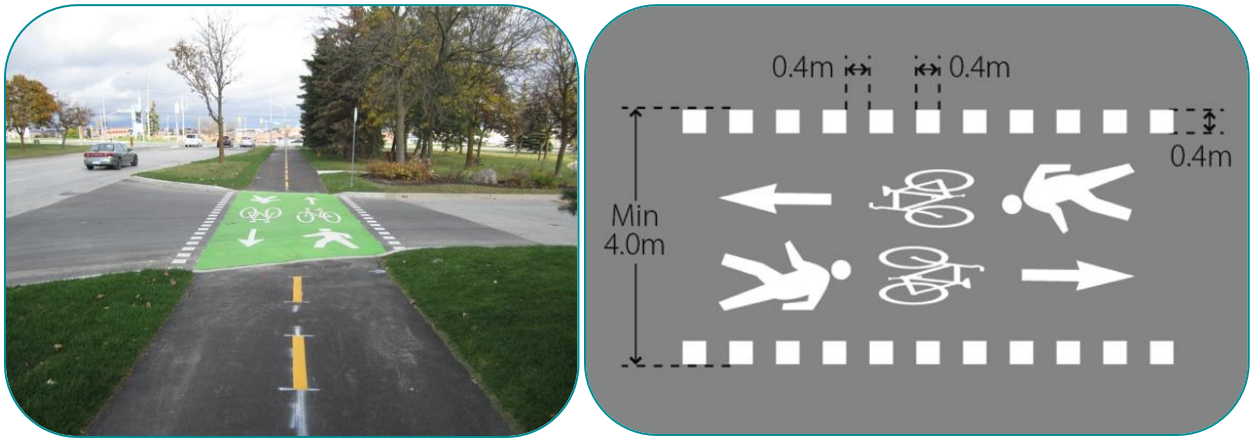
Crossings

MUP road crossings should be visually distinguished from pedestrian crossings so drivers can expect users crossing at different speeds. The following measures are recommended when an MUP crosses a road:

- Provide pavement markings that include symbols for both pedestrians and cyclists.
- Use “elephant’s feet” markings to denote a bicycle crossing.
- Paint the crossing green to increase visibility and indicate the presence of cyclists.

Figure 4.2 illustrates a multi-use path crossing.

Figure 4.2: Multi-Use Path Crossing



Source: OTM Book 18

Additional Design Considerations

The following measures are recommended to improve MUP comfort:

- Avoid circuitous routing and maintain clear sightlines, particularly at corners, by clearing vegetation and physical obstructions.
- Aim for a path alignment that is as level as possible. Keep steep sections short.
- If paving with concrete or asphalt, apply a centreline along the path to delineate travel directions and improve visibility for users at night.

TRAILS

Trails are off-street routes typically provided in park land, open spaces, and wilderness areas. They retain many natural elements of the landscape and are less formalized than multi-use paths.

Trails are typically built to minimally alter the natural landscape. Trails meander to avoid natural obstacles such as trees and large rock formations, while retaining small obstacles such as roots and rocks on the travelled way. Trails also follow the natural topography of the land, which can result in steeper grades than other facility types.

Some trails can be considered all-ages-and-abilities (AAA) facilities, but many are not. For a trail to be considered AAA, the trail must have minimal elevation change, few obstacles or tripping hazards on the travelled way, and no advanced features such as ladders, ropes, or narrow footbridges. The trail width must also be accessible for wheelchairs. If these features are desired, it is recommended that a Multi-Use Path be considered instead. In the JdFEA context, trails are recommended to provide secondary and tertiary connections targeting pedestrians and recreational hikers. Trails in the JdFEA will adhere to the natural landscape, and the fitness and skill required for each trail will be dependent on its location and alignment.

Use Case

Trails are recommended in the following conditions:

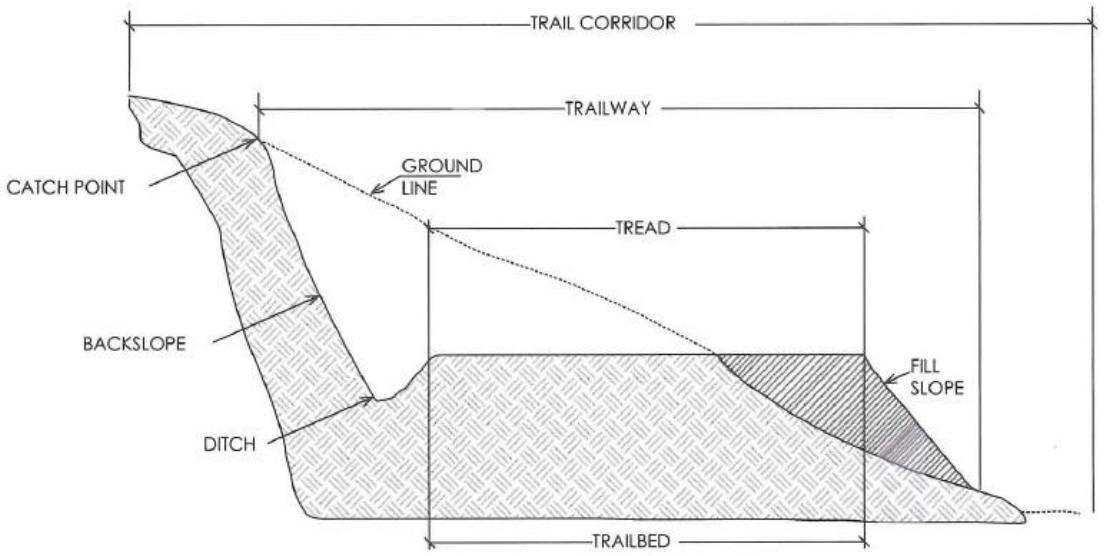
- The proposed alignment follows a local road or connection;
- There is limited desire for cycling on the proposed alignment; and/or,
- The proposed alignment is targeting recreational hikers.

Widths and Clearances

The CRD has a dedicated Juan de Fuca Electoral Area *Community Parks Trail Standards* document, which provides standard cross-sections and parameters for trail construction. The document also provides design guidance for advanced trail features such as bridges, retaining walls, switchbacks, and more. For the purposes of this ATNP, the project team has adapted most of the trail design guidance directly from this document. However, some parameters have been changed to align with the best practices both the TAC *Geometric Design Guide for Canadian Roads (2017 Edition)* and the *BC Active Transportation Design Guide (2019)*. The *Community Parks Trail Standards* document is attached in **Appendix E**. In the subsections below, the recommendation that differ from the *Community Parks Trail Standards* have been clearly marked.

Figure 4.3 illustrates a typical trail cross-section. **Table 4.1** summarizes recommended design parameters for both a pedestrian-only trail and a multi-use trail.

Figure 4.3: Trail Design Elements



Source: Juan de Fuca Electoral Area Community Parks Trail Standards

In addition to the above trail anatomy in Figure 4.3, the following are key components of a trail:

- **Clearing Height:** Vertical distance between the trail tread and the lowest obstacle above the trail tread.
- **Clearing Width:** Horizontal distance across the narrowest point along the trail corridor.

- **Tread Width:** Width of the portion of the trail that is directly travelled on.
- **Structure Width:** Width of any structures over which the trail passes.
- **Surface Type:** Material used to surface the trail tread.
- **Protrusions:** Trail tread imperfections (e.g., rocks, roots, holes, stumps, steps, etc.).
- **Obstacles:** Natural obstructions that add challenge to a difficulty rating.
- **Target Grade:** Average vertical steepness of the trail (or segment of the trail) over its entire length.
- **Maximum Grade:** Steepest acceptable vertical grade permitted along a short portion of the trail.
- **Maximum Grade Proportion:** Proportion of a trail with grades that exceed the Target Grade but are less than or equal to the Maximum Grade.
- **Target Cross Slope:** Average horizontal grade of the trail tread measured perpendicular to the centreline, over the entire length of the trail (or segment of the trail).
- **Maximum Cross Slope:** Steepest acceptable horizontal grade of the trail tread measured perpendicular to the centreline, over the entire length of the trail (or segment of the trail).
- **Target Turning Radius:** Horizontal radius of the trail curve.

Table 4.1: Trail Design Parameters – Easy Degree of Challenge

Design Parameter		Natural Surface (Pedestrian)	Crusher Fine (Cyclist Compatible)
Clearing Limit	Clearing Width	1.0m uphill, 1.5m downhill	1.25m uphill, 1.75m downhill
	Clearing Height	3.0m	3.5m*
Tread Width	Tread Width	1.0m	>2.5m*
	Structure Width (minimum width)	Tread +0.10m each side	Tread +0.15m each side
Surfacing	Surface Type	Compacted natural surface	Crusher fine surface
	Protrusions	None	Rare, <0.10m*
	Obstacles (max height)	0.15m max. height, few vertical steps*	Rare, <0.10m*
Grades	Target Grade	3%*	3 – 6%*
	Maximum Grade (short)	12%*	10%*
	Maximum Grade Proportion	5 – 10%*	10 – 20%*
Cross Slope	Target Cross Slope	3 – 5% crowned	2% crowned
	Maximum Cross Slope	3%*	8%*
Turning	Target Turning Radius	1.8 – 2.4m*	1.5 – 2.5m*

* Indicates the recommended value differs from the *Community Parks Trail Standards*

Material

In the JdFEA, two material types are recommended for the travelled way on a trail:

- **Natural Surface**: Recommended in most contexts due to relative ease of construction. Retains the most natural feel. Suitable for pedestrians.
- **Crusher Fines**: Recommended in high-use contexts where a multi-use path is not achievable. Can be used by cyclists, although not recommended for main routes or long distances as the width of the travelled way may limit ability to pass.

Crossings

Where a trail crosses a road, crossing treatment may not be required if the traffic volume and trail volume are low. In these cases, a sign should be provided for trail users indicating the name of the road they are crossing. This serves to warn users to proceed with caution and serves as a wayfinding feature. **Figure 4.4** provides an example of a road crossing sign with a road name sign.

Figure 4.4: Road Crossing Sign with Road Name Sign

Source: https://ondertravel.com/galloping-goose-regional-trail/

If traffic or trail volumes are significant, or if other safety issues are present, multiple treatment options can be considered:

- Provide zebra crosswalk markings and a Pedestrian Crosswalk Sign (RA-4) on both sides of the crossing in both directions.
- Where there is limited visibility on the approach to a trail crossing, provide a Pedestrian Crosswalk Ahead Sign (WC-2), 50 to 150 metres ahead of the crosswalk.

Figure 4.5 illustrates a RA-4R and WC-2R sign.

Figure 4.5: RA-4R and WC-2R Signs

Source: TAC Manual of Uniform Traffic Control Devices for Canada, 4th Edition

Additional Design Considerations – Trail Access Points

Where a trail or path terminates at a roadway, and where no connecting off-street facility is present, it is important to provide a design treatment that allows for users to transition smoothly to/from the roadway. This ensures that the connection between facilities is obvious.

- Install a TAC approved trail crossing sign (e.g., WC-32) along the intersecting roadway
- Ensure all transitions are as smooth as possible
- Provide trail signs, with consistent logos and fonts for the area, indicating the trail difficulty, length, and name (if applicable) at key trail access points (e.g., access points near a parking lot, an intersection, an intersection with other trails, etc.)

ROAD SHOULDERS

A road shoulder is additional pavement width beyond the outside of a vehicle lane. Road shoulders serve to provide vehicles with a recovery zone if they deviate from the lane but can also serve as a space for active transportation users. In rural and constrained contexts, road shoulders can provide some level of visual and spatial separation between active transportation users and vehicle traffic. In the JdFEA, shoulders are provided on some sections of Highway 14 and main roads such as Otter Point Road; cyclists and pedestrians have been observed using these road shoulders.

Multi-use paths are always preferable to using shoulders for active transportation; however, in cases where multi-use paths are not feasible, widened shoulders can be an improvement to a road that is lacking them. When widening a road to provide a shoulder, a white-painted fog line should be considered to distinguish the shoulder from the vehicle lane.

Use Case

Providing road shoulders with painted fog lines is recommended in the following conditions:

- An off-street multi-use path is not feasible; and,
- The road has significant vehicle volumes and/or speeds (e.g., highways, arterials, collectors)

Widths and Clearances

In the JdFEA, there are two types of shoulders than can be considered:

- **Walkable Shoulders:** Sufficient width for pedestrians only. May be considered on roads where the speed limit is less than 60 km/h.
- **Bicycle-Acceptable Shoulders:** Sufficient width for cyclists and pedestrians. May be considered on roads where the speed limit is less than 100 km/h[10]. However, it is recommended that bicycle-acceptable shoulders not be considered on roads with a speed limit greater than 80 km/h.

Figure 4.6 illustrates cyclists using a bicycle-acceptable shoulder, with a painted fog line.

Figure 4.6: Cyclists on a Bicycle-Acceptable Shoulder with a Painted Fog Line

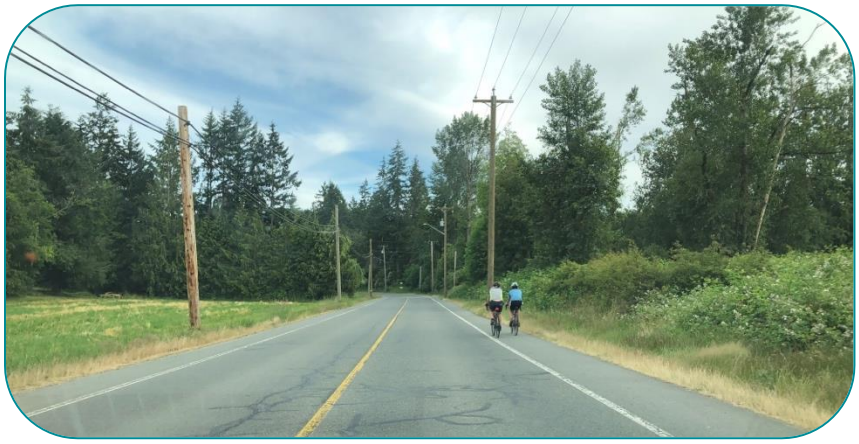


Table 4.2 summarizes desirable and minimum widths for road shoulders, in different speed limit and vehicle volume conditions.

Table 4.2: Desirable and Minimum Shoulder Widths

Suitable Conditions	Widths	
	Desirable (m)	Minimum (m)
Posted Speed: 0 – 30 km/h Vehicle Volume: <2,500 veh/day	1.8	1.5
Posted Speed: 30 – 50 km/h Vehicle Volume: <4,000 veh/day	1.8	1.5
Posted Speed: 50 - 80 km/h Vehicle Volume: <10,000 veh/day	2.0	1.8
Posted Speed: 80 - 100 km/h Vehicle Volume: <10,000 veh/day	3.0	2.0

Source: TAC Geometric Design Guide for Canadian Roads (2017 Edition), BC Active Transportation Design Guide

[10] Transportation Association of Canada, "Geometric Design Guide for Canadian Roads", 2017.

Material

Shoulders should be paved with the same material as the vehicle lane, typically asphalt.

Additional Design Considerations – Rumble Strips

Rumble strips can be considered in addition to providing a paved shoulder and fog line, especially in cases where the posted speed limit exceeds 80 km/h. Rumble strips are milled sections of pavement along a roadway. Rumble strips provide feedback to motorists through noise and vibrations, notifying them when they have deviated from the travel lane into the shoulder. Rumble strips enforce delineation of the shoulder area and aim to discourage drivers from using the shoulder to drive at higher speeds. This also aims to reduce risk for active transportation users on the shoulder. **Figure 4.7** illustrates a rumble strip.

Figure 4.7: Rumble Strip

When installing rumble strips, the following practices are recommended:

- Shoulders should have a minimum width of 1.5 metres.
- Rumble strips can be milled into new or existing asphalt.
- Rumble strips should be installed in 15-metre-long blocks, with 3.5-metre gaps in between.
- The BC Active Transportation Design Guide recommends the rumble strips be place within the shoulder area and as close to the fog line as possible to minimize interference with cyclists.
- Rumble strip widths range from 4 -12 inches (10 – 30 cm). Narrower 6 - 8 inches (15 – 20 cm) widths are recommended in the JdFEA context to retain smooth shoulder surface area and maximize buffering impact.
- Raised rumble strips or road textures are not recommended due to being subject to damage during maintenance.

SHARED STREETS

A shared street is a street where vehicles, cyclists, and other rolling active modes share the same space. Shared streets are suited to low-speed, low-volume roads, where there is no bicycle-acceptable shoulder. Shared streets are typically used by more experience cyclists, who can travel with control and are comfortable with vehicles passing them. Generally, a shared street is not wide enough for a vehicle to pass a cyclist without crossing into the opposing travel lane; therefore, vehicles should wait for adequate sight distance in front of them to confirm that no vehicles are approaching in the opposite direction before passing.

Shared streets are among the least onerous type of active transportation facility to implement, typically only requiring signage and the application of traffic calming. However, shared streets should be implemented cautiously as active transportation users are not separated from vehicle traffic. Road shoulders with fog lines are preferred to shared streets; however, shared streets may be more suitable if a secondary or tertiary connection is desired on a local road.

Use Case

Providing road shoulders with painted fog lines is recommended in the following conditions:

- An off-street multi-use path is not feasible; and,
- The road has low speeds and low volumes (e.g., local road); and,
- The proposed route will be a secondary or tertiary connection.

Widths and Clearances

Table 4.3 presents the recommended shared street widths based on the TAC Geometric Design Guide, including requirements for:

- **Shared Roadways:** Cyclists and vehicles share the travelled way under low-speed conditions
- **Shared Lanes:** General purpose lanes that can facilitate a small range of experienced cyclists

Table 4.3: Recommended Shared Street Widths

Shared Street	Parameter	Widths	
		Desirable (m)	Minimum (m)
Shared Roadway	Width (m), shared roadway with parking both sides	8.0 – 9.0	8.0
	Width (m) shared roadway with parking on one side	5.5 – 7.0	5.5
Shared Lane	Width (m), shared lane, side-by-side operation	4.3 – 4.9	4.3
	Width (m), shared lane, single file operation	Lane width – 4.0	Lane width

Source: TAC Geometric Design Guide for Canadian Roads (2017 Edition)

Additional Design Considerations – Share Street Signage

Signage is recommended in a shared street condition. Signage serves to both warn drivers of the presence of active transportation users and indicate to active transportation users that the street is a route option.

Table 4.4 illustrates and summarizes signage that can be considered on shared streets.

Table 4.4: Shared Street Signage Options

SHARED PATHWAY SIGN	SHARE THE ROAD SIGN	BIKE ROUTE SIGN
		
These can be used on facilities that are shared spaces for both pedestrians and cyclists, including road shoulders. The sign should be applied cautiously as it may create confusion between the shoulder and the referenced pathway.	Used on rural roadways that have no shoulders or have inadequate shoulders to indicate travel lanes are to be shared.	Used on designated bicycle routes. Can aid in directing cyclists to safer route options.
CYCLIST ON ROADWAY SIGN	**PEDESTRIANS ON SHOULDER SIGN**	**SHARROW**
		
Used when cyclists are present but there is insufficient width for shoulders. Warns both drivers and cyclists to be aware and give space to one another. Not preferred for rural roadways as the sign omits pedestrians.	Insinuates cyclists and pedestrians should use the shoulder area. Should be provided on low-speed roads with a paved shoulder and painted fog line.	Used on traffic-calmed roadways with low vehicle traffic. Cyclists are intended to take the lane. Not recommended in rural contexts but may be applicable to community cores.

FACILITY SELECTION ON HIGHWAYS AND ARTERIALS

For some of the identified projects, there is no one recommended facility type. Rather, it is recommended that improvements be pursued over time as the opportunity arises. The following selection process is recommended for opportunity-based improvements:

1. **Improve Shoulders**
   Introducing or improving road shoulders is recommended as an interim step in improving active transportation along an existing road. Shoulder improvements are completed at the discretion of the Ministry of Transportation and Transit (MoTT), as they the approving road authority for all public roads in the JdFEA.

   It is recommended that the CRD collaborate with MoTT to provide road shoulders with painted fog lines when MoTT is completing routine maintenance or upgrading a section of road per their capital plan. Both shoulders should be widened to a minimum of 1.5m width. The addition of rumble strips could be considered in sections that have a posted speed limit greater than 80 km/h and are away from residential areas.

2. **Explore Off-Street Multi-Use Paths**
   Introducing a multi-use path is recommended as the ultimate step in improving active transportation along on existing road. A MUP may be introduced on a road that has been upgraded with shoulders or may supersede shoulder upgrades if the need for off-street connections is significant. A combination of a MUP and widened shoulders may be acceptable. It should be noted that transitions between a MUP and bidirectional shoulders introduces road crossing safety risks as one direction of travel will need to shift to the other side of the roadway when the route switches from MUP to shoulders. This adds safety risks and project costs to introduce the required controlled road crossing.

   It is recommended that the CRD consider multi-use paths when CRD park land is available for this purpose, or when the CRD has made agreements with property owners adjacent to the subject road.

WARNING SIGNAGE

Table 4.5 provides examples of speed-related warning signs that may be applied at locations with collision risk. A traffic study, conducted by a professional engineer, must be completed to determine the appropriateness and content of each sign.

Table 4.5: Speed Control Warning Signs

ADVISORY SPEED TAB SIGN	ELECTRONIC SPEED WARNING SIGNS	CURVE AHEAD SIGN
		
This sign is always used in conjuction with other warning signs (e.g., “curve ahead” sign), immediately below the sign on the same post. Notifying drivers of the suitable advisory speed around the curve aims to reduce frequency of drivers overlapping road shoulders or the centrline. A traffic engineering study must be conducted to determing the suitable advisory speed. Pictured: WA-7S[1]	Speed warning signs display real-time speeds of oncoming vehicles.	“Curve ahead” warning signs should be provided when an upcoming curve is obscured from view. This warns drivers to slow down and avoid overlapping the shoulder, where there could active transportation users. A traffic engineering study must be conducted to determing the suitability of these signs. Pictured: WA-3R[1]

1 Manual of Uniform Traffic Control Devices for Canada, 4th Edition (Transportation Association of Canada, 1998)

LIGHTING & AMENITIES

Lighting

Contextually appropriate lighting is important to ensure that pedestrian and cycling facilities are safe, accessible, and reliable throughout all seasons and times of day.

Pedestrian and cycling scaled lighting should be positioned, placed, and angled to illuminate the travelled way, wayfinding signage, conflict and decision points, intersections, and other key features of pedestrian and cycling facilities. Lighting is also designed to minimize cast shadows with appropriate illumination levels, gradual lighting transitions, and suitable colour temperatures.

Dark Sky Compliance

The Juan de Fuca Electoral Area has a dark skies policy, meaning that lighting should consider impact on the visibility of celestial bodies in the night sky. Therefore, lighting should[11]:

- Restrict light directed towards the night sky
- Reduce or avoid glare
- Reduce of avoid over-lighting
- Have customization options such as dimmers or related controls
- Lessen blue light that appears at nighttime
- Have a specific colour temperature no higher than 3,000 Kelvin.

On pathways, which would be the typical use in the JdFEA, the following guidance is recommended (via the Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs[12]):

- Pathway lighting should be restricted to only near buildings, parking lots, and campgrounds. Lighting outside of these areas could be detrimental to wildlife use.
- Lights should be Full Cut-Off (FCO) or Sharp-Cut-Off (ShCO) fixtures, which have specific attributes that limit glare and stray light outside of a specific area directly below the lamp.
- Lighting should be considered higher priority on asphalt-paved paths, as crusher fine paths are better reflectors of ambient light.
- Motion detectors in advance of light fixtures can be considered in sensitive areas.

Table 4.6 provides guidance on the appropriate pathway illumination, depending on pathway type.

[11] Contractors Insurance. “What is dark sky compliance? 5 things contractors need to know.” Ontario, Canada. Contractorsinsurance.ca/blog/dark-sky-compliance-explained
[12] Royal Astronomers Society of Canada.

Table 4.6: Pathway Illumination Guidelines (Maximum Values)
Source: Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs

Pathway Type	Fixture Type	Light Type	Level (lux)	Height (m)	Curfew
Trails	None	None	n/a	n/a	n/a
Off-Street Mult-Use Paths (Highway)	FCO, ShCO	Amber Incandescent or LED, Filtered	~1	1.0	Yes
Off-Street Multi-Use Paths (Within Community)	FCO, ShCO	Amber Incandescent or LED, Filtered	~1	1.0	No

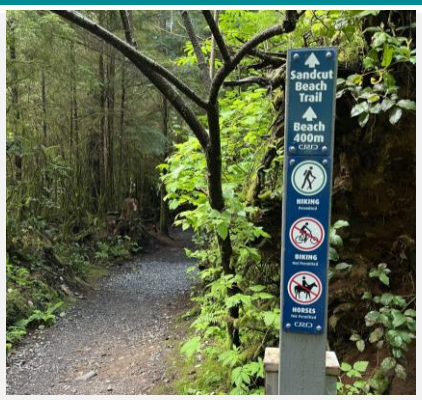
Wayfinding Signage

Four major types of wayfinding signage are being considered for the Plan:

- **Information kiosks:** Provide an overview of the area and information to users regarding safety, the environment, etiquette, and wayfinding.
- **Directional signage:** Provide directional and distance information to destinations and indicate the difficulty level and user types permitted on a trail (i.e., unpaved) or pathway (i.e., paved trail).
- **Trail distance markers:** Indicate the distance along the trail that a user is located.
- **Etiquette signage:** communicate the appropriate rights-of-way for shared trails or pathways and proper use of the trail or pathway.

Table 4.7 provides examples of these wayfinding signs.

Table 4.7: Wayfinding Signage Examples

Information Kiosk	Directional Signage
 *Source: Bunt & Associates – Kieran Quan*	 *Source: Bunt & Associates – Tyler Thomson*
Trail Distance Marker	**Etiquette Signage**
 *Source: Bunt & Associates – Tyler Thomson*	 *Source: Bunt & Associates – Kieran Quan*

5 IMPLEMENTATION PLAN

IMPLEMENTATION PLAN

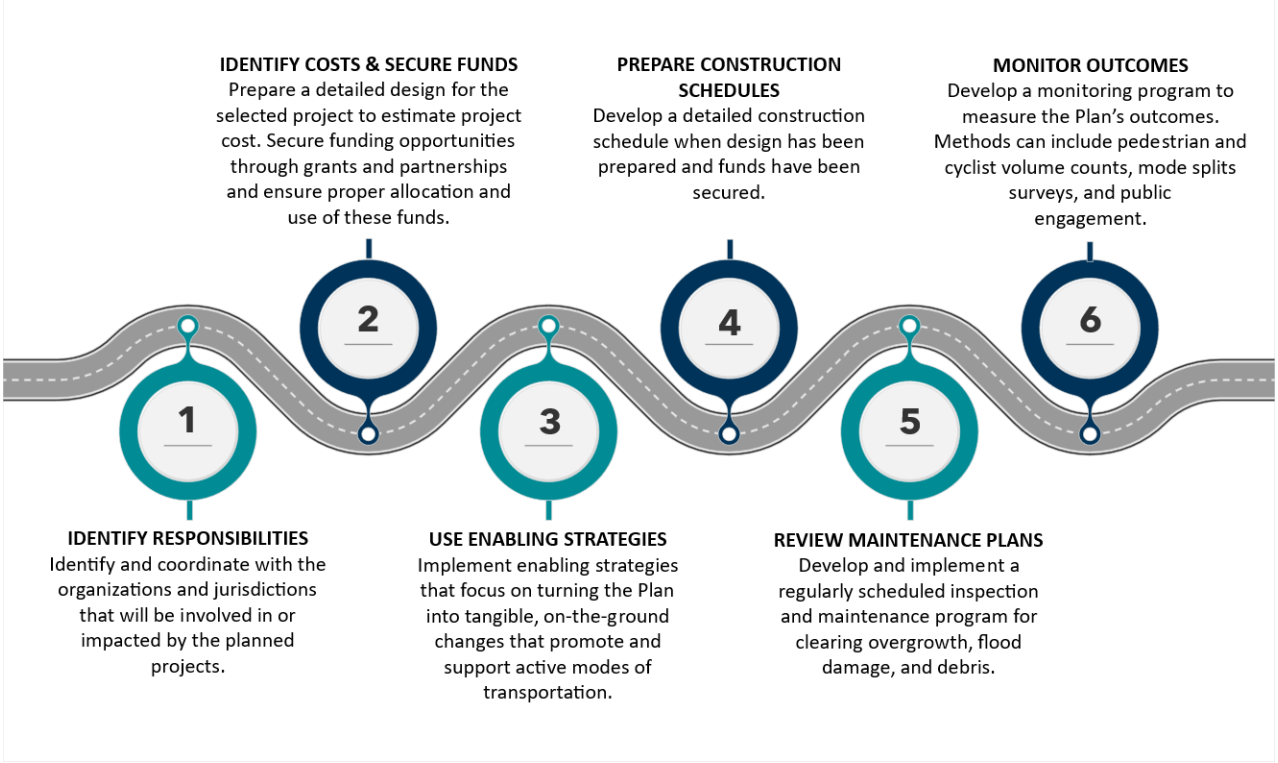
5.1 ROAD MAP

Implementation is typically the most difficult step towards achieving an active transportation network. The JdFEA faces several key challenges with plan implementation, including the distance between communities and the numerous jurisdictions and road authorities for coordination.

Successful implementation of the ATNP requires coordination among various groups, including government agencies, community organizations, businesses, and the public. The proposed initiatives and actions can then begin to be executed using strategies that focus on turning the plan into tangible on-the-ground changes that promote and support active modes. Ongoing maintenance, regular monitoring, and project evaluation should also be completed to help ensure that the active transportation plan is implemented effectively and adapted as needed to meet the evolving needs of each community.

Key steps in the road map to implementing the plan are outlined in **Figure 5.1** and described in the sections that follow.

Figure 5.1: Implementation Road Map Visualization



5.2 RESPONSIBILITIES

The responsibilities of implementing and maintaining the active transportation network will be divided among jurisdictions. The key jurisdictions and their potential overlap are described below, followed by the departmental responsibilities.

EXTERNAL JURISDICTION

Coordination between the JdFEA and external jurisdictions may be required to implement new pathways, crossings, trails, or other network elements.

BC Ministry of Transportation and Transit (MoTT)

The BC Ministry of Transportation and Transit (MoTT) holds jurisdiction over all electoral area roadways – not the CRD. Importantly, MoTT also has jurisdiction over Highway 14.

MoTT has historically supported active transportation improvements along or beside its roadways if the roads can continue to be maintained per current practice. For example, MoTT can sweep and maintain roadways with wider shoulders, but vertical elements such as speed bumps or curbs to protect bike lanes present maintenance challenges.

There may be a legal mechanism to provide the issuance of a License of Occupation to be issued from MoTT to JdFEA/CRD to allow JdFEA to design, construct, and maintain a multi-use path within a MoTT road right-of-way but the mechanism requires additional discussion and coordination between jurisdictions.

District of Sooke

The communities of Otter Point and Sooke are highly interconnected. The District of Sooke shares a jurisdictional boundary with two key roads: Otter Point Road and Highway 14. Coordination is required to ensure existing and proposed facility types on these roads are consistent.

Pacheedaht First Nation

Pacheedaht First Nation is highly interconnected with the community of Port Renfrew. Many Pacheedaht community members live and work in Port Renfrew; it is therefore important to coordinate proposed active transportation improvements in the JdFEA with proposed improvements in the Nation reserve land.

Several partnership opportunities with Pacheedaht First Nation have been identified as part of this ATNP. The aim of these projects is to partner with the Nation and MoTT to proceed with active transportation connections that are outside of JdFEA jurisdiction but have significant impact on the JdFEA.

Scia'new First Nation

Scia'new First Nation has connections to the community of East Sooke. Proposed improvements in East Sooke should consider the needs and plans of the Nation; there may be partnership opportunities with the community.

BC Parks

Juan de Fuca Provincial Park and French Beach Provincial Park are only accessible by travelling through the JdFEA and are major destinations for locals and visitors. Several projects in the ATNP are proposed to connect directly to these parks; there are potential partnership opportunities with BC Parks to continue proposed active transportation facilities into the parks themselves.

INTERNAL JURISDICTION

The CRD will contribute to the planning, design, and maintenance of infrastructure in CRD within the communities including trails and pathways within CRD park land, and with licenses of occupation with MoTT.

The CRD will be responsible for the planning, design, implementation and maintenance of trails within the community areas.

5.3 IMPLEMENTATION COSTS

All recommended projects will need to undergo a refined costing, detailed design, and internal approval process if selected to proceed. Costing will consider underground utilities, infrastructure mitigation, land acquisition, and other items as necessary depending on the project context.

5.4 POTENTIAL ACTIVE TRANSPORTATION FUNDING SOURCES, PROGRAMS, AND CONSIDERATIONS

The development of the active transportation network will take many years and is dependent on coordination and cooperation with MoTT. The plan may require new and additional funding sources through provincial and federal partnerships; the following subsections summarize funding sources that may be available.

PROVINCIAL FUNDING

BC MINISTRY OF TRANSPORTATION AND TRANSIT (MOTT)

MoTT allocates funds annually for road rehabilitation and maintenance. This includes road resurfacing, bridge rehabilitation and replacement, seismic retrofits, intersection improvements, and upgrades to smaller side roads to help connect communities.

BRITISH COLUMBIA COMMUNITY SAFETY ENHANCEMENT PROGRAM

The Community Safety Enhancement Program provides up to five million in provincial funding to help communities make small improvements to their infrastructure. Small improvements may include pedestrian safety improvements, crosswalk improvements such as Rectangular Rapid Flashing Beacons (RRFBs) and pathway improvements.

BRITISH COLUMBIA ACTIVE TRANSPORTATION INFRASTRUCTURE GRANTS PROGRAM – INFRASTRUCTURE GRANT

This grant allows eligible governments to apply for a maximum of two (2) active transportation infrastructure grants for different projects or phases. The projects must be under one million dollars, part of an active transportation network plan and can begin construction once the funding has been announced. These projects have completion deadlines and are open to the pubic. The province cost-

shares to a maximum of $500,000 per project; the cost-share portion is determined by the type and size of community applying for the grant.

UNION OF BC MUNICIPALITIES (UBCM) FUNDING PROGRAM – ACTIVE TRANSPORTATION PLANNING

This funding supports local governments to incorporate or enhance active transportation components of formal planning documents (Official Community Plan, Sustainability Plan, Neighbourhood Plan, or Transportation Plan), including research, and policy development. The funding program can contribute up to 100% of the cost of eligible activities to a maximum of $30,000.

UNION OF BC MUNICIPALITIES (UBCM) FUNDING PROGRAM – COMPLETE COMMUNITIES

This program supports local governments in advancing complete community goals by supporting communities in providing transportation options including increased walkability and making connections to infrastructure investment and servicing decisions.

UNION OF BC MUNICIPALITIES (UBCM) FUNDING PROGRAM – COMMUNITY TO COMMUNITY PROGRAM

The Community-to-Community program supports the advancement of local government and First Nation reconciliation and relationship building through the development of agreements, joint plans and/or strategies. The program can contribute up to a maximum of $20,000 to eligible activities.

FEDERAL FUNDING

INFRASTRUCTURE CANADA – ACTIVE TRANSPORATION FUND

The Active Transportation Fund supports building new and expanded networks of pathways, bike lanes, trails, and pedestrian bridges.

INDIGENOUS COMMUNITY INFRASTRUCTURE FUND (ICIF)

This fund may be relevant to the identified partnership projects with Pacheedaht First Nation.

The Indigenous Community Infrastructure Fund (ICIF) is a $4.3 billion investment by the Federal Government over 4 years, which began in 2021-2022. A wide range of infrastructure projects are eligible for funding from the ICIF, including roads and bridges. A shovel-ready project proposal must be presented to the local Indigenous Services Canada (ICS) office to apply[13].

COMMUNITY INITIATIVES & LOCAL PARTNERSHIPS

The community may be interested in contributing towards the implementation of the ATNP. Some example initiatives include a bench purchasing program, an adopt / sponsor a “blank” program to aid with infrastructure maintenance or to add simple components to the networks such as a light. Businesses, families, and individuals could adopt / sponsor the item and then have a small plaque indicating who sponsored them.

[13] Government of Canada, “Indigenous Community Infrastructure Fund”, Ottawa, Canada, 2021. Sac-isc.gc.ca

The costs of producing and distributing a route map could be partially or fully offset by selling advertising space on the map or online in banners around the map. Advertising on benches could also reduce the costs of providing rest areas.

5.5 ENABLING STRATEGIES

Successful implementation of the ATNP will be supported through a suite of enabling strategies that will help engage the public, coordinate responsibilities, secure funding and begin executing the proposed initiatives and actions outlined in the ATNP. These strategies focus on turning the ATNP into tangible, on-the-ground changes that promote and support active modes of transportation.

NON-INFRASTRUCTURE

Non-infrastructure related enabling strategies of support for educational initiatives and on-going community engagement include the following:

- Update design standards & other regulatory documents
- Develop supporting plans & policies
- Create & update standardized wayfinding maps
- Coordinate with existing capital plan upgrades & work programs
- Establish an active transportation champion such as a Parks Manager to monitor and enforce ANTP implementation
- Implement education & outreach programs
- Promote active transportation & related events
- Confirm road rights-of-way and MoTT requirements

INFRASTRUCTURE

Quick and cost-effective infrastructure improvements offer a fast way to improve network connectivity, safety, and comfort, while getting solutions on the ground and engaging community members through built form.

QUICK BUILD TECHNIQUES

Quick-build techniques refer to infrastructure improvements that can be implemented in a short timeframe, using low-cost materials, with minimal planning and construction required. The resulting facilities are flexible in their design and can be easily altered or removed if needed. They can also be upgraded to or built as permanent solutions if appropriate long-lasting materials are used, and the facilities are properly maintained.

5.6 CONSTRUCTION SCHEDULES

Construction schedules are highly variable, and dependant on funding, design, project extents, project size, jurisdiction, and more. Noting this, the CRD has provided estimated timelines for the number of years until a project begins construction, should it be selected to proceed. The estimate for each project is provided in the last column of the prioritized project table in **Appendix C**. The estimates are preliminary and high-level, and are one of the following time ranges:

- 1-5 years
- 5-10 years
- 10-15 years
- 15+ years

Rezoning and Subdivision Applications

For many recommended projects, land and funds must be acquired to facilitate construction. One key method of doing this is through rezoning and subdivision applications. The CRD will use the ATNP as part of their review of development proposals, evaluating if land and funding to support the construction of all or a section of a nearby active transportation upgrade can be acquired through the process. This impacts the estimated construction schedules significantly as the time and frequency of applications is unknown.

Partnership Projects and Projects under MoTT Jurisdiction

Both partnership projects and projects under MoTT jurisdiction (any project on a public road or within a public road right-of-way in the JdFEA) require collaboration with a jurisdiction outside of the CRD to complete. As such, a timeline cannot be set for these projects. The ATNP will serve to identify these projects, and the CRD will bring them forward to partners.

The CRD will use the ATNP to advocate to MoTT that the community is interested in active transportation upgrades on public roads or within public rights-of-way. This is intended to begin a discussion towards MoTT supporting active transportation improvements within their jurisdiction.

5.7 MAINTENANCE OF INFRASTRUCTURE

Regular and on-going rehabilitation and maintenance of active transportation infrastructure is required. Maintenance helps to keep active transportation facilities functional and usable throughout their lifespan and ensures that facilities are accessible.

BC MoTT will be responsible for the maintenance of all roadways, while the CRD will be responsible for all trails through CRD parks, statutory rights-of-way, and potentially licenses that use portions of MoTT road rights-of-way.

As the active transportation network expands, special equipment may be required to maintain the infrastructure. In addition, resources may need to be dedicated to clearing leaves, snow, ice, and debris, especially for facilities that may be too narrow for traditional maintenance vehicles. Pathway maintenance should be considered in the same manner as road maintenance, such as establishing fall and winter action plans.

Three facility priority levels are recommended for inspection and maintenance along pedestrian and cycling facilities. This includes identifying priority routes in case of snow and ice conditions.

1. **Primary Connections:** Active transportation routes that are of high desire and connect to key destinations. These routes should be inspected annually to assess barriers, tripping hazards, surface condition, etc. In the case of a snow or ice event, these routes should be plowed and salted first.
2. **Secondary Connections:** Active transportation routes that are of medium desire and connect to popular, non-essential destinations. These routes should be inspected semi-regularly (i.e. every 2 to 3 years) to assess barriers, tripping hazards, surface condition, etc. In the case of a snow or ice event, these routes should be plowed and salted within 48 hours.
3. **Tertiary Connections:** Active transportation routes that are of medium desire and connect to local or recreational destinations. These routes should be inspected at least every 5 years to assess barriers, tripping hazards, surface condition, etc.

5.8 MONITORING

Monitoring the growth and success of the active transportation network will be determined by measuring change in travel behaviour. Travel patterns collected as part the regular population census will indicate changes in the mode split of the JdFEA. An increase in trips by walking and cycling is indicator of ATNP success.

It is recommended that the CRD establish a system to measure and track active transportation use in the JdFEA on a scheduled basis. This may include:

- Volume counts – annual cyclist and pedestrian counts at key locations.
- Mode Split Surveys – online or mail-out surveys to the community.
- Community Feedback – public engagement initiatives focused on network improvements. Future monitoring will track network success and provides the CRD with opportunities to refine initiatives, seek funding and resources, update plans, and engage the communities.

5.9 YEAR OVER YEAR GHG EMISSIONS REDUCTIONS

As more active transportation infrastructure and measures are implemented in the community, it is anticipated that there will be a mode shift from private vehicle use to active transportation. Mode split targets have not been established, but assumptions have been made based on potential improvements to active transportation infrastructure and areas having more mode choice. The existing and future predicted mode splits are as shown in **Figures 5.2 – 5.5**. They assume that transit can improve by 1% every 5 years and that active transportation (walk, bike, and other) will approximately double in 20 years (2045).

Figure 5.2: Existing Mode Splits (2025)

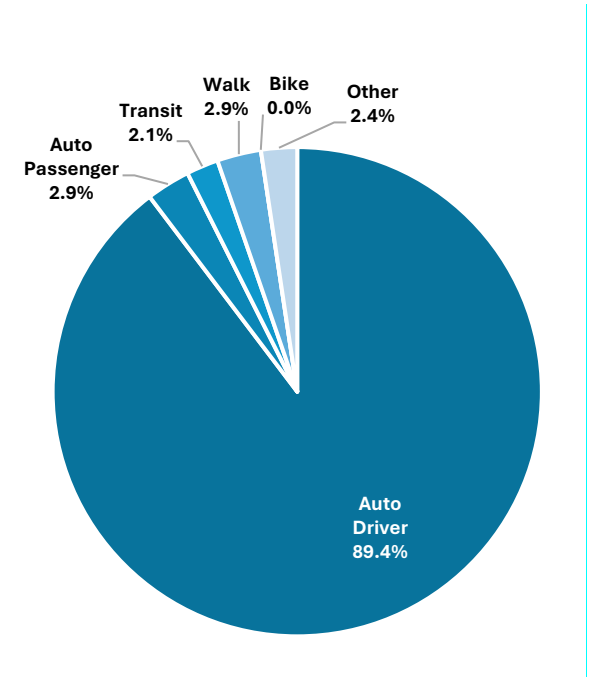


Figure 5.3: Future Mode Splits (2030)

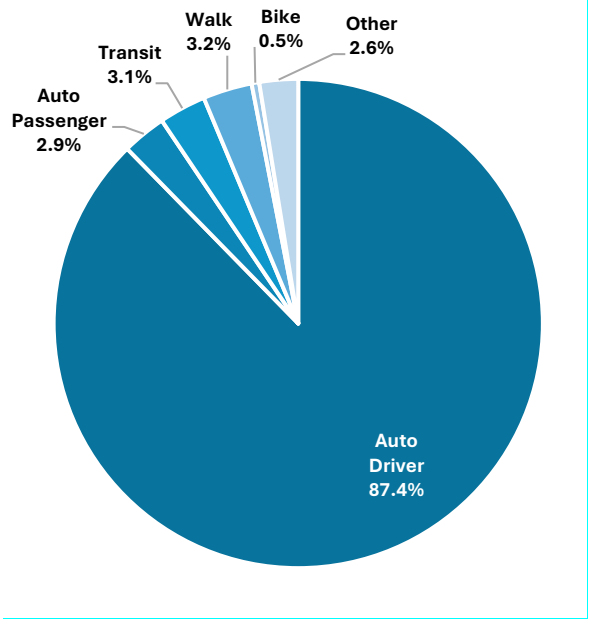


Figure 5.4: Future Mode Splits (2030)

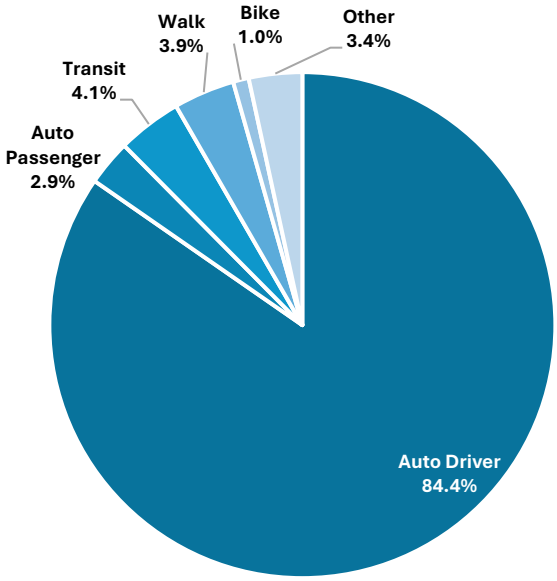
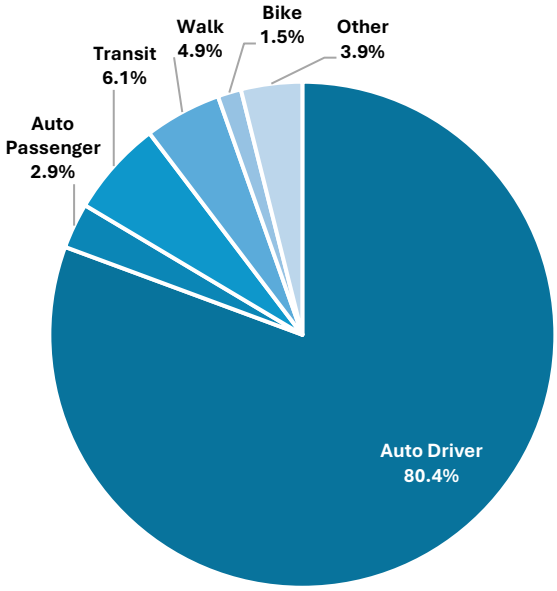


Figure 5.5: Future Mode Splits (2045)



The Canadian Fitness and Lifestyle Research Institute (CFLRI) and Canadian Parks and Recreation Association (CPRA) determined the economic cost in greenhouse gas emissions per private vehicle, which came out to an estimated $56.4 billion Canadian dollars in 2019/2020 for approximately 23,472,111 private vehicles. Thus, for a mode shift from private vehicle to active transportation can yield a greenhouse gas emission savings of approximately $2,403 per mode shift per year. The CFLRI does not determine a specific economic cost savings for mode shifts from private vehicle to transit, but they report a Canada-wide economic benefit of $19 billion per year and an annual reduction of 4.7 million tonnes of greenhouse gas emissions based on 2018 data.

In addition, a European study completed by a University of Oxford team found that an average person shifting their mode choice from private vehicle to active transportation for 200 days a year (attempting to account for the regular 5-day commute to work per week minus sick/vacation days) would decrease lifestyle CO2 emissions by an estimated 1,856 kg (1.856 tonnes) annually. Similarly, they found that an average person shifting their mode choice from private vehicle to public transit for 200 days a year yielded a decrease in lifestyle CO2 emissions by approximately 1,362 kg (1.362 tonnes) annually.

Using the projected population numbers (which Stats Canada has shown to have a 3.3% linear growth rate from 2016-2019), future mode split assumptions, estimated economic savings and GHG emission decreases, Table 5.1 was established to show the potential cumulative savings for up to 20 years in the future, showcasing the savings in years 2030, 2035, and 2045. As can be seen, a cumulative $1.1 million Canadian dollars through active transportation mode shifts alone and 1,309 tonnes of GHG emissions reductions through mode shifts is possible by 2045, should the mode split targets be achieved.

Table 5.1: Projected GHG Emissions Reductions

Projected Year	Population	Cumulative Economic GHG Savings ($) (for Active Transportation only)	Cumulative GHG Emissions Reductions (Tonnes)		
			Active Transportation	Transit	TOTAL
2030	6,656	$159,900	123.5	90.7	**214.2**
2035	7,503	$540,900	278.5	306.6	**585.1**
2045	9,197	$1,105,000	682.8	626.3	**1309.0**

APPENDIX A
Engagement Summary Report

PUBLIC AND COMMUNITY PARTNER ENGAGEMENT

The Active Transportation Network Plan (ATNP) underwent two rounds of public engagement, beginning in late October 2024 and concluding in March 2025. The primary objective of this engagement process was to ensure that the final recommendations for the ATNP accurately reflected the needs, priorities, and aspirations of residents and visitors to the Juan de Fuca Electoral Area (JdFEA). It was also important to identify the unique transportation needs of the distinct communities within the electoral area.

To reach a broad audience, engagement activities were promoted through multiple channels, including the project website and Capital Regional District (CRD) social media platforms. These outreach efforts aimed to ensure widespread awareness and encourage participation from diverse community partner groups.

The engagement process followed the International Association of Public Participation (IAP2) framework, which aligns with the CRD's Public Participation Framework. Based on the IAP2 framework, the level of engagement for this project was classified as "Consult." The commitment to the public at this level of engagement is to "keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how the public input influenced decisions."

The following pages provide a summary of the activities conducted during both rounds of engagement, highlighting the efforts made to gather input and ensure community involvement in the development of the ATNP.

SEPTEMBER 2024

1,250 webpage visits

ROUND 1

- **1** interview — Email interviews with community partners
- **235** respondents — Survey 1 - existing usage, conflicts, and opportunities
- **2** pop-ups — In-person community pop-up
- **1** meeting — Public partners meeting

ROUND 2

- **107** respondents — Survey 2 - community confirmation for proposed concepts
- Report out - Final ATNP is shared

MARCH 2025

ROUND 1 ENGAGEMENT

Round 1 Engagement aimed to gather input on the existing active transportation network within the Juan de Fuca Electoral Area, focusing on how people currently use transportation amenities, their concerns with the existing network, and opportunities for improvement. Engagement activities included an online survey, public pop-up events at key locations, and a virtual workshop for community partners. These efforts provide valuable feedback to help identify priorities and inform recommendations for enhancing active transportation in the region presented in Round 2 engagement.

ONLINE SURVEY 1

The online survey was open to the public from October 7th 2024 to October 27th 2024, with a total of 235 respondents sharing their experiences with the existing active transportation network. The survey gathered insights on how individuals currently use the network, their motivations for using it, and the barriers that prevent greater utilization. In addition, an interactive mapping tool was made available on the CRD project website, allowing participants to identify areas in need of improvement and highlight gaps in connectivity between existing parks and trail infrastructure.

Significant results from the survey are shown to the right. The number in (__) refers to the number of respondents who selected each answer.

235 people
participated in survey 1

Majority of Respondents Use or Would Use Active Transportation for **Recreation (152), Physical Activity (189), and Getting Around (103)**

Majority of Respondents **Walk (195),** or **Bike (161)** as a Mode of Active Transportation

Majority of Respondents **Want to Use Active Transportation More Often (216)**

Majority of Respondents Would Use Active Transportation More Often if **There was Separation from Vehicles (178), More Continuous, Complete, Connected Routes (172), More Routes that Connect to Major Destinations (72)**

Majority of Respondents Feel **Lack of Pathways or Bike Lanes (162),** and **Too Much Traffic (68)**, are Barriers Preventing them from Using Active Transportation

19 people participated in the interactive map

Participants were asked if they had any **suggestions for how to improve active transportation in their community or in the region.** *The word cloud below highlights themes pulled from the participants ideas shared in the online survey.*

Interactive Map From Juan de Fuca Active Transportation Network Plan - getinvolved.crd.bc.ca. Note: this is a snapshot of major themes distilled from 27 comments placed on the map.

20 people
participated in pop-ups

PUBLIC POP-UP

On October 5th, 2024, the project team held pop-up events at the Shirley Community Hall and SEAPARC Recreation Centre, each lasting two hours. While participation in Shirley was limited, the team engaged in meaningful conversations with approximately 20 individuals at SEAPARC, most of whom were local residents from the Sooke area. During these discussions, participants raised several key concerns, including the lack of dedicated cycling routes between Sooke and Otter Point, safety issues for cyclists on Highway 14 between Sooke and Jordan River and the quality of Otter Point Road and Kemp Lake Road, which were seen as inadequate for the levels of cycling activity they currently support. Safety issues noted were poor pavement conditions, narrow lanes, lack of shoulders, and limited sight lines.

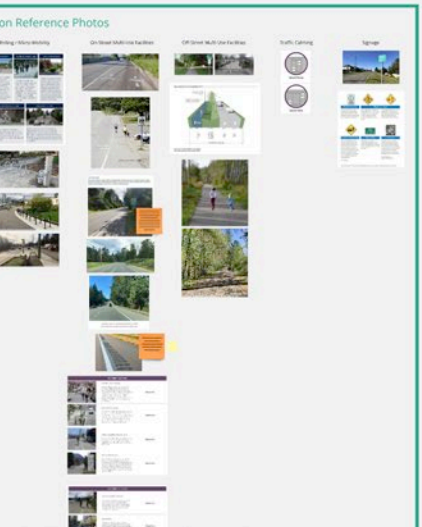
SEAPARC POP-UP, October 5th, 2024

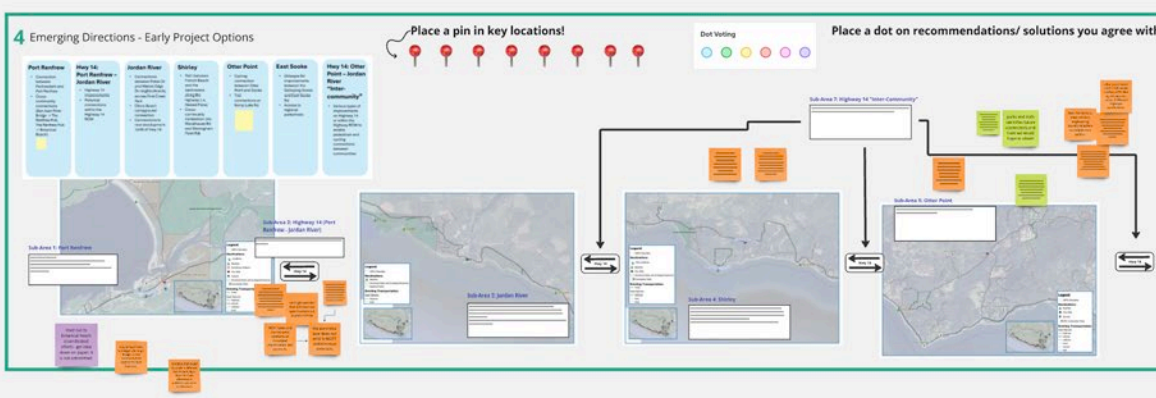
PUBLIC PARTNER WORKSHOP

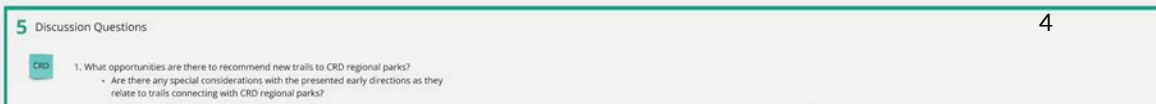
Given the CRD's connection to several public agencies that will be impacted by future developments from the JdFEA ATNP, it was important to consult these public partners for their input on the existing network and potential solutions. A virtual workshop was held on November 20th, 2024 via Microsoft Teams, with participation from representatives of the Ministry of Transportation and Transit, BC Parks, and the District of Sooke. The information was also shared with CRD Regional Parks representatives and they were able to provide feedback via email. Before the workshop, a project backgrounder was shared, outlining the current transportation network and emerging directions for future projects designed to address specific community needs. To facilitate discussion and gather feedback, the team utilized Miro, an online whiteboard platform, to present additional information and capture input from participants.

SHIRLEY POP-UP, October 5th, 2024

PUBLIC PARTNERS WORKSHOP MIRO BOARD, November 20th, 2024



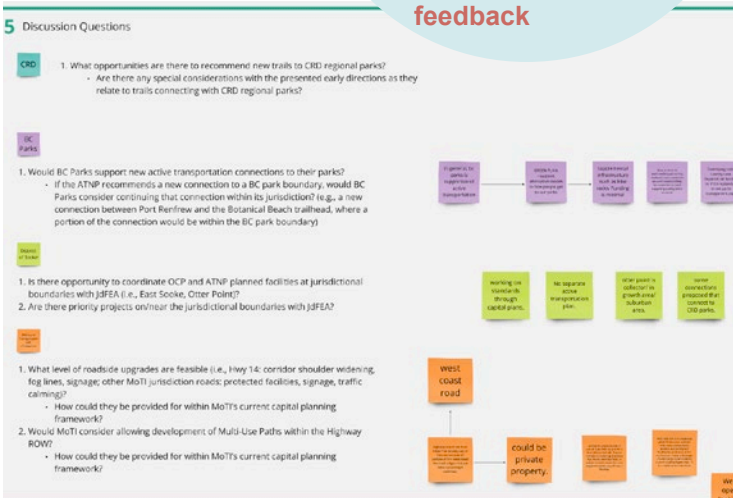




4 public partners provided feedback

PUBLIC PARTNER WORKSHOP

Each public partner representative was asked to provide feedback on the emerging directions for potential active transportation projects in the JdFEA, along with responses to a series of discussion questions specific to their agency. The feedback received was invaluable, offering insights into land ownership, relevant policy and design standards for areas overlapping between their jurisdictions and the JdFEA, as well as information on existing or planned capital projects that may intersect with the ANTP. Overall, Public Partners expressed support for the JdFEA ATNP, though they identified potential challenges and areas where extensive coordination will be necessary prior to implementation



PUBLIC PARTNERS WORKSHOP MIRO BOARD, November 20th, 2024

COMMUNITY PARTNER EMAIL INTERVIEW

A list of questions was distributed to Community Partners via email. These questions were designed to gather feedback from each organization on how they use the existing JdFEA ATNP and where they would like to see improvements. The questions were shared with Juan de Fuca Trails Society and Sooke Mountain Bike Club. The Juan de Fuca Trails Society provided valuable input, highlighting several locations for potential active transportation improvements, including Shirley (French Beach, Matterhorn, Jacob's Creek, Lost Lake), Otter Point (William Simmons Memorial Park, Kemp Lake Rd., Wieland Trail), and the route from Jordan River to Port Renfrew (Kludahk Trails, Loss Creek, Avatar Grove, and Eden Grove). They emphasized the need for better connections between existing trail systems, key areas within the JdFEA, and underscored the importance of extending the Galloping Goose Trail to Port Renfrew or developing a similarly comprehensive trail network.

Juan de Fuca COMMUNITY TRAILS SOCIETY

ROUND 2 ENGAGEMENT

Round 2 Engagement aimed to gather feedback on the proposed projects and recommendations for the ATNP, which were developed based on input received during Round 1. The goal was to validate that the project team's direction aligns with the priorities and needs expressed by the community, ensuring that the proposed solutions effectively address the concerns and aspirations of local residents.

ONLINE SURVEY 2

The online survey was open to the public from February 21st 2025 to March 7th 2025, with a total of 107 respondents sharing their feedback on the proposed active transportation projects specific to the following areas: Port Renfrew (Area 1 and 2), Shirley, Jordan River, Otter Point, East Sooke, West Coast Road (Highway 14) between Jordan River and Port Renfrew. The survey gathered feedback and gaged the level of support from local community members on the proposed active transportation projects for the distinct areas previously listed.

Significant feedback themes are listed by area in the following pages.

107 people
participated in survey 2

Port Renfrew, Area 1

Overall, respondents expressed enthusiasm for the proposed improvements, highlighting the potential benefits, such as safer walking and biking options.

Safety considerations: There were calls for adequate lighting along paths, especially in areas where children might use the facilities.

Infrastructure and Connection Considerations: Requests for more parking along roads and the possibility of a dedicated parking lot near the trail access points.

Port Renfrew, Area 2

Safety Considerations: There were concerns about the need for better lighting, particularly where pedestrian paths intersect roadways. Some also suggested trimming brush along paths to reduce safety risks.

Infrastructure and Connection Considerations: There was a suggestion that paths along roadways should be physically separated for safety, rather than just marked with paint.

Shirley: *6.8% of survey respondents live in Shirley*

Overall, many respondents are excited about the projects, especially for improving walking and cycling connections.

Safety Considerations: The need for better signage, lights, and marked crossings at high-traffic areas, like Sheringham Point Road, was emphasized. Walking and cycling along the highway is considered unsafe, and there's a strong push for dedicated corridors between Sooke and Shirley.

Infrastructure Considerations: Suggestions were made for additional paths linking key areas, including from French Beach to the lighthouse and through Shirley Hill.

Jordan River: *18.4% of survey respondents live in Jordan River*

Overall, many respondents expressed enthusiasm for the proposed projects, emphasizing the need for safer trails and the positive impact on the community.

Safety Considerations: A recurring theme was the need for safer infrastructure, especially along Highway 14, where respondents highlighted the dangers for both cyclists and pedestrians. There were also requests for safer routes for families and cyclists of all abilities.

Infrastructure and Connection Considerations: A few respondents suggested specific improvements, such as upgrading the First Creek trail, creating a safer route to Jordan River (beach), and improving the trail at the bottom of Petrel to the beach. Additionally, there were calls for wider shoulders for cycling and more physical separation of paths from roads.

Speed and Traffic Considerations: There was a request for a speed bump on Waters Edge Drive to slow down drivers, as well as a suggestion for setting a speed limit of 40 km/h for better safety in the area.

Otter Point: *10.7% of survey respondents live in Otter Point*

Overall, many respondents expressed enthusiastic support for the proposed active transportation projects, especially the Highway 14 shoulder improvements and multi-use path.

Safety Considerations: There were specific concerns about poor visibility along Otter Point Road due to overgrowth and the need for regular clearing of brush. One comment shared a personal account of a near-miss accident along this route, emphasizing the urgent need for safer walking infrastructure.

Infrastructure and Connection Considerations: Several comments highlighted the desire for additional trails, such as a cycling and walking corridor between Sooke and Shirley, and the re-establishment of the trail from Carpenter Road Community Park to Carpenter Road. There was also interest in better access to Kemp Lake.

East Sooke: *35.9% of survey respondents live in East Sooke, and 18.4% live in Sooke.*

Overall, many respondents expressed enthusiasm for improved infrastructure, particularly for safer walking and cycling along East Sooke Road and Gillespie Road. Several highlighted the dangerous conditions and expressed gratitude for the proposed changes.

Safety Considerations: There were numerous requests to widen and repave East Sooke Road and Gillespie Road, including improving shoulders for cyclists and pedestrians or advocating for separate dedicated trails for pedestrians and cyclists. Comments also mentioned the need for better maintenance, including addressing drainage issues and erosion, to ensure the safety and durability of the trails.

Infrastructure and Connection Considerations: Respondents suggested trails, such as a pathway to Aylard Farm, better connections to the Galloping Goose trail, and a walking/cycling path from Pike Road to Pedder Bay Marina. Some also requested better public beach access to the Sooke Basin.

West Coast Road (Highway 14) from Jordan River to Port Renfrew and at Sandbar Trail Access

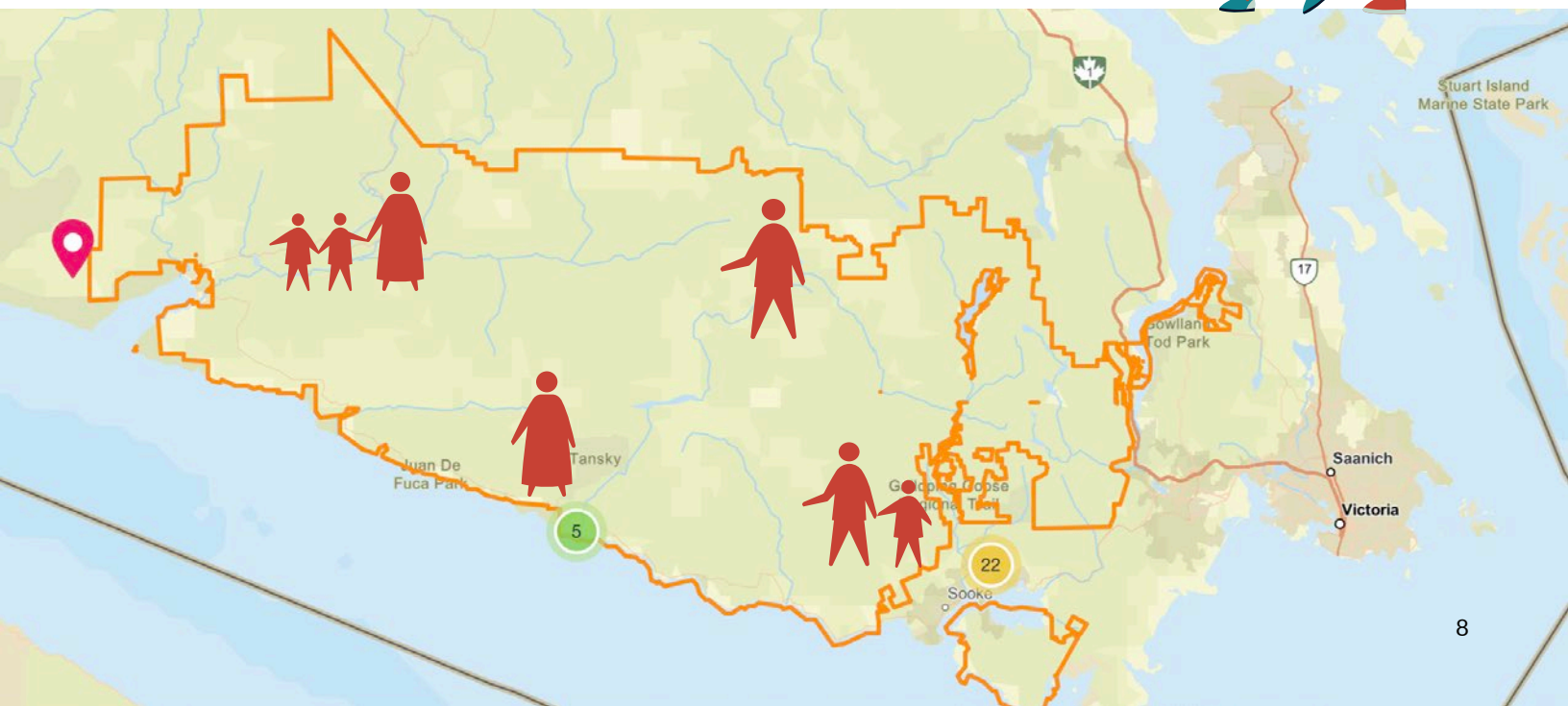
Overall, respondents expressed strong support for the proposed improvements, especially for the long-term vision of the project.

Safety Considerations: Speed bumps or raised speed strips were suggested as more effective traffic calming measures compared to speed readers.

Infrastructure Considerations: Several comments highlighted the poor state of the highway, specifically from French Beach to Port Renfrew. There were concerns about the impact on parking availability, especially during peak times at parks, and the potential for congestion or blind spots.

We also heard from respondents living in Malahat (6.8%), Willis Point (1.9%), Scia'new (1.9%), and other locations (5.8%). Thank you to all the community members who took the time to provide valuable feedback and insights. The information collected from Survey 2 will help inform how projects are prioritized in the final Juan de Fuca Electoral Area Active Transportation Network Plan.

Thank you to all the people who shared their thoughts and experiences with us!



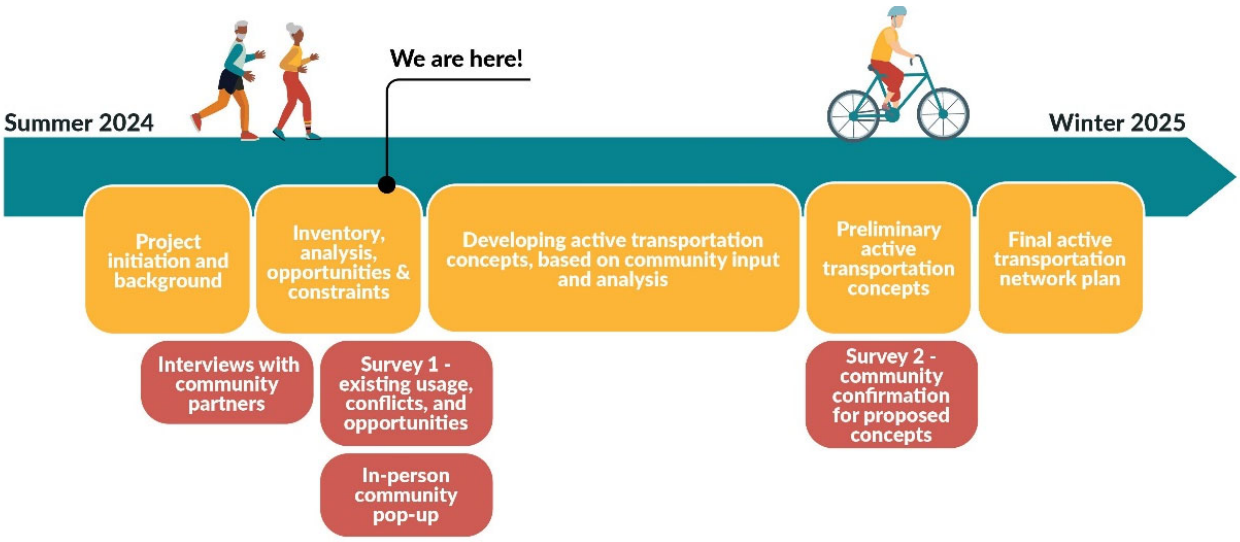
APPENDIX B
Public Survey Examples

Juan de Fuca Electoral Area Active Transportation Network Plan

Public Survey 1

What is this survey?

The following survey is to help develop an understanding of how and where JdFEA residents currently use active transportation, and how and where facilities could be improved and developed. The project lifecycle is shown below:



At the end of the survey period, the project team will review the responses and use them to inform the development of the Plan. Later, there will be a second public survey that will seek your input on some preliminary project concepts.

You have valuable community insights that we want to know about, please share your experiences and ideas with us!

Estimated time to take survey: 10 minutes

This survey is designed to be anonymous. For security purposes any personal information which identifies you or others will be immediately deleted once your response is received and processed. Any personal information which is collected by the Capital Regional District (CRD) is done so under Section 26 (c) and (e) of the Freedom of Information and Protection of Privacy Act *and will be used to help develop an understanding of how and where JdFEA residents currently use active transportation, and how and where facilities could be improved and developed.*

Section 1: Demographics

1. What is your age range? (**Circle one**)
    a. Under 18
    b. 18 - 24
    c. 25 - 34
    d. 35 – 44
    e. 45 – 54
    f. 55 - 64
    g. 65+

2. In which community do you live? (**Circle one**)
    a. Pacheedaht
    b. Port Renfrew
    c. Jordan River
    d. Shirley
    e. Otter Point
    f. T'Sou-ke
    g. Sooke
    h. East Sooke
    i. Scia'new
    j. Malahat
    k. Willis Point

    l. Other: _____

Section 2: Current Use

3. Which active transportation modes do you use most often? (**Please circle your top 3**)
    a. Walk
    b. Bicycle
    c. Electric Bicycle
    d. Kick Scooter / Skateboard
    e. Electric Scooter / Electric Skateboard
    f. Mobility Assistance Device / Scooter / Wheelchair
    g. Horseback
    h. Other: _____

    i. I do not travel by active transportation modes

If you selected "I do not travel by active transportation modes", please skip to question 6

4. What are the main reasons that you use active transportation? (**Please circle your top 3**)
    a. Time / Convenience
    b. Physical Activity
    c. Recreation / Fun
    d. Passenger and Cargo Capacity
    e. Carbon Footprint
    f. Accessibility
    g. Getting around in my community
    h. Travelling to other communities

5. Would you like to use active transportation more often to get around the JdFEA? (**Select one**)
    Yes
    No

Section 3: Identifying Challenges and Opportunities

6. What would motivate you to use active transportation more frequently? (**Please circle your top 3**)
    a. Separation from vehicle traffic
    b. More continuous/complete/connected routes
    c. Safer crossings
    d. More places to securely lock up equipment
    e. Wider pathways
    f. Better visibility
    g. Better lighting
    h. Routes that connect me to major destinations (i.e. schools, shopping, employment, bus stops/transit, etc.)
    i. Slower vehicle speeds
    j. Other: _____

7. What barriers prevent you from using active transportation? (**Please circle your top 3**)
    a. Lack of pathways or bike lanes
    b. Lack of convenience (storage space during travel)
    c. Lack of convenience (travel time)
    d. Lifestyle (children and/or family obligations)
    e. Not enough places to securely lock up my bike or mobility device
    f. Traffic speeds are too high
    g. Poor visibility between myself and vehicles / Lack of lighting
    h. Poor weather conditions
    i. Too many hills / too difficult (physically demanding)
    j. Too much traffic
    k. Too long to arrive at my destination
    l. No connection to bus stop/transit
    m. Too remote / Concerns about wildlife activity / Reduced sense of safety

    n. Other: _____

8. Do you have any suggestions for how to improve active transportation in your community, or in the region? (**Please write your response in the box below. Please do not include any personal or contact information within your response**)

9. Please identify specific locations where you would like to see active transportation improvements, or locations with missing connections (i.e., “gaps”) between existing parks and trail infrastructure.

   To identify a location, please place a sticker on the maps provided on the presentation boards. You can include a comment below to describe what improvements you would like to see or what gaps you have observed at that location. You may place multiple stickers and provide multiple comments.

****

Thank you for taking this survey!

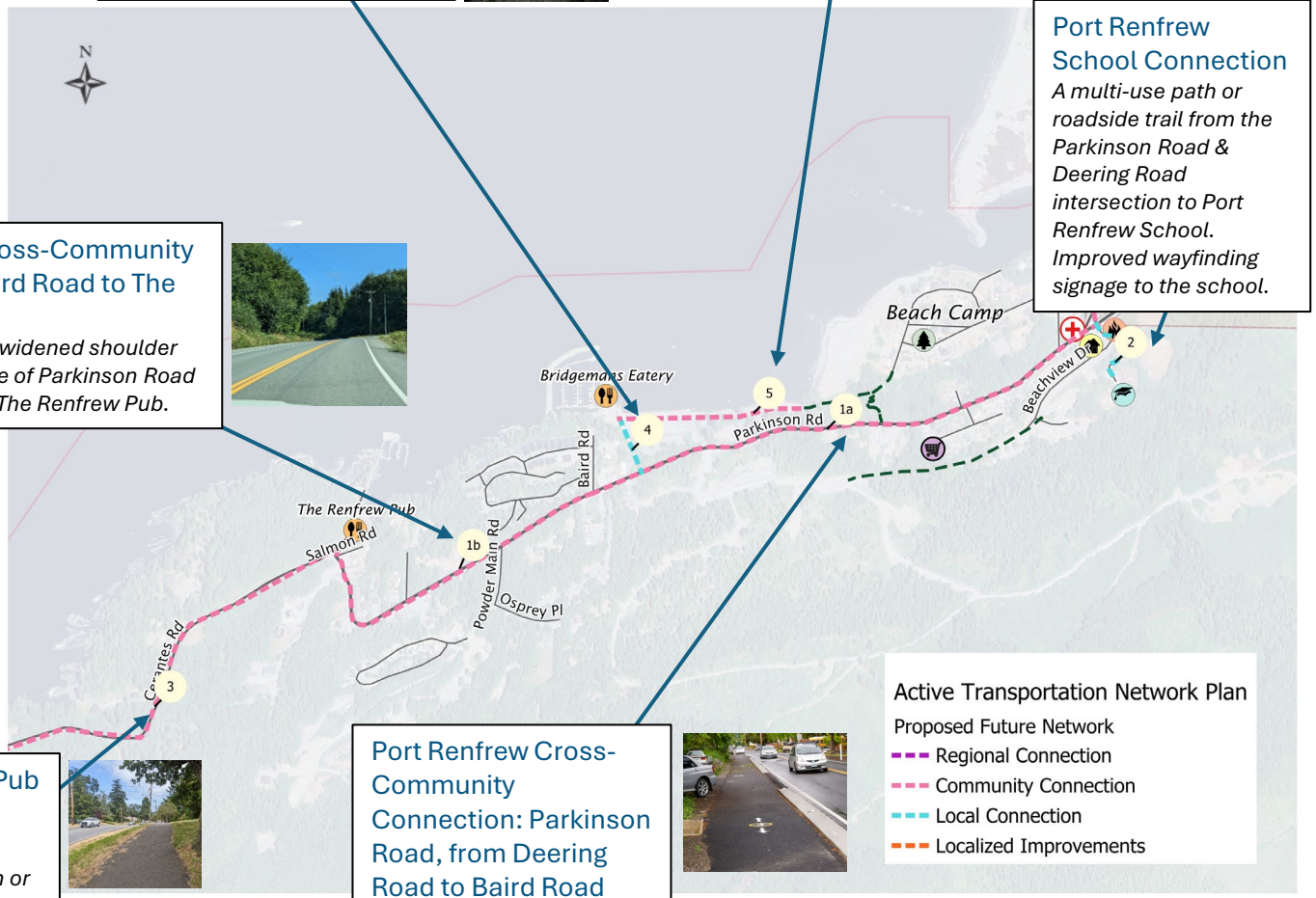
Your responses will provide valuable information for developing the Active Transportation Network Plan.

Juan de Fuca Electoral Area Active Transportation Network Plan

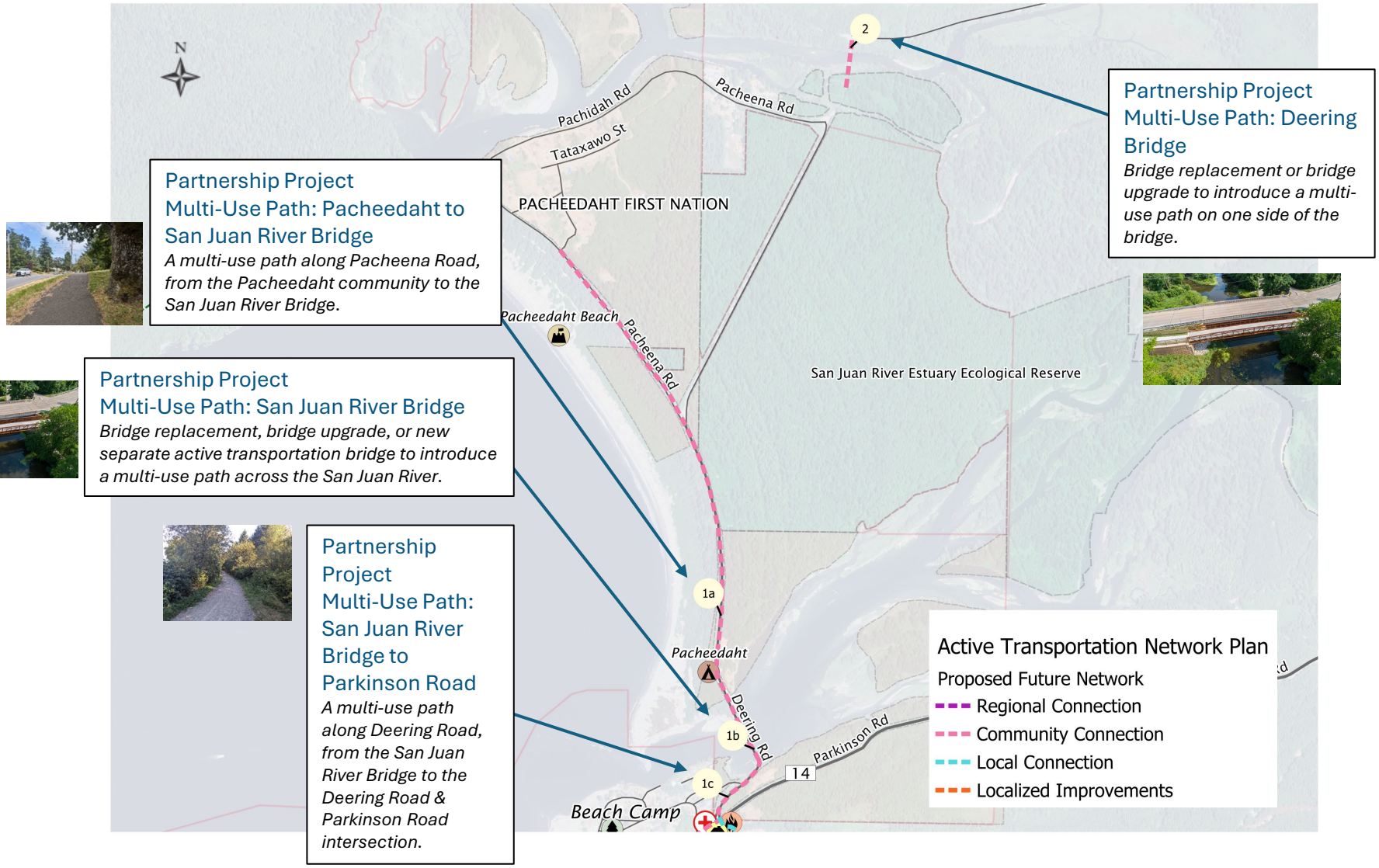
Public Survey 2

1. Are you a resident of the Juan de Fuca Electoral Area?
    a. If yes, select which community you live in from the drop-down menu (Port Renfrew, Jordan River, Shirley, Otter Point, East Sooke, Malahat, Willis Point, Other – specify in comment box)
    b. If no, which community do you live in? (specify in comment box)

2. Active transportation projects identified for the Port Renfrew area (area 1 of 2) are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?



3. Active transportation projects identified for the Port Renfrew area (area 2 of 2) are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?



Partnership Project
Multi-Use Path: Pacheedaht to San Juan River Bridge
A multi-use path along Pacheena Road, from the Pacheedaht community to the San Juan River Bridge.

Partnership Project
Multi-Use Path: Deering Bridge
Bridge replacement or bridge upgrade to introduce a multi-use path on one side of the bridge.

Partnership Project
Multi-Use Path: San Juan River Bridge
Bridge replacement, bridge upgrade, or new separate active transportation bridge to introduce a multi-use path across the San Juan River.

Partnership Project
Multi-Use Path: San Juan River Bridge to Parkinson Road
A multi-use path along Deering Road, from the San Juan River Bridge to the Deering Road & Parkinson Road intersection.

Partnership Projects: Pacheedaht First Nation

4. Active transportation projects identified for the Jordan River area are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?

Trail Connection: Petrel Drive to China Beach Trail Network

A trail between Petrel Drive and the China Beach Trail network to connect Petrel / Cormorant / Waters Edge to Juan de Fuca Provincial Park.

Campground-to-Campground Multi-Use Path: China Beach Campground to Waters Edge Drive

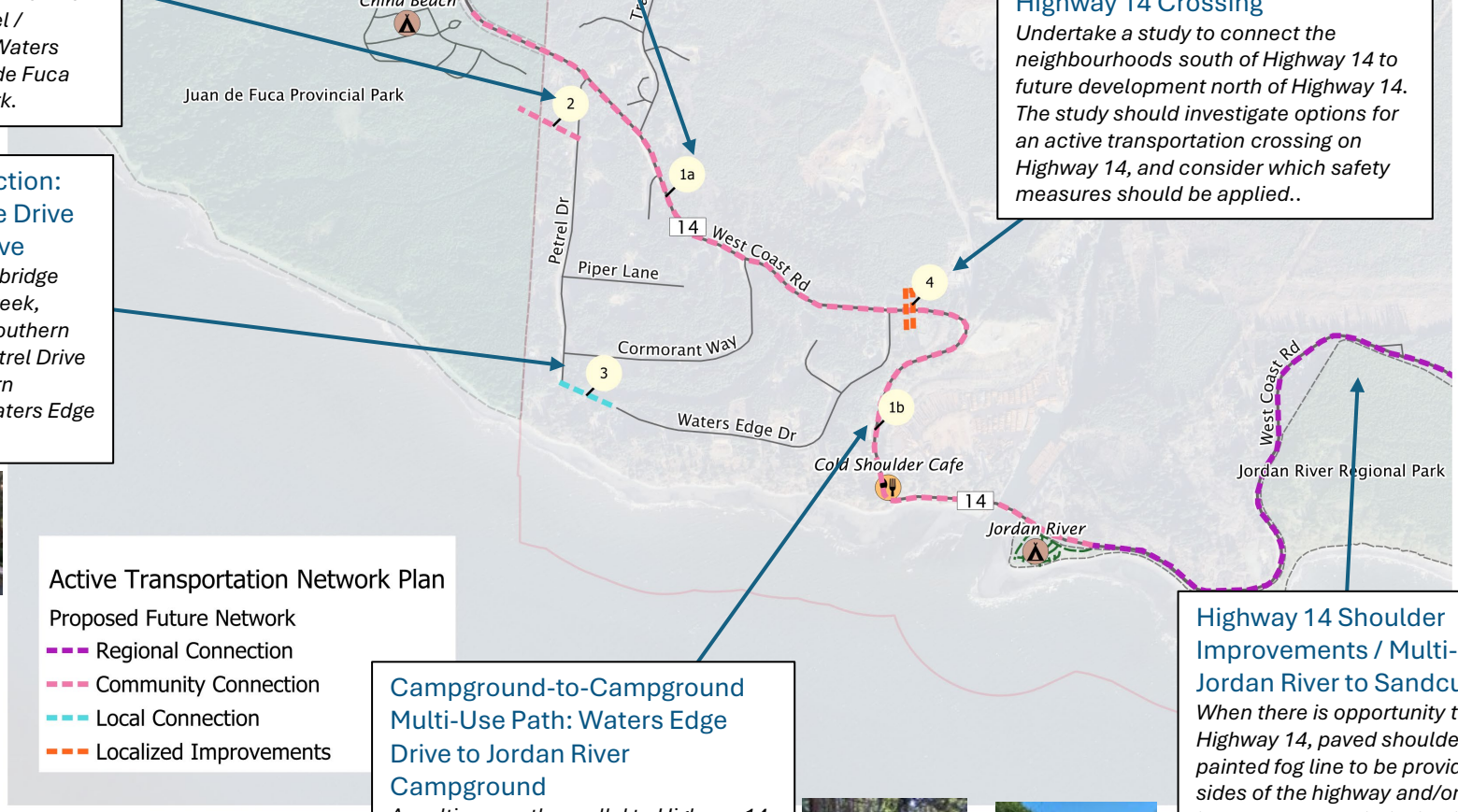
A multi-use path on the south side of Highway 14, from the China Beach Campground access to Waters Edge Drive.

Highway 14 Crossing

Undertake a study to connect the neighbourhoods south of Highway 14 to future development north of Highway 14. The study should investigate options for an active transportation crossing on Highway 14, and consider which safety measures should be applied..

Trail Connection: Waters Edge Drive to Petrel Drive

A trail and footbridge across First Creek, between the southern terminus of Petrel Drive and the western terminus of Waters Edge Drive.



Campground-to-Campground Multi-Use Path: Waters Edge Drive to Jordan River Campground

A multi-use path parallel to Highway 14, on the south and west sides of the highway, from Waters Edge Drive to Jordan River campground.

Highway 14 Shoulder Improvements / Multi-Use Path: Jordan River to Sandcut

When there is opportunity to upgrade Highway 14, paved shoulders and a painted fog line to be provided on both sides of the highway and/or where land in the CRD Parks jurisdication abuts the highway, develop a multi-use path parallel to the highway within that abutting park land.

Jordan River

5. Active transportation projects identified for the Shirley area are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?

Multi-Use Path: Sandcut to French Beach Campground

A multi-use path, on the north side of Highway 14, between Sandcut Beach access and French Beach campground access.

French Beach Campground to Stoked Wood-Fired Pizzeria & Market

A multi-use path or roadside trail on the south side of the Highway 14, between French Beach Provincial Park campground access and Stoked Wood-Fired Pizzeria & Market.

Access and Pedestrian Improvements at the Community Hall and Shirley Delicious

Undertake a study to reduce conflict points between vehicles and pedestrians at the Highway 14 & Sheringham Point Road intersection, and at the Sheringham Point Road & Community Hall Parking Lot intersection.

"Lower Loop": Woodhaven Road / Seaside Drive

Once "Lower Loop": Lighthouse Point project complete, provide wayfinding signage on Highway 14, directing active transportation users down Woodhaven Road, to indicate the "Lower Loop" is an alternate active transportation route to Highway 14. Provide additional "share the road" and "watch for cyclists / pedestrians" signs on Woodhaven Road.

Active Transportation Network Plan

Proposed Future Network

- Regional Connection
- Community Connection
- Local Connection
- Localized Improvements

"Lower Loop": Lighthouse Point

A connection between the south end of Woodhaven Road and Sheringham Point Road via a Lighthouse Point Road OR Sheringham Lighthouse Loop Trail to connect the "Lower Loop" as an alternate active transportation route to Highway 14.

"Lower Loop": Sheringham Point Road

Once "Lower Loop": Lighthouse Point project complete, provide wayfinding signage on Highway 14, directing active transportation users down Sheringham Point Road, to indicate the "Lower Loop" is an alternate active transportation route to Highway 14. Provide additional "share the road" and "watch for cyclists / pedestrians" signs, and traffic calming measures (e.g., speed humps, warning lights at horizontal curves, etc.).

Shirley

6. Active transportation projects identified for the Otter Point area are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?

Multi-Use Path: Muir Creek Beach to Gordon's Beach

A multi-use path, parallel to Hwy 14 spanning between Muir Creek Beach and Gordon's Beach.

Otter Point Road Shoulder Improvements

Widening of Otter Point Road to provide paved shoulders, including "share the road" and "watch for cyclists' signage.

Trail Connection: Wieland Trail to Kemp Lake Road

Extending the Wieland Trail to an access point from Kemp Lake Road.

Kemp Lake Road Shoulder Improvements

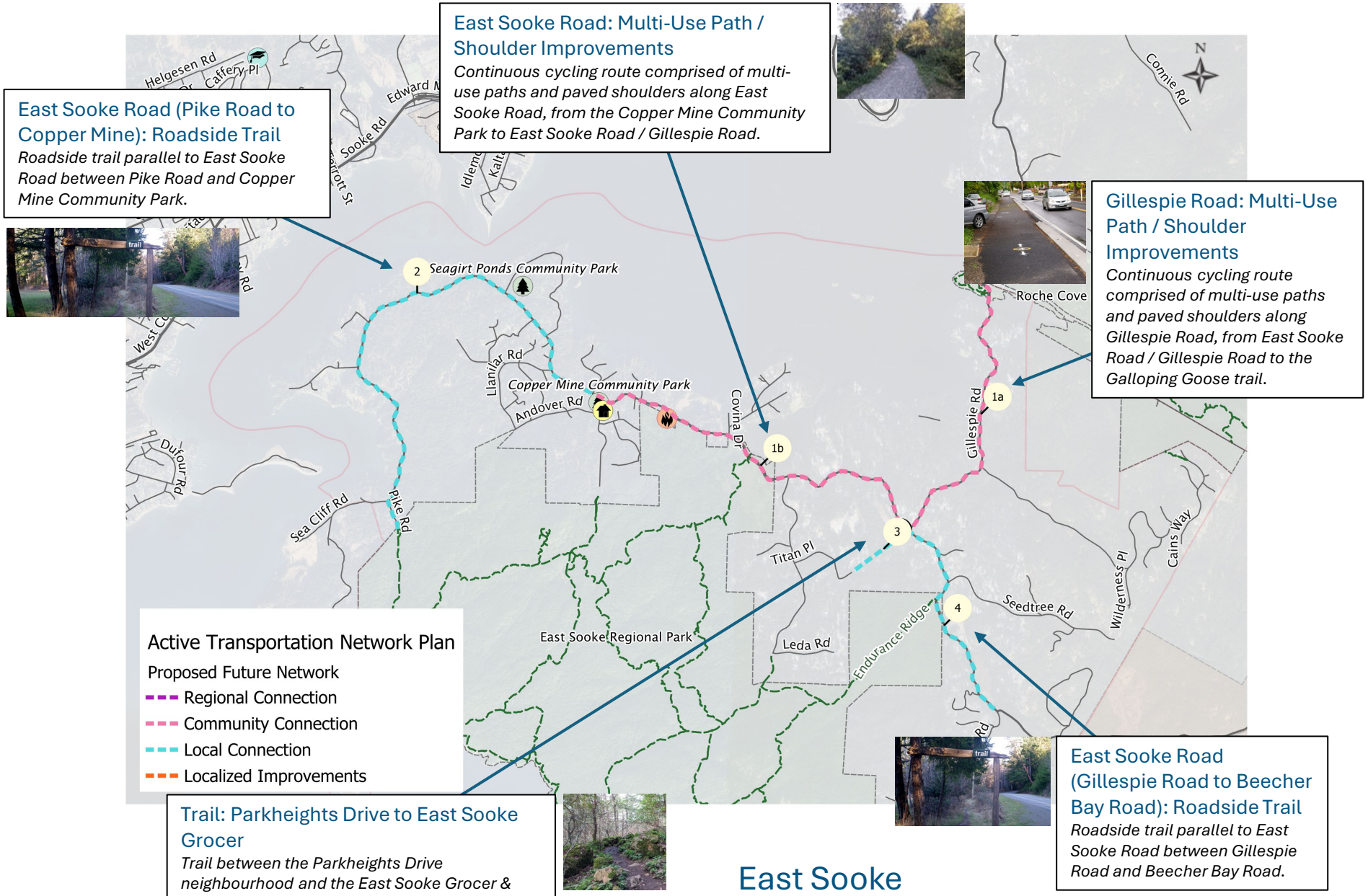
Widening of Kemp Lake Road to provide paved shoulders, including "share the road" and "watch for cyclists' signage.

Highway 14 Shoulder Improvements / Multi-Use Path: Gordon's Beach to District of Sooke

When there is opportunity to upgrade Highway 14, paved shoulders and a painted fog line to be provided on both sides of the highway and/or where land in the CRD Parks jurisdiction abuts the highway, develop a multi-use path parallel to the highway within that abutting park land.

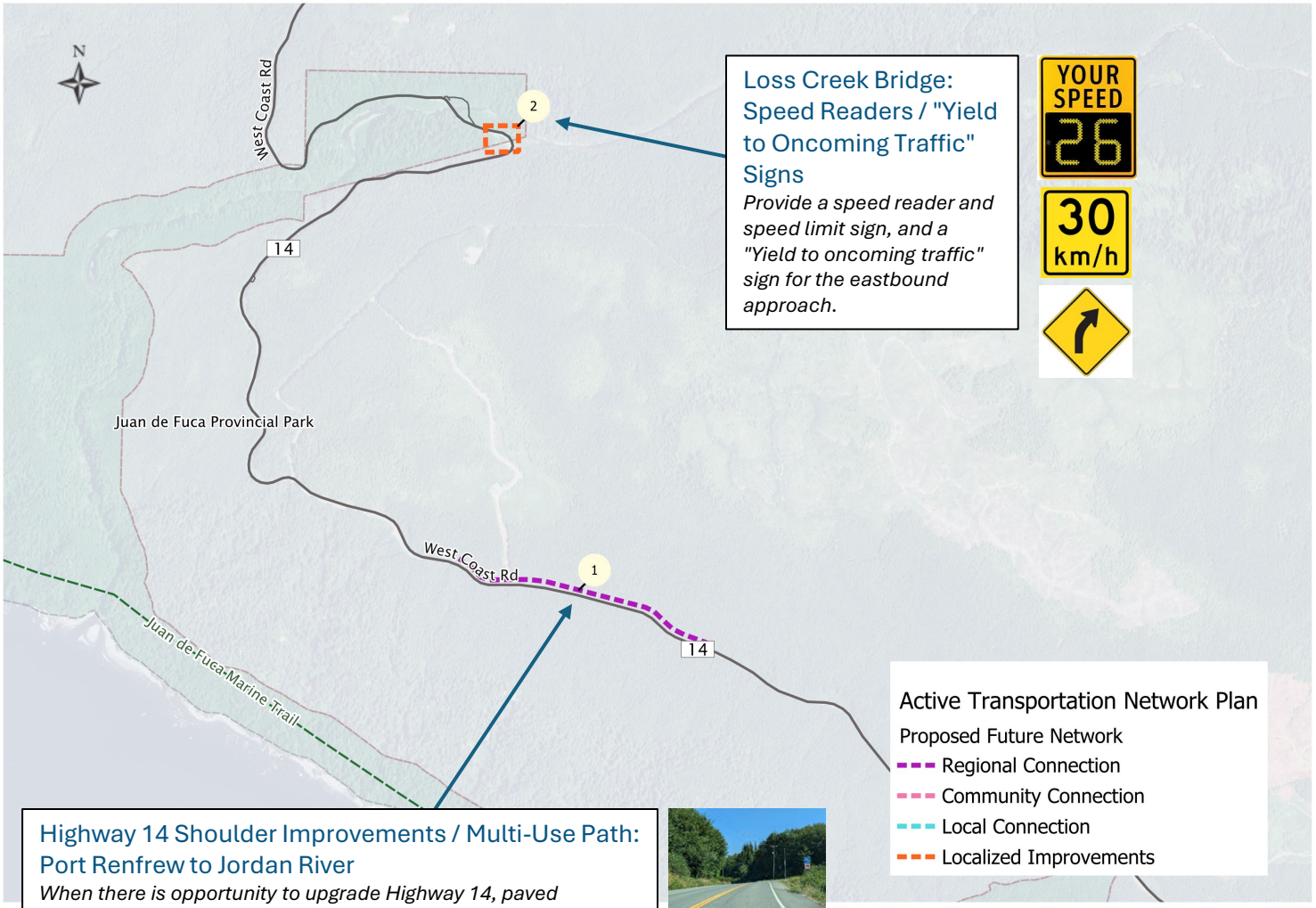
Otter Point

7. Active transportation projects identified for the East Sooke area are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?

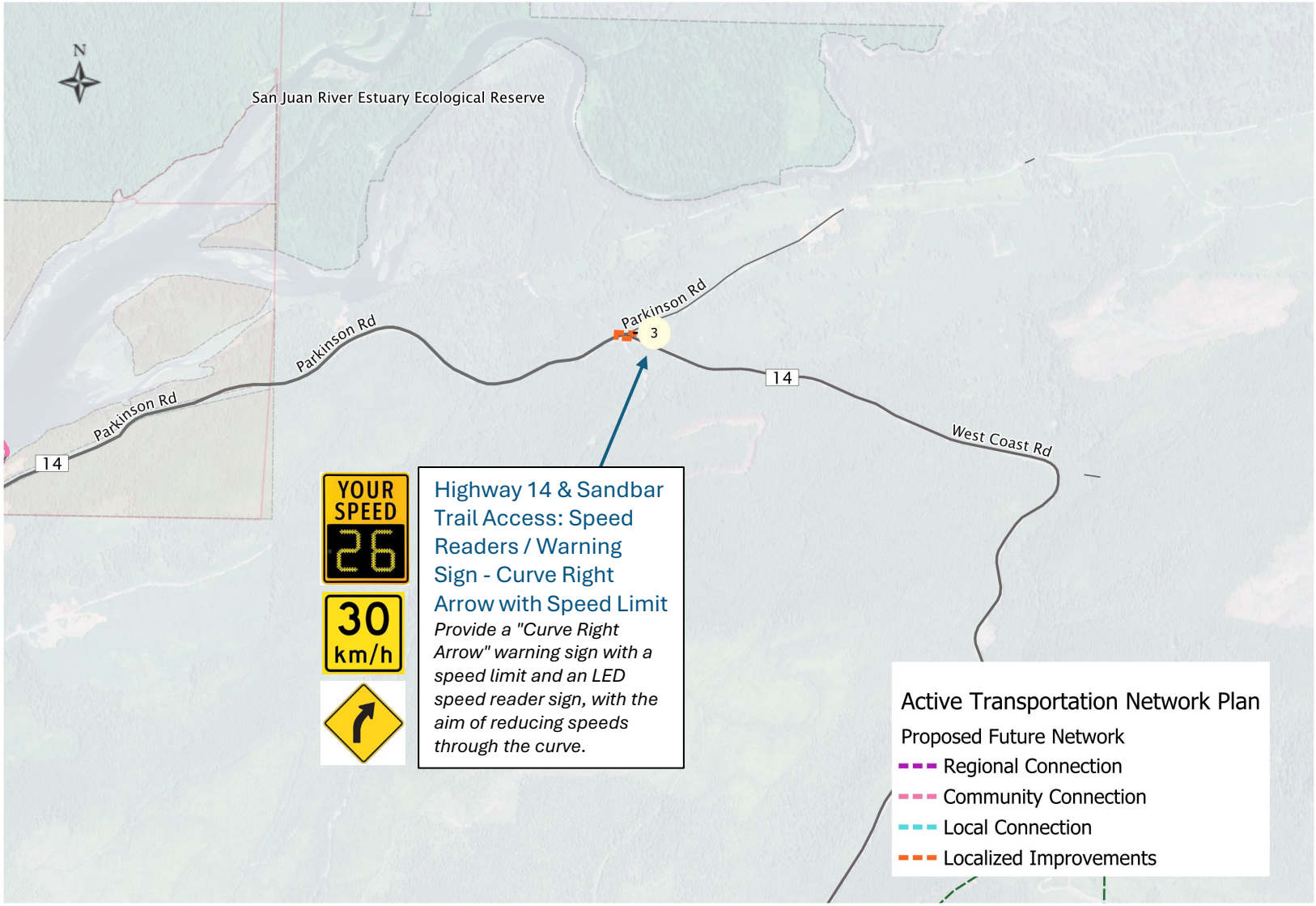


8. Active transportation projects identified for the section of West Coast Road (Highway 14) between Jordan River and Port Renfrew are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?

Otter Point to Port Renfrew (1/2)



9. Active transportation projects identified for the West Coast Road (Highway 14) & Sandbar Trail Access are highlighted below. Is there anything that we missed that you think should be included in the plan (comment box)?



Otter Point to Port Renfrew (2/2)

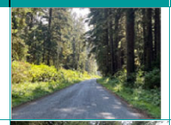
APPENDIX C
Scoring Matrix and Project List

EVALUATION CRITERIA

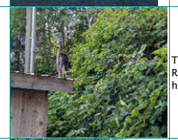
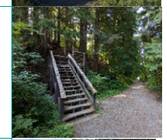
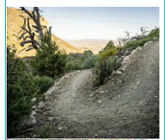
Project prioritization was guided by a quantitative scoring system based on the identified key objectives. Route options were evaluated and prioritized based on criteria presented below. Higher scores are higher priority improvements. Five points are given in four categories out of a total of 20 points. Points are calculated using the table below:

SCORING MATRIX				
Criteria	**Description**	**Score**	**Score Description**	**Example**
Connectivity (Network Gaps)	Ability to connect key destinations. Measured by a projects ability to improve connectivity, particularly for vulnerable road users. Includes evaluation of spot gaps, connection gaps, lineal gaps, and corridor gaps.	0 - 2	Creates tertiary connections. The network gap being addresed is at the regional or community level and is anticipated to be a low-demand route or is at the local level and is anticipated to be a low/medium-demand route. These gaps typically lead to recreational destinations or to an area used by a small subset of the community/region.	A connection to a low-density local neighbourhood.
		3	Creates secondary connections. The network gap being addressed is at the regional or community level and is anticipated to be a medium-demand route or is at the local level and is anticipated to be a high-demand route. Or the network gap impedes a connection to a popular destination that is not a community focal point (i.e., some presence of vulnerable road users is anticipated).	A connection to secondary destinations (e.g., retail, recreation, small community parks), or a connection via a low/medium-demand inter-community route (e.g., a route between independent communities).
		4 - 5	Creates primary (critical) connections. The network gapbeing addressed is at the regional or community level and is anticipated to be a high-demand route. Or the network gap impedes a key connection to a community focal point (i.e., high presence of vulnerable road users).	A connection to major destinations or a destination of a vulnerable road user group (e.g., schools, popular restaurants, grocery stores), or a connection via a high-demand inter-community route (e.g., a route between communities reliant on one another).
Community Benefit	Public benefit. Measured by a project's ability to improve safety of vulnerable road users, perceived equity, and local economy.	0 - 2	No or low impact to safety (i.e., the project is in a location with low vehicle volumes and speeds; minor application of the safe systems approach), equity, and/or local economy.	e.g., wayfinding signage, warning and advisory signs, trail markers, minor recreational trail connection.
		3	Medium impact to safety (i.e., the project is in a location with moderate vehicle volumes and speeds; moderate application of the safe systems approach); and/or the project has synergy with improved equity or local economy.	e.g., increased road shoulder width, a separated connection to a local destination, visibility improvements, letdowns and ramps.
		4 - 5	High impact to safety (i.e., the project is in a location with high vehicle volumes and speeds; major application of the safe systems approach); and/or the project directly targets improved equity or local economy.	e.g., separated bike lane on a high-volume road, off-street path with vertical separation on an arterial road, upgraded alternate routes via low-volume and low-speed roads.
Feasibility (Cost-Benefit)	Forecasted cost (capital & operating) vs. anticipated project benefit. Anticipated project benefit is based on a high-level estimate of the project's mode shift potential and its ability to impact travel operations. Can be adjusted based on ease of administration/development.	0 - 2	A high-cost project with comparatively low mode shift potential.	e.g., rural road resurfacing to achieve shoulder widening.
		3	A high-cost project with medium mode shift potential, a medium-cost project with medium mode shift potential, or a low-cost project with low mode shift potential.	e.g., resurfacing of a major road to achieve shoulders where none previously existed, off-street connection between two distant destinations.
		4 - 5	A low/medium cost project with medium/high mode shift potential, or a high cost project with high mode shift potential.	e.g., a warning sign for a dangerous maneuver where none previously existed, off-street connection on a major community route.
Engagement Input	Feedback received from the public engagement process. Measured by the frequency at which the project or issue was mentioned during engagement, or by the level of importance conveyed for that project or issue. The score is also increased if there are opportunities to collaborate on the project with other groups or agencies.	0 - 2	Not raised or minimally raised, or disagreed upon. Little opportunity for collaboration.	e.g., only one survey respondent mentioned the issue, multiple conflicting responses on the same issue.
		3	Raised occasionally, and mostly agreed upon. Some opportunity for collaboration.	e.g., multiple survey respondents mentioned the project/issue, respondents agree on key aspects of the project/issue, public partners expressed interest in collaborating on the project/issue.
		4 - 5	Raised often, and strongly agreed upon. Clear opportunity for collaboration.	e.g., project/issue was a common theme among survey respondents, respondents agree on the key aspects of the project/issue, public partners specifically identified areas for collaboration.

PARTNERSHIP PROJECTS

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS			RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)	Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Partnership Projects: Pacheedaht First Nation	PP1a	4.1	Multi-Use Path: Pacheedaht to San Juan River Bridge		Pacheena Road: No shoulder on either side. Road width is insufficient to allow two-way vehicle traffic with a pedestrian or cyclist on the road. Vehicle speeds are reportedly, and observed to be, high. Sight lines are limited. Route is of high desire and importance for Pacheedaht community members.		Paved/Crusher Fine Surface Multi-Use Path	A multi-use path along Pacheena Road, from the Pacheedaht community to the San Juan River Bridge.	T-1	Partnership Projects: Coordination with Pacheedaht First Nation required before timeline can be estimated.
Partnership Projects: Pacheedaht First Nation	PP1c	4.1	Multi-Use Path: San Juan River Bridge to Parkinson Road		Deering Road: No shoulder on either side. Active transportation users are forced onto the road; this in combination with high vehicle speeds and poor sight lines is undesirable. Grades are steep in this section. Route is of high desire and importance to Pacheedaht community members. Image Source: Google StreetView		Paved/Crusher Fine Surface Multi-Use Path	A multi-use path along Deering Road, from the San Juan River Bridge to the Deering Road & Parkinson Road intersection.	T-1	Partnership Projects: Coordination with Pacheedaht First Nation required before timeline can be estimated.
Partnership Projects: Pacheedaht First Nation	PP1b	4.1	Multi-Use Path: San Juan River Bridge		San Juan River Bridge: Bridge connects Port Renfrew and Pacheedaht First Nation. Bridge is one-lane (single-lane traffic). The west side of the bridge has a narrow footpath with railings on both sides; the footpath is insufficient for cyclists and mobility devices. In the existing condition, vehicles are forced to yield before the bridge to community members who use golf carts to travel to and from Port Renfrew. Image Source: Google StreetView		Bridge with Multi-Use Path **OR** Active Transportation Bridge	Bridge replacement, bridge upgrade, or new separate active transportation bridge to introduce a multi-use path (suitable for active modes and golf carts) on across the San Juan River. Image Source: Strand Associates	2	Partnership Projects: Coordination with Pacheedaht First Nation required before timeline can be estimated.
Partnership Projects: Pacheedaht First Nation	PP2	4.1	Multi-Use Path: Deering Bridge		Existing bridge is one lane (one-way-alternating traffic) with no path for active transportation users. Vehicle speeds are reportedly high. Route is of high importance to Pacheedaht community members to access key locations.		Bridge with Multi-Use Path **OR** Active Transportation Bridge	Bridge replacement or bridge upgrade to introduce a multi-use path (suitable for active modes and golf carts) on one side of the bridge. Image Source: Strand Associates	3	Partnership Projects: Coordination with Pacheedaht First Nation required before timeline can be estimated.

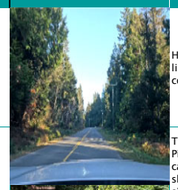
PORT RENFREW

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS				RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Port Renfrew	PR1a	4.2	Port Renfrew Cross-Community Connection: Deering Road to Baird Road		Parkinson Road is the main route through the community of Port Renfrew. Most sections do not have a shoulder on either side; active transportation users are forced onto the road. Vehicle speeds are reportedly frequently above 50 km/h. Sight lines are limited in some sections. A cross-community route is of high importance to the community. An alternate cross-community route exists via Tsonoqua Drive and the beach near the Marina; however, this route features limited connectivity to the wider community.				Paved Multi-Use Path	An east-west multi-use path across the community via Parkinson Road (Upper Route) between the Parkinson Road & Deering Road intersection and the Parkinson Road & Baird Road intersection. Image Source: Jonathan Maus - bikeportland.org	1	10-15 Years
Port Renfrew	PR1b	4.2	Port Renfrew Cross-Community Connection: Baird Road to The Renfrew Pub		A continuation of Parkinson Road, between Baird Road and The Renfrew Pub. Most sections do not have a shoulder on either side; active transportation users are forced onto the road. Vehicle speeds are reportedly high. Sight lines are limited in some locations, notably in front of Wild Coast Wilderness Resort (17268 Parkinson Rd) due to the significant horizontal curve.				Paved Multi-Use Path **OR** Paved Shoulder with Fog Line	A multi-use path or widened shoulder along the north edge of Parkinson Road from Baird Road to The Renfrew Pub. Image 1 Source: Jonathan Maus - bikeportland.org	2	10-15 Years
Port Renfrew	PR2	4.2	Port Renfrew School Connection		The existing route from Parkinson Road to the Port Renfrew School is via a narrow paved road that winds up a hill. No shoulder or footpath exists for active transportation users. Sight lines along the road are poor. There is no wayfinding signage for the school from Parkinson Road (i.e., it is unclear on how to access the school).				Crusher Fine/Natural Surface Trail, Wayfinding Signage	A multi-use path or roadside trail from the Parkinson Road & Deering Road intersection to Port Renfrew School. Improved wayfinding signage to the school.	T-3	5-10 Years
Port Renfrew	PR5	4.2	Lot 64 to the Marina		The existing route between Beach Camp and the Marina is undefined for active transportation users. Vehicle traffic is mixed with other traffic. The vehicle access to the Marina is steep; this in combination with an lack of active transportation infrastructure is undesirable.				Crusher Fine Surface Multi-Use Path	A multi-use path along the beach from the terminus of Queesto Drive to the Marina.	T-3	5-10 Years
Port Renfrew	PR4	4.2	Marina to Parkinson Road Connection		There is currently no direct connection between the Marina and Baird Road/Parkinson Road. A connection previously existed via a staircase; however, this is now condemned due to hazardous conditions.				Staircase **OR** Natural Suface Switchback Trail	A trail, or a staircase on or parallel to Baird Road to connect the Marina to Parkinson Road. Image 2 source: Hikingbeginner.com	4	5-10 Years
Port Renfrew	PR3	4.2	The Renfrew Pub to Botanical Beach		Approximately half the length of Cerantes Road (the road between The Renfrew Pub and Botanical Beach Parking Lot) is in the Port Renfew boundary. The road is narrow (insufficient width for two-way freeflow vehicle traffic) with no shoulders on either side. The road was observed to be used by backpackers to walk between the Juan de Fuca Marine Trail and Port Renfrew.				Paved/Crusher Fine Surface Multi-Use Path **OR** Paved Shoulder with Fog Line	A multi-use path or widened shoulder along Cerantes Road, between The Renfrew Pub to the Botanical Beach Park Boundary.	5	10-15 Years

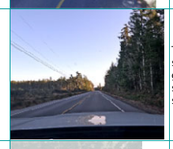
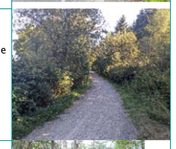
JORDAN RIVER

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)				Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Jordan River	JR1a	4.5	Campground-to-Campground Multi-Use Path: China Beach Campground to Waters Edge Drive		The existing route between China Beach Campground and Jordan River Campground is via Highway 14. This is undesirable as there are no shoulders on this section of the highway, vehicle speeds are high, and sight lines are poor in some locations. Active transportation users are forced onto the road.					Paved/Crusher Fine/Natural Surface Multi-Use Path	A multi-use path parallel to Highway 14, on the south side of the highway, from the China Beach Campground access to Waters Edge Drive.	T-1	10-15 Years
Jordan River	JR1b	4.5	Campground-to-Campground Multi-Use Path: Waters Edge Drive to Jordan River Campground		The existing route between China Beach Campground and Jordan River Campground is via Highway 14. This is undesirable as there are no shoulders on this section of the highway, vehicle speeds are high, and sight lines are poor in some locations. Active transportation users are forced onto the road. This section is also steep, which introduces additional hazards such as high speeds, poor sight lines, and reduced control of vehicles and bicycles.					Paved/Crusher Fine/Natural Surface Multi-Use Path	A multi-use path parallel to Highway 14, on the south and west sides of the highway, from Waters Edge Drive to Jordan River campground.	T-1	10-15 Years
Jordan River	JR2	4.5	Trail Connection: Petrel Drive to China Beach Trail Network		The existing connections between Petrel Drive and the China Beach Campground trail network, used by residents of west Jordan River, are informal and unmaintained. Unmaintained trails are of limited appeal as they present accessibility challenges for both people and pets. Image Source: Google StreetView					Natural Surface Trail	A trail between Petrel Drive and the China Beach Trail network to formally connect the Petrel / Cormorant / Waters Edge neighbourhoods to Juan de Fuca Provincial Park.	2	5-10 Years
Jordan River	JR4	4.5	Highway 14 Crossing		There are currently no active transportation crossings (e.g., crosswalk, signal, etc.) on Highway 14 in Jordan River. This is an issue as residents and visitors south of the highway who wish to visit the areas north of the highway do not have means to cross without entering a hazardous situation. In this section, Highway 14 does not have a shoulder on either side, vehicle speeds are high, sight lines are poor, and grades are steep.					Study: Active Transportation Highway Crossing	Undertake a study to connect the neighbourhoods south of Highway 14 to future development north of Highway 14. The study should investigate options for an active transportation crossing on Highway 14, and consider which safety measures should be applied.	3	10-15 Years
Jordan River	JR3	4.5	Trail Connection: Waters Edge Drive to Petrel Drive		In the existing condition, residents of Waters Edge Drive wishing to travel to Petrel Drive or China Beach Campground must route via Waters Edge Drive and Highway 14. This is a significant distance, and travelling along Highway 14 is undesirable. Travelling between the southern terminii of Waters Edge Drive and Petrel Drive would reduce this travel time significantly and be via low-volume roads, which is more desirable from a safety and comfort perspective. A gulley and creek separate the southern terminii of these roads. Image Source: Google StreetView					Natural Surface Trail with Wooden Bridge	A trail and footbridge across First Creek, between the southern terminus of Petrel Drive and the western terminus of Waters Edge Drive.	4	10-15 Years

SHIRLEY

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Shirley	S1	4.6	Multi-Use Path: Sandcut to French Beach Campground		Highway 14: No shoulder on either side. High vehicle speeds. Poor sight lines at some locations. Section is used by recreational cyclists and by commuters travelling between communities.				Crusher Fine Surface Multi-Use Path	A multi-use path, parallel to Highway 14, on the north side of the highway between Sandcut Beach access and French Beach campground access.	1	10-15 Years
Shirley	S2	4.6	French Beach Campground to Stoked Wood-Fired Pizzeria & Market		The route between French Beach Campground and the Stoked Wood-Fired Pizzeria and Market is via Highway 14. The route is popular with campground visitors, who walk or cycle to the market for food and shopping. In this section of Highway 14, there are no shoulders on either side, and vehicle speeds are high. A narrow foot trail has been created over time by walking traffic on the south edge of the highway, indicating the route's popularity with active transportation users. In the existing condition, the foot trail has minimal physical or spatial separation from the highway, and cyclists are forced to ride on the road.				Crusher Fine/Natural Surface Multi-Use Path **OR** Natural Surface Trail	A multi-use path or roadside trail parallel to Highway 14, on the south side of the highway, between French Beach Provincial Park campground access and Stoked Wood-Fired Pizzeria & Market. Image 3 Source: Comox Valley Regional District	2	5-10 Years
Shirley	S4	4.6	Access and Pedestrian Improvements at the Community Hall and Shirley Delicious		The south leg of the Highway 14 & Sheringham Point Road intersection is a high-traffic area for both vehicles and active transportation users. Vehicles use this leg to access the homes on Sheringham Point Road, access Lighthouse Point Park, and access parking for Shirley Delicious and the Community Hall. Active transportation users use the leg to cross between Shirley Delicious and the parking lot and Community Hall on the east side of the road. Access to the east parking lot is close (approx. 1m) to the southeast corner of the intersection. There are no formalized paths or crossings for active transportation. Area is highly conflicted.				Study: Multi-Modal Circulation Improvements at the Highway 14 & Sheringham Point Road intersection	Undertake a study to reduce conflict points between vehicles and pedestrians at the Highway 14 & Sheringham Point Road intersection, and at the Sheringham Point Road & Community Hall Parking Lot intersection.	3	1-5 Years
Shirley	S3a	4.6	"Lower Loop": Lighthouse Point		The southern terminii of Sheringham Point Road and Woodhaven Road / Seaside Drive do not connect via a public road. Instead, there are two options to connect: 1) The private Lighthouse Point Road connects the two public roads, but is gated at the discretion of the residents and isn't a reliable route option; 2) Sheringham Point Trail is accessible approximately 100m north of the end of Seaside Drive, but requires walking through the forest to access. The trail connects directly to Sheringham Point Road. Both of these options are not desirable from a reliability and accessibility perspective. Image Source: Google StreetView				Crusher Fine Multi-Use Path **OR** Natural Surface Trail	A connection between the southern terminii of Woodhaven Road and Sheringham Point Road via either Lighthouse Point Road **OR** Sheringham Lighthouse Loop Trail to connect the "Lower Loop" as a continuous walking/cycling route that is an alternative to Highway 14.	T-4	5-10 Years
Shirley	S3b	4.6	"Lower Loop": Woodhaven Road / Seaside Drive		Woodhaven Road / Seaside Drive is an approximately 3-5m-wide local road that connects from the highway to Lighthouse Point on the west side of Shirley. The road serves as local access to single-family homes; therefore, it does not experience high vehicle volumes. Width is sufficient for single-lane passing. Sight lines are poor in some locations with horizontal curvature. There are no shoulders on either side. Route is popular with local active transportation users. Image Source: Google StreetView				Wayfinding signs, "share the road" signs, "watch for cyclists / pedestrians" signs	Once project S3a is completed, provide wayfinding signage on Highway 14, directing active transportation users down Woodhaven Road, to indicate the "Lower Loop" is an alternate active transportation route to Highway 14. Provide additional "share the road" and "watch for cyclists / pedestrians" signs on Woodhaven Road.	T-4	5-10 Years
Shirley	S3c	4.6	"Lower Loop": Sheringham Point Road		Sheringham Point Road is an approximately 2.5-3m-wide local road that connects from the highway to Lighthouse Point on the east side of Shirley. The road serves as both local residential access and as access to Lighthouse Point Park. The road width allows vehicles to pass one another only at specific points; otherwise, vehicle traffic is single-lane. Depite the low vehicle volumes, Sheringham Point Road is undesirable as an active transportation route in its current condition due to the narrow width, lack of shoulders, and variable sight lines. Image Source: Google StreetView				Wayfinding signs, "single file" signs, "watch for cyclists / pedestrians" signs, Traffic calming measures (speed humps, etc.)	Once project S3a is completed, provide wayfinding signage on Highway 14, directing active transportation users down Sheringham Point Road, to indicate the "Lower Loop" is an alternate active transportation route to Highway 14. Provide additional "share the road" and "watch for cyclists / pedestrians" signs on Sheringham Point Road. Introduce traffic calming measures on Sheringham Point Road (e.g., speed humps, warning lights at horizontal curves, etc.). Image 3 source: HRG-inc.com	T-4	5-10 Years

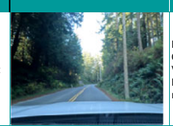
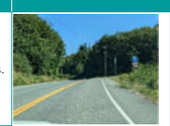
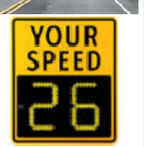
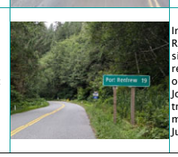
OTTER POINT

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS			RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)	Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Otter Point	OP1	4.7	Otter Point Road Shoulder Improvements		In this section of Otter Point Road, there are no shoulders on either side. Vehicle speeds are high (observed exceeding 50 km/h speed limit) and sight lines are variable. Route is popular with cyclists commuting between Otter Point and Sooke. Cyclists are currently forced to ride on the road, with vehicles crossing the centreline to pass them. Image Source: Google StreetView	 	Paved Shoulders with Fog Lines, "Share the road" signs, "Watch for cyclists" signs	Widening of Otter Point Road to provide a paved shoulder on both sides, including fog lines to delineate shoulders from the vehicle travel lane (i.e., upgrade Otter Point Road to match its existing condition at Sarah Drive). Include "share the road" and "watch for cyclists" signage.	1	Advocacy of community interest to MoTT: timeline cannot be estimated.
Otter Point	OP2	4.7	Kemp Lake Road Shoulder Improvements		Kemp Lake Road is a two-lane collector road. There are no shoulders on either side. The road is used to access the trail network around Kemp Lake, and by local and visiting active transportation users passing through Otter Point. Active transportation users are currently forced to use the road, with vehicles crossing the centreline to pass. Image Source: Google StreetView	 	Paved Shoulders with Fog Lines, "Share the road" signs, "Watch for cyclists" signs	Widening of Kemp Lake Road to provide a paved shoulder on both sides, including fog lines to delineate shoulders from the vehicle travel lane. Include "share the road" and "watch for cyclists" signage.	T-2	Advocacy of community interest to MoTT: timeline cannot be estimated.
Otter Point	OP3	4.7	Multi-Use Path: Muir Creek Beach to Gordon's Beach		This section of Highway 14 connects two popular beaches. In addition, the section provides access to many vacation rentals, which are likely generators of recreational active transportation. The section has paved shoulders on both sides with a painted fog line, but no physical separation.		Crusher Fine Surface Multi-Use Path	A multi-use path, parallel to Highway 14, on the north side of the highway between Muir Creek Beach and Gordon's Beach.	T-2	Advocacy of community interest to MoTT: timeline cannot be estimated.
Otter Point	OP4	4.7	Trail Connection: Wieland Trail to Kemp Lake Road		The Wieland Trail currently runs along the east edge of the Sooke Business Park for approximately 400 metres. There are no formalized trails beyond the southern terminus that connect to Kemp Lake Road. A trail in that area would connect Poirier Lake and William Simmons Memorial Community Park and the Kemp Lake Public Access lot. In addition, it would provide a recreational connection for the businesses in the Sooke Business Park. BaseMap Source: CRD Regional Map		Natural Surface Trail	A continuation of the Wieland Trail that would extend from its current southern terminus along the south edge of the "Warburton Woodworks" site, to an access point from Kemp Lake Road.	3	1-5 Years

EAST SOOKE

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
East Sooke	ES1b	4.8	East Sooke Road: Multi-Use Path / Shoulder Improvements		East Sooke Road is a two-lane collector road that serves as the main route through East Sooke. The road is the main route for cyclists and other active transportation users, who use the road to access Gillespie Road and the Galloping Goose Regional Trail. The road does not have a shoulder on either side. Vehicle speeds are reportedly high and sight lines are poor in some locations due to horizontal curvature. Cylists and other active transportation users are forced to use the road; this is undesirable to the high vehicle speeds and poor sight lines, and vehicles being forced to cross the centreline to pass active transportation users. Image Source: Google StreetView				Combination of Paved Shoulders with Fog Lines and Crusher Fine/Natural Surface Multi-Use Path	Continuous cycling route on or parallel to East Sooke Road that provides a connection from the Copper Mine Community Park to the East Sooke Road & Gillespie Road intersection. Cyclists should be able to ride on either a multi-use path or a paved shoulder, with transitions between the two facility types, along the entire length of this project.	1	Advocacy of community interest to MoTT: timeline cannot be estimated.
East Sooke	ES1a	4.8	Gillespie Road: Multi-Use Path / Shoulder Improvements		Gillespie Road, between the Galloping Goose Trail and the Gillespie Road & East Sooke Road intersection, is a two-lane collector road. There is a paved shoulder on both sides with a painted fog line. The route is used by active transportation users to travel between East Sooke and the Galloping Goose Regional Trail. Vehicle speeds are reportedly high and sight lines are poor in some locations due to horizontal curvature. Image Source: Google StreetView				Combination of Paved Shoulders with Fog Lines and Crusher Fine/Natural Surface Multi-Use Path	Continuous cycling route on or parallel to Gillespie Road that provides a connection from the East Sooke Road & Gillespie Road intersection to the Galloping Goose trail. Cyclists should be able to ride on either a multi-use path or a paved shoulder, with transitions between the two facility types, along the entire length of this project.	2	Advocacy of community interest to MoTT: timeline cannot be estimated.
East Sooke	ES2	4.8	East Sooke Road (Pike Road to Copper Mine): Roadside Trail		East Sooke Road is a two-lane collector road that serves as the main route through East Sooke. This section of East Sooke Road is less populated than those further east; however, it still serves as an access road to residential areas and the Pike Road park access. The road does not have a shoulder on either side. Vehicle speeds are reportedly high and sight lines are poor in some locations due to horizontal curvature. Cylists and other active transportation users are forced to use the road; this is undesirable to the high vehicle speeds and poor sight lines, and vehicles being forced to cross the centreline to pass active transportation users. Image Source: Google StreetView				Natural Surface Trail	Roadside trail parallel to East Sooke Road between Pike Road and Copper Mine Community Park.	T-3	15+ Years
East Sooke	ES3	4.8	Trail: Parkheights Drive to East Sooke Grocer		The East Sooke Grocer is located at a community hub: the Gillespie Road & East Sooke Road intersection. This intersection is the main entry point into East Sooke. The East Sooke Grocer itself provides a well-used service to community members, who visit this area for local goods and groceries. Currently, the residents on or near Parkheights Drive are forced to take an indirect route to the Grocer, via East Sooke Road. A more direct trail connection would reduce travel distance and encourage active transportation over vehicle travel. BaseMap Source: CRD Regional Map				Crusher Fine Mult-Use Path **OR** Natural Surface Trail	Trail between the Parkheights Drive neighbourhood and the East Sooke Grocer & General Store.	T-3	15+ Years
East Sooke	ES4	4.8	East Sooke Road (Gillespie Road to Beecher Bay Road): Roadside Trail		East Sooke Road is a two-lane collector road that serves as the main route through East Sooke. This section of East Sooke Road is less-used than the section between Gillespie and the Community Hall to the north; this section mainly serves as park access to areas along the coast. The road does not have a shoulder on either side. Vehicle speeds are reportedly high and sight lines are poor in some locations due to horizontal curvature. Cylists and other active transportation users are forced to use the road; this is undesirable to the high vehicle speeds and poor sight lines, and vehicles being forced to cross the centreline to pass active transportation users. Image Source: Google StreetView				Natural Surface Trail	Roadside trail parallel to East Sooke Road between Gillespie Road and Beecher Bay Road.	4	15+ Years

WEST COAST ROAD / HIGHWAY 14 (OTTER POINT - PORT RENFREW)

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Highway 14: East Sooke to Jordan River	WC4	4.5	Highway 14 Shoulder Improvements / Multi-Use Path: Jordan River to Sandcut		Highway 14: This section features steep grades between the Jordan River Campground and Sandcut Beach. There is no shoulder on either side. Vehicle speeds are reportedly high. Sight lines are poor in some locations. From an active transportation perspective, section is reportedly used mostly by recreational cyclists.				Paved Shoulders with Fog Lines **OR** Crusher Fine/Natural Surface Multi-Use Path	When there is an opportunity to upgrade a section of Highway 14 (e.g., capital planning, routine maintenance, repairs), it is recommended that paved shoulders and a painted fog line be provided on both sides of the highway AND/OR where land in the CRD Parks jurisdication abuts the highway, develop a multi-use path parallel to the highway within that abutting park land.	T-1	5-10 Years
Highway 14: East Sooke to Jordan River	WC5	4.7	Highway 14 Shoulder Improvements / Multi-Use Path: Gordon's Beach to District of Sooke		Highway 14: No shoulder on either side. High vehicle speeds. Poor sight lines at some locations. Section is reportedly used by both commuters (especially those travelling between Sooke and Otter Point) and recreational cyclists. However, an alternate route exists via Otter Point Road. Image Source: Google StreetView				Paved Shoulders with Fog Lines **OR** Crusher Fine/Natural Surface Multi-Use Path	When there is an opportunity to upgrade a section of Highway 14 (e.g., capital planning, routine maintenance, repairs), it is recommended that paved shoulders and a painted fog line be provided on both sides of the highway AND/OR where land in the CRD Parks jurisdication abuts the highway, develop a multi-use path parallel to the highway within that abutting park land.	T-1	Advocacy of community interest to MoTT: timeline cannot be estimated.
Highway 14: Port Renfrew - Jordan River	WC2	4.4	Loss Creek Bridge: Speed Readers / "Yield to Oncoming Traffic" Signs		The eastbound approach to the Loss Creek Bridge has limited sight lines and minimal warning signage for the one-lane condition on the bridge. Multiple head-on collisions have occurred at this location in the last five years. Image Source: Google StreetView				Speed Reader, Speed Limit Sign, "One Lane" sign WA-24 + WA-24S	Perform a traffic study, conducted by a traffic engineer, to contemplate additional signage at this location. This may include a speed reader and speed limit sign (posted speed limit for the approach with an LED sign that provides the current speed of the approaching vehicle) and a "Yield to oncoming traffic" sign for the eastbound approach.	T-2	Advocacy of community interest to MoTT: timeline cannot be estimated.
Highway 14: Port Renfrew - Jordan River	WC3	4.3	Highway 14 & Sandbar Trail Access: Speed Readers / Warning Sign - Curve Right Arrow with Speed Limit		At this location, the access points for two local roads intersect the highway; sight lines are limited and the point-of-entry from the side roads onto the highway is undefined. Multiple collisions have occurred at this location in the last five years. Image Source: Google StreetView				"Curved Right Arrow" Warning Sign, Speed Reader, Speed Limit Sign	Perform a traffic study, conducted by a traffic engineer, to contemplate additional signage at this location. This may include a "Curve Right Arrow" warning sign with a speed limit and an LED speed reader sign, with the aim of reducing speeds through the curve.	T-2	Advocacy of community interest to MoTT: timeline cannot be estimated.
Highway 14: Port Renfrew - Jordan River	WC1	Not referenced in an Exhibit as this project is recommended to be completed on an opportunity basis, and does not have a defined area.	Highway 14 Shoulder Improvements / Multi-Use Path: Port Renfrew to Jordan River		In general, the section of Highway 14 between Port Renfrew and Jordan River does not have a shoulder on either side, is narrow, features poor sight lines, and has steep grades on one or both sides. Vehicle speeds are reportedly and observed to be high in this section as there are few points of interest (i.e., most drivers are travelling between Port Renfrew and Jordan River as quickly as possible). The section is not a key active transportation route (i.e., limited commuter activity) and is reportedly mostly used by recreational cyclists. The section also runs parallel to the Juan de Fuca Marine Trail, a hiking trail along the coast.				Paved Shoulders with Fog Lines **OR** Crusher Fine/Natural Surface Multi-Use Path	When there is an opportunity to upgrade a section of Highway 14 (e.g., capital planning, routine maintenance, repairs, etc.), it is recommended that paved shoulders and a painted fog line be provided on both sides of the highway AND/OR where land in the CRD Parks jurisdication abuts the highway, develop a multi-use path parallel to the highway within that abutting park land.	3	Advocacy of community interest to MoTT: timeline cannot be estimated.

MALAHAT

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Malahat	M1	4.9	Traffic Calming Signage: Aspen Road		Aspen Road is a narrow winding road with no shoulders on either side. The vertical and horizontal curvature limits sight lines in some locations. Active transportation users on Aspen Road are at risk due to high vehicle speeds and poor sight lines. Image Source: Google StreetView				Traffic Calming Signage	Perform a traffic study, conducted by a traffic engineer, to cotemplate various traffic calming improvements at locations with limited visibility and/or high speeds, which may include warning signs, speed readers, and/or wayfinding signs.	1	Advocacy of community interest to MoTT: timeline cannot be estimated.

WILLIS POINT

PROJECT ID				EXISTING CONDITIONS		PROJECT DETAILS					RANK	CONSTRUCTION FORECAST
Area	Project Map Code	Exhibit Reference	Project Name	Existing Condition Image	Existing Condition Description	Precedent Image(s)			Project Facility Type	Project Description	Community Priority Rank	Estimated Start of Project Construction
Willis Point	WP1	4.10	Traffic Calming Signage: Willis Point Road		Willis Point Road is a narrow winding road with no shoulders on either side. The vertical and horizontal curvature limits sight lines in some locations. Active transportation users on Willis Point are at risk due to high vehicle speeds and poor sight lines. Image Source: Google StreetView				Traffic Calming Signage	Perform a traffic study, conducted by a traffic engineer, to cotemplate various traffic calming improvements at locations with limited visibility and/or high speeds, which may include warning signs, speed readers, and/or wayfinding signs.	1	Advocacy of community interest to MoTT: timeline cannot be estimated.

APPENDIX D
Active Transportation Design Guidelines

ACTIVE TRANSPORTATION DESIGN GUIDELINES

In support of Capital Regional District
Juan de Fuca Electoral Area
Active Transportation Network Plan

bunt&associates

TABLE OF CONTENTS

1 DESIGNING FOR DIFFERENT USERS

A core component of design is prioritizing safety for a wide range of users. Though traditionally active transportation facilities have focused on pedestrians and cyclists, an increasingly diverse set of users are enjoying these amenities including people on skateboards and scooters (both electric and human-powered). Each of these users has unique needs and interact with each other differently.

1.1 COMPARING STREET USERS

Different street users occupy different amounts of space and travel at varying speeds. Hence, speed, space, and travel distance are important considerations when mixing different users. Typical street user characteristics are illustrated below.

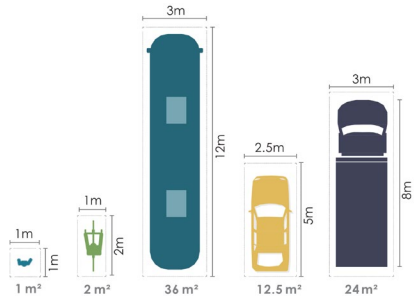


Figure 1.1 Typical Envelopes for Different Users
Source: Content by Global Designing Cities Initiative Global Street Design Guide

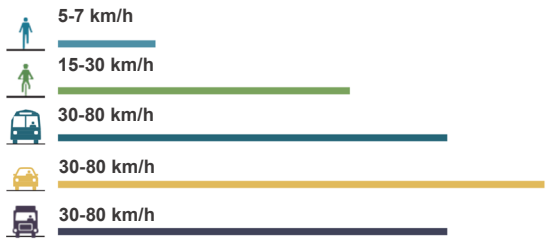


Figure 1.2 Typical Speeds for Different Users

1.2 SPEED

At a basic level, speed is the primary consideration when mixing different users on the same path or trail.

Typical Speeds for Different Users

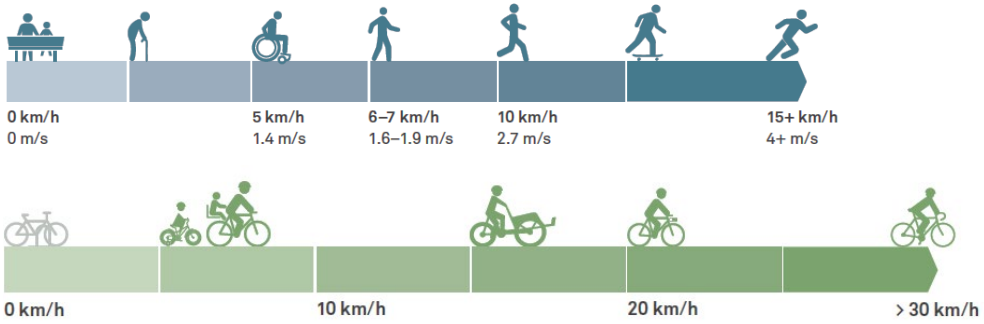


Figure 1.3 Typical Speeds for Pedestrians & Cyclists
Source: Content by Global Designing Cities Initiative Global Street Design Guide

1.3 SHARED SPACE FACILITY DESIGN CONSIDERATIONS

Maximize safety and enjoyment where a variety of users share space by:

> Considering all potential users when designing a facility
> Separating cyclists and pedestrians when possible
> Mixing micro-mobilities such as skateboarders or scooters with cyclists rather than pedestrians
> Increasing shared facility widths where separate pedestrian facilities are not feasible or desired
> Maintaining a consistent set of rules for all users while understanding diverse needs

2 EMERGING TRENDS

2.1 SHARED MICRO-MOBILITY

Micro-mobility refers to several small, one-person vehicles. The term is used primarily for electric scooters and shared bicycles. Many companies have begun providing shared dockless electric scooters in cities worldwide. The introduction of dedicated cycling facilities has been shown to reduce e-scooter collisions by 90%.

2.2 ELECTRIC BICYCLES

The market share of electric bicycles has grown significantly in the last five years. Electric bicycles increase distances that riders are willing to cycle and attract users that would not be typically interested in cycling.

2.3 EVOLVED BICYCLES

A wide range of bicycles are available to accommodate varied needs. These include:

RECUMBENT

A recumbent cycling position may put less strain on the rider's back and joints.

LONG-TAIL

An elongated tail is provided which is commonly used to seat one to three children and/or cargo. Long-tails are longer and heavier than standard bicycles.

CARGO

Used by businesses to deliver goods and parents to transport children. They range in size and weight but are always wider than standard bicycles.

TRAILER

A trailer is typically fitted to a standard bicycle and are often used by parents to transport their children but can also be used to move goods.

HANDCYCLE

Handcycles can come as one piece or as a 'clip-on' attachment for a wheelchair.

TANDEM

Tandems are designed for two people to ride together.

TRICYCLE

Has three wheels and offers good stability. They also exist in tandem and recumbent versions.

3 PEDESTRIAN FACILITIES

The design of pathways, crossings, and trails has a significant impact on the safety, accessibility, and overall quality of the pedestrian experience.

3.1 TYPES OF PEDESTRIAN FACILITIES

Pedestrian facilities can be broadly divided into facilities designed for all ages and abilities and supporting facilities.

All Ages and Abilities Facilities

Facilities for all ages and abilities (AAA) are safe and accessible for all users. Pedestrian age is a major factor that can impact a pedestrian's walking characteristics such as walking speed and environmental perception. Older pedestrians or pedestrians with disabilities may also require assistive mobility devices that call for special design considerations. The following facilities can be designed to AAA standards.

> **Off-Street Asphalt (Paved) Multi-Use Paths:** Paved (e.g., concrete, asphalt) pathways physically separated from the road.
> **Off-Street Crusher Fine (Paved) Multi-Use Paths:** Crusher fine (a.k.a. crusher dust, a byproduct of rock crushing that comprises only the fine rock particles and dust) pathways physically separated from the road.

Multi-use paths differ from trails in that they are typically well-marked, have a consistent width, and avoid extraneous difficulty (e.g., elevation gain, stairs, ladders, etc.) associated with recreational trails.

Supporting Facilities

Supporting facilities can be provided in rural contexts where AAA facilities are not feasible. Special consideration should be given to providing traffic calming measures to reduce motor vehicle speeds where separated sidewalk facilities cannot be maintained. The following are types of supporting pedestrian facilities from most to least desirable.

> **Off-Street Natural Surface Multi-Use Path:** Pathways separated from the road that rely on the natural ground surface (e.g., packed dirt, rock). These paths provide high-quality separation but are not AAA due to uneven surfaces and susceptibility to weather (natural surfaces can by muddy, slippery, and pool water).
> **Non-Separated Walking Paths:** Paved (pavement or crusher fine) pathways that are located directly next to the roadway.
> **Separated Trails:** Natural surface (e.g., packed dirt, rock) trails can serve as both connections and recreational options. Trails differs from paths as they are designed to minimally impact the land and feature the natural geography of the area; as a result, they may be less suitable for AAA as their widths may be inconsistent, have tripping hazards (rocks, roots), and have non-AAA features such as ladders, ropes, and bridges. However, they do provide separation from non-walking modes.
> **Walkable Shoulders:** Roadway shoulders that can accommodate people walking. While the terrain of paved roadway shoulders is typically easy for AAA, the proximity of shoulders to vehicle traffic presents safety risks.

3.2 PATHWAY DESIGN PRINCIPLES

> Provide separated pathways where possible by adding elements between vehicles and pedestrians such as bollards, detectable warning strips, or textured pavers. Or provide physical separation with a landscape or natural surface strip between the pathway and vehicles.

> When interfacing with roads or other facilities, provide non-visual cues for users who are blind through use of detectable surfaces such as tactile warning strips, detectable edges, and detectable changes in surface texture.

> Provide firm, stable, and slip resistant surfaces with minimal discontinuities and horizontal openings that could trap wheels.

> Ensure that changes in pavements feature distinct differences in texture, color, and tonal contrast for individuals with low vision.

3.3 CROSSING DESIGN PRINCIPLES

Safe and accessible pedestrian crossings are crucial to ensuring all ages and abilities can navigate the transportation network.

> Provide curb/wheelchair ramps at all intersection corners to allow access for all users.

> Provide tactile mats and brightly colored bollards at intersection corners to indicate where crossing is safe to users with visual impairments.

> Enhance crosswalk markings through use of zebra or decorative crosswalk markings.

4 CYCLING FACILITIES

Creating a network of cycling facilities that accommodates users of all ages and abilities requires a breadth of options that reflect the surrounding environment. Cycling facilities can be designed for a variety of users including skateboarders, longboarders, in-line skaters, roller skaters, scooters, and e-bike operators.

4.1 BIKEWAY PLANNING AND DESIGN PRINCIPLES

The following five principles of good bikeway planning and design (CROW 2016) reflect the unique challenges and needs of those riding:

1. SAFETY: Perceived and real, road users should feel that they have enough space to ride, conflicts are minimized, and outcomes of crashes are not severe

2. COMFORT: Surfaces should be smooth and turn angles and gradients should be gentle with minimal obstructions

3. DIRECTNESS: Alignments should be comparable with the driving network, have as few turns as possible, and minimal stops

4. COHERENCE: Facilities and routes should be intuitive in their design and direction and should also be integrated seamlessly with other transportation systems

5. ATTRACTIVENESS: Routes should be enjoyable, relatively quiet, and connected to points of attraction

While many people enjoy cycling, it has been found that a large part of the population would enjoy riding a bicycle more often if a safe and convenient network was readily available. Understanding what types of facilities those on bikes find comfortable is important to encourage increased ridership.

4.2 TYPES OF BIKEWAY FACILITIES

Cycling facilities can be broadly categorized into separated and shared facilities.

Separated Facilities

AAA quality routes with physical separation from vehicles. These routes provide the highest quality active transportation network. Due to their higher capital and operating costs, these routes are typically provided on roadways with the highest vehicle volume or speeds and where separation provides the highest benefit. Separated routes are encouraged in areas with higher vehicle and pedestrian volumes such as on the main route through a community. They are also encouraged to be the primary choice along rural roadways in the form of an adjacent off-street multi-use path (i.e., paved trail) when they are determined to be feasible.

Shared Facilities

On-street routes are signposted but do not have physical separation between cyclists and vehicles. Traffic calming initiatives can be considered on these routes to reduce vehicle speeds. Shared routes are typically lower-cost options. In the context of the Juan de Fuca Electoral Area, these types of facilities are anticipated to be widened roadway shoulders or shared low-vehicle-volume streets.

4.3 BICYCLE PARKING CLASSIFICATION

There are two categories of off-street bicycle parking.

Short-term

A parking space for bicycles parked for a short period (i.e., less than 4 hours) in locations that are easily accessible.

Long-term

A parking space for bicycles parked for longer periods (i.e., more than 4 hours), typically requiring more secure parking.

4.4 BICYCLE PARKING LOCATION & ACCESS

High-quality, secure bicycle parking encourages people to travel by bicycle, as it allows them to spend time at their destinations with reduced fear of theft and weather impacts. Bicycle parking should consider all types of bicycles. To that end, there are several fundamental guiding principles that influence how both bicycle parking is located and accessed:

WELL-LOCATED: Convenient, accessible, as close as possible to the destination, and weather protected.

STAIR-FREE ACCESS: Provision of ramps large enough to accommodate all types of bicycles. Slopes should be limited.

MINIMUM WIDTHS: Appropriate widths shall be provided along all routes required to access bicycle parking facilities, including ramp accesses, at doorways, and aisle widths in bicycle parking rooms.

SIGNAGE: Integrated, high-quality, and simple bicycle parking signage should be provided to indicate the availability and location of an off-street bicycle parking area.

VISIBILITY: The location selected for bicycle parking shall be easily identifiable by cyclists as they are riding. It will also help to reduce theft and vandalism.

BARRIER-FREE: Access to bicycle parking facilities should be direct and free from obstacles to accommodate all users. Provide breaks in long spans of bicycle racks for more convenient access.

DETECTABILITY: Design should be cognisant of users with physical, sensory, or cognitive impairments and should ensure the facilities are both easily detectable for these users and do not create obstacles.

LIGHTING: Quality lighting should be provided to ensure facilities are well-lit to improve the overall security of all bicycle parking facilities. Tamper-proof features should be considered to prevent vandalism.

SECURITY: Racks in visible, well-lit places that have high levels of natural surveillance.

Table 4.1: Design Principles Specific to Short- and Long-Term Bicycle Parking

Principles	Short-Term	Long-Term
General Location	▪ Provide at-grade ▪ Locate within 15.0m of pedestrian building access points	▪ Locate in a private parking area, private garage or bicycle room ▪ Provide at-grade where possible
Access & Clearance	▪ Provide stair-free level access ▪ Where a grade change is inevitable, a slope of 6% or less is preferred by cyclists ▪ Access routes with a minimum clear width of 2.0m ▪ Additional buffer space (min., 0.5 m) shall be considered if the access route is next to a wall or railing ▪ Provide sufficient minimum overhead clearance (2.1m) ▪ Aisle widths within bicycle parking rooms should have a minimum width of 1.5m, except for aisles adjacent to stacked bicycle racks where the minimum width shall be increased to 2.1m	
Visibility & Signage	▪ Locate near active entries and public amenity spaces ▪ Provide signage as needed for usage ▪ Well-lit	▪ Both the room and the access route shall be well-lit ▪ Place in clear visible locations ▪ 'Tamper-proof' lighting should be considered ▪ Directional signage should be provided along the route
Weather Protection	▪ Provide for all bicycle parking (either incorporate into building design, such as under an overhang, or a provide a standalone structure)	
Other	▪N/A	▪ Equipped with electrical outlets ▪ If access is shared with vehicles, delineators should be provided to separate bicycles from vehicular traffic where space permits

Short-Term Bicycle Parking Location in the Juan de Fuca Electoral Area

Short-term bicycle parking should be located at community focal points and popular recreational destinations. Community halls, grocery stores, schools, and community parks are good candidates for new short-term parking as these types of destinations serve a large subset of the community. Recreational destinations within the JdFEA such as parking areas at campgrounds and regional parks, beach access points, and restaurants are also good candidates as they see high numbers of visitors, who may want a secure and weather-protected location to park their bicycles while visiting these locations.

There may be opportunities to collaborate with BC Parks to provide short-term bicycle parking at French Beach and Juan de Fuca Provincial Parks.

4.5 BICYCLE PARKING SPACE DESIGN PRINCIPLES

The design principles of the bicycle parking itself is key to attract to the user, not only from an aesthetic perspective but also regarding the security and safety that is offered as part of the facility.

SUPPORT: The rack should provide two points of contact with the bicycle frame and keep it upright without putting stress on the wheels.

INTUITIVE RACK USE: The rack should be recognizable as bicycle parking and should be easy to use without the need for written instructions.

EFFICIENT USE OF SPACE: Available space is often a constraint, but the choice of bicycle parking should not be dictated by space alone. Racks should allow a good number of bicycles to be parked in a small area while providing adequate space between bicycles to facilitate parking and locking.

LONGEVITY: Weather- and corrosion-resistant materials should be used in the construction of the bicycle parking racks, while appropriate maintenance should be completed regularly to ensure the longevity and attractiveness of facilities.

SECURITY: Racks shall be in secured private or indoor spaces, or in visible, well-lit places that have high levels of natural surveillance.

LARGER SPACES: Ensuring the availability of spaces for larger models and reserving allocated spaces for users with accessibility requirements.

VARIETY: Long-term parking facilities should anticipate the presence of a variety of bicycles and accessories.

DESIGN & ATTRACTIVENESS: The design and aesthetic quality of bicycle parking facilities should reflect the surrounding neighbourhood and environment to attract users without compromising their functionality.

Examples of Good Bicycle Parking Design

There are several types of bicycle racks that meet design principles.

> Provide at least two points of contact

> Bicycles can be secured by a U-lock from multiple options on the frame

> One bicycle per side, per rack

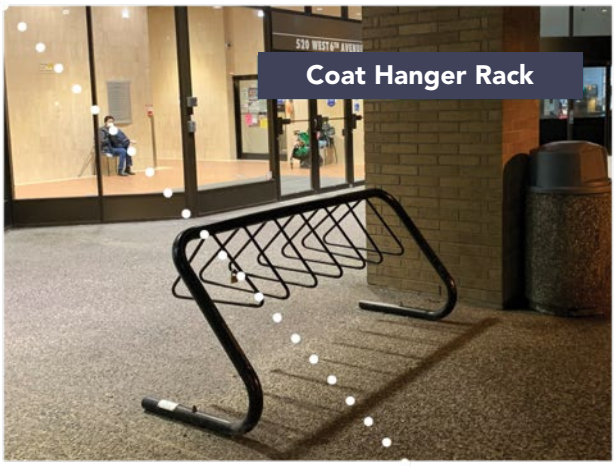
> Sturdy, thick material is resistant to weather cutting

> Universal design and height above the ground are obvious for passing cyclists

Figure 4.1: Examples of Good Bicycle Rack Design

Examples of Poor Bicycle Parking Design

There are several types of bicycle racks that do not meet the design principles. These should be avoided as they do not meet the above design principles. For example, most do not allow for two points of contact, nor would they accommodate different types of bicycles.



- May not provide two points of contact per bicycle
- May not allow bicycles to be secured using a U-lock
- Bicycles may fall over when parked
- Spaces are very close together, reducing capacity
- Mostly constructed of thin tubing which is vulnerable to cutting

Figure 4.2: Examples of Poor Bicycle Rack Design

5 FACILITY SELECTION AND DESIGN

The appropriate pedestrian or cycling facility for a given location is largely dependent on the traffic environment. The following section provides a framework for identifying the appropriate facility type and the corresponding design considerations.

5.1 FACILITY SELECTION

The selection of bicycle and pedestrian facility types depends on vehicle speeds, volumes, and the anticipated popularity of the proposed route. Facilities need to provide higher levels of separation and width as the vehicle risk and route popularity rises.

5.2 MULTI-USE PATHS (PAVED / CRUSHER FINE TRAILS)

Multi-use paths are paved trails that have the potential to play an important role in a multimodal transportation system. Generally, multi-use paths (i.e., paved trails) are wide enough trails to accommodate two-way travel of both pedestrians and rollers. They are the preferred active mode infrastructure typology as they separate pedestrians and rollers from the noise and dangers of vehicle traffic.

Design Considerations for Multi-Use Paths

Key characteristics of a roadside multi-use path include the travelled way, a horizontal buffer from any obstructions such as bollards or trees (at least 0.6m), and a buffer between the edge of the travelled way and any motor vehicle lanes (at least 2.0m), as shown in the diagram below. The TAC Geometric Design Guide recommends a minimum path width of 3.0 metres to accommodate one cyclist in each direction or one cyclist and two pedestrians walking side by side. In addition to base requirements for user needs, the path design should consider the existing or potential width of maintenance equipment.

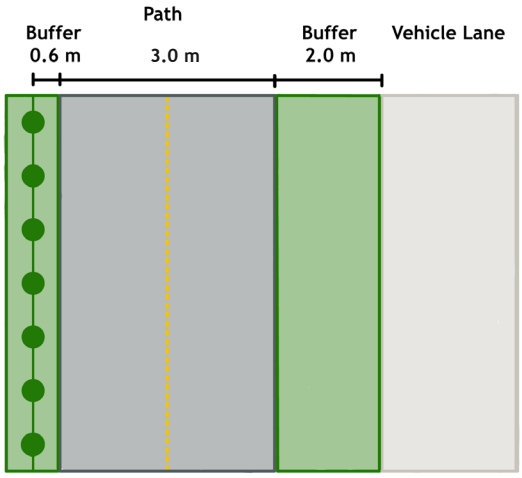


Figure 5.1: Multi-Use Path (Paved Trail) Design

- Desired width is at least 3.0 metres.
- Horizontal buffer of at least 0.6 metres from obstructions unless adjacent to a vehicle lane, in which case at least 2.0 metres is desired.
- Option dashed directional dividing line (cannot be provided if using crusher fine surface).

DESIGN PRINCIPLES

Multi-use path design plays an important role in the safety and satisfaction of users. To continue to capture the inherent comfort and enjoyment of multi-use paths while improving safety, the following measures are recommended:

> Avoid circuitous routing and maintain clear sightlines, particularly at corners, by clearing vegetation or physical obstructions

> If paving with concrete or asphalt, apply a centre line along the path to delineate travel directions and improve visibility for users at night

> Consider delineating space for pedestrians and cyclists where high volumes of users are expected

> Use pavement markings and/or signs to indicate the intended road user and travel direction where paths experience high bidirectional volumes or operational challenges such as sight distance constraints

Pavement Markings for Multi-Use Path Road Crossings

Providing clear and consistent pavement markings is important to communicate facility information to all road users. With multimodal facilities, it is important to clearly mark crossing points so that drivers can expect users crossing at different speeds than a standard pedestrian crossing.

> Provide a mixed crossing where pedestrians and cyclists are mixed, as illustrated in **Figure 5.4**
> Use elephant's feet markings to denote a bicycle crossing, as illustrated in **Figure 5.5**
> Use a green surface treatment to increase the conspicuity of the crossing in locations with high bicycle volumes or high vehicle turning, as illustrated in **Figure 5.4**

Figure 5.4 Green Combined Crossing
Source: OTM Book 18

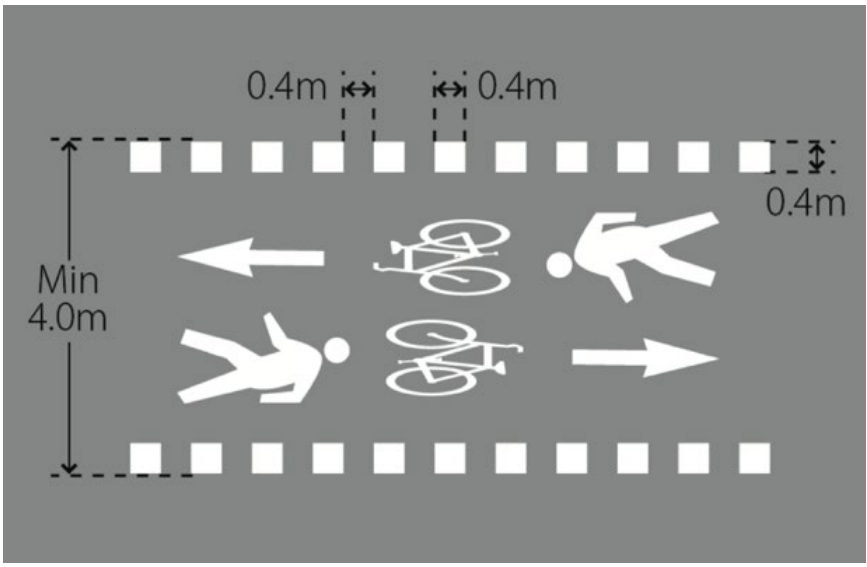


Figure 5.5 Combined Crossing Pavement Markings

5.3 SHARED STREETS

Shared streets offer unseparated bikeways in spaces that are shared with motor vehicles. These can include shared roadways, bicycle boulevards, and shared lanes. Shared roadways are roadways where cyclists and vehicles share the travelled way under low-speed conditions. Bicycle boulevards are shared roadways that limit exposure to motor vehicle traffic through traffic calming measures. Shared lanes are general purpose lanes with sufficient width to facilitate a small range of experienced cyclists amongst other motor vehicles.

DESIGN CONSIDERATIONS FOR SHARED STREETS

The table below presents the recommended shared street widths based on the TAC Geometric Design Guide, including requirements for:

> **Shared Roadways:** Cyclists and vehicles share the travelled way under low-speed conditions
> **Shared Lanes:** General purpose lanes that can facilitate a small range of experienced cyclists

Table 5.4: Recommended Shared Street Widths
Source: TAC Geometric Design Guide

Shared Street	Parameter	Widths	
		Desirable (m)	Minimum (m)
Shared Roadway	Width (m), shared roadway with parking both sides	8.0 – 9.0	8.0
	Width (m) shared roadway with parking on one side	5.5 – 7.0	5.5
Shared Lane	Width (m), shared lane, side-by-side operation	4.3 – 4.9	4.3
	Width (m), shared lane, single file operation	Lane width – 4.0	Lane width

5.4 ROAD SHOULDERS

Rural roadway shoulders are often used for active transportation. Many rural roadways have shoulders that are well below the width guidance and/or have shoulders delineated with a white fog line. Many others have no shoulders or fog lines at all, therefore active mode participants must share the roadway with vehicles.

Walkable shoulders may be considered on rural roadways where vehicle speeds are less than 60km/h and only occasional pedestrians are present. Walkable shoulder design should consider lighting, signage, and the provision of through zones to mitigate risks for pedestrians.

A minimum width of 1.2m is required for pedestrians, with additional width requirements where shoulders are to be shared with cyclists.

Rural roadway shoulders may be considered as "bicycle acceptable" if they provide sufficient width and a smooth surface that is clear of snow and debris. Bicycle acceptable shoulders are generally not considered where vehicle speeds are greater than 80 km/h or where there are more than 10 heavy vehicles during the peak hour.

Recommended minimum and desired widths for pedestrian and bicycle acceptable rural roadway shoulders depend on vehicle speeds (i.e., posted speed) and vehicle volumes (i.e., average daily traffic).

Table 5.5: Pedestrian and Bicycle Accessible Shoulder Widths
Sources: TAC Geometric Design Guide and BC Active Transportation Design Guide

Suitable Conditions	Widths	
	Desirable (m)	Minimum (m)
Posted Speed: 0 – 30 km/hr Vehicle Volume: <2,500 veh/day	1.8	1.5
Posted Speed: 30 – 50 km/hr Vehicle Volume: <4,000 veh/day	1.8	1.5
Posted Speed: 50 - 80 km/hr Vehicle Volume: <10,000 veh/day	2.0	1.8
Posted Speed: 80 - 100 km/hr Vehicle Volume: <10,000 veh/day	3.0	2.0

RUMBLE STRIPS

Rumble strips are milled sections of pavement along a roadway. Rumble strips provide feedback to motorists through noise and vibrations, notifying them when they have deviated from the travel lane into the shoulder. Rumble strips enforce delineation of the shoulder area and aim to discourage drivers from using the shoulder to drive at higher speeds. This also aims to reduce risk for active transportation users on the shoulder.

The following provides guidance for installing rumble strips:

- Shoulders should have a minimum width of 1.5 metres.
- Rumble strips are recommended when the posted speed limit exceeds 80 km/h.
- Rumble strips can be milled into new or existing asphalt.
- Rumble strips should be installed in 15-metre-long blocks, with 3.5-metre gaps in between.
- The BC Active Transportation Design Guide recommends the rumble strips be place within the shoulder area and as close to the fog line as possible to minimize interference with cyclists.
- Rumble strip widths range from 4 -12 inches (10 – 30 cm). Narrower 6 - 8 inches (15 – 20 cm) widths are recommended in the JdFEA context to retain smooth shoulder surface area and maximize buffering impact.
- Raised rumble strips or road textures are not recommended due to being subject to damage during maintenance.

5.5 TRAILS (UNPAVED - NATURAL SURFACE)

A trail is a defined type of infrastructure that is purposefully designed and used for one or more user groups. This section focuses on unpaved trails, which can be used both recreationally and as connections.

Design Considerations for a Trail (Unpaved)

Trail design parameters have significant implications on the quality of the trail experience, the degree of challenge, and the type of user that the trail can accommodate. The design parameters provided below are intended for developed trails that can accommodate users with all skill levels (easy). Trails should be designed to meet critical parameters, which are the most demanding parameters based on the user.

Figure 5.2 illustrates a typical trail cross-section while the subsections below describe the key components of the cross-section. **Table 5.6** then summarizes the recommended parameters associated with each cross-section component for a trail with an easy degree of challenge. Parameters for both natural surface and crusher fine trails are provided. Design guidance for advanced trail features (e.g. bridges, boardwalks, switchbacks, etc.) can be found in the Juan de Fuca Electoral Area *Community Park Trail Standards*; advanced features can add challenge and enjoyment but limit the type of trail user to those with higher skill and ability.

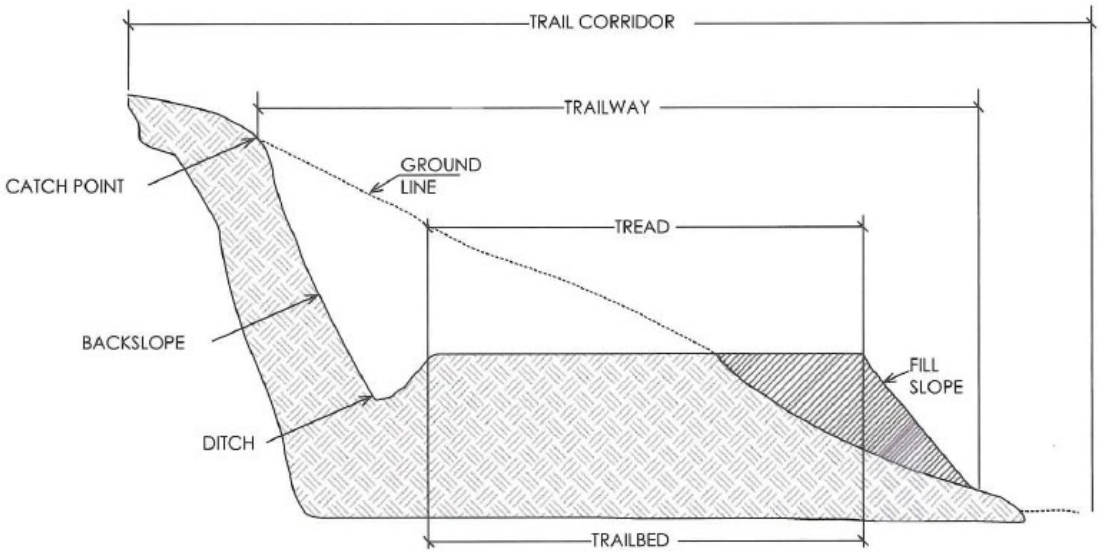


Figure 5.2: Trail Design Elements
Sources: Juan de Fuca Electoral Area Community Parks Trail Standards

CLEARING LIMITS

The minimum area over and beside the trail tread that is cleared of any obstructions.

> **Clearing Height:** Vertical distance between the trail tread and the lowest obstacle above the trail tread
> **Clearing Width:** Horizontal distance across the narrowest point along the trail corridor

TREAD & STRUCTURE WIDTHS

The minimum width of the portion of the trail that is directly travelled on and the required structure width to support the minimum width.

> **Tread Width:** Width of the portion of the trail that is directly travelled on
> **Structure Width:** Width of any structures over which the trail passes

TREAD SURFACING

Characteristics of the surface of the trail.

> **Surface Type:** Material used to surface the trail tread
> **Protrusions:** Trail tread imperfections (e.g., rocks, roots, holes, stumps, steps, etc.)
> **Obstacles:** Natural obstructions that add challenge to a difficulty rating

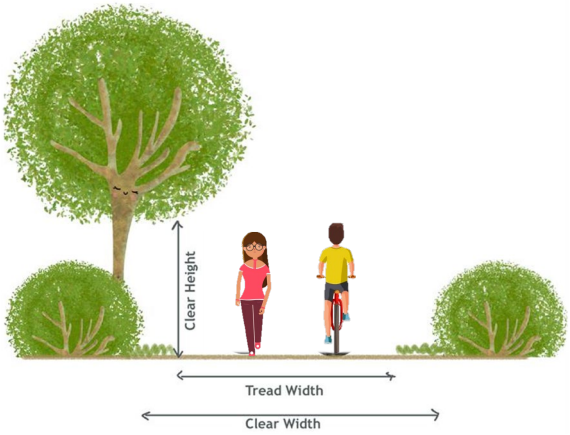


Figure 5.2 Trail Clearance Design Parameters

GRADES

The vertical distance of ascent or descent of the trail, measured as a ratio or percentage of rise to length.

> **Target Grade:** Average vertical steepness of the trail (or segment of the trail) over its entire length
> **Maximum Grade:** Steepest acceptable vertical grade permitted along a short portion of the trail
> **Maximum Grade Proportion:** Proportion of a trail with grades that exceed the Target Grade but are less than or equal to the Maximum Grade

CROSS SLOPE

The percentage grade of the trail tread measured perpendicular to the direction of travel.

> **Target Cross Slope:** Average horizontal grade of the trail tread, measured perpendicular to the centreline, over the entire length of the trail (or segment of the trail)
> **Maximum Cross Slope:** Steepest acceptable horizontal grade of the trail tread, measured perpendicular to the centreline, over the entire length of the trail (or segment of the trail)

TURNING RADIUS

The horizontal radius the trail activity requires to negotiate a curve in a single maneuver.

> **Target Turning Radius:** Horizontal radius of the trail curve

Table 5.6: Trail Design Parameters - Easy Degree of Challenge
Source: Juan de Fuca Community Parks, Bunt & Associates

Design Parameter		Natural Surface (Pedestrian)	Crusher Fine (Cyclist Compatible)
Clearing Limit	Clearing Width	1.0m uphill, 1.5m downhill	1.25m uphill, 1.75m downhill
	Clearing Height	3.0m	3.5m
Tread Width	Tread Width	1.0m	>2.5m
	Structure Width (minimum width)	Tread +0.10m each side	Tread +0.15m each side
Surfacing	Surface Type	Compacted natural surface	Crusher fine surface
	Protrusions	None	Rare, <0.10m
	Obstacles (max height)	0.15m max. height, few vertical steps	Rare, <0.10m
Grades	Target Grade	3%	3 – 6%
	Maximum Grade (short)	12%	10%
	Maximum Grade Proportion	5 – 10%	10 – 20%
Cross Slope	Target Cross Slope	3 – 5% crowned	2% crowned
	Maximum Cross Slope	3%	8%
Turning	Target Turning Radius	1.8 – 2.4m	1.5 – 2.5m

Note that due to the geography of the JdFEA, the above targets may be difficult to achieve in some cases. The above targets are intended to provide parameters for an “easy” trail experience; trails that cannot achieve the targets will have a smaller range of users but are still anticipated to provide a useable connection.

Figure 5.3 provides an example cross-section of a pedestrian-only, natural surface trail.

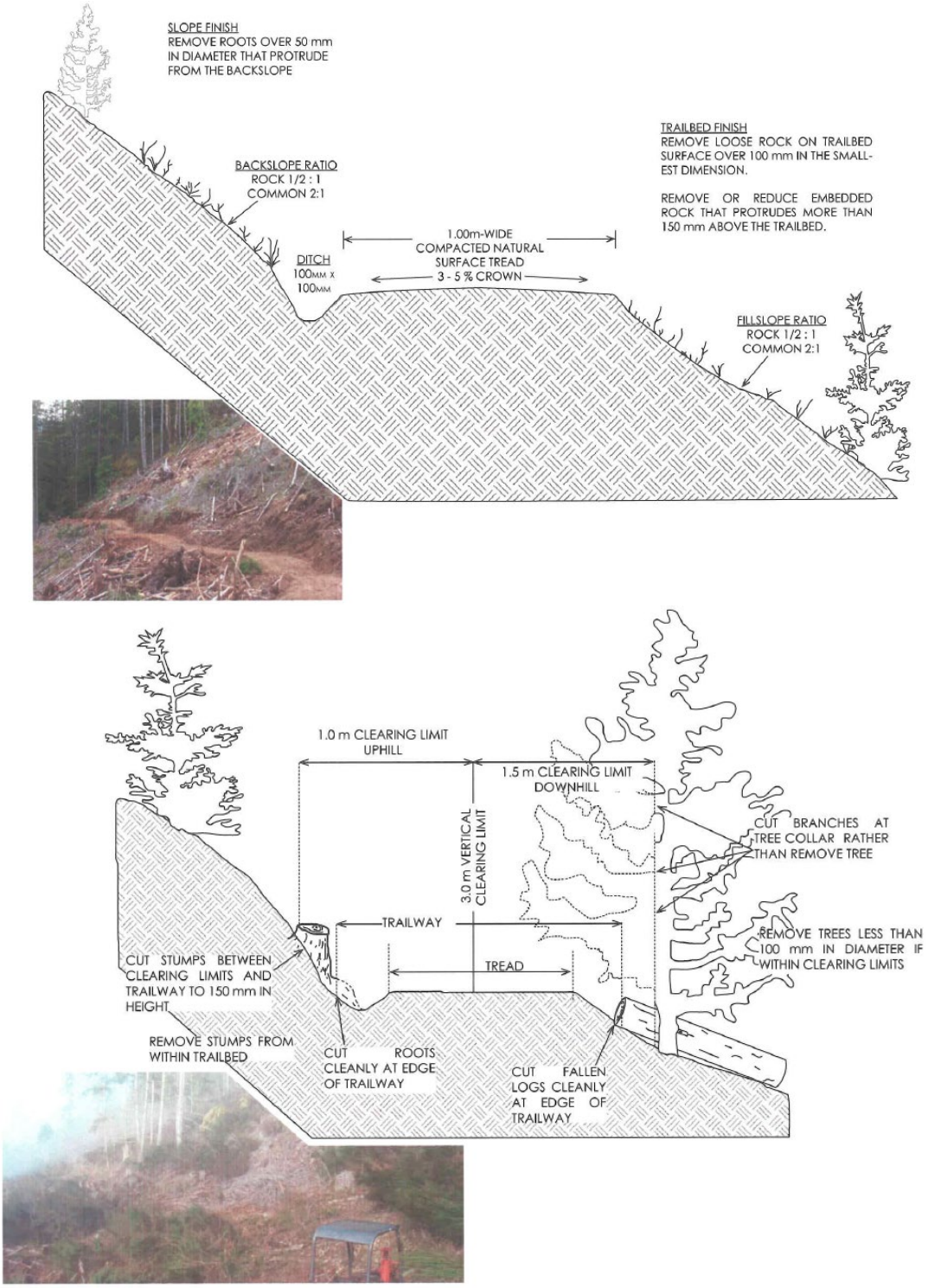


Figure 5.2: Pedestrian-Only Natural Surface Trail Cross-Section Example
Source: Juan de Fuca Electoral Area Community Parks Trail Standards

BANK SLOPE, GUARDS & HANDRAILS

Guards serve as protective barriers along walkable surfaces that are adjacent to a change in elevation, these barriers reduce the chances of a fall or serious injury.

Handrails are forms of guards that are intended to provide guidance and support to users along stairs and ramps. Handrails must have a graspable portion that a person can comfortably and firmly grab and hold onto.

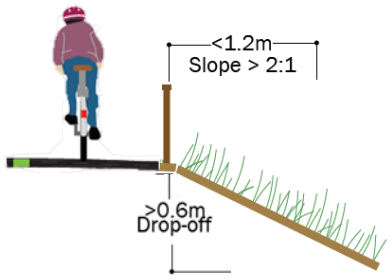


Figure 5.3 Bank Slope Guard Requirements

It is recommended that guards and handrails be provided when there is a difference in elevation of 0.6m or more between an elevated walkway or stairs and the adjacent ground.

Universally Accessible or Barrier Free Trail Design

Universally accessible or barrier free trails are designed to enable users of all ages and abilities to enjoy the trail without the need for assistance. The following best practices should be considered when designing an accessible trail:

- Provide options for entry and exit at multiple trailheads at key entrance and exit points, intermediate areas on lengthy trails, and decision points
- Integrate level rest areas every 30 metres wherever running or cross-slopes exceed 5%
- Line edges adjacent to water or a drop-off with a 50-millimetre elevated barrier, integrating colour, texture, and tonal contrast to prevent users from slipping over the edge
- Use multiple communication strategies to provide trail information, including alternative formats on-site, at community focal points, and on websites.

Trail Access Points

Where a trail or path terminates at a roadway, and where no connecting off-street facility is present, it is important to provide a design treatment that allows for users to transition smoothly to/from the roadway. This ensures that the connection between facilities is obvious.

RECOMMENDED TRAIL TERMINUS FEATURES

> Provide crossings on higher volume collector or arterial roads
> Install a TAC approved trail crossing sign (e.g., WC-32) along the intersecting roadway
> Ensure all transitions are as smooth as possible
> Provide trail signs, with consistent logos and fonts for the area, indicating the trail difficulty, length, and name (if applicable) at key trail access points (e.g., access points near a parking lot, an intersection, an intersection with other trails, etc.)

6 SUPPORTING AMENITIES

Common active transportation infrastructure amenities include benches, bike racks, bicycle repair stations, water fountains, garbage/recycling bins, temporary shelters (in case of rain), and educational materials. The presence and location of these amenities can significantly improve the experience for all users.

6.1 SUPPORTING AMENITY DESIGN PRINCIPLES

Supportive amenities such as lighting, bike parking, benches and rest areas, signage and wayfinding, and other active transportation related elements, support safe and enjoyable trips for people of all ages and abilities.

While the design of individual elements may be subject to site-specific context, the following general design principles can be considered:

> Maintain a consistent look and feel, to deliver a sense of continuity throughout the trail system

> Place amenities well outside the clear zone of the path or trail, to ensure users are engaging with the amenities but do not obstruct other trail users (e.g., place benches ≥1.0 m from edge of the path so those sitting are a comfortable distance from passing users) and to reduce the likelihood of users colliding with amenities

> Ensure amenities do not obstruct sightlines of trail users to reduce safety challenges associated with blocked sightlines

Types of Supporting Amenities

Common types of supporting amenities include:

LIGHTING: Appropriate lighting can be installed at access points and intersections, or where other amenities are located.

BIKE PARKING: Short-term bicycle parking protected from the elements (where possible) provides an incentive to cycle around the JdFEA.

BENCHES & REST AREAS: Rest areas provide a place for people to stop during a long trip or enjoy a scenic view. They are located along a trail or at gathering areas such as parks and trail junctions.

SIGNAGE & WAYFINDING: Signage supports safe and enjoyable trips by providing clear and intuitive information to help people navigate unfamiliar environments and understand how to use the trails appropriately.

ACTIVE TRANSPORTATION HUBS: A hub is a concentration of amenities that may include shelter from the elements, seating, bathroom facilities, a bike repair station, a water station, etc. They are best located at junctions or at links to other forms of transportation.

6.2 INFORMATION & WAYFINDING

Wayfinding signage supports safe and enjoyable trip making by providing simple, clear, and intuitive information to help people navigate unfamiliar environments. Effective wayfinding signage should be strategically located, tailored to provide information about services and infrastructure within the vicinity, and provided in a format that is easy to access and understand for people of all ages and abilities. All signage should be provided with a consistent design and format.

Wayfinding Information

Four major types of wayfinding signage are being considered for the Plan:

INFORMATION KIOSKS: Provide an overview of the area and information to users regarding safety, the environment, etiquette, and wayfinding.

DIRECTIONAL SIGNAGE: Provide directional and distance information to destinations and indicate the difficulty level and user types permitted on a trail (i.e., unpaved) or pathway (i.e., paved trail).

TRAIL DISTANCE MARKERS: Indicate the distance along the trail that a user is located.

ETIQUETTE SIGNAGE: Communicate the appropriate rights-of-way for shared trails or pathways and proper use of the trail or pathway.

Information Kiosk

Source: Bunt & Associates – Kieran Quan

Directional Signage

Source: Bunt & Associates – Tyler Thomson

Trail Distance Marker

Source: Bunt & Associates – Tyler Thomson

Etiquette Signage

Source: Bunt & Associates – Kieran Quan

6.3 PEDESTRIAN & CYCLING SCALED LIGHTING

Contextually appropriate lighting is important to ensure that pedestrian and cycling facilities are safe, accessible, and reliable throughout all seasons and times of day.

Pedestrian and cycling scaled lighting should be positioned, placed, and angled to illuminate the travelled way, wayfinding signage, conflict and decision points, intersections, and other key features of pedestrian and cycling facilities. Lighting is also designed to minimize cast shadows with appropriate illumination levels, gradual lighting transitions, and suitable colour temperatures.

Dark Sky Compliance

The Juan de Fuca Electoral Area has a dark skies policy, meaning that lighting should consider impact on the visibility of celestial bodies in the night sky. Therefore, lighting should[1]:

- Restrict light directed towards the night sky
- Reduce or avoid glare
- Reduce of avoid over-lighting
- Have customization options such as dimmers or related controls
- Lessen blue light that appears at nighttime
- Have a specific colour temperature no higher than 3,000 Kelvin.

On pathways, which would be the typical use in the JdFEA, the following guidance is recommended (via the Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs[2]):

- Pathway lighting should be restricted to only near buildings, parking lots, and campgrounds. Lighting outside of these areas could be detrimental to wildlife use.
- Lights should be Full Cut-Off (FCO) or Sharp-Cut-Off (ShCO) fixtures, which have specific attributes that limit glare and stray light outside of a specific area directly below the lamp.
- Lighting should be considered higher priority on asphalt-paved paths, as crusher fine paths are better reflectors of ambient light.
- Motion detectors in advance of light fixtures can be considered in sensitive areas.

[1] Contractors Insurance. “What is dark sky compliance? 5 things contractors need to know.” Ontario, Canada. Contractorsinsurance.ca/blog/dark-sky-compliance-explained

[2] Royal Astronomers Society of Canada.

Table 6.1 provides guidance on the appropriate pathway illumination, depending on pathway type.

Table 6.1: Pathway Illumination Guidelines (Maximum Values)
Source: Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs

Pathway Type	Fixture Type	Light Type	Level (lux)	Height (m)	Curfew
Trails	None	None	n/a	n/a	n/a
Off-Street Mult-Use Paths (Highway)	FCO, ShCO	Amber Incandescent or LED, Filtered	~1	1.0	Yes
Off-Street Multi-Use Paths (Within Community)	FCO, ShCO	Amber Incandescent or LED, Filtered	~1	1.0	No

Type of Pedestrian & Cycling Scaled Lighting

While adhering to the dark sky guidance above, the following examples demonstrate appropriate lighting solutions for the active transportation network:

Source: Bunt & Associates – Tyler Thomson

Source: www.holophane.com

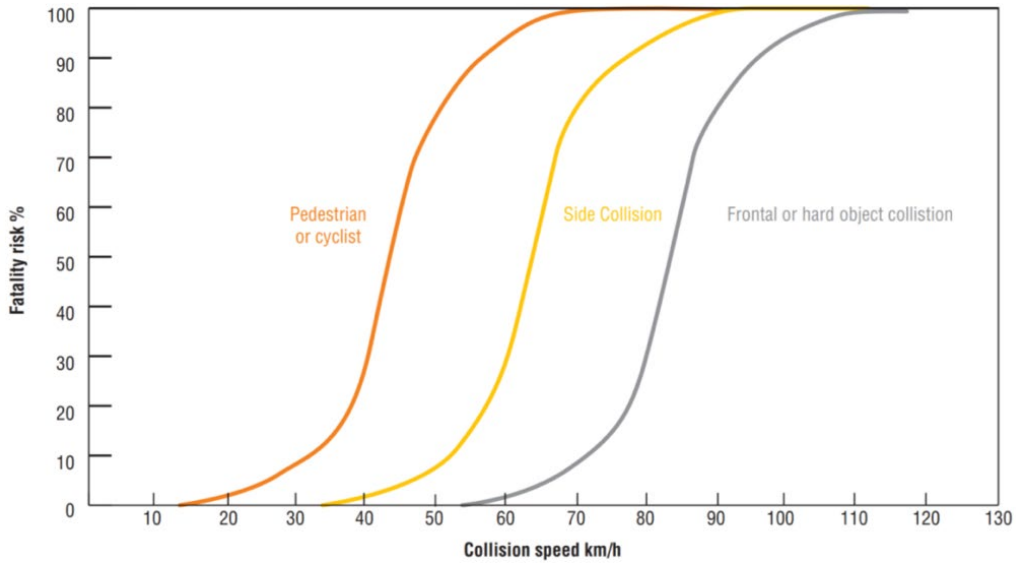
7 TRAFFIC CALMING AND SIGNAGE

The measures described below can be applied throughout the Juan de Fuca Electoral Area to improve safety, comfort, enjoyment, and navigability around the community.

7.1 SPEED LIMIT

The graph below provides the likelihood of a fatality due to a collision at various vehicle speeds. For pedestrians and cyclists, the likelihood of fatality increases greatly as speeds increase from 30 km/h to 50 km/h (from approximately 10% to 75%). Small changes in vehicle speeds in this range can have a significant impact on collision outcomes (i.e., traffic calming on local roads can have a significant impact on fatal collision rates). Beyond 70 km/h, almost all collisions with a pedestrian or cyclist are fatal; therefore, physical separation should be strongly considered on roads with speeds greater than 70 km/h.

Cumulative Probability of Collision Fatality



Source: NACTO

Posted Speed Reduction Impacts

NACTO[3] identifies that *"Even changing the posted speed limit sign creates safety benefits and allows cities to provide more and better safety treatments and improve overall quality of life."*

7.2 ROADWAY CROSSINGS AND INTERSECTIONS

Intersections present the primary conflict points between pathway users and motor vehicle traffic. This makes their design a priority for ensuring a consistently safe and comfortable network of facilities.

Trails and MUPs are unique in terms of bicycle and pedestrian facilities in that they function for both cyclists and pedestrians in two directions. This context results in an increased safety risk at intersections with the roadway as drivers must look out for users traveling in two directions and at varying speeds. Compared to unidirectional bike facilities, MUPs and bidirectional facilities are found to be ~50% less safe

at intersections. These risks can be mitigated through design that highlights the presence of the facility and reduces conflicts by slowing turning vehicles and providing optimal signal phasing where applicable.

RECOMMENDED SAFETY FEATURES

> Differentiate crossings from the main roadway with alternative pavement colouring or set back crossings from the intersection
> Provide leading or protected bicycle/pedestrian signal phases where feasible
> Raise crossings at minor intersections and driveways
> Provide high-conspicuity pavement markings and/or signage
> Provide refuge island (≥3m in width) on uncontrolled collector and arterial streets, when possible, to allow pedestrians and cyclists to deal with one direction of traffic at a time and help slow drivers

7.3 TRAFFIC CALMING & CONTROL

Traffic Control Measures

TRAFFIC CIRCLES

Traffic circles slow down vehicles and reduce conflicts with cyclists.

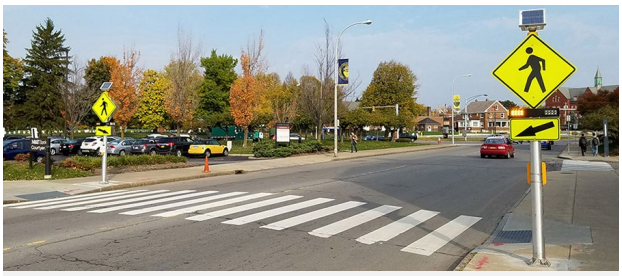
ALL-WAY STOP CONTROLS

All-way stop controls force vehicles to stop at each leg of an intersection.

TRAFFIC DIVERTERS & CLOSURES

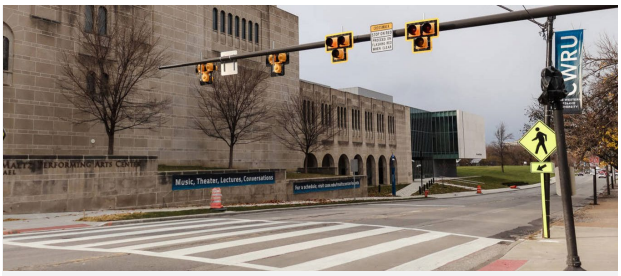
Traffic diverters and closures prevent shortcutting through local streets.

PEDESTRIAN ACTIVATED FLASHERS & RRFBS



Pedestrian flashers and Rectangular Rapid Flashing Beacons (RRFBs) indicate when activated by a push-button.

PEDESTRIAN ACTIVATED SIGNALS



Pedestrian activated signals are full traffic signals that stop vehicles for pedestrians when activated by a push-button.

7.4 SIGNAGE, PAVEMENT MARKINGS & OTHER ENHANCEMENTS

Signage

WAYFINDING SIGNS

Wayfinding signs provide directions to help guide facility users.

ELECTRONIC SPEED WARNING SIGNS

Speed warning signs display real-time speeds of oncoming vehicles.

PEDESTRIAN CROSSING SIGNS

Advance pedestrian crossing signs warn drivers of a pedestrian crossing.

SHARED PATHWAY SIGN

These can be used on facilities that are shared spaces for both pedestrians and cyclists, including road shoulders. The sign should be applied cautiously as it may create confusion between the shoulder and the referenced pathway.

SHARE THE ROAD SIGN

Used on rural roadways that have no shoulders or have inadequate shoulders to indicate travel lanes are to be shared.

BIKE ROUTE SIGN

Used on designated bicycle routes. Can aid in directing cyclists to safer route options.

CYCLIST ON ROADWAY SIGN

Used when cyclists are present but there is insuffiicent width for shoulders. Warns both drivers and cyclists to be aware and give space to one another. Not preferred for rural roadways as the sign omits pedestrians.

PEDESTRIANS ON SHOULDER SIGN

Insinuates cyclists and pedestrians should use the shoulder area. Should be provided on low speed roads with a paved shoulder and painted fog line.

SHARROW

Used on traffic-calmed roadways with low vehicle traffic. Cyclists are intended to take the lane. Not recommended in rural contexts, but may be applicable to community cores.

Warning Signage – Traffic Study

The signage below may be applied as speed control measures at locations with collision risk. A traffic study, conducted by a professional engineer, must be completed to determine the appropriateness and content of each sign.

ADVISORY SPEED TAB SIGN

This sign is always used in conjuction with other warning signs (e.g., "curve ahead" sign), immediately below the sign on the same post. Notifying drivers of the suitable advisory speed around the curve aims to reduce frequency of drivers overlapping road shoulders or the centrline. A traffic engineering study must be conducted to determing the suitable advisory speed.

Pictured: WA-7S[1]

CURVE AHEAD SIGN

"Curve ahead" warning signs should be provided when an upcoming curve is obscured from view. This warns drivers to slow down and avoid overlapping the shoulder, where there could active transportation users. A traffic engineering study must be conducted to determing the suitability of these signs.

Pictured: WA-3R[1]

1 Manual of Uniform Traffic Control Devices for Canada, 4th Edition (Transportation Association of Canada, 1998)

Pavement Marking Design Options

3D PAINTED CROSSWALKS

3D painted crosswalks capture the attention of drivers and cyclists by appearing as if there is a floating crosswalk.

TRANSVERSE PAVEMENT MARKINGS

Transverse pavement markings are parallel lines that create an illusion to drivers that their speed is increasing.

8 REFERENCES

8.1 BRITISH COLUMBIA

British Columbia Active Transportation Design Guide (2019)

City of Coquitlam Bicycle Parking Design Guidelines

Clean BC Move Commute Connect - B.C.'s Active Transportation Strategy

Juan de Fuca Electoral Area Community Parks Trail Standards (2010)

8.2 CANADA

Costing of Bicycle Infrastructure and Programs in Canada – Clean Air Partnership (2019)

Federal Highway Administration (FHWA) - Bikeway Selection Guide (2019)

National Active Transportation Strategy – Infrastructure Canada (2021)

Canadian Guidelines for Outdoor Lighting for RASC Dark-Sky Protection Programs (2020)

8.3 INTERNATIONAL

Massachusetts Department of Transportation (MASSDOT) - Separated Bikeway Planning & Design Guide (2015)

National Association of City Transportation Officials (NATCO) - Designing for All Ages and Abilities (2017)

National Association of City Transportation Officials (NATCO) - Urban Bikeway Design Guide

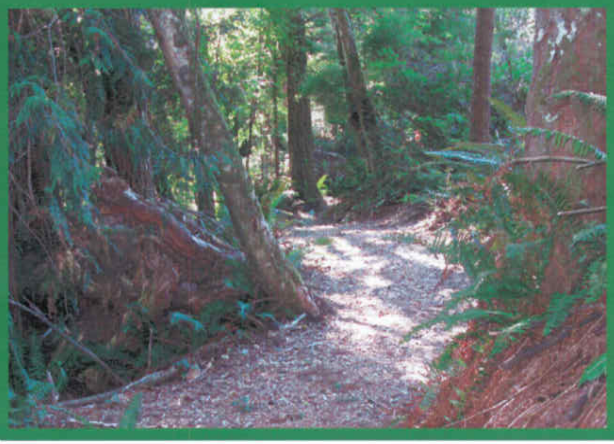
National Association of City Transportation Officials (NATCO) - Urban Street Design Guide

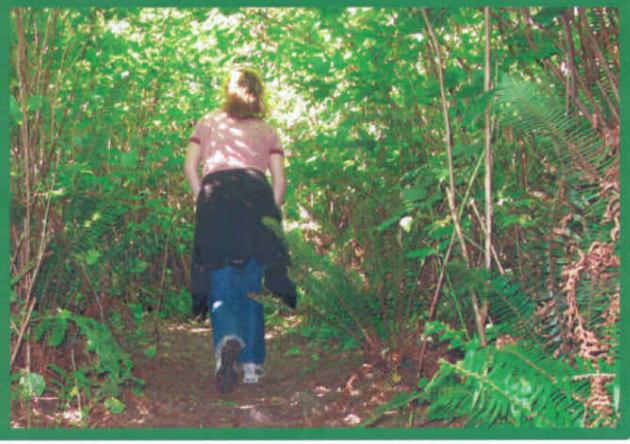
The state of National Cycling Strategies in Europe (2021)

APPENDIX E
CRD Juan de Fuca
Trail Standards

Juan de Fuca Electoral Area

Community Parks and Recreation





Juan de Fuca
Community Parks

Community Park Trail Standards

CRD
Making a difference...together

CONTENTS

TRAIL TYPES

All trails within the Juan de Fuca (JDF) Electoral Area Community Parks and Recreation should be useful, and safe, for recreation as well as for transportation. Recreation trails are those that loop a trail user through a piece of property, or park, whereas transportation trails are, in essence, recreational trails linking destination points, or providing alternatives to the road network.

In determining the type and width of trail the users and amount of use should be the primary determinants. The following table is a rough guide for classifying user levels:

	Number of users per busy day
Very Low	< 25
Low	25-100
Moderate	100-200
High	200-400
Very High	>400

The JDF Electoral Area Community Parks recognizes the following trail types:

TYPE 1 - Natural Surface Trails: These trails are suitable for low to moderate use and should provide for a natural and undeveloped feel. Construction, maintenance, and sustainability are easiest if trail grades are less than 12% and cross slopes are at least 15%. Trail width can vary to handle the expected volume and types of use but should be at least 1.0 metre.

TYPE 2 - Crusher Fine Surface Paths: These are trails suited for low to moderate use in urban, suburban, and easily-accessed undeveloped areas. These trails can accommodate hiking, running, biking, and limited use by equestrian riders and should be barrier-free, and accessible, for some physically-challenged individuals. Construction, maintenance, and sustainability are easiest if trail grades are less than 6% (trail must be adequately crowned to accommodate grades between 6% and 12%).

TRAIL CONSTRUCTION

The following items are recognized by the JDF Electoral Area Community Parks and Recreation as it relates to trail construction:

1. Determine who will build the trail: the type of labour (volunteer, in-house, or contract), or the nature of the company building the trail, will, in large part, determine the quantity of trail and type of structures that can be built.

2. Identify the construction features: prior to construction a detailed layout should identify, and quantify, features such as bridges, boardwalks, switch-backs, retaining walls, culverts, and length of trail to be built. A more detailed analysis, and design, should be given to major structures such as bridges and boardwalks.

3. Consider the Construction Window: Given fire hazard, fish bearing streams, and other wildlife requirements consider what time of year the trail should be constructed.

4. Perform on Quality Construction: Instead of using inferior materials or designing and building just enough to get by for a decade or two, trails should be built to high standards in materials, techniques, and workmanship.

5. Design and Construct Trails for a Maximum Lifespan: Given regular and scheduled maintenance trails should not need to be extensively rebuilt or replaced before the maximum lifespan of the surface material. Crusher fines and natural surface trails, when properly designed and constructed, should never have to be extensively rebuilt or relocated.

TRAIL MAINTENANCE

Trails are a community resource and should last indefinitely:

1. Determine Maintenance Responsibilities and Tasks: Before construction is approved determine in what ways, how often, and who will maintain the trail.

2. Design Trails to Minimize Maintenance: Properly layout trails and mitigate potential problems through good design and construction methods. Proposed high-maintenance trails should be reevaluated, redesigned, or realigned to minimize maintenance.

3. Estimate Future Maintenance: Given a good understanding of site, good trail design, quality construction, and excellent materials, one should be able to estimate the future maintenance requirements 6 months, 1 year, 5 years, and 20 years after trail completion

4. Schedule Design and Maintenance Reviews: To identify and correct design and construction deficiencies, review the trail about 4-6 months and one year after completion. Representatives from JDF Electoral Area Community Parks and Recreation, the trail contractor, and groups responsible for maintenance and trail management should be present.

5. Trail Inspection: Inspect all trails twice a year and busy trails once every six to eight weeks. Detect and fix problems while they are small, and legitimize, or close, unofficial social trails as they appear.

FIGURE 1 - TRAIL ANATOMY

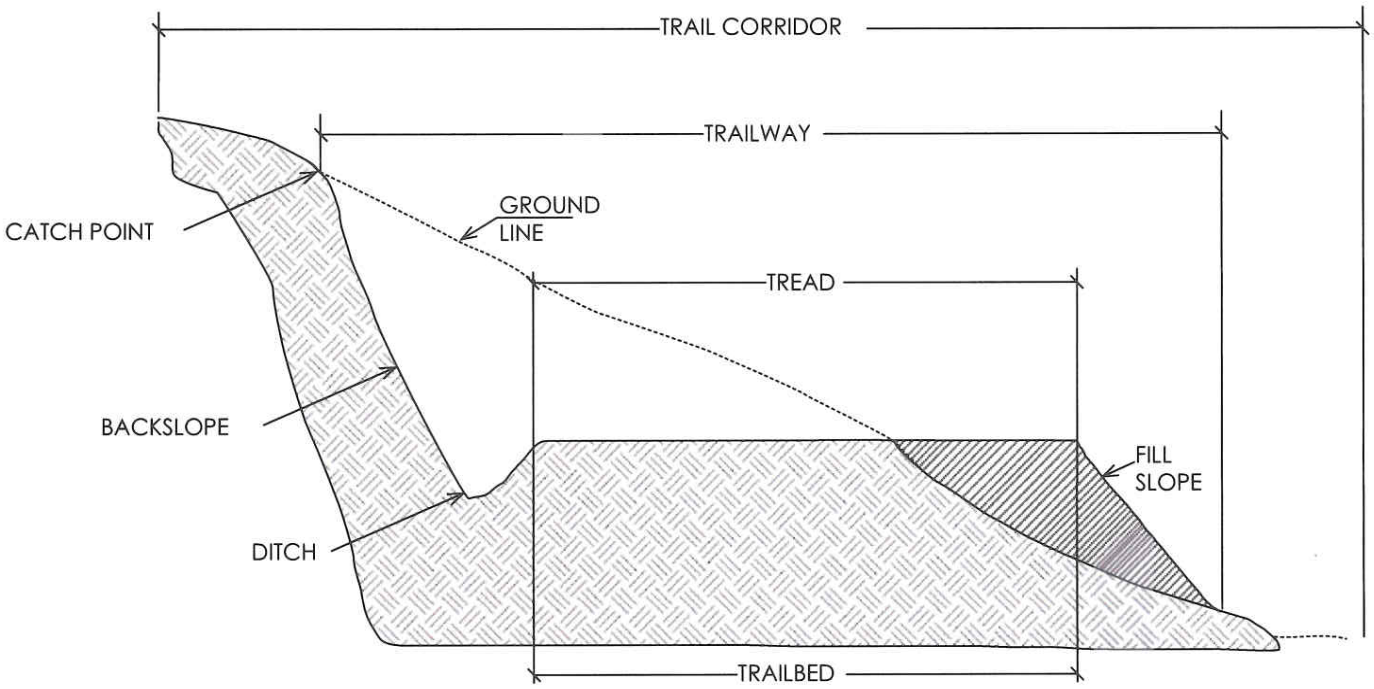


FIGURE 2 - TRAILBED AND SLOPE FINISH - TRAIL TYPE 1

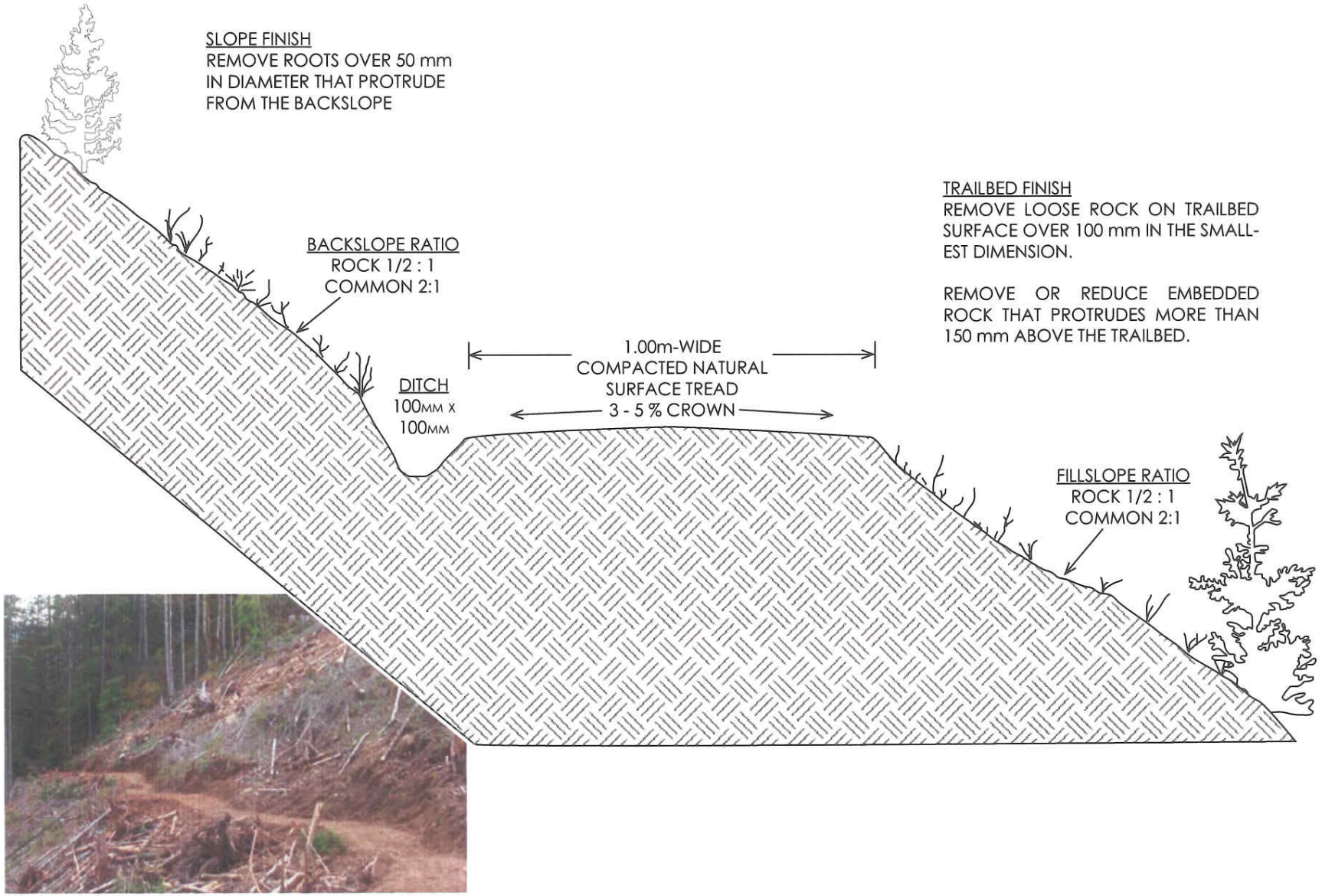


FIGURE 3 - CLEARING LIMITS - TRAIL TYPE 1

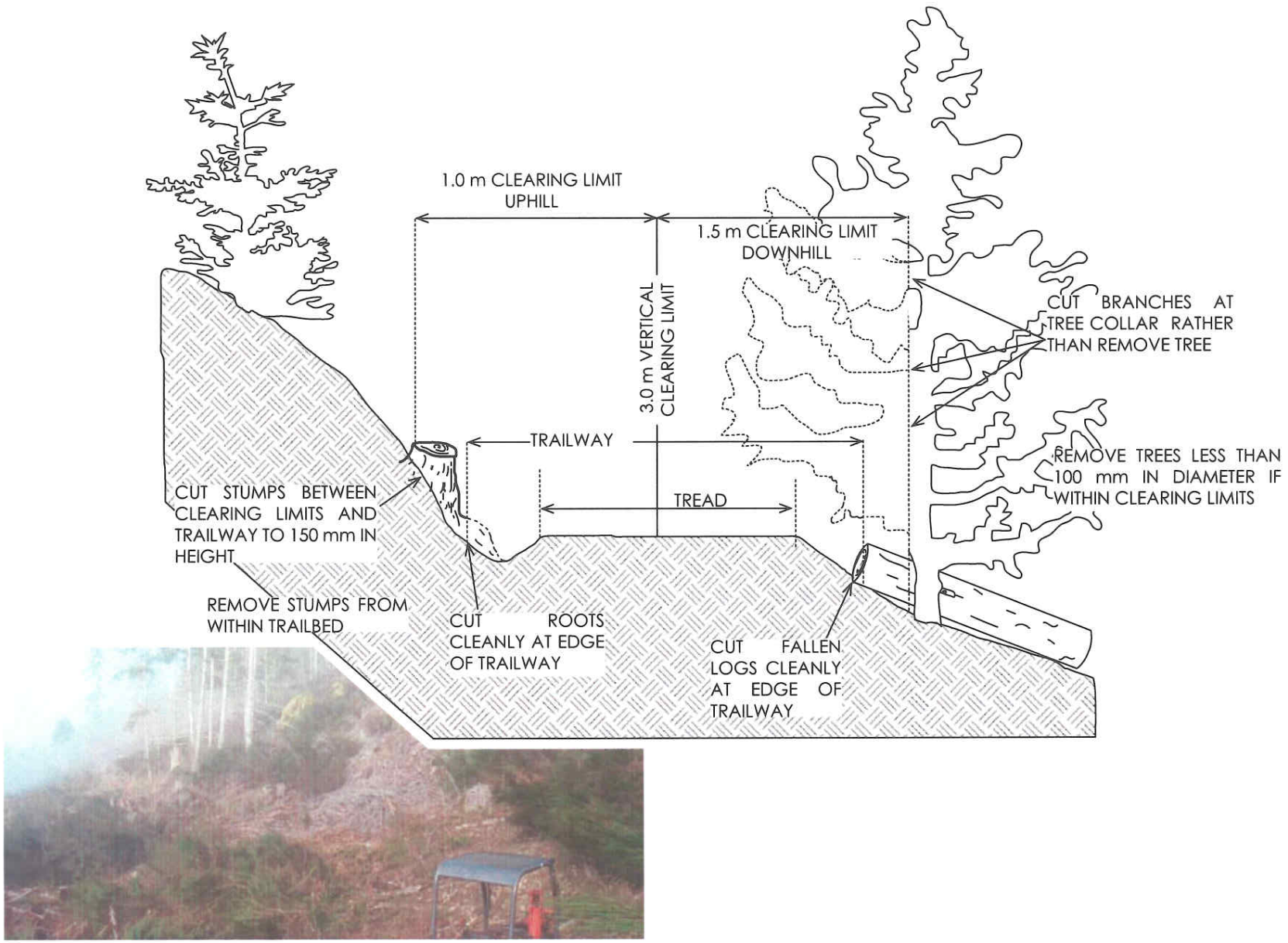


FIGURE 4 - TRAILBED AND SLOPE FINISH - TRAIL TYPE 2

FIGURE 5 - CLEARING LIMITS - TRAIL TYPE 2

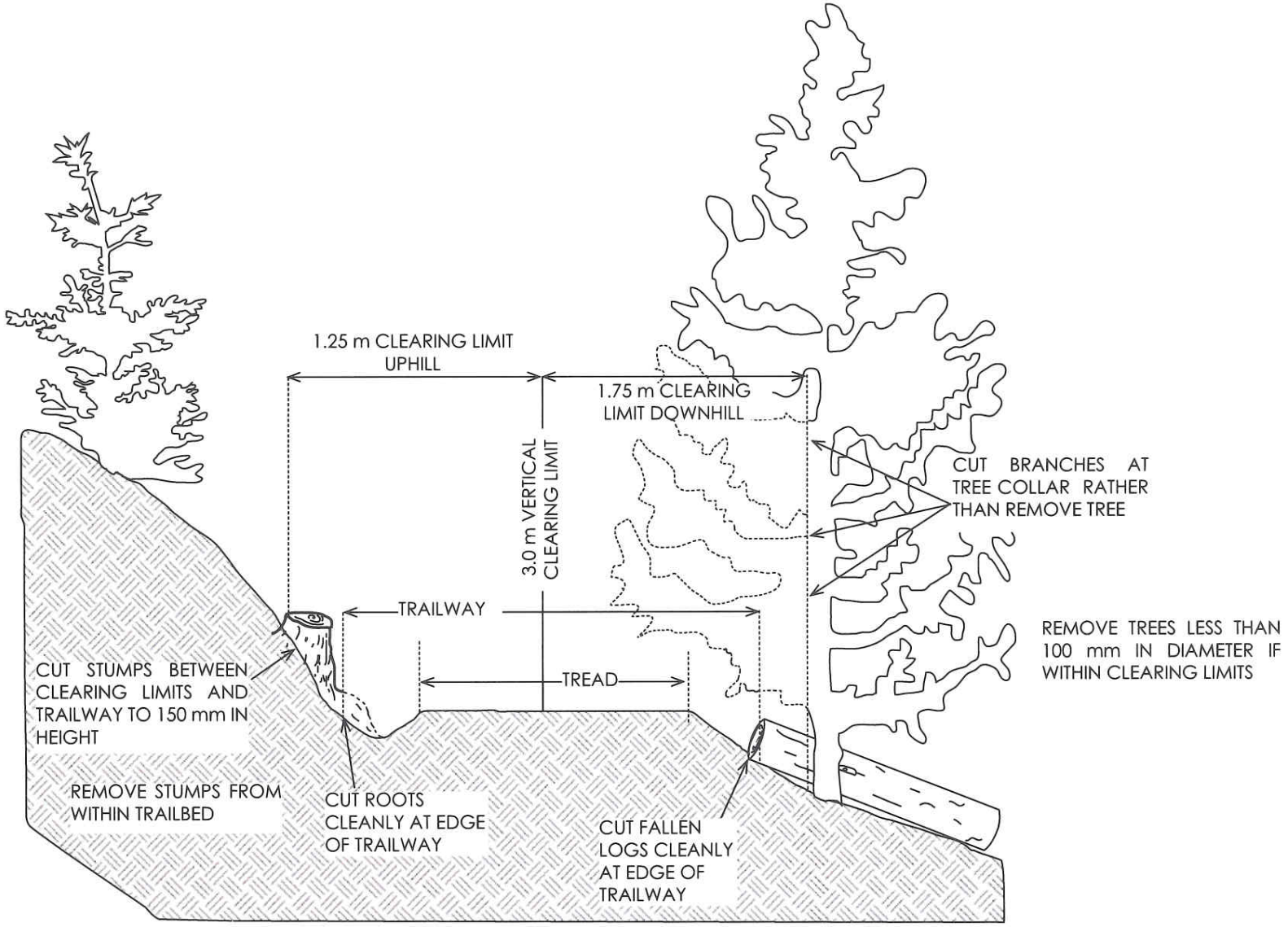
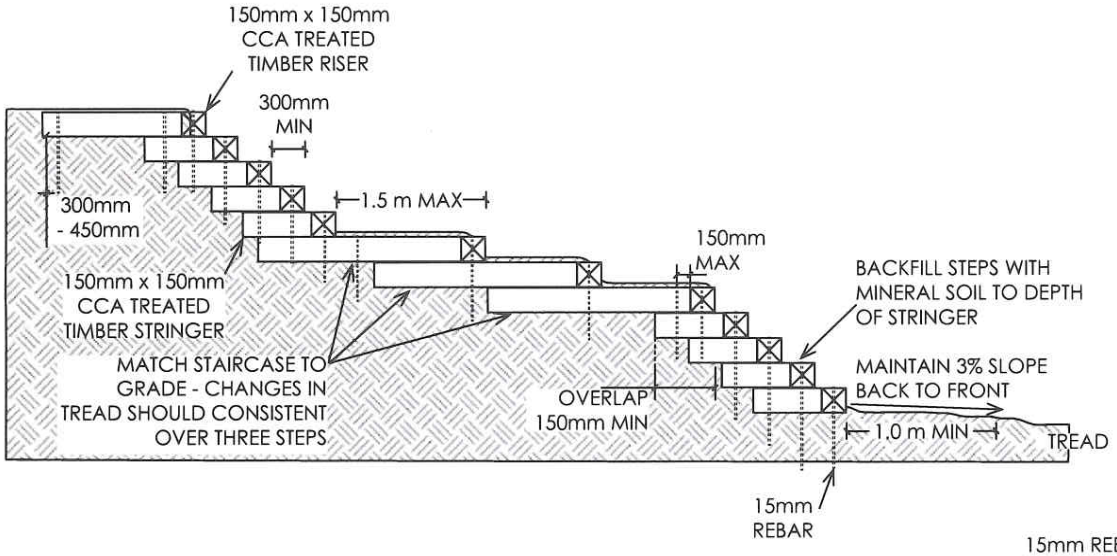
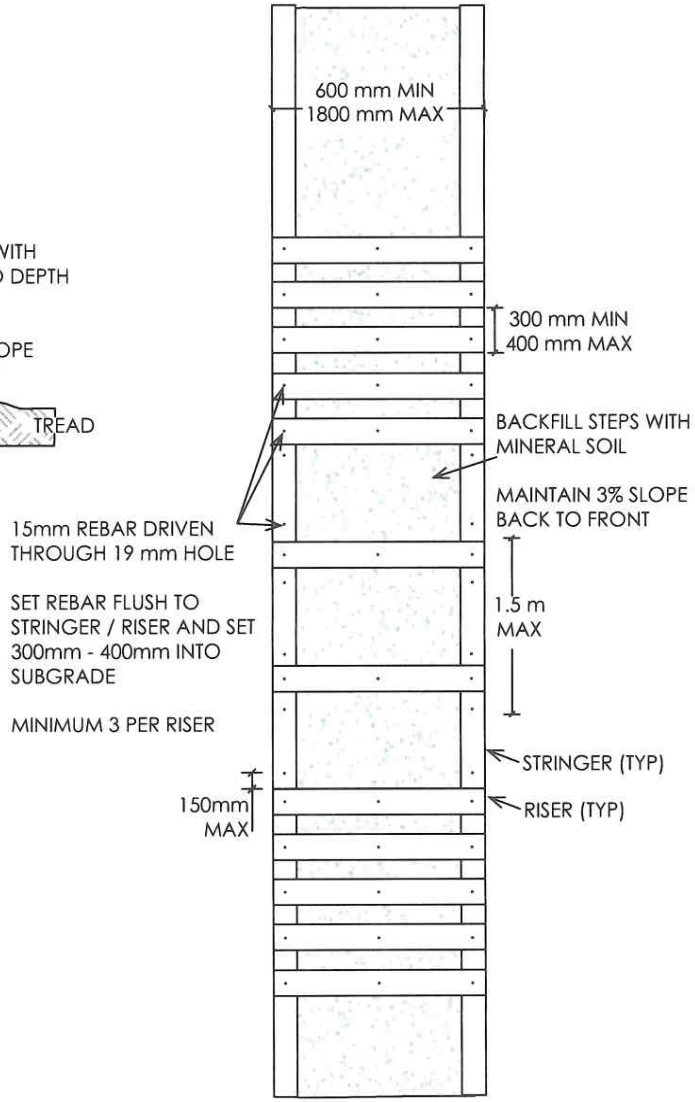


FIGURE 6 - TIMBER CRIBBED STEPS

SIDE VIEW



PLAN VIEW



GENERAL NOTES:

1. A MINIMUM OF THREE STEPS, WITH CONSISTENT RISE AND RUN, WILL BE BUILT IN A STAIRCASE.
2. DESIRED TREAD LENGTH: 350MM - 400MM
3. MINIMUM TREAD LENGTH: 300MM
4. MAXIMUM TREAD LENGTH: 400MM
5. MINIMUM LANDING LENGTH: 1500MM
6. SUBGRADE WILL BE COMPRISED OF FIRM AND STABLE MINERAL SOIL, OR COMPACTED SUITABLE FILL.
7. ALL MATERIAL TO BE CCA TREATED FIR TIMBERS

FIGURE 7 - ELEVATED PEDESTRIAN BOARDWALK WITH DIAMOND PIERS

BOARDWALK ELEVATION

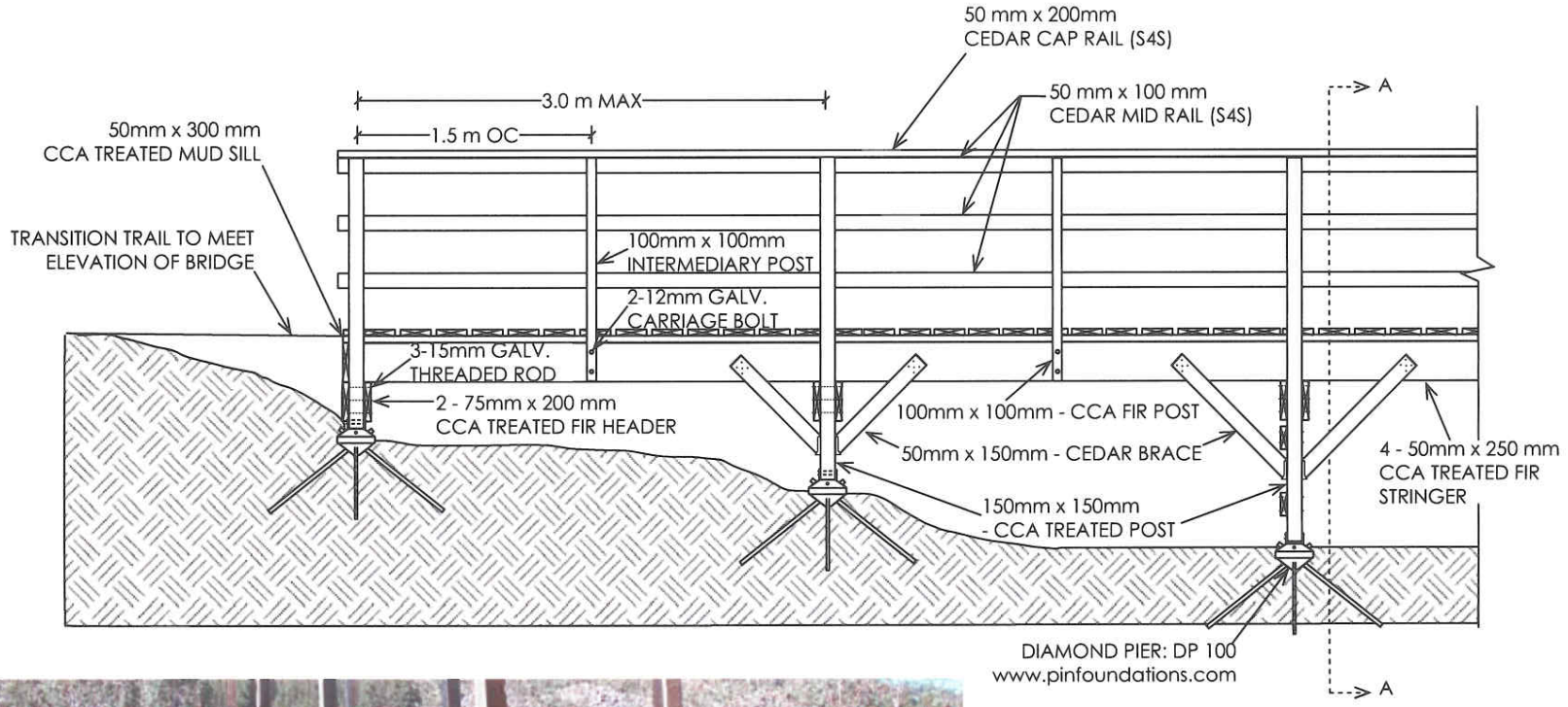


FIGURE 8 - ELEVATED PEDESTRIAN BOARDWALK WITH DIAMOND PIERS (CONT'D)

BOARDWALK PLAN VIEW

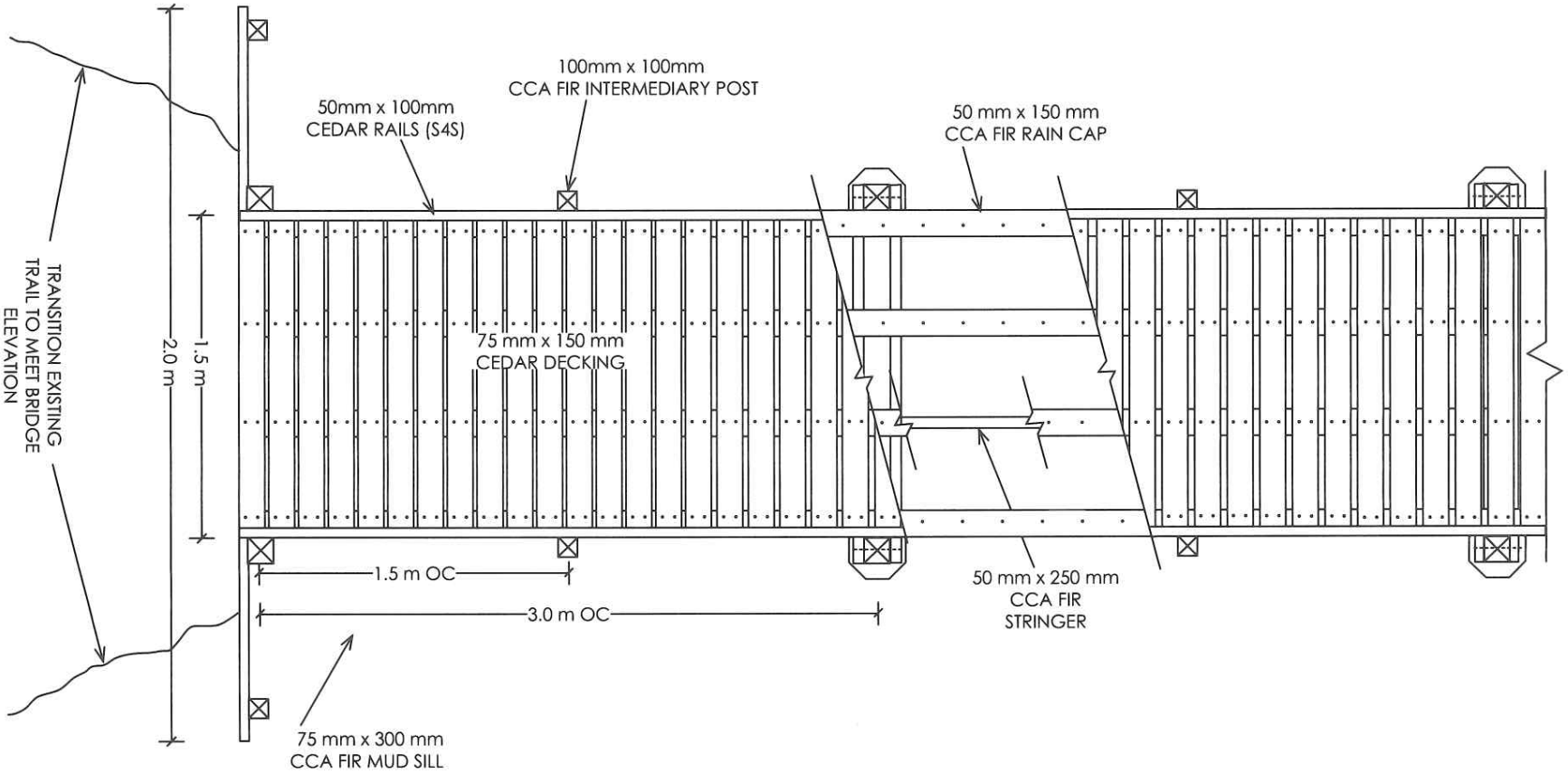
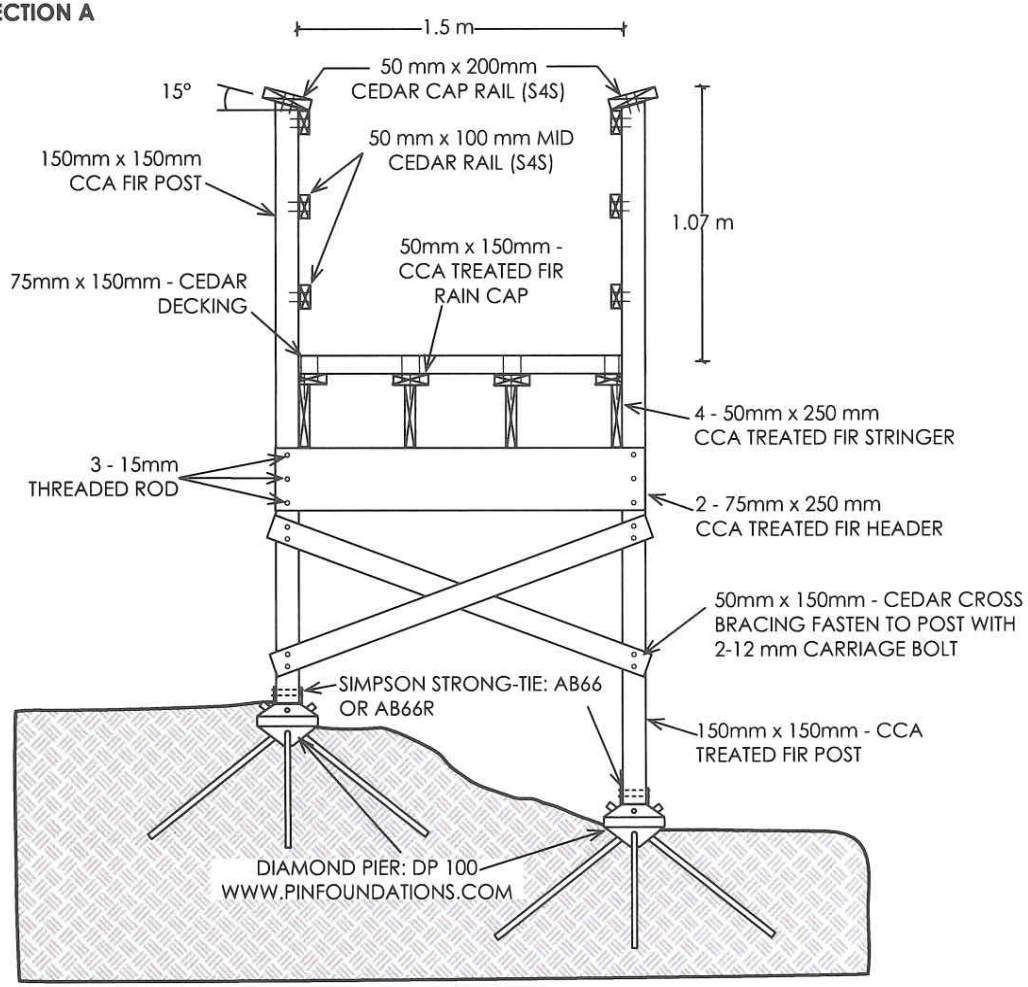


FIGURE 9 - ELEVATED PEDESTRIAN BOARDWALK WITH DIAMOND PIERS (CONT'D)

SECTION A



ALTERNATE CONCRETE FOOTING

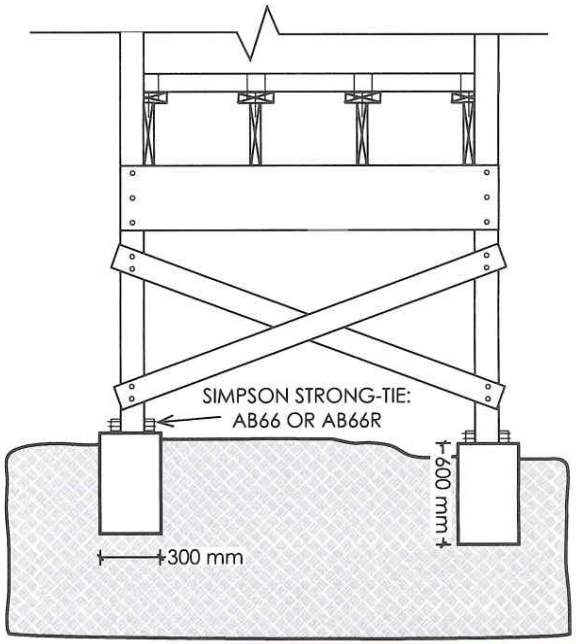
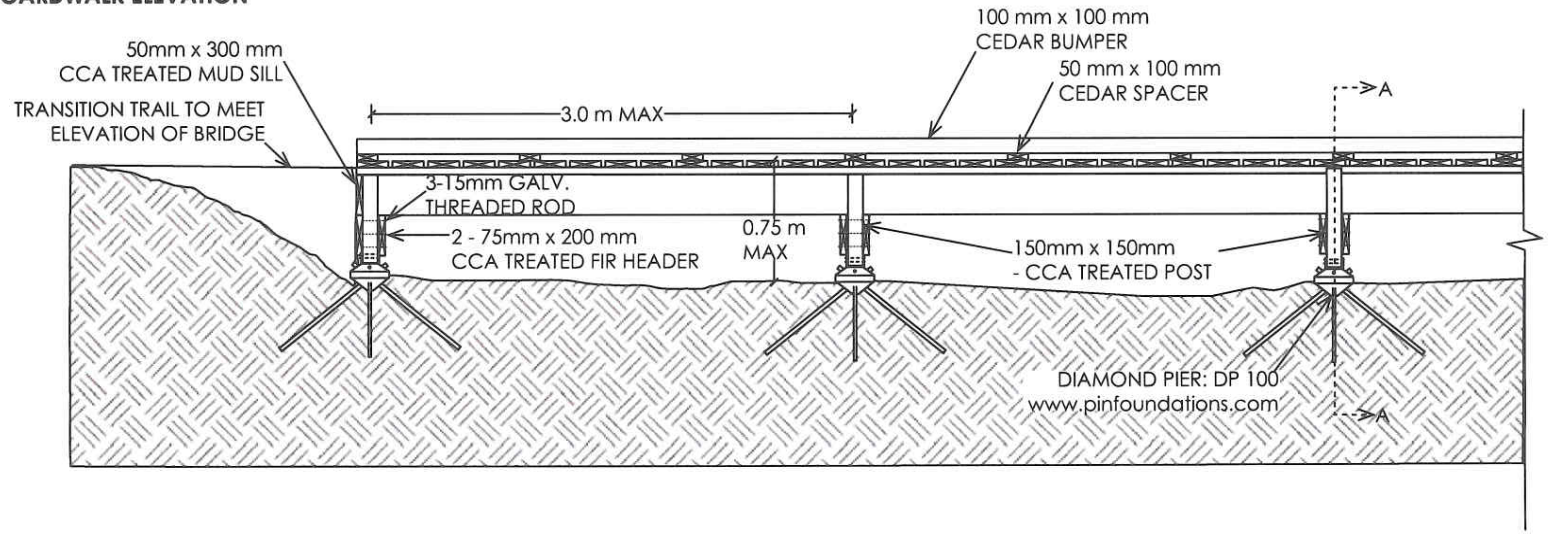


FIGURE 10 - LOW-LEVEL PEDESTRIAN BOARDWALK

BOARDWALK ELEVATION



SECTION A

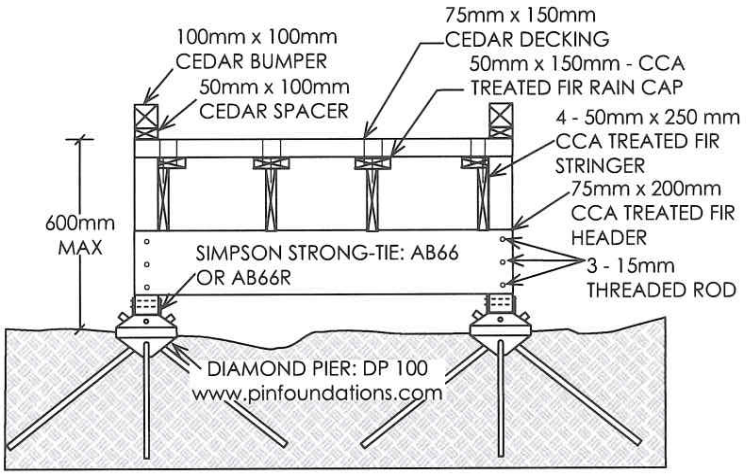
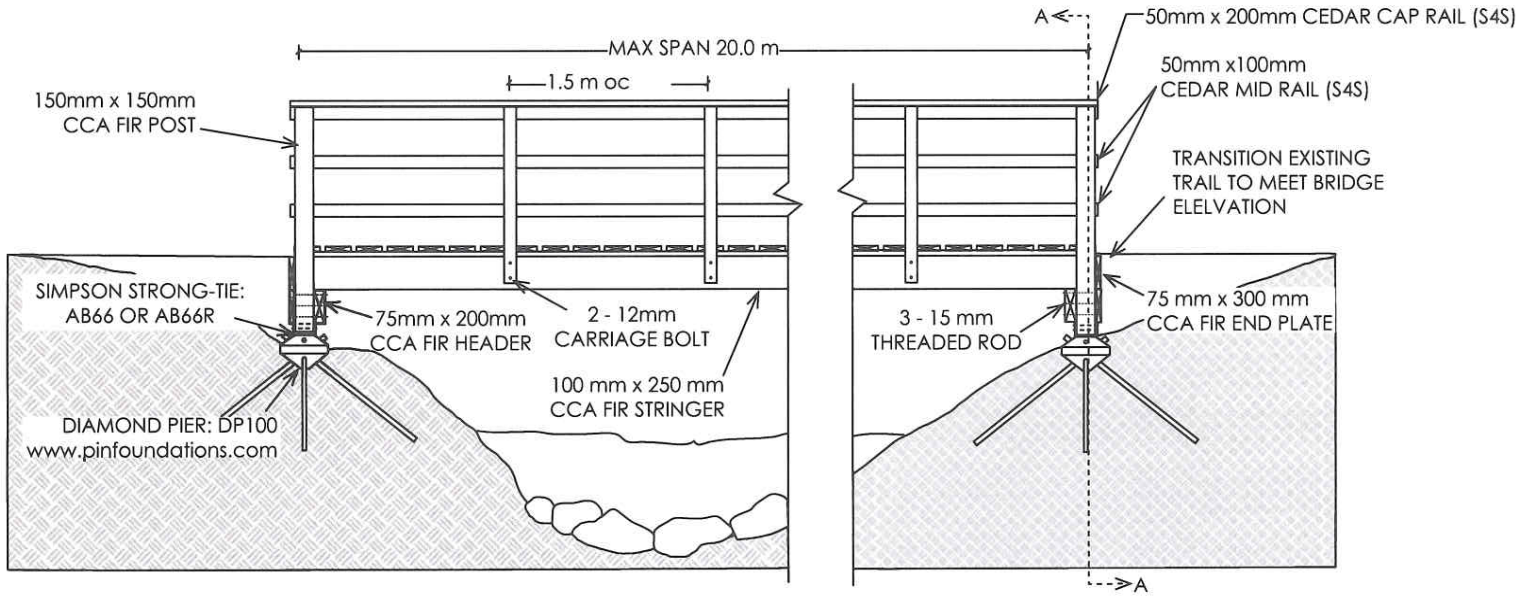


FIGURE 11 - PEDESTRIAN BRIDGE

BRIDGE PROFILE



BRIDGE PLAN VIEW

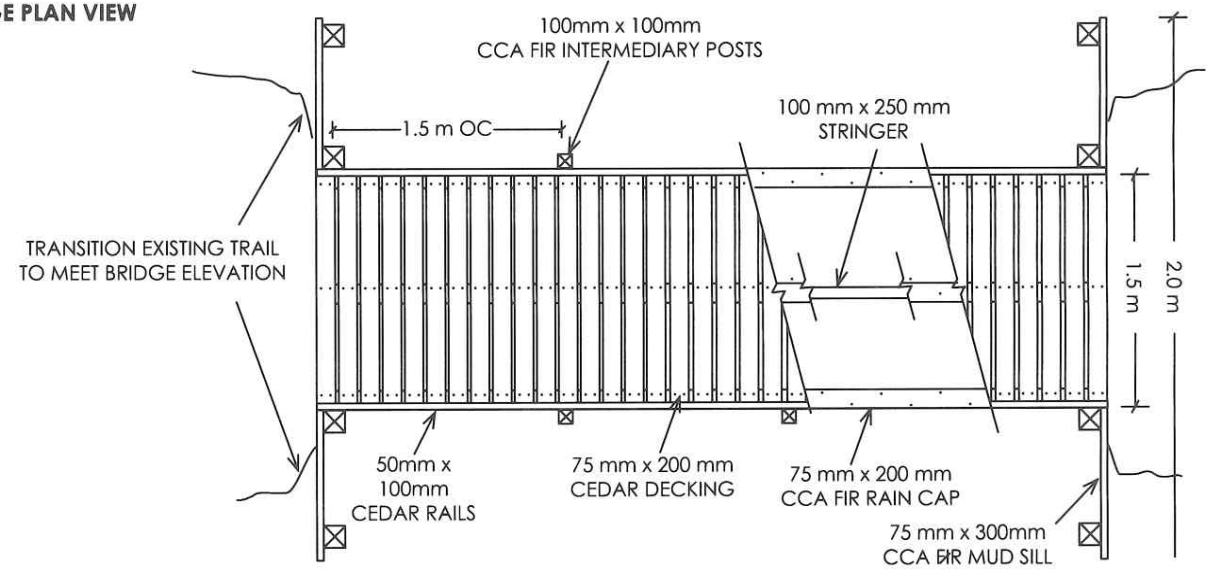
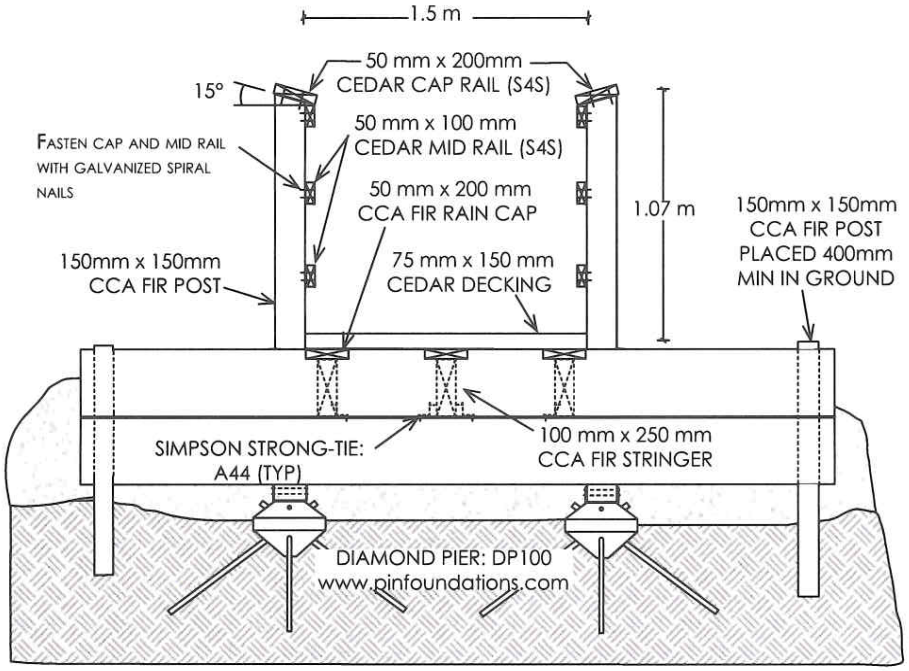


FIGURE 12 - PEDESTRIAN BRIDGE (CONT'D)

SECTION A



ALTERNATE CONCRETE FOOTING

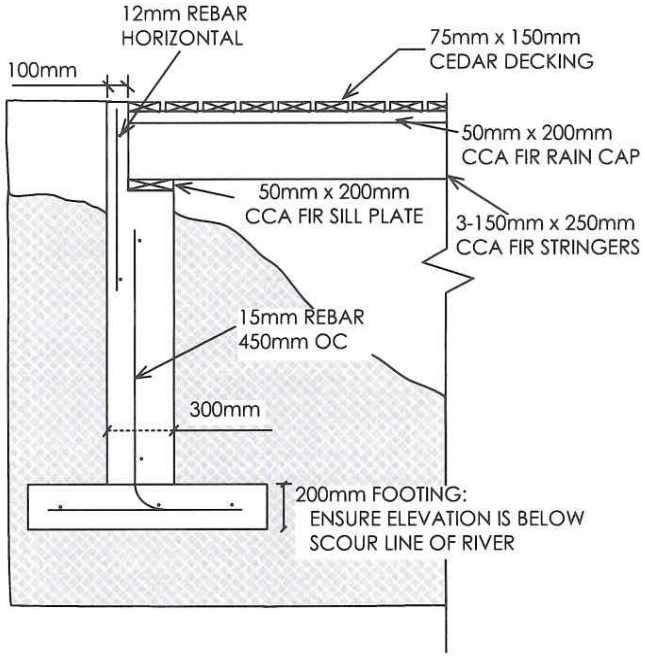
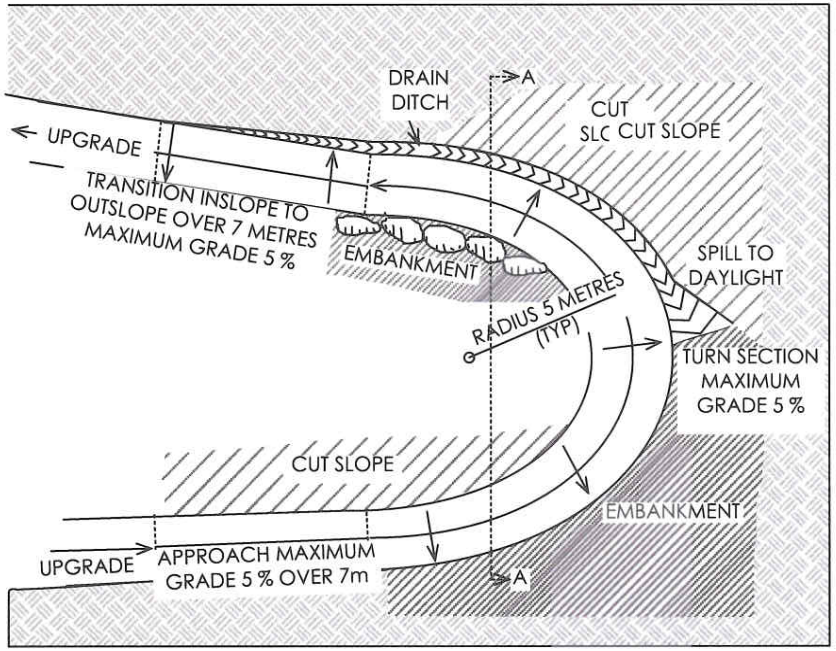


FIGURE 13 - TYPE 1 SWITCH-BACK

PLAN VIEW



SECTION A

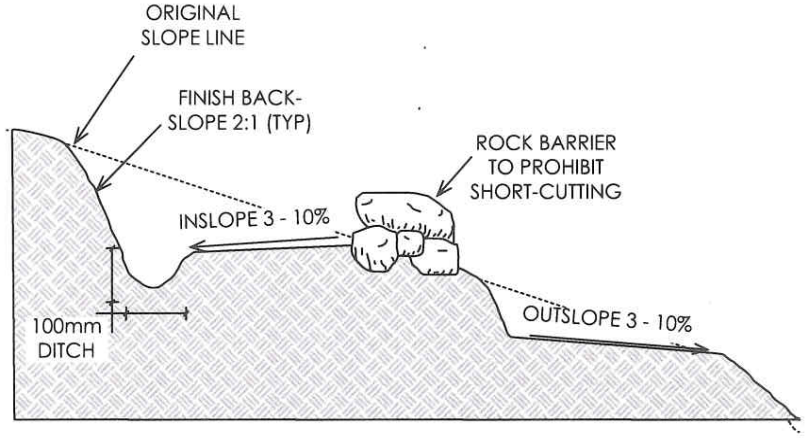
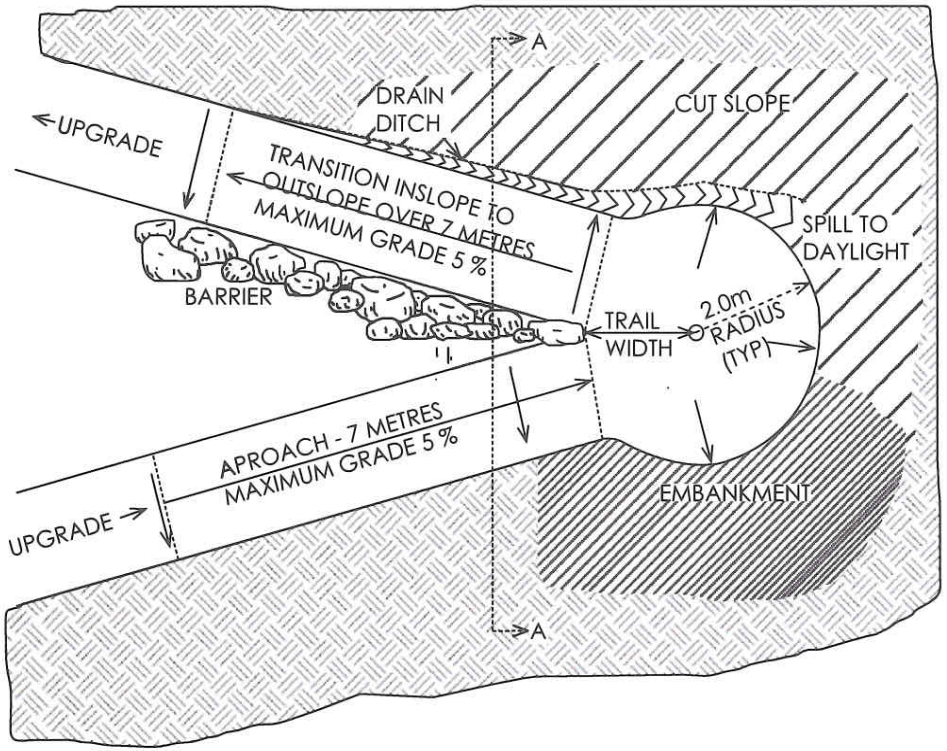


FIGURE 14 - TYPE 2 SWITCH-BACK

PLAN VIEW



SECTION A

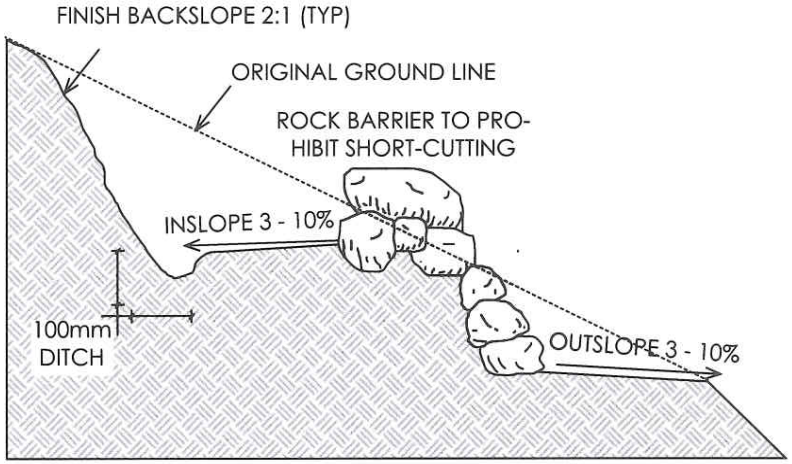
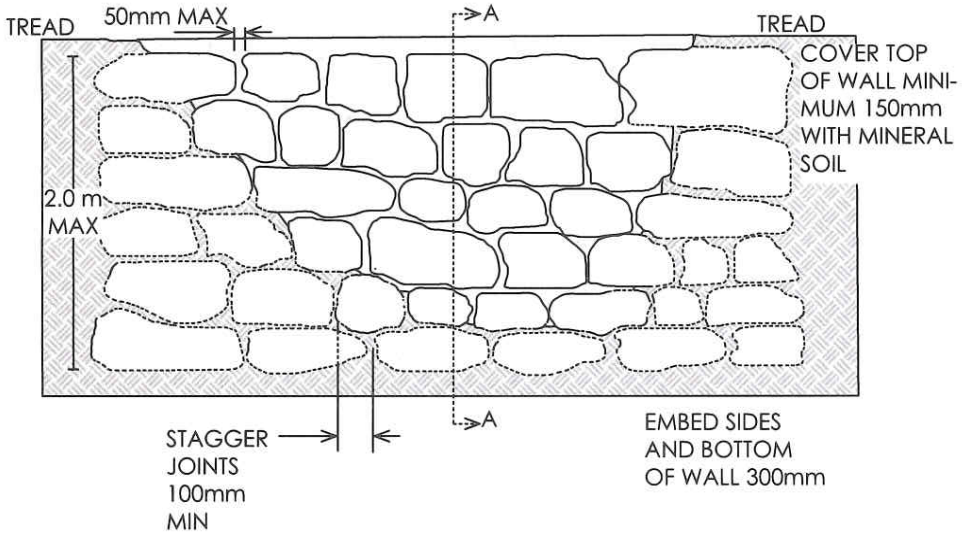


FIGURE 15 - ROCK RETAINING WALL

FRONT VIEW



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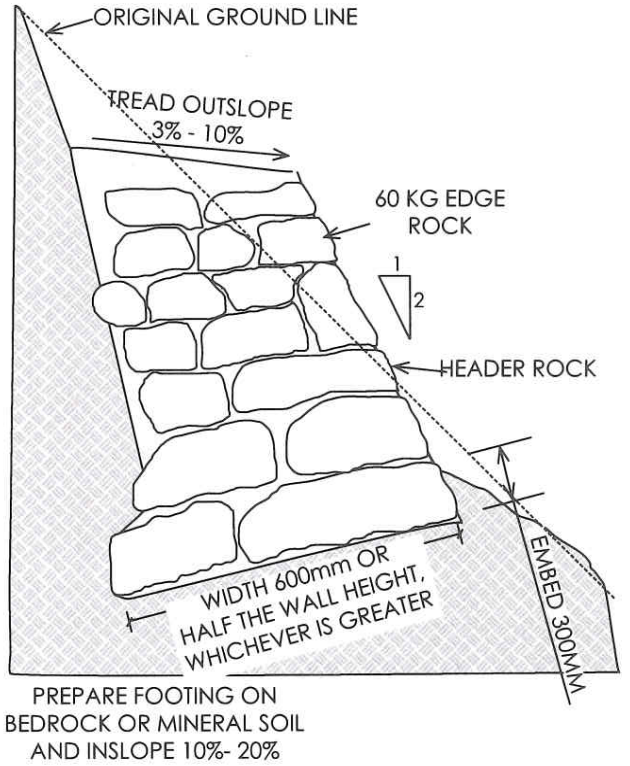
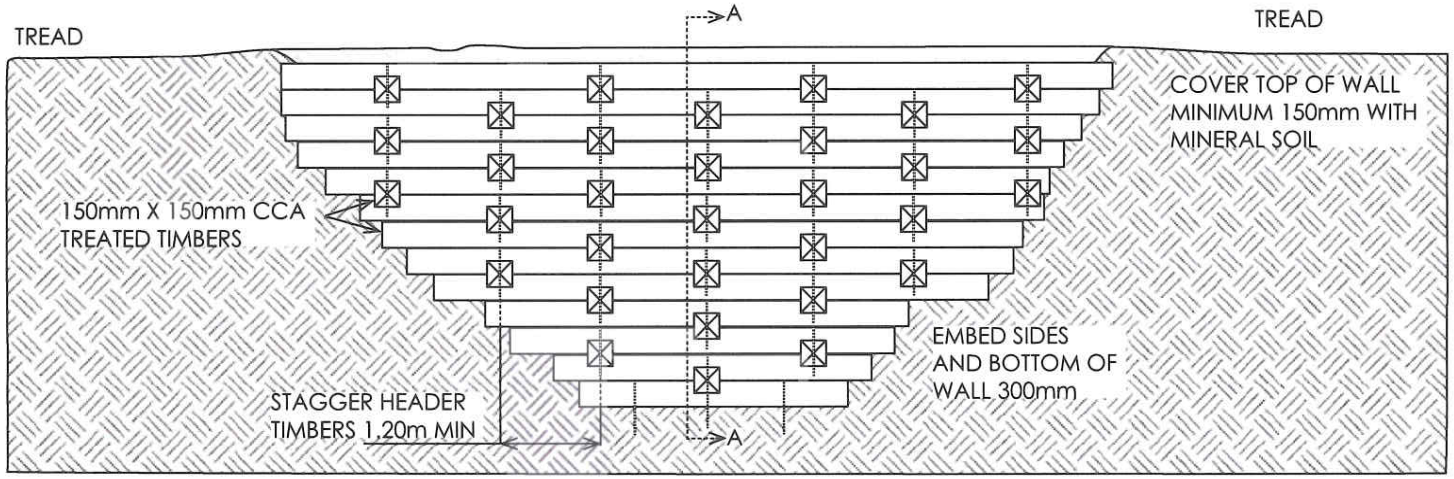


FIGURE 16 - WOOD RETAINING WALL

FRONT VIEW



SECTION A

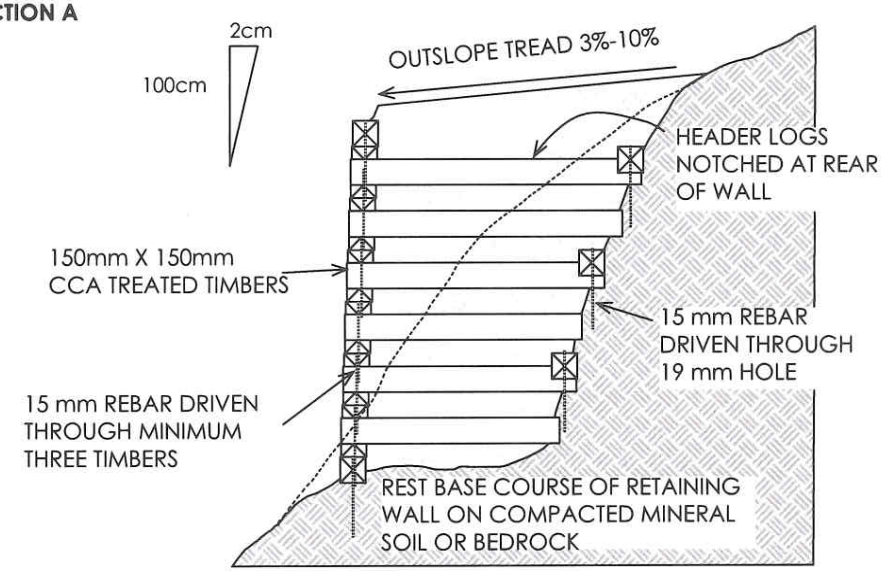
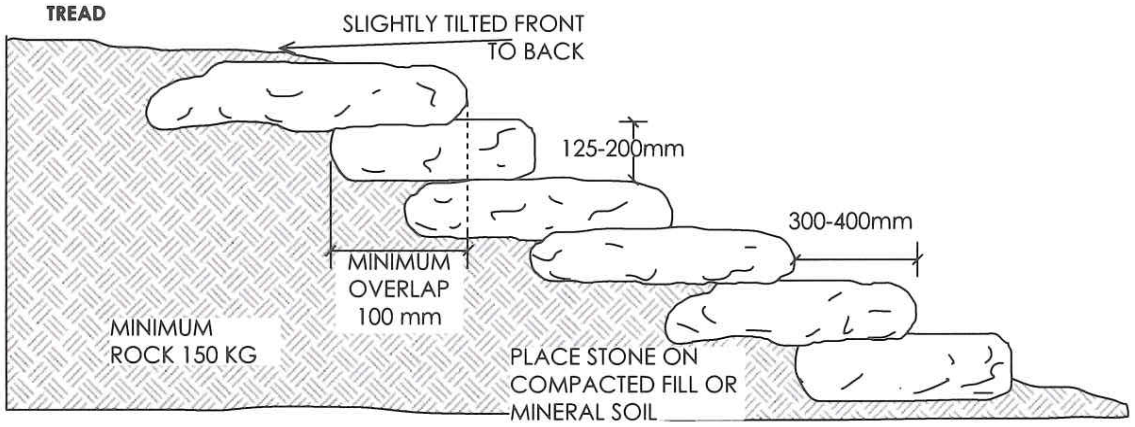


FIGURE 17 - ROCK STEPS

OVERLAPPING ROCK STAIRCASE



GENERAL NOTES:

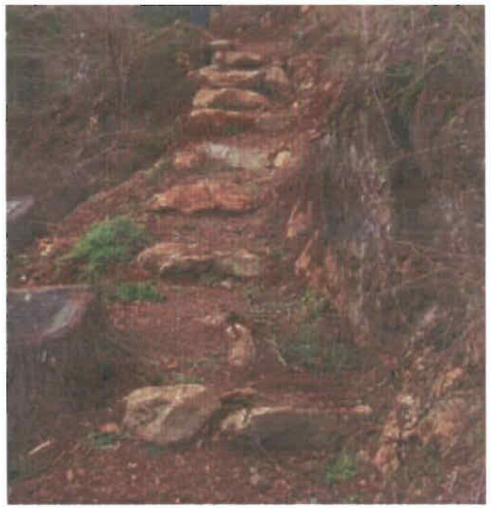
STAIR RISERS TO BE COMPRISED OF A SINGLE STONE.

STONES TO BE TILTED FROM FRONT TO BACK

MINIMUM 150LB ROCK TO BE USED FOR EACH RISER

STAIRWAY TO BE A MINIMUM 1.20 METRES WIDE

WHEN PLACING STONES, MINIMIZE THE AMOUNT OF SITE DISTURBANCE BY EXCAVATING ONLY TO ACCOMMODATE STONE RISER.



ROCK RISER STAIRS

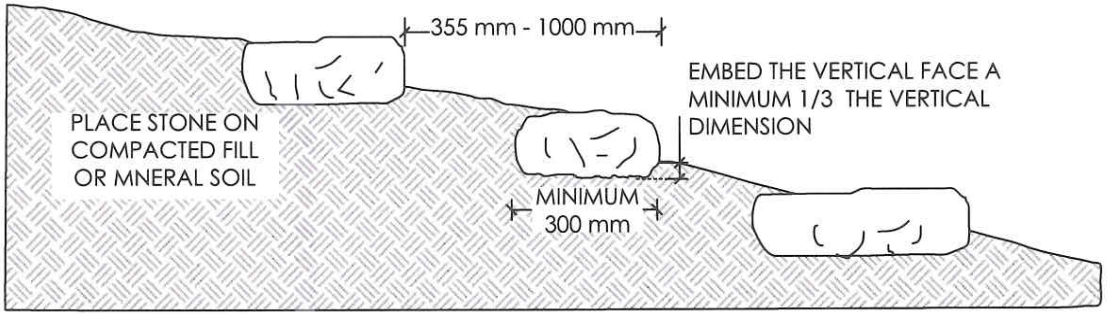
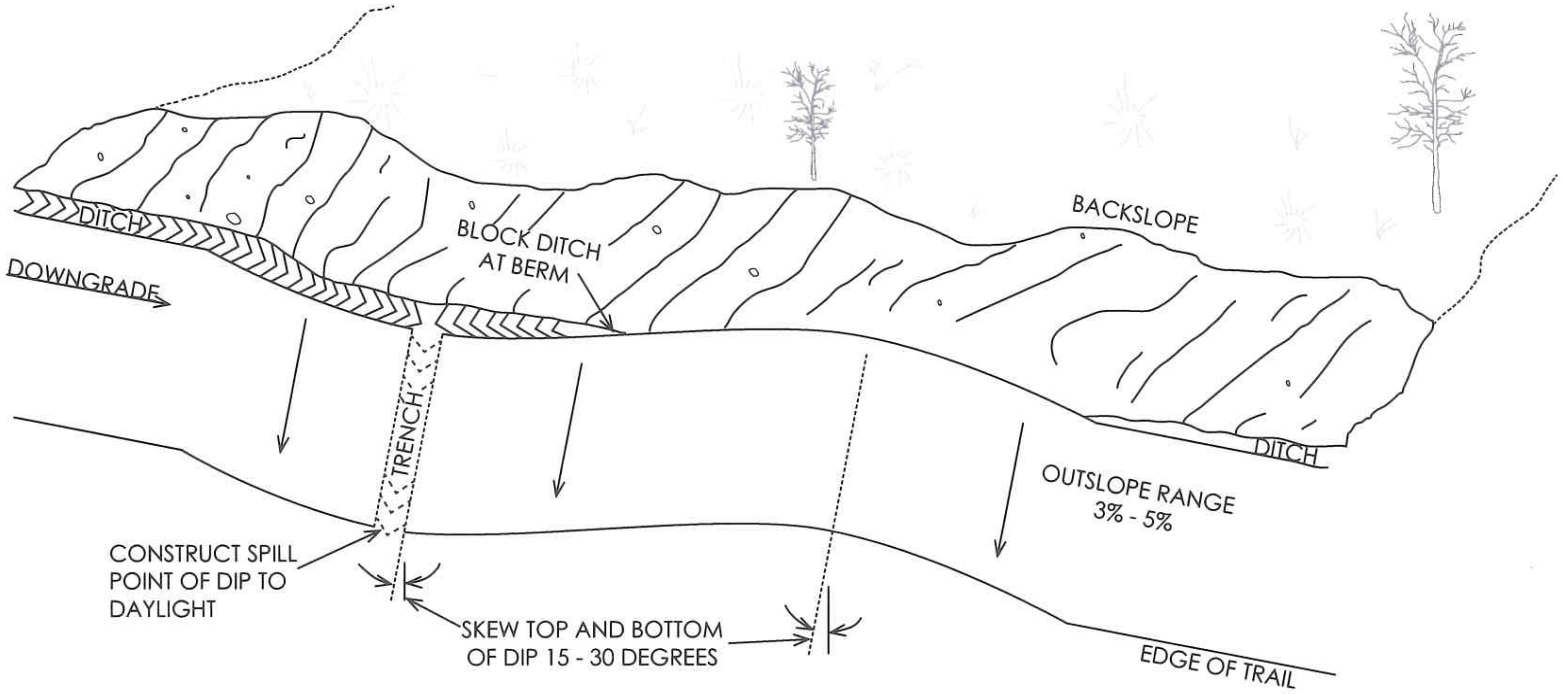


FIGURE 18 - GRADE DIP

PERSPECTIVE



SIDE VIEW

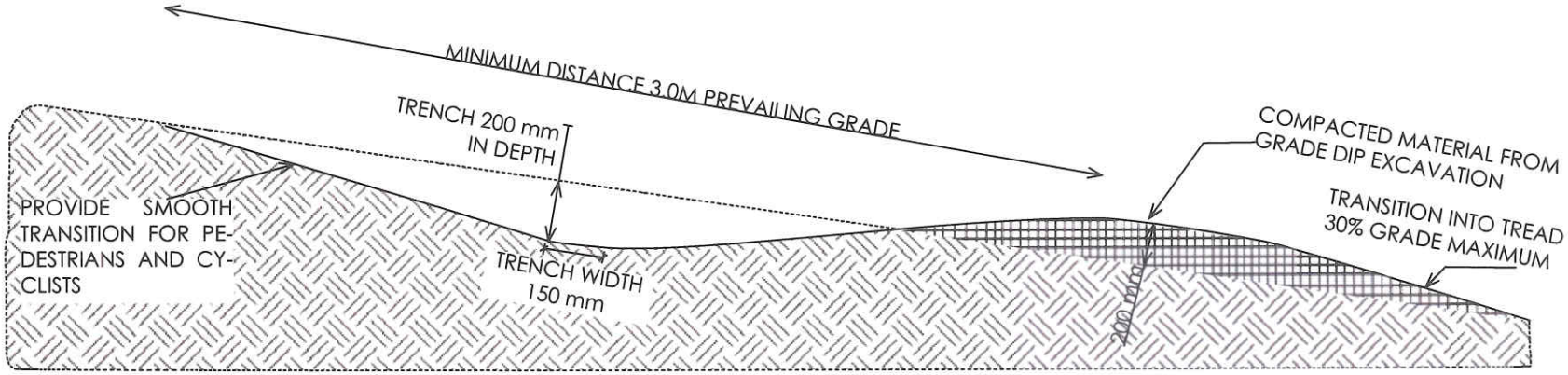
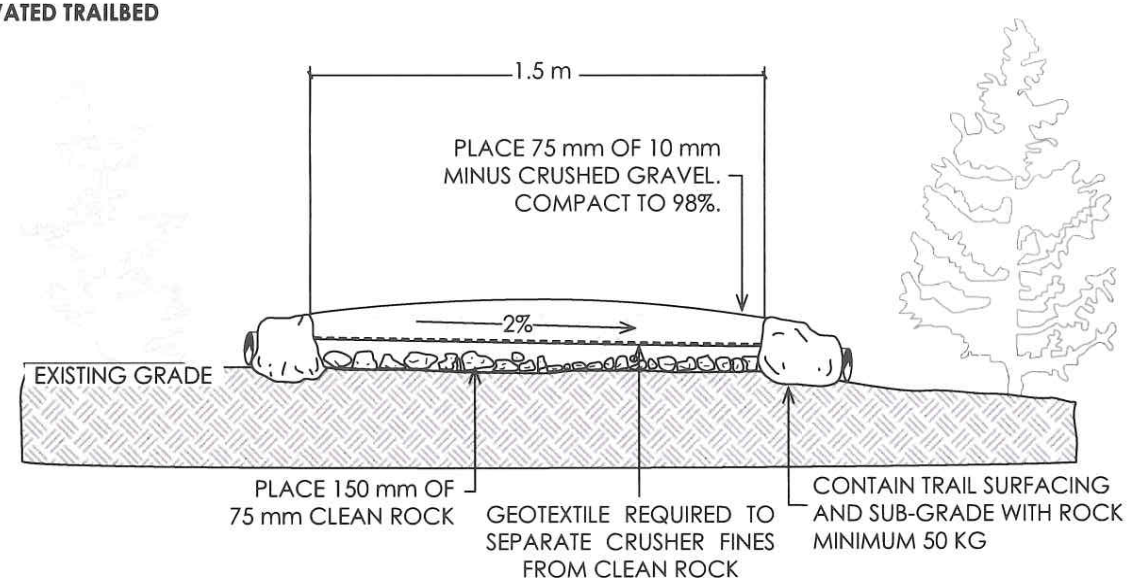


FIGURE 19 - CULVERT

ELEVATED TRAILBED



ELEVATED TRAILBED - PROFILE