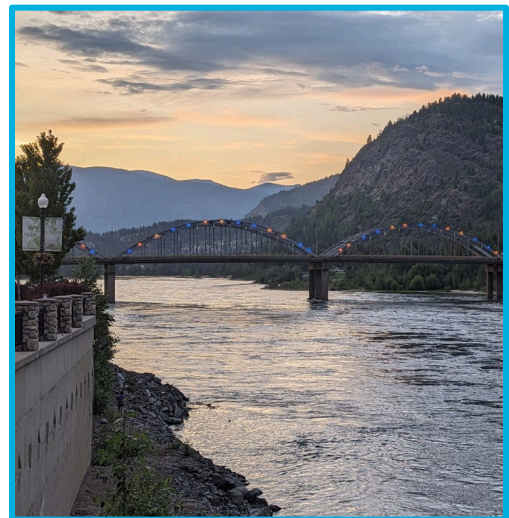
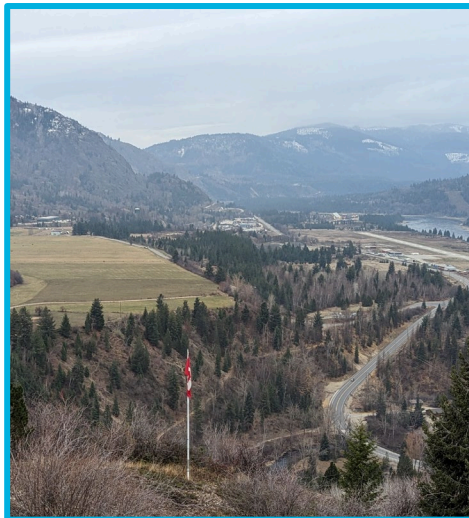


SOUTH KOOTENAY GREEN LINK ACTIVE TRANSPORTATION PLAN

Steering Committee Report 1– Baseline Conditions



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1.0 INTRODUCTION

1.1 Acknowledgements

We recognize and appreciate that the land on which this report is based is the converging, traditional and unceded territory of the Sylix, Secwépemc, Sinixt, and Ktunaxa Peoples as well as the Métis Peoples whose footsteps have also marked these lands. We respectfully acknowledge the First Nations' long history of land stewardship and knowledge of the land and will look for opportunities to learn from and collaborate with First Nations to help us improve our offerings on collaboratively building better communities.

1.2 Project Overview

The RDKB secured \$50,000 for the Lower Columbia Rolling Green Ribbon project, also known as the South Kootenay Green Link, with matching funds from BC's Active Transportation Network Planning program. The South Kootenay Green Link and Active Transportation Working Group, including representatives from Rossland, Warfield, Trail, Montrose, Fruitvale, Electoral Areas A and B, and the Ministry of Transportation and Infrastructure, is developing a plan to realize the Green Link. Stakeholders such as the RCMP, School District #20, BC Transit, environmental and economic sector members, and the public will be engaged throughout the process to ensure the plan reflects their priorities.

The study area encompasses the communities listed above, all of which are anchored by major employers such as Teck Cominco, Trail Hospital, and Red Mountain. Rossland demonstrates how bike culture contributes to a healthy lifestyle, economic growth, social equity, and greenhouse gas reduction in the surrounding picturesque valleys and mountainous terrain.

The 30 km South Kootenay Green Link (SKGL) active transportation corridor aims to connect Rossland, Warfield, Trail, Montrose, Fruitvale, and Electoral Areas A and B, offering a viable alternative to cars for many trips. Enhancing recreational opportunities and active transportation connectivity, the corridor will also support local businesses, promote tourism, and create jobs. It is crucial to develop an All Ages and Abilities (AAA) facility, in line with the BC Active Transportation Design Guide (2019), that is comfortable, convenient, attractive, and safe for everyone.



Arnold Lauriente Way Multi-Use Path in Warfield



1.3 Plan Process



Phase 1 Understanding: The first phase will establish the baseline conditions in the local communities. Keys to understanding include a log to document existing conditions, review existing policy, collect data, and determine potential routing. A major outcome of this phase is the **Baseline Conditions Report**.



Phase 2 Listening: The phase will build upon the engagement work already underway in the area as part of other projects. A combination of online surveys, stakeholder interviews, idea fairs, and bike shops will be used to gather input. A key outcome of this phase is the **What We Heard Report**, summarizing essential insights and future direction.



Phase 3 Developing: The third phase includes the bulk of the technical planning work. Highlights include a Multiple-Account Evaluation of potential route options, pathway cross-sections, and infrastructure design standard development. A series of workshops will also be held as key inputs for the plan's creation. The **Draft South Kootenay Green Link Plan** is the major deliverable for this phase.



Phase 4 Finalizing: Input will be sought to confirm the plan's final direction. The finalized content will be presented to the RDKB East End Services Committee and the **plan finalized** pending any final feedback from the committee.

1.4 Baseline Condition Report Scope

The scope of this Baseline Conditions Report provides a background review and existing conditions summary composed of:

- The area's overall community profile including transportation mode share, and demographic trends.
- Land use and key destinations including future growth areas.
- Policy and planning context to inform the SKGL plan's direction.
- An existing network analysis detailing:
 - Underserved desire lines.
 - Maps detailing road classification, existing & future active transportation infrastructure, and key destinations.



- Transit integration opportunities.
- A StavaMetro analysis of the most popular routes used today by active transportation users.
- A data collection plan to help inform appropriate route cross-section and crossing treatments for busy highway crossings.
- Initial development of route segment alignment options for stakeholder and engagement feedback.
- Steering Committee Workshop #1 outcomes and results
- Preliminary list of criteria that should be considered for final route selection.

All of these topics together will work to inform our consultation approach moving forward with engagement involving community members, advocacy groups, and government agencies, as well as provide a means of identifying priorities, concerns, and discussion topics regarding route considerations moving forward into Phases 2 and 3. (Listening and Developing).

This report includes some terminology represented normally as an acronym, which is highlighted below for ease of reference.

AAA - All Ages and Abilities biking facilities: These are cycling infrastructure elements designed to accommodate users of all ages and abilities, providing a safe, comfortable, and convenient experience for cyclists, pedestrians, and other active transportation users.

MAE - Multiple Account Evaluation: A decision-making tool that assesses various options or alternatives based on multiple criteria. It helps in comparing and selecting the most suitable alternative in a systematic and transparent manner.

MUP - Multi-Use Pathway: A type of infrastructure that supports multiple modes of active transportation, including walking, cycling, and other non-motorized activities. MUPs are typically separated from motor vehicle traffic, offering a safer and more enjoyable experience for users.



Active transportation infrastructure already in place on Washington Avenue in Rossland.



2.0 COMMUNITY PROFILE

The communities of Fruitvale, Montrose, Rossland, Trail, and Warfield as well as, Electoral Area's A and B are home to ~20,000 year-round residents. The population increases with an influx of visitors enjoying adventure tourism in the Monashee Mountains in the summer and winter months.

2.1 Demographic Trends

To develop a baseline for improvement and to help understand the potential user base for the SKGL, several demographic indicators have been considered from the 2021 and 2016 Statistics Canada Census data.

First, the commuting mode split was looked at for the seven communities along the SKGL route, see **Figure 1**. Of note, Rossland and Trail have significant walk mode splits compared to the more rural communities of Warfield, Montrose, Fruitvale, and Electoral Area A & B. The well built out sidewalk network and walkable downtowns are primary factors in their walkability. However, the mode split for autos is still quite high for all communities. Rossland's is the lowest at 82% and Montrose has the highest at 96%. It can also be seen that commuting by bike has not developed significant traction even though bike culture is developing rapidly in the region. One of the major challenges for cyclists is the large elevation differences and lack of non-highway connections between the communities to access the major employers in the region. The construction of a safe and comfortable regional route such as the SKGL and the rising popularity of ebike and micromobility will make these non-automobile commuting trips more palatable in the future. Looking at the mode split trends from 2016 to 2021, not much has changed. Bike mode share remains low at 1-2% while transit and walk figures remain stable as well within a couple of percent of 2016 levels.

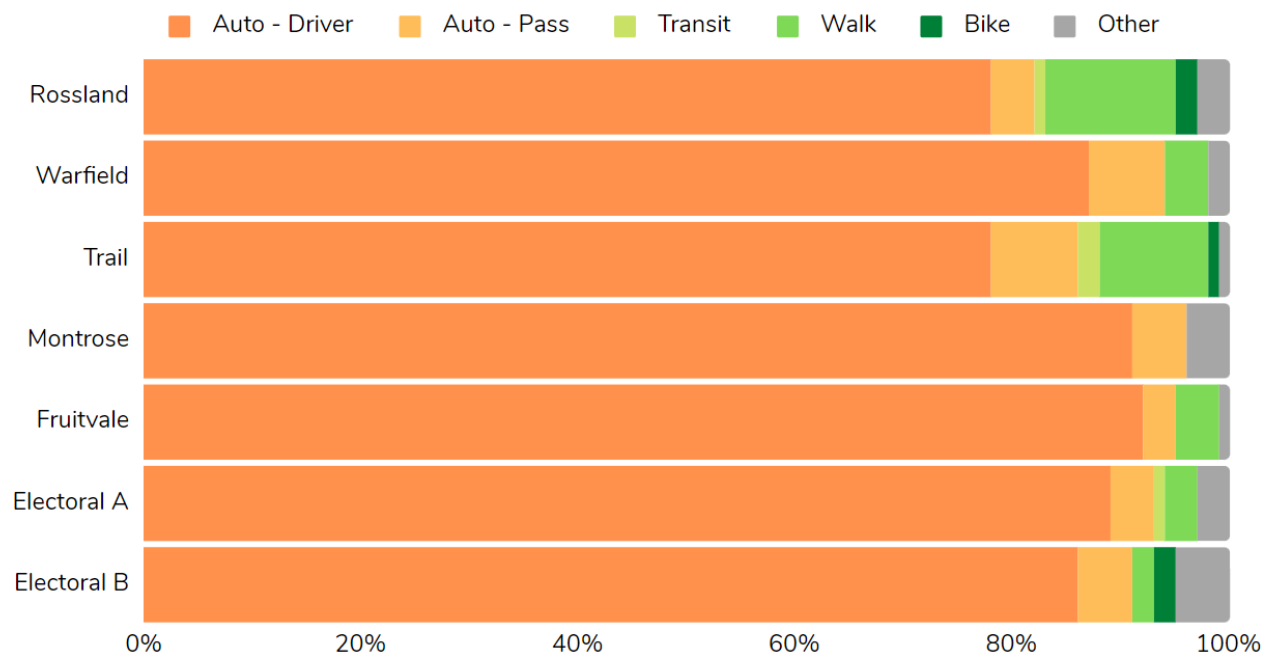


Figure 1 - 2021 Transportation Commuting Mode Share

Table 1 and **Table 2** illustrate the population changes across the region as well as the change in the resident median age. Rossland has seen the largest population increase, 11% over five years, while the other communities have remained relatively stable with smaller growth each year except for Electoral Area A which has declined. Trail remains the largest community in the region with 7920 residents while Rossland has roughly half that at 4140. Looking at age trends throughout the communities, Rossland has the lowest median age at 40.8 years, just slightly below the provincial average of 42.8 years. Warfield and Montrose’s median age is 44.8 years and the remaining communities of Trail, Fruitvale, and Electoral Area A are near 50. Electoral Area B has the highest median age at 55.6 years. Each community's median age remains relatively stable except for Montrose’s, which dropped by 12% over the five year period. The region's demographic trends will shape the future of active transportation planning, emphasizing age-friendly and supportive transportation options. The SKGL must adhere to principles that prioritize providing an active transportation corridor that is safe and comfortable for all ages and abilities. Age-friendly considerations include rest areas along steep climbs, easily accessible and well-maintained pathways, clear signage and wayfinding, and barrier-free design elements such as curb ramps and wide, smooth surfaces. These features will ensure that people of varying ages, fitness levels, and mobility can comfortably and safely navigate the corridor. Additionally, incorporating amenities like benches, shaded areas, and bicycle repair stations can enhance the user experience for all.



Table 1 - Population Change Across the Region

Population	2016	2021	Change
Rossland	3729	4140	11%
Warfield	1680	1753	4%
Trail	7709	7920	3%
Montrose	996	1013	2%
Fruitvale	1920	1958	2%
Electoral Area A	1891	1905	1%
Electoral Area B	1442	1422	-1%
British Columbia	4.6m	5.0m	9%

Table 2 - Median Age Across the Region

Median Age	2016	2021	Change
Rossland	41.1	40.8	-1%
Warfield	45.3	44.8	-1%
Trail	50.6	49.6	-2%
Montrose	50.9	44.8	-12%
Fruitvale	48.8	50	2%
Electoral Area A	47.8	49.2	3%
Electoral Area B	53.9	55.6	3%
British Columbia	43.0	42.8	0%

2.2 Land Use and Key Destinations

2.2.1 Future OCP Growth Areas

Rossland

Rossland is expected to grow quickly in the coming years. As a part of that growth, major focus areas include:

- Larger scale residential and commercial development near Red Mountain Resort. As part of the resort's master plan, the amount of skiable terrain will nearly double. With this brings significant development planned for the resort's village with many amenities also provided to create a proper village environment. Creating and maintaining a top quality active transportation connection between Red Mountain and Rossland will become increasing import in the future. Future development should be leveraged to help build out the SKGL in this area.
- Downtown commercial along Columbia Ave and Washington Street. Washington Street is slated as the Town's second commercial street with mixed use development north of Columbia Avenue.
- Residential density increases (multi-family or infill housings) are encouraged everywhere in the Town's existing footprint.
- Gateway commercial near the Highway 3B / Highway 22 turnoff.

Warfield

Warfield's future growth areas include a residential area north of the Arnold Lauriente Way active transportation corridor and commercial development near the old Warfield Highway Tunnel area.



Trail

The Trail OCP states that future development should be concentrated within existing urbanized areas. Of note, future multifamily development is permitted in West Trail and East Trail and commercial development is permitted in the existing commercial land use areas.

Montrose

Montrose has limited growth potential due to topography. The OCP states a focus on providing housing diversity for those with disabilities, seniors, and low-income households. There is a small future commercial core area near the intersection of 5th Street and Highway 3B.

Fruitvale

Growth is focused in core areas with multifamily development planned for along Columbia Gardens Road and commercial development centred around the existing commercial centre on Highway 3B.

RDKB Area A (Surrounding Montrose and Fruitvale)

The Area A OCP states with respect to growth:

- Preserve the predominantly rural character and lifestyle of the Plan Area; and minimize urban/rural conflicts by directing urban development toward the adjacent municipalities where services including water, sewer and public transit are available.

RDKB Area B (Surrounding Rossland, Warfield, and Trail)

The Area B OCP states with respect to growth:

- Support the preservation of the area's rural character.
- Match density and land use with the level of water and sewer servicing available.
- Support existing, expanded and new industrial development in areas designated as 'Industrial'.
- Support the safe and efficient movement of people and goods within and through the Plan Area and encourage higher density where there is easy access to public transit.



2.2.2 Employment Hubs

It will be important to provide connections to regional employment hubs along the SKGL. Major employers include Teck Resources Limited, Kootenay Boundary Regional Hospital, Red Mountain Resort, Downtown Trail, primary and secondary schools, Selkirk College hub located in Trail, as well as the big box retailers in the Waneta area.



A photo of Teck Resources from Downtown Trail.

2.2.3 Other Key Destinations

In addition to commuting trips, accommodation for other essential trips for shopping or attending an appointment to commercial hubs is also important. As far as recreation goes, users may use the SKGL purely for exercise and well-being or as a corridor to arrive at attractions and destinations along the trail. For all of these use cases, it is important for the SKGL to tie into residential neighbourhoods so residents can start their trip without encountering any major infrastructure barriers preventing them from accessing the SKGL in a safe and comfortable manner. A preliminary list of some of the more important recreational and essential trip destinations that are desirable to provide connections to if possible is provided below, the list is ordered from west to east and will be developed further through public engagement:

Recreation Facilities and Areas:

- Mountain bike trail network at Red Mountain
- Mountain bike trail network between Rossland and Warfield
- Rossland Pool
- Trail Aquatic and Leisure Centre
- Gyro Park
- Sports fields
- Beaver Creek Provincial Park
- Beaver Falls

Commercial Hubs:

- Rossland downtown
- Trail downtown
- Waneta
- Fruitvale downtown

Tourist Attractions:

- Red Mountain
- Royal Theater
- Columbia River Skywalk



- Columbia Gardens Wineries

3.0 POLICY CONTEXT

3.1 Plans and Studies

3.1.1 Rossland Active Transportation Network Plan Review (2022)

A review of Rossland's 2009 ATNP was done to provide an update on progress and to refine priorities for the next decade. The overall goal of Rossland's Active Transportation Plan is to "Establish an implementable active transportation network that reflects Rossland's community context and improves the accessibility and safety of the built environment to enhance active living and mobility for all.

During engagement the public provided input on gaps in the active transportation network. Three gaps related to SKGL were identified:

- Pave Centennial Trail, Wagon Road, and Rail Grade
- Connection from Rossland to Redstone Dr and to Trail (Old Wagon Road)
- Connector trail from south of Red Mountain Road to Centennial Trail

Among the plan's top recommendations are to:

- Implement the Green link and promote the use of the Green Link as a safe, efficient, non-highway bike/e-bike commuter route between Rossland, Warfield, Trail and Fruitvale and expand to RDCK, Castlegar and Salmo for the benefit of both residents and visitors.
- Consider the impact of new mobility technologies such as e-bikes on the active transportation network and facility design.
- Explore ways to restore the old Railgrade through town to provide active transportation connections.
- Explore opportunities to upgrade existing trails including paving Railgrade, Centennial and Wagon Road trails to promote accessibility by all ages and abilities.
- Support collaboration with neighbouring municipalities and Regional Districts to identify and develop off-road pedestrian/cycling routes linking the communities.
- Explore opportunities with MOTI to enhance safety and crossings for all users at the following locations:
 - Columbia Avenue and St. Paul Street
 - Columbia Avenue and Washington Street
- Columbia Avenue and Spokane Street

The best possible SKGL route that makes use of planned active transportation infrastructure through Rossland is highlighted in **Figure 2**.



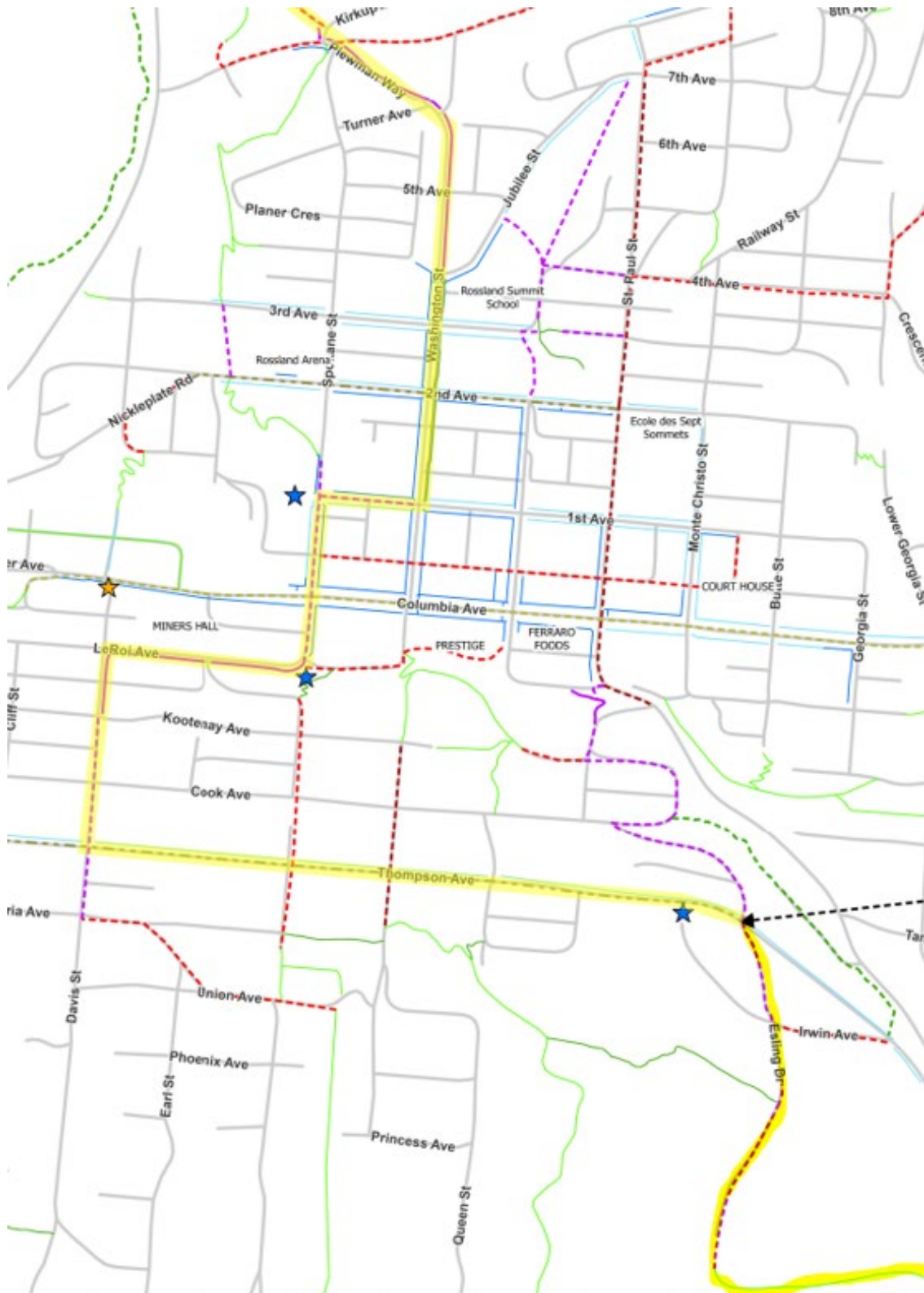


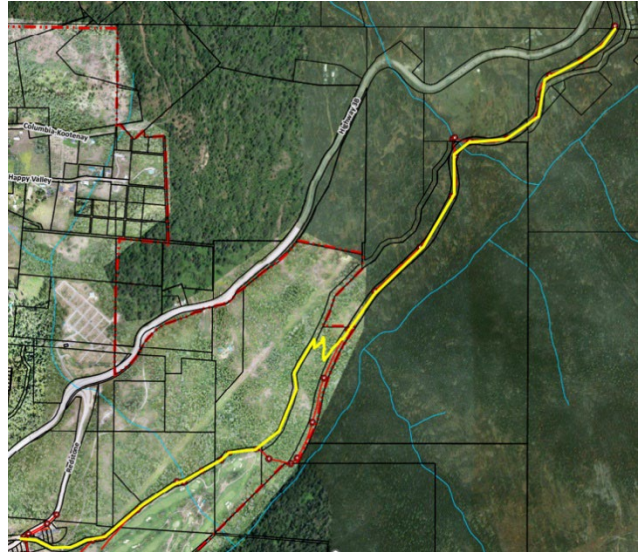
Figure 2 - Potential SKGL Route Through Rossland



3.1.2 Rossland to Warfield Green Link Plans (2022)

The Green Link has been contemplated prior to this study as the portion focused on the connection of Rossland and Warfield by making use of the existing Wagon Road trail and the Railgrade trail historical alignments.

The plan in place for this segment revolves around the need to upgrade the sanitary sewer system which runs along the proposed trail alignment. At the top, the trail started on the Old Wagon Road trail and then roughly halfway down it connects over to the Railgrade trail. The cutover is shown in **Figure 3** for which it creates a switchback that results in a 10% grade for the trail connection.



Proposed Green Link trail alignment on the Old Wagon Road and then transitioning to the Railgrade halfway down.

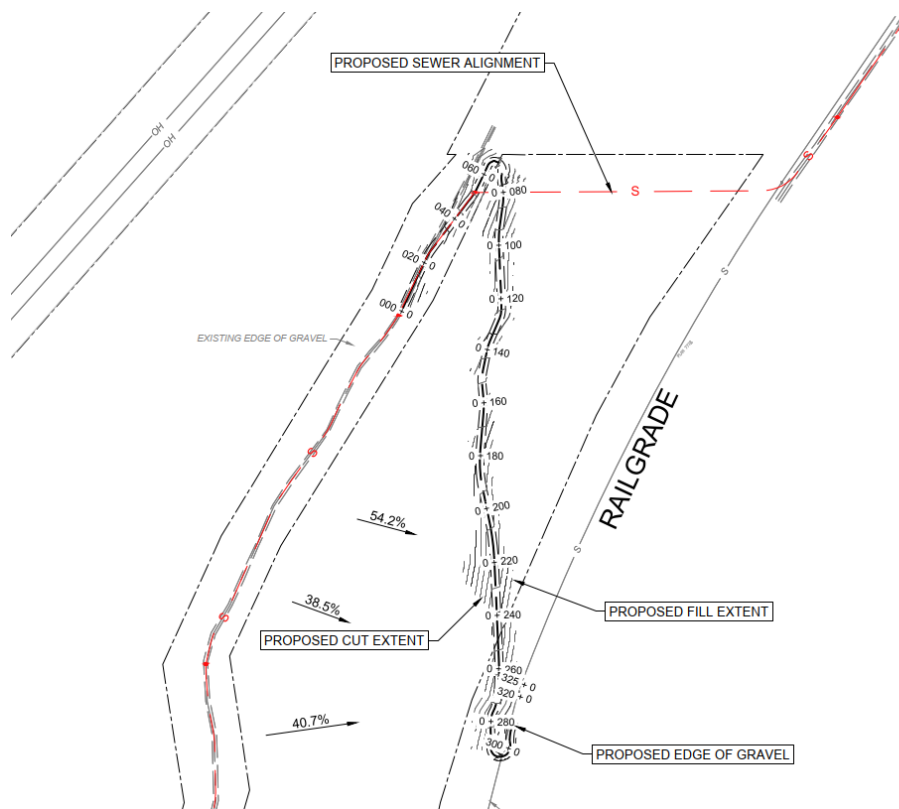


Figure 3 - Proposed Green Link Transition from the Wagon Road to the Railgrade



3.1.3 Rossland Sustainability Commission Cycle Commuting Public Input (2019)

An engagement session was held by the Rossland Sustainability Commission in 2019 to gather public input regarding cycling as an option for commuting between Trail and Rossland. Feedback was sought for route feedback, improvement prioritization, current challenges and barriers, and idea generation for each potential route drawn. The Wagon Trail was chosen as the preferred route over the Railgrade due to its length primarily (4km versus 8km). Key takeaways regarding the SKGL include:

Route Feedback:

- Shortest is route best
- Existing Wagon Road and Railgrade need upgrades for commuter bikes (non-mountain bikes).
- Access to Trail Hospital, Teck, and single track trail network desired
- Some interest for winter use.
- Transit pickup from Trail/Warfield is desired to avoid the hill up.

Improvement Prioritization:

- Short term:
 - Quality trail that is well built.
 - Safe bike racks/lockups at destination.
 - Quick and safe trail uphill and downhill.
 - Mitigate the sanitary sewer odour.
 - Improved wayfinding.
 - Connections to major destinations/employers.
- Long Term:
 - Paved and lighted route.
 - Snow plowed/groomed trail.



A photo from the Rossland Sustainability Commission cycle engagement event.

Current Challenges:

- Railgrade is too long.
- Wildlife, especially bears.
- BC Transit busses only have capacity for two bikes.
- Vehicle exhaust and poor safety on highway route.

Idea Generation:

- Greater awareness of where transit routes are and their schedule.
- Establish a bike shuttle with a known route and consistent timing for uphill alternative.
- Create bike hubs at Teck, Hospital, West Trail, East Trail and at key transit stops.



3.1.4 Rossland Harry Lefevre Square Improvement Project Report (2022)

Rossland Harry Lefevre Square next to Ferraro Foods grocery store on the main street is slated for an improvement project that includes a public washroom and covered bike racks. This location is very central to Rossland's downtown and would be a great bike hub to tie into as a part of the SKGL project.



Public washroom and covered bike rack planned for Rossland's downtown.

3.1.5 Trail Active Transportation Network Plan (2023)

The City of Trail very recently adopted their Active Transportation Network Plan. This is important for the SKGL project as it provides potential routes for the trail corridor to follow through the City. The plan makes several mentions of the SKGL and its importance to function as the spine of the active transportation network through Trail. As such, it is prioritized in the implementation plan with some sections implementing a quick-build strategy. See **Figure 4** for the proposed active transportation network in and around the downtown area.



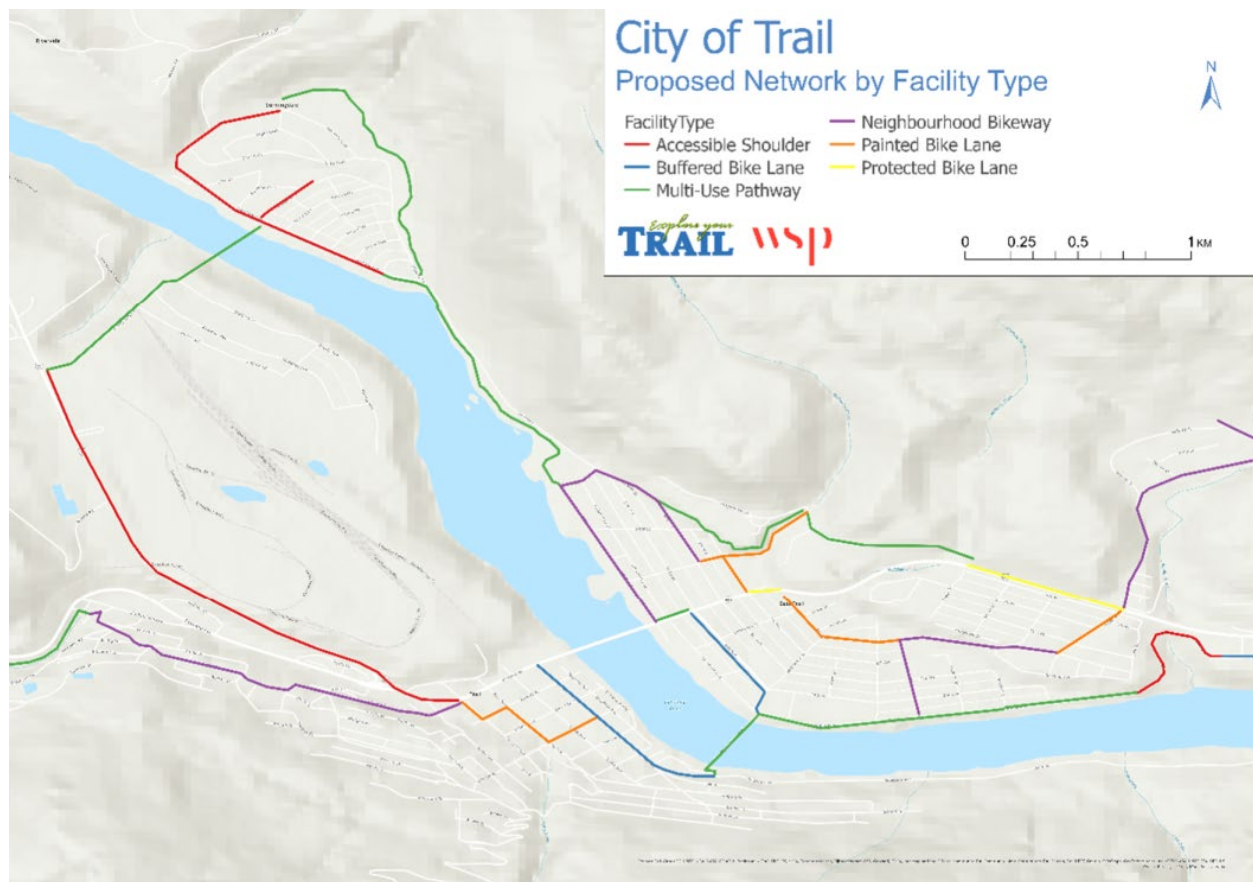


Figure 4 - Trail's Recently Adopted Active Transportation Network Map

Extensive stakeholder outreach was completed with all the major employers, neighbourhood groups, government authorities, and trail societies. An online engagement survey was also conducted where it was found that the public's top priorities include:

- Add/improve bicycle infrastructure.
- Improve and expand sidewalks.
- Improve pedestrian street crossings.
- Connections to recreational trails.

Of note, Trail's OCP makes mention that the trail network should be constructed along the riverfront where possible.

As a part of the SKGL plan over the longer term and as active transportation use increases, consideration should be given to upgrading some of the quick-build network elements to more robust active transportation infrastructure to solidify the SKGL as a premier facility. This includes upgrading painted and buffered bike lane infrastructure and potentially realigning the spine alignment through downtown to be along the Esplanade Trail to align with the OCP's desire of having trails constructed along the riverfront where possible.



3.1.6 Warfield OCP (2017)

Warfield's OCP outlines two SKGL related goals:

- Transportation modes and infrastructure move people and goods around conveniently and safely within and beyond Warfield, doing so in a way that contributes to the health of residents and reduced emissions.
- Warfield parks, trails, facilities and amenities meet community recreational and cultural needs; they are well maintained and supported, and they are delivered within the financial means of the community.

3.1.7 Montrose OCP (2021)

The Montrose OCP sets several transportation goals for connectivity to neighbouring communities and for active transportation. Per the OCP, they include:

- Collaborate with the Ministry responsible for management of Highways to ensure that Highway 3B is a safe and efficient route for both vehicles and pedestrians.
- Explore alternatives to sidewalks that offer safe separation between pedestrians and vehicular traffic.
- Consider opportunities to create routes for bicycles and pedestrians using both roadways and trail networks.
- Work in partnership to achieve adequate transit service to meet the needs of citizens.
- Discourage direct highway access, unless highway access cannot be avoided, in which case shared access should be encouraged.

3.1.8 Electoral Area B OCP (2013) (Surrounding Rossland, Warfield, and Trail)

The Electoral Area B OCP sets objectives and goals for improving transportation. Per the OCP, the items specific to active transportation include:

- To promote the safe and efficient movement of vehicles, bicycles, and pedestrians within and through the Plan Area.
- To support alternatives to automobile traffic where feasible, including trails, bicycle routes and railway.
- To promote and protect a network of transportation corridors that accommodate a variety of modes of transportation including but not limited to foot traffic, horses and bicycles.
- Support and encourage the Ministry of Transportation and Infrastructure to include bike lanes in the highway right of way when resurfacing the highway network.



3.1.9 Fruitvale OCP (2011)

The Fruitvale OCP outlines several SKGL related objectives:

- Encourage healthy active lifestyles through the development of new, and enhancement of existing, multimodal trail and path systems.
- Encourage alternative transportation modes that reduce environmental impacts, through the provision of appropriate infrastructure.
- Address accessibility issues and ensure universal design.
- Ensure that there are safe intersections and crosswalks, especially in the vicinity of schools and seniors housing.
- Ensure roads, sidewalks, and trail systems are kept in good repair.
- Incorporate traffic calming measures, safe pedestrian environments and non-vehicular options within the Village Centre area.
- Investigate improvements and options to the regional transportation system within Fruitvale and surrounding area.



3.1.10 Electoral Area A OCP (2011) (Surrounding Montrose and Fruitvale)

The Electoral Area A OCP sets objectives and goals for improving transportation. Per the OCP, the items specific to active transportation include:

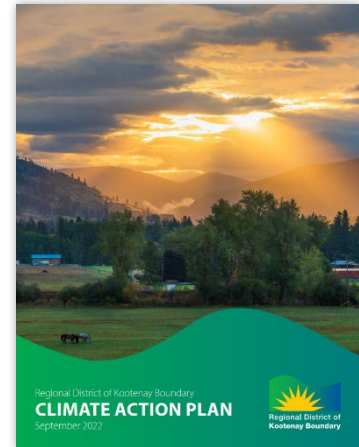
- To encourage a healthy, active lifestyle through increased walking and biking by encouraging the development and use of non-motorized transportation corridors.
- Establish a primary network of trails and cycle paths as outlined in Schedule 6 linking open space and providing linkage throughout the Plan Area. (These trails include mountainous hiking trails as well as the rail corridor north of Fruitvale).
- To encourage the use of abandoned railway rights of way for non-motorized recreational trails and utility corridors, while maintaining the integrity of the rights of way for possible future rail use.
- Uphold railway transportation as the priority use in abandoned railway rights of way and support the re-establishment of the railway should it become economically viable some time in the future.



3.1.11 RDKB Climate Action Plan (2022)

The RDKB recently completed a Climate Active Plan for the region. Of the six climate action areas, three are related to the SKGL:

- **Organizational Leadership** – To integrate climate action into all RDKB organizational decisions to build a resilient and sustainable community.
- **Transportation, Land Use and Infrastructure** – To provide our residents and businesses access to clean transportation options suited for rural living. To prepare our critical infrastructure for the impacts of climate change including enhancing our ecosystems.
- **Ecosystems** – To protect the integrity and biodiversity of our local ecosystems for generations to come recognizing that local ecosystems and natural environment assist in adapting to a changing climate.



The plan includes an extensive list of action items to work towards in order to achieve the plan's main goals of reducing the region's GHG emissions, and to increase community resilience by adapting to changes in the climate. The following list includes the action items related to the SKGL project:

- **Action 4.1** – Review options for reducing RDKB work travel and explore alternative methods. (Cost: Covered by existing staff and operating budgets)
- **Action 4.6** – Encourage alternative transportation for employee commutes and provide facilities to support alternative transportation for staff. (Cost<\$50,000)
- **Action 4.7** – Complete the South Kootenay Green Link Active Transportation Plan that connects five municipalities and two electoral areas. (Cost: Covered by existing staff and operating budgets)
- **Action 4.10** – Incorporate low carbon resilience into long-range plans and electoral area OCPs, including policies that minimize transportation emissions through complete communities in a rural context, and provide access to transportation alternatives. (Cost: Covered by existing staff and operating budgets)
- **Action 4.15** – Work with local governments and local community organizations on the implementation of the SKGL connecting five municipalities and two electoral areas including seeking funding. (Cost: \$500,000-\$1,000,000)
- **Action 6.1** – Identify opportunities to demonstrate climate resilient landscaping and ecosystem restoration on land owned by RDKB. (Cost: \$50,000-\$500,000)



3.2 Regional Context

There are a number of other important regional trails either built or under consideration in the surrounding area that aim to connect communities to provide recreational opportunities all while providing an alternative to automobile transportation. The map illustrated in **Figure 5** provides an overview of the existing trails and potential trail connections for the future. The future trail connections vary in their development stage from the active planning stage to being an idea unformalized but desired by the community.

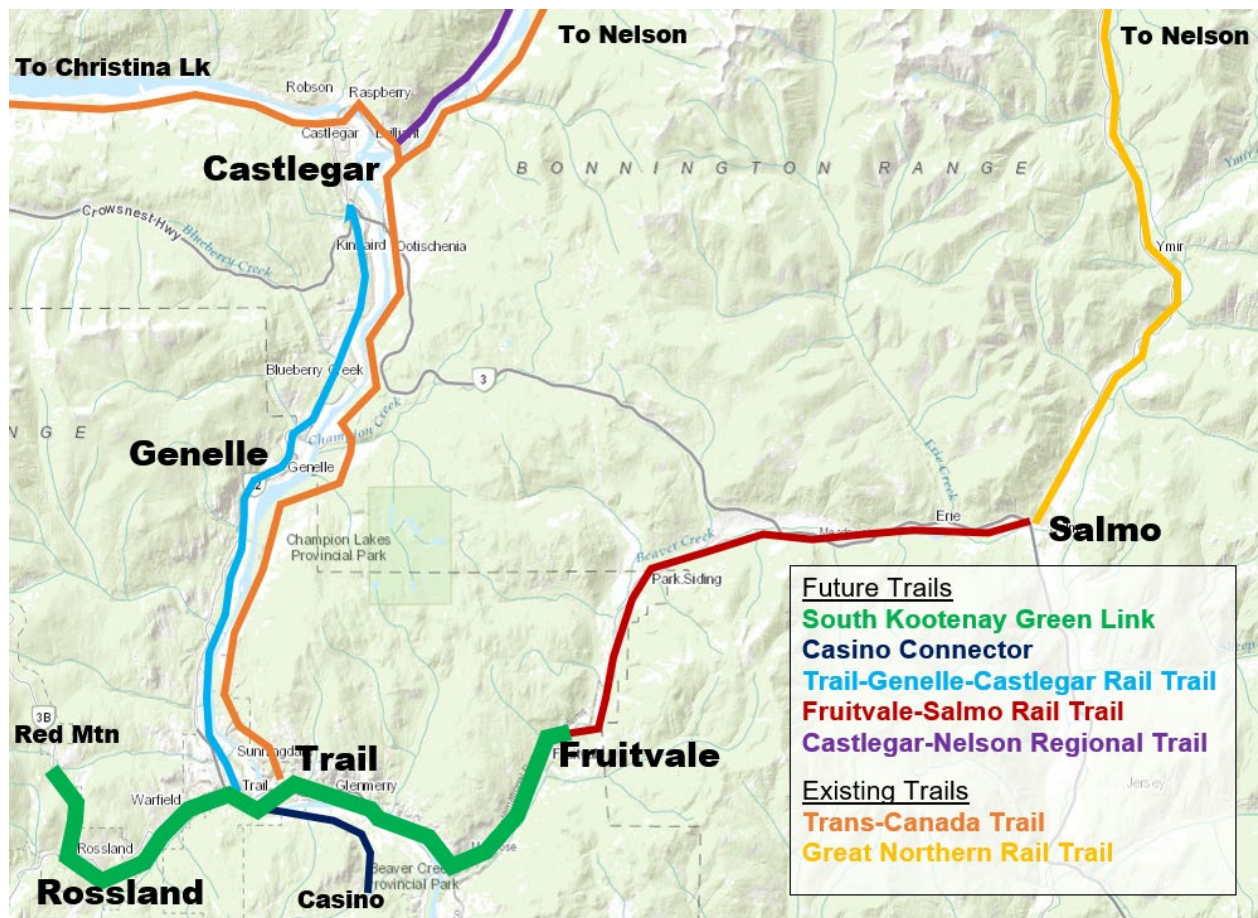


Figure 5 - Existing and Future Regional Trails

Some details on each route are provided below:

Future Trails:

- **South Kootenay Green Link** – The subject of this study.
- **Casino Connector** – An unexplored opportunity for a trail connecting Trail and Casino. It has not been defined in OCP and no planning work has been done to date.



- **Trail-Genelle-Castlegar Rail Trail** – An unexplored opportunity for a rail trail that would run along the active railway between Trail and Castlegar as a way to link Genelle to the hub communities in either direction. It has not been defined in OCP and no planning work has been done to date.
- **Fruitvale-Salmo Rail Trail** – An unexplored opportunity for a rail trail that would run along the active railway between Fruitvale and Salmo. It has not been defined in OCP and no planning work has been done to date. Some challenges include a section of the rail right-of-way that has been sold off north of Parks Siding.

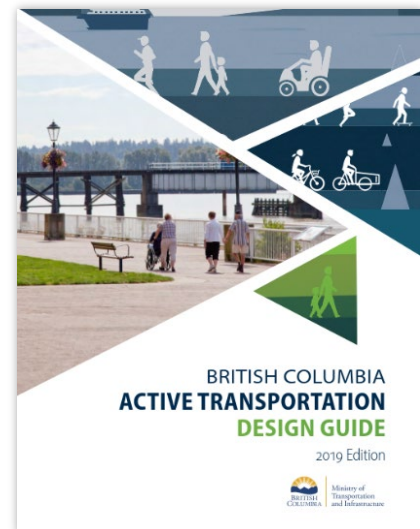
Existing Trails:

- **Trans-Canada Trail** – Existing trail on east side of Columbia River between Trail and Castlegar. It is suitable for hikers, horseback riding, cross-country skiing, and mountain biking.
- **Great Northern Rail Trail** – 48km runs between the village of Salmo in the south and the city of Nelson in the north. It is a gravel trail with some motorized access allowed.

Given the potential for the Trail-Genelle-Castlegar Rail Trail, Casino Connector, and the Fruitvale-Salmo Rail Trail, the SKGL has some important trail connection considerations to connect and complete the regional trail network. As such, it is important for the routing of the SKGL to consider the ease of connecting to these potential future routes.

3.3 Provincial Context

The BC Active Transportation Design Guide was released by the BC government in June 2019.¹ The guide is a comprehensive set of planning and engineering guidelines offering recommendations for the planning, selection, design, implementation, and maintenance of active transportation facilities across the province. It contains engineering principles and best practices from the municipal, provincial, national, and international levels. It advances concepts and practices introduced in the 2017 TAC Geometric Design Guide for a British Columbia context. These two efforts call for more protected cycling facilities generally using motor vehicle speeds and volumes as the primary way to determine what sort of facility should be provided.



¹ Government of BC. (2019) Active Transportation Design Guide. Available online at: <https://tinyurl.com/yxq3ipod>



The goals of the design guide are four-fold:

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

The Design Guide contains several chapters that are cited in this report and that will be referenced throughout the development of the RDKB's South Kootenay Green Link Plan.



The Columbia River is an important focal point for SKGL route consideration.



4.0 EXISTING NETWORK ANALYSIS

4.1.1 Underserved Desire Lines

There are a number of active transportation desire lines that do not have active transportation infrastructure currently in place to meet the needs of their respective communities. These include regional routes and connections to major employment centres and destinations such as:

- Comfortable and safe active transportation connection between Rossland, Warfield, and Trail.
- Active transportation route through West Trail through the downtown to the Columbia Skywalk.
- Comfortable and safe active transportation connection to Teck from downtown Trail.
- An active transportation route off highway from the Columbia Skywalk to Waneta.
- Columbia Skywalk to the Hospital and JL Crowe Secondary School.
- Active transportation connection between Montrose and neighbouring communities.
- Active transportation connection between Fruitvale and neighbouring communities.

Many of these missing links would have their desire lines fulfilled with the construction of the SKGL. The exception being the Teck connection, as well as the Hospital and JL Crowe Secondary School connection. See **Figure 6** and **Figure 7** for an illustration of the underserved active transportation desire lines. Consideration should be given to integrating these additional connections with the buildout of the SKGL.

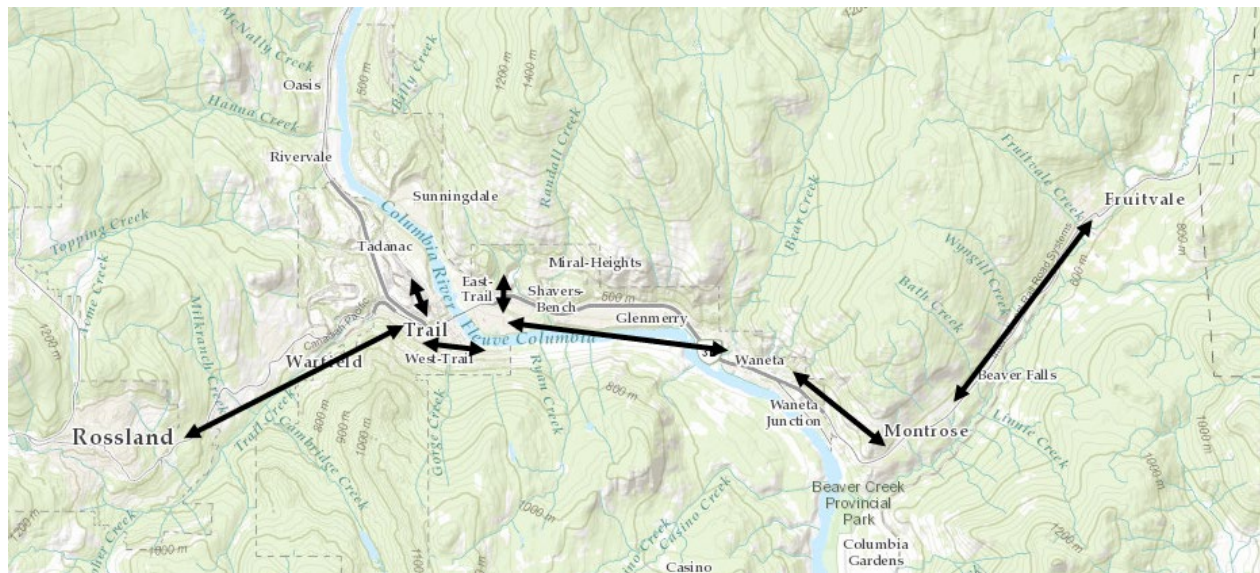


Figure 6 - Underserved Active Transportation Regional Desire Lines

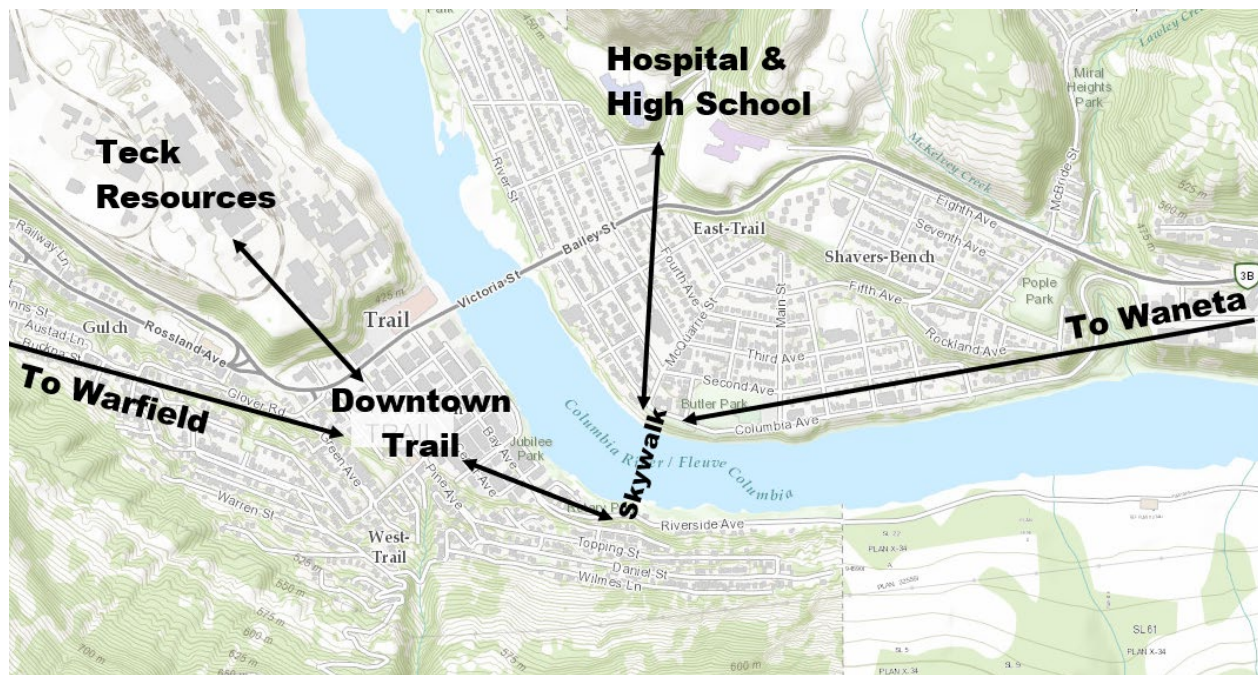


Figure 7 - Underserved Active Transportation Trail Desire Lines

4.2 Existing and Future Active Transportation Network

Understanding the current transportation network and future planned active transportation networks for all jurisdictions along the SKGL is crucial for planning a corridor that integrates seamlessly and synergistically into each community. The planning process should focus on routes that are part of the primary active transportation network. **Appendix A** contains a series of maps (Map 1a, 1b, 1c) detailing existing and future active transportation infrastructure, as well as the proposed facility types, to facilitate this understanding and inform decision-making.

Included with these maps is road classification data to understand what routes may and may not be best suited for the SKGL corridor.

The maps also feature icons illustrating key destinations that SKGL users may find appealing. These destinations include parks, recreation facilities, trailheads, cultural buildings, schools, commercial hubs, and employment centres, which have been the primary focus of this analysis.

4.2.1 Quick-Build Opportunities

Over the last 20 years, municipalities have been moving towards dedicating more road space to people walking, rolling, and cycling. Movements such as “Complete Streets,” “Road Diets,” “Vision Zero,” “Green Transportation” are ultimately supporting the same goal, enabling more transportation options in a safe and equitable way. Jurisdictions have passed motions or made changes to infrastructure to accommodate this change in mindset. A combination of these



policies ensures that the transportation network will focus on improvements in the quality of life of our residents, prevention of traffic collisions, and reductions in GHG emissions.

Further, driven by the COVID-19 pandemic, municipalities within BC have fast-tracked projects prioritizing walking, rolling, and cycling. Many of those municipalities that explored pilot projects throughout the COVID-19 pandemic have since transitioned into long term solutions that have become part of the transportation network and even set ambitious targets such as designating 10% or more of the roadway to sustainable modes and pedestrian spaces.² Where possible, providing an interim or a “quick-build” approach is an efficient way of reallocating roadway space in a cost-efficient and timely manner that can be implemented within the existing paved width. See various example photos below.



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



Example of a quick-build MUP in Calgary, AB using rubber barrier curb and plastic delineators

The use of temporary materials can also allow quick-build facilities to be set up in the months of highest use and removed in the winter months to allow for proper winter maintenance. This could be beneficial in challenging situations and a way to test its usage before going permanent.

Many of the active transportation facilities proposed as a part of the Trail Active Transportation Network Plan call for the reallocating of roadway space between the existing curbs on either side of the roadway to provide better accommodation for people walking, rolling, and cycling. For example, painted bike lanes with a painted buffer is a common facility type. This however is not an All Ages and Abilities (AAA) facility. A physical buffer separation that brings the standard to a AAA facility should be considered along the SKGL corridor.

² City of New Westminster (2021). Streets for People. Available online at: <https://www.newwestcity.ca/streets-for-people>



Another reason to consider quick-build infrastructure in the interim is the ability to phase important segments quickly to get the initial pieces of the SKGL in place and functional. From there, these quick-build segments can be connected with sections that require more robust construction to provide an adequate cross-section. Finally, as the complete network is coming together, funding can be put towards making the initial quick-build infrastructure more permanent based on lessons learned during the quick-build process and desired ultimate cross-section.

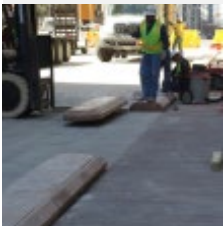
There are various barrier types that can be used to separate vehicle traffic from pathway users. The following **Table 3** summarizes some of the materials that are used typically in quick-build infrastructure and are considered appropriate for the region's context. Flexible delineators are often a low cost option that yields positive results from users in terms of actual and perceived safety. There is also the opportunity to mix and match barrier types to shape a solution. A couple of examples include jersey barriers & planter boxes or parking stops & delineators.



An additional quick-build example WATT Consulting designed in Kelowna, BC.



TABLE 3 - QUICK-BUILD MATERIALS

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



4.3 Transit Integration Opportunities

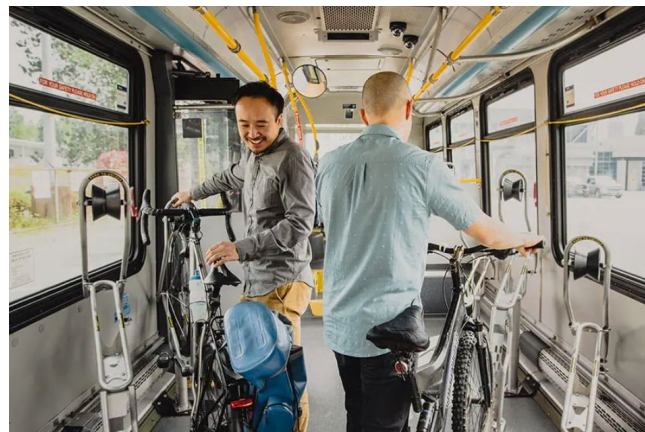
Along the 30km SKGL routing there are opportunities to integrate the active transportation corridor with the transit system to better serve those wishing to travel long distances by a combination of bus and active transportation as well as for one-way trips to overcome steep and long elevation climbs.

The two most prominent examples where transit integration may be most important are:

- Warfield to Rossland in the westbound direction to overcome the long uphill climb.
- Between Trail, Montrose, and Fruitvale to overcome the long distances and steep hill along the highway between Waneta and Montrose.

Specified transit stops that are important to creating the connections outlined above should be enhanced to create mobility hubs with secure bike parking, ebike charging, bike tools, bus shelter seating and a nearby public washroom ideally. To make transit a more attractive option, efforts should also be made to provide a consistent headway on a standardized schedule.

Given the limited bike capacity (two) of standard transit buses, it might be advantageous to support a specific bike bus with expanded bike capacity inside the bus or a bike specific shuttle could also be offered. One example of a way to provide a bike shuttle service would be to repurpose the Rossland ski shuttle for summer use.



Translink bike bus operating as a ferry connection between the SkyTrain network and the Tsawwassen Ferry Terminal. Image retrieved from: www.translink.ca.



Transit stops and art in Rossland, Trail, and Fruitvale.

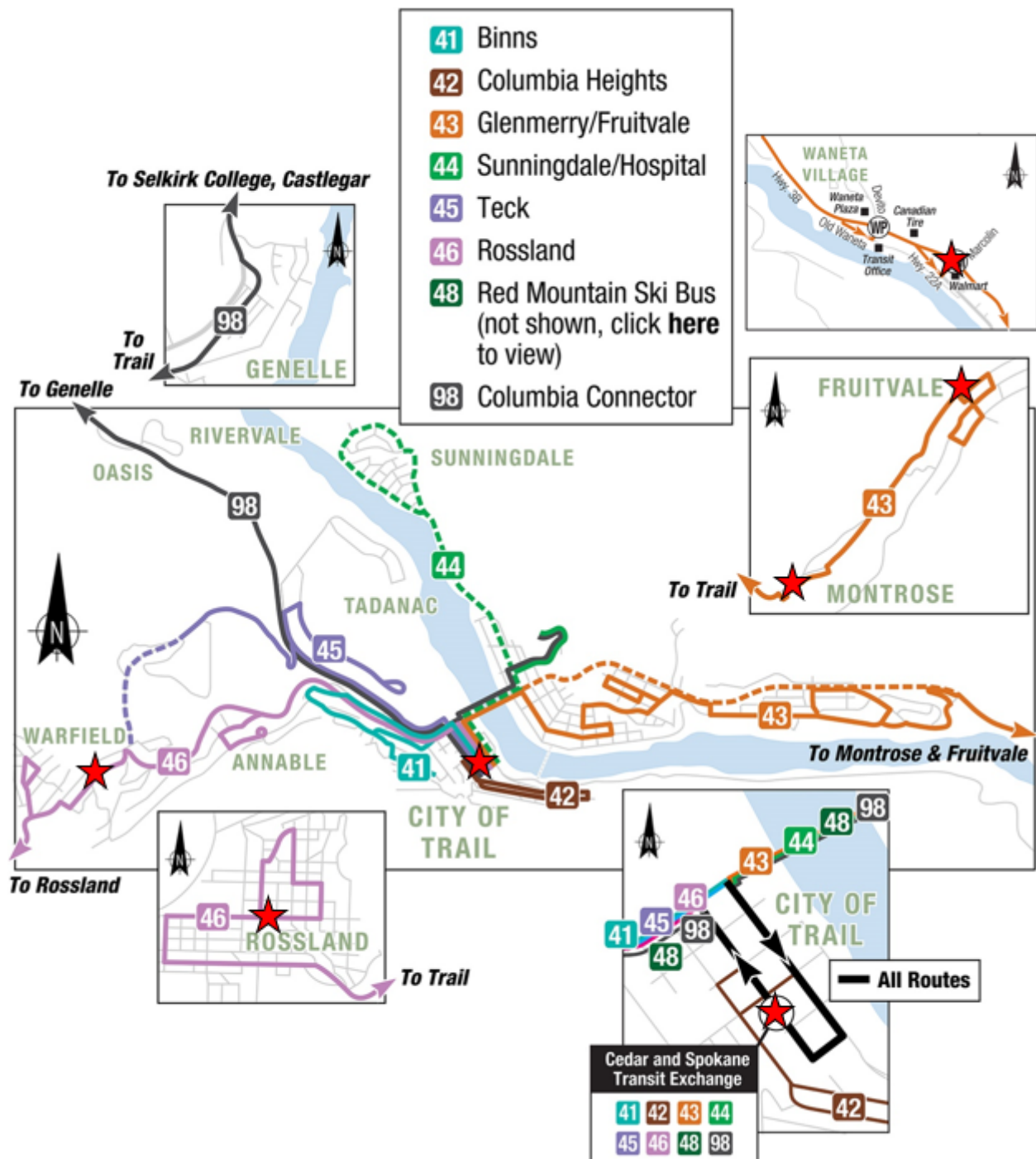


Figure 8 - Existing Transit Network with Potential Mobility Hubs (Starred)



The existing bus network for the Columbia Zone is illustrated in **Figure 8**. Two routes, 46: Rossland and 43: Glenmerry/Fruitvale are the primary candidates for SKGL integration. Potential stops to be upgraded to a mobility hub are starred in **Figure 8** and are also listed below.

Potential Mobility Hubs:

- Route 46: Rossland
 - Trail: Cedar Avenue and Spokane Street
 - Warfield: Warfield Store
 - Rossland: Columbia Avenue and Spokane Street
- Route 43: Glenmerry/Fruitvale
 - Trail: Cedar Avenue and Spokane Street
 - Waneta: Walmart
 - Montrose: 9th Avenue and 5th Street
 - Fruitvale: Main and Kootenay (Pole Yard)

4.4 Opportunities Identified at Kick-Off Meeting

A number of opportunities were identified by key stakeholders and RDKB staff at the project's kick-off meeting. They are listed as follows:

- Wagon Road – Has sanitary sewer work planned complete with an active transportation trail alignment planned between Rossland and Warfield. Trail would transition to Rail Grade near Warfield.
- Option for routing through Warfield: Railgrade Trail -> Watmough Road -> Short Street -> Haig Street
- Trail ATNP proposed route from Warfield to Downtown Trail via: Warfield Tunnel -> Trail Creek -> Rossland Avenue -> Hwy 3B / 22 Intersection.
- Route through downtown Trail directly to the river front and then on an expanded Esplanade Trail -> Skywalk Bridge. Interim routing may follow a different on-street route.
- Consider adding bike channels to existing stairs when possible.
- Columbia Gardens Road route is preferred by Fruitvale, although the southern portion is circuitous.
- Rossland is working on a bike parking hub as a part of the Harry Lefevre Square Improvement Project located on the main street.



4.5 Infrastructure Barriers

There are many infrastructure-based barriers along the SKGL routing that need to be improved in order to create a viable active transportation corridor from community to community. Present day along the SKGL routing there is a:

- Lack of All Ages all Abilities (AAA) active transportation infrastructure. This prevents most users from considering active transportation as an option for commuting or recreating.
- Extreme topography between communities makes it difficult to travel in some cases without electric power assist active transportation.
- The highway alignment is the sole connection between some communities. It is characterized by high speed limits, heavy truck traffic, noise, exhaust pollution, and intermittent paved shoulders in certain areas. These factors make the existing highway route unsuitable for many active transportation users in its current state.
- Surface materials that impact the user group mix and comfort. For example, if a section has a gravel surface, it may be more attractive for pedestrians but becomes unrideable for skateboarders and rollerbladers and highly uncomfortable for wheelchairs, strollers, and road bikes.
- Other factors such as active transportation-specific street sweeping and snow clearing are important elements for a year-round active transportation facility but are not currently in place or considered in the present day approach.



Looking along the highway near Montrose. Often there are limited active transportation routing options between communities which leaves the highway as the sole option.

4.6 Strava Metro Analysis

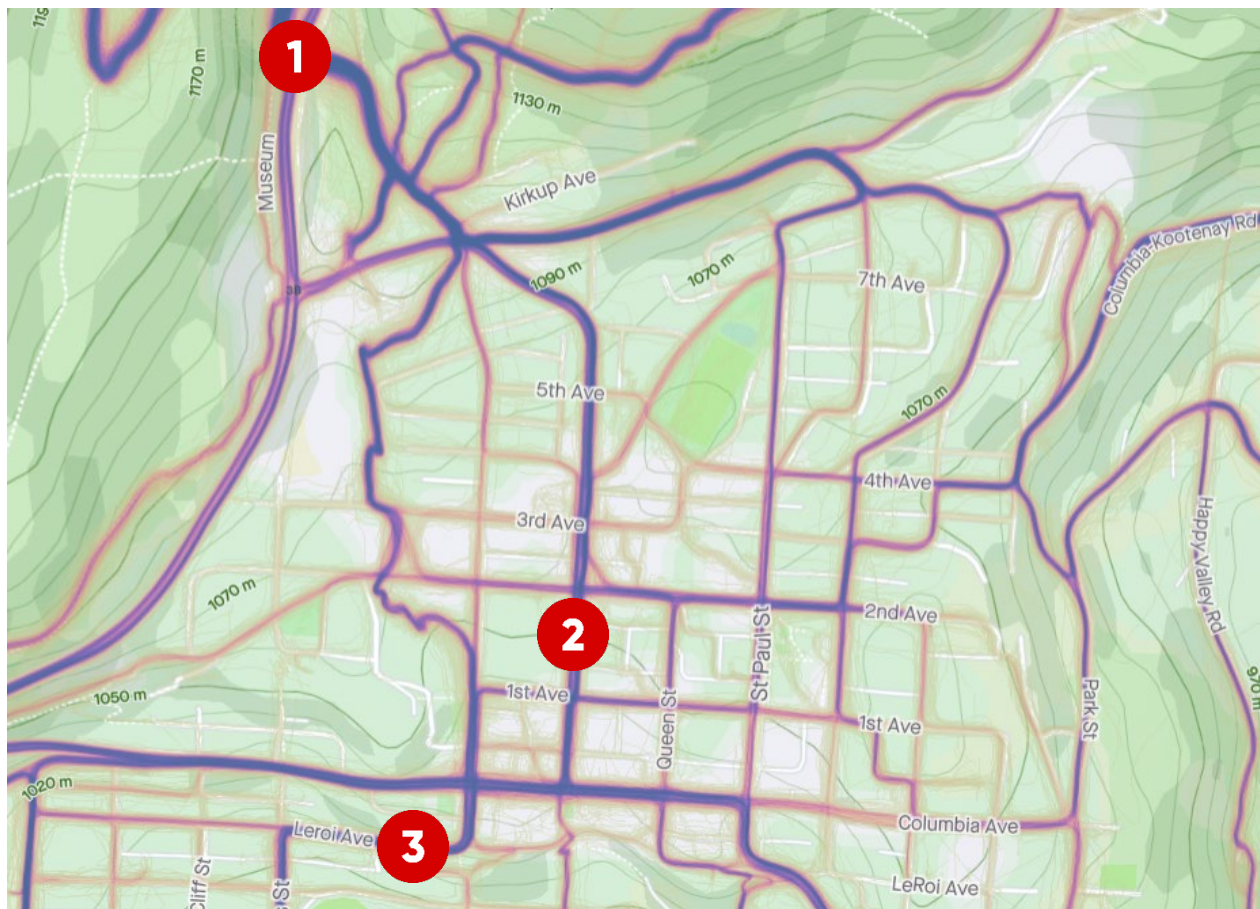
Strava is an increasingly popular exercise and tracking app that incorporates social network and GPS features. Data from publicly shared activities – such as cycling or running– are mapped out displaying elevation change and route, and are categorized by activity. This data may be used to identify desire paths, network gaps, and help communities improve their active transportation infrastructure.³ Even though Strava data is more representative of recreational trips, research has indicated that the app is becoming more representative of the general bicycling population.

³ Ferster, C. & Nelson, T. & Laberee, K. & Winters, M. (2021). Mapping bicycling exposure and safety risk using Strava Metro. *Applied Geography*. Vol 127. Retrieved From: <https://doi.org/10.1016/j.apgeog.2021.102388>



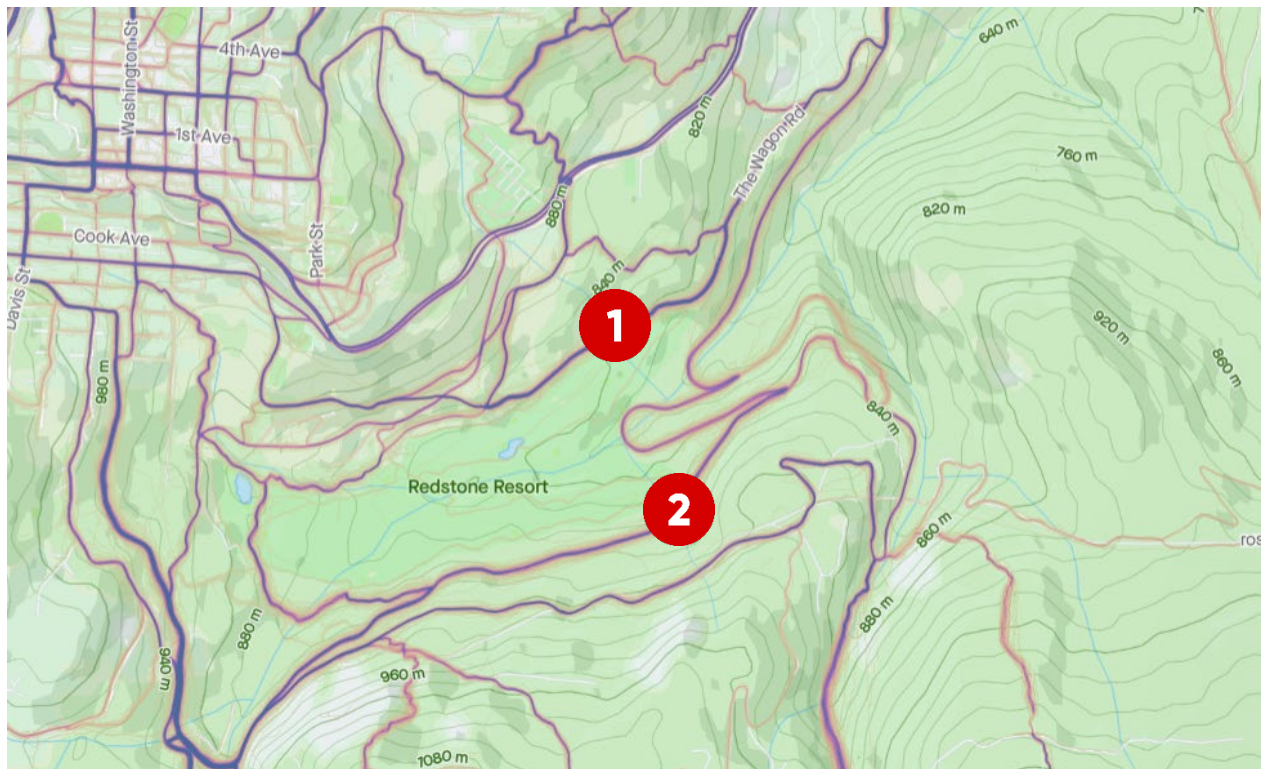
Further, in some BC municipalities, there is higher usage of Strava among women and older adults.⁴

WATT received Strava Metro data access for the RDKB. From this data, the most influential piece is the user route heatmap, which shows the relative popularity of different routes compared to each other. It is a great indicator of the preferred routes for people cycling in the community on the existing road and active transportation network. This section highlights key findings in a series of maps with captions starting at Red Mountain and working east towards Fruitvale.

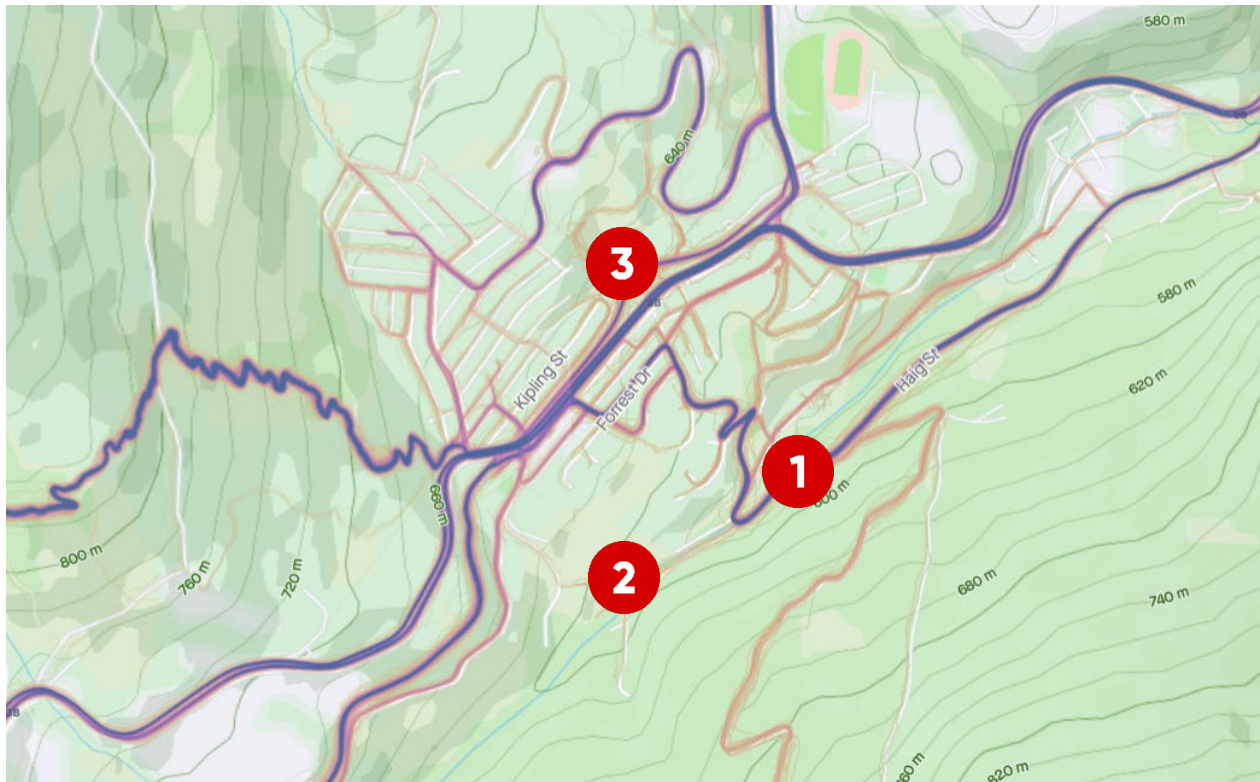


From the tunnel (1) that heads towards Red Mountain through Rossland the Washington Street protected bike lanes (2) towards the Leroi Avenue MUP (3) is the preferred route towards lower Rossland and the Wagon Road trail.

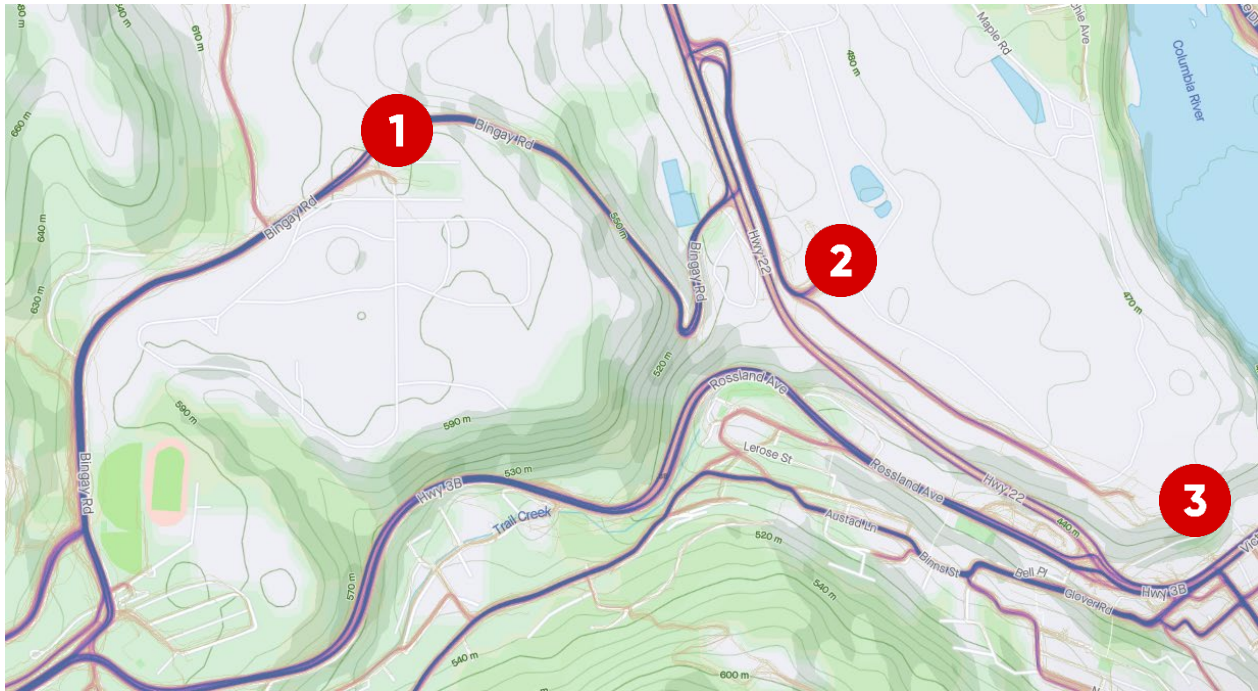
⁴ Fischer, J. & Nelson, T. & Winters, M. (2022). Changes in the Representativeness of Strava Bicycling Data during COVID-19. Transport Findings. Available online at: <https://findingspress.org/article/33280-changes-in-the-representativeness-of-strava-bicycling-data-during-covid-19>



The Wagon Road (1) is more utilized than the Rail Grade (2) between Rossland and Warfield. The highway also sees some use as a more direct but less safe/comfortable alternative.



Through Warfield, there are three notable routes that could be considered for the SKGL. Two on the south side of the highway and one on the north side. On the south side the first is down the narrow switchbacks along Willow Drive -> Wolfe Drive -> Montalm Road -> Annable Road -> Wellington Avenue -> Haig Street (1). The second that a few users make use of and has potential is down along Watmough Road and then over through a large undeveloped lot to cut over to Wellington Avenue -> Haig Street (2). On the north side of the highway the Arnold Lauriete Way MUP (3) crosses the highway at a controlled crosswalk and then runs along its own alignment towards James L Webster Elementary and further to Bingay Road that provides a route with painted shoulders towards Teck Resources.



The majority of users that head towards Teck Resources do so on Bingay Road (1) and then north along Highway 22 -> Teck Resources main entrance and then onward to the covered bike parking facility (2). Another route that leads to Teck Resources is along an abandoned route that is pedestrian and bike access only now due to road setting issues on the side slope. It starts near the Highway 3B / Highway 22 junction and switchbacks up the hill (3). It has low utilization in its current form due to the poor connectivity where it ties into the highway.



There is a potential route in a powerline right-of-way (1) between Warfield and Trail that runs along the mountain side. The route traverses up and down a mountain slope but does not provide an opportunity to connect with Teck Resources and downtown trail in a convenient way. This route also requires additional grade to be climbed versus the valley bottom route. Off of the highway between Warfield and Trail, the Haig Street -> Austad Lane -> Binns Street -> Glover Road route (2) is the most popular. Through downtown Trail, users tend to zig-zag on the grid network (3) in the most direct way possible towards the Trail Skywalk.



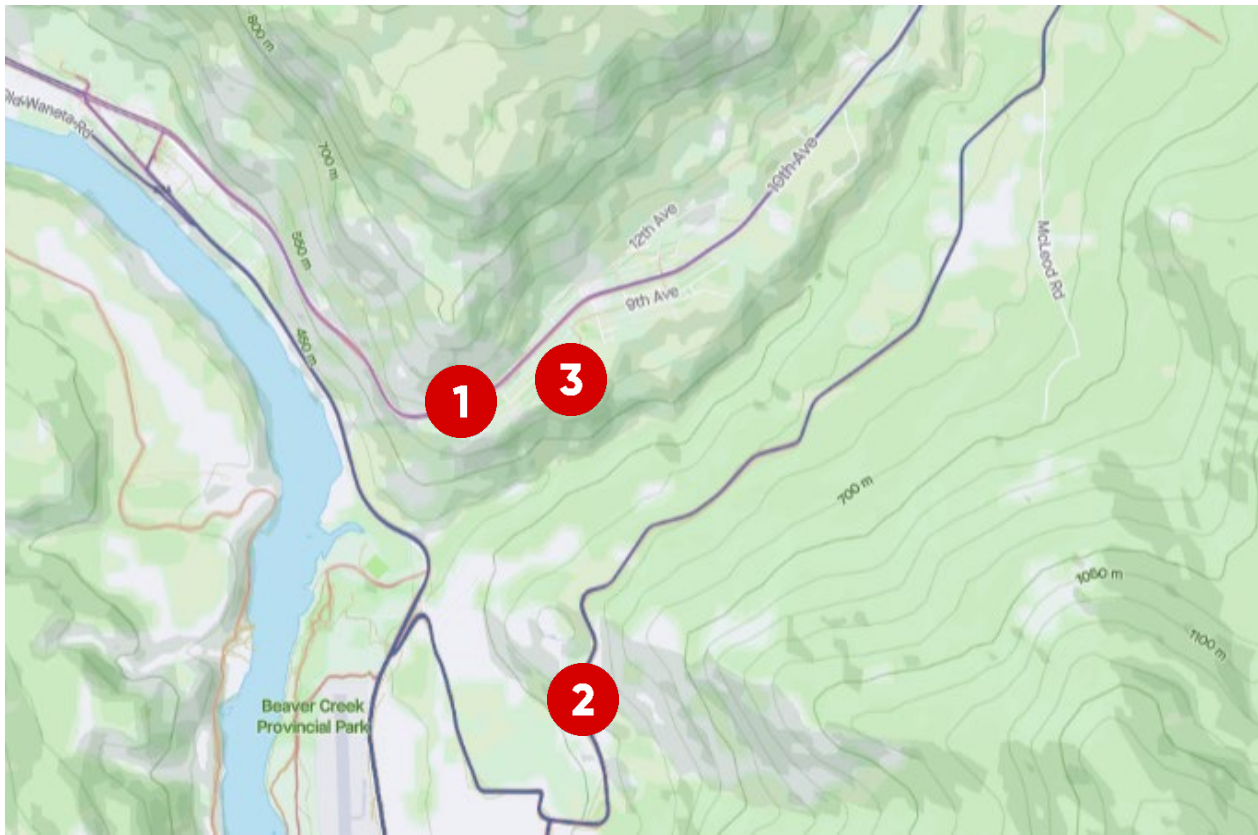
In East Trail, the Skybridge towards Columbia Avenue and along the river is well utilized (1). Looking at connections to the hospital and high school, there are two highway underpass tunnels for active transportation use (2, 3). The Fifth Avenue tunnel has a rough trail cutting through undeveloped road right-of-way (4) that could be improved. The McBride Street tunnel crosses the highway to access a multi-use path, separated by concrete barriers, on the north side of the highway (5) that leads towards the high school. East of McBride Street the MUP transitions to the south side of the highway and runs as far as the Highway Drive signalized intersection. The high use north on McBride Street is related to a recreational trail loop.



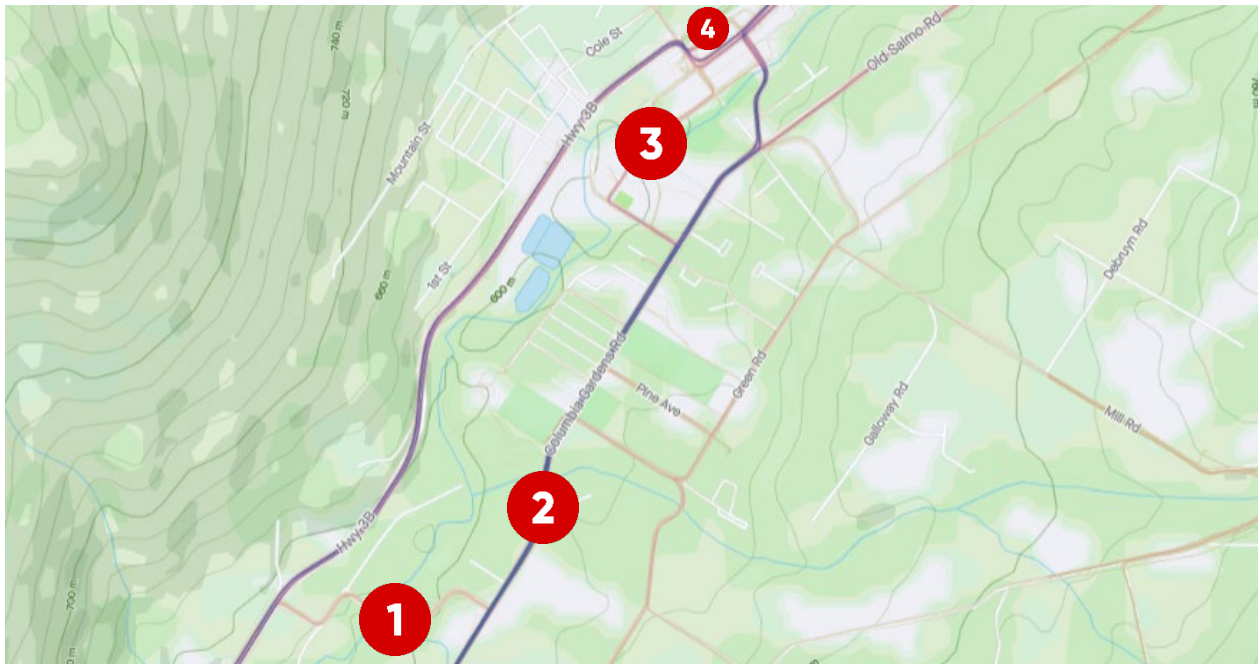
In Glenmerry there is a pedestrian tunnel (1) to cross the highway near the RCMP detachment). Between Glenmerry and Waneta the Carnation Drive (2) is popular, east of that point the highway (3) is the only available route for active transportation users. In this area, the highway has a paved shoulder of varying width. Old Waneta Road (4) is the preferred route through Waneta to the east.



In Waneta there is a noticeable desire lines to Waneta Plaza (1), Canadian Tire (2), and Walmart (3).



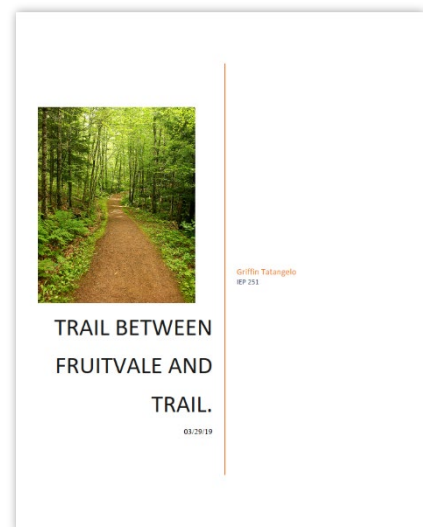
There are two possible active transportation routes from Waneta to Fruitvale. One follows the highway through Montrose (1) and the other makes use of Columbia Gardens Road (2). Columbia Gardens is more popular even though it is a longer route since it avoids the steep grades of the highway, as well as the fast vehicle travel speed, and narrow paved shoulder that varies in width. Looking at the heatmap line is more pronounced to the west and to the east of Montrose. Within Montrose, some trips are made between the north end of 7th Avenue to 9th Avenue through the park towards the Community Hall.



Within Fruitvale some make use of the Bluebird Road connection (1) between the highway and Columbia Gardens Road. Columbia Gardens Road (2) is the most well used active transportation route through Fruitvale. Beaver Street also sees some use with the Beaver Street Walking Bridge providing a connection over the river (3). Pole Yard Lane (4) downtown gets some use as well.

4.7 Student Report

A Selkirk College Student performed a route study as part of a university project. The project has the objective of connecting Fruitvale with Waneta in a way that avoids highway routing. As such, they provided a potential routing option that may be worth exploring in more detail. The routing between Beaver Creek Provincial Park – Montrose – Fruitvale is shown in **Figure 9**.



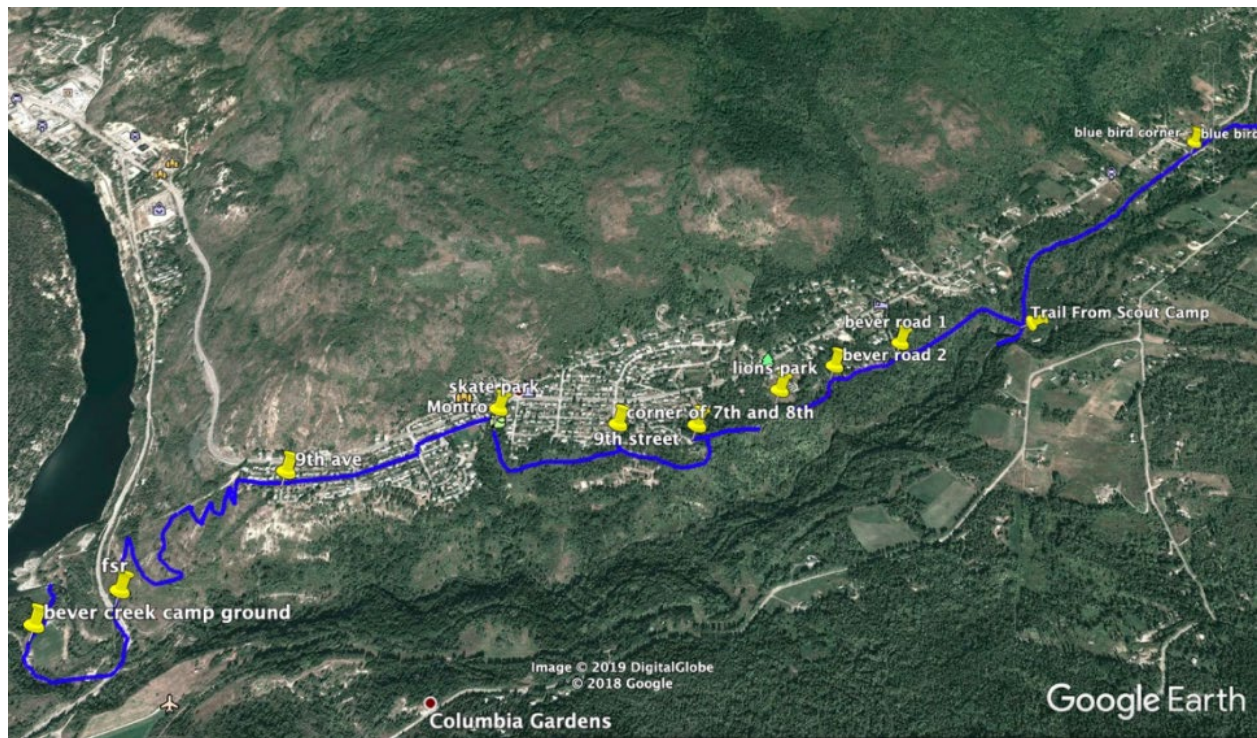


Figure 9 - Selkirk Student University Project Routing

The route starts at Beaver Creek Provincial Park at the river crossing bridge as the tie-in point with the routing to Waneta. From here the route exits the park and switchbacks up the embankment to Montrose. Through Montrose, the route follows 9th Avenue to the Montrose Community Hall and then cuts through private forested land towards the east skirting existing development with connections to 7th Street, 9th Street, Lions Park, and Beaver Road. From this point, the trail leads to the Scouts Camp and Beaver Creek Falls. From Beaver Creek Falls the trail runs along side the rail tracks in the rail right-of-way towards Fruitvale. At Blue Bird Road the route follows an existing hiking trail through the Kelly Creek valley towards Columbia Gardens Road.

This routing has great promise if a property corridor can be obtained from private interests for the route's development. Cooperation with the rail operator would also be important. A couple of routing alternatives would make the route's creation more feasible. First, the SKGL could run along the full length through Montrose. Second, the routing could take Blue Bird Road to tie more directly into Columbia Gardens Road or it could also follow the rail right-of-way the full length to Fruitvale's downtown terminating at Pole Yard Lane.



4.8 Data Collection Plan

A comprehensive understanding of road conditions is crucial for facility selection and intersection improvements along the SKGL. Collecting intersection counts, speed, and link volume data is an important step to inform cross-sectional designs and appropriate safety measures for road crossings along the route. The data collection plan will be informed by feedback received from the working group.



The data collection plan will be important to inform what level of highway crossing treatments will be necessary such as in this example located in Warfield.



5.0 PRELIMINARY CORRIDOR ASSESSMENT

5.1 Preliminary Corridor Routing

A set of SKGL route segment alignment options has been prepared for initial feedback from the Working Group and then will be advanced for stakeholder and engagement feedback. Map 1 focuses on Rossland and Warfield, Map 2 Trail Area, and Map 3 Montrose and Fruitvale. For each map, the preferred option is shown in green and additional options have their own colour. Additional links to key destinations such as Teck Resources, the hospital, high school, and Walmart have also been detailed in a thin orange linetype. These are desirable connections that many users of the SKGL will wish to access and as a result, a secondary active transportation route should be provided. See **Appendix B** for the preliminary corridor routing maps.

5.1.1 Map 2a: Rossland and Warfield

1. From Red Mountain to Rossland there is one preferred route. It runs along an upgraded centennial trail through the highway tunnel to Rossland connecting to Washington Street via Plewman Way.
2. Through Rossland, the SKGL follows the preferred routing described in the recently updated Rossland ATNP. It runs down Washington Street, heads to the west on 1st Avenue and then south on Spokane Street to cross the highway with a pedestrian flasher or half-signal. South of the highway the route follows the existing MUP on LeRoi Avenue -> Davis Street and then east on Thomson Avenue -> Esling Drive to the Wagon Road Trail start.
3. Between Rossland and Warfield the route follows the alignment of the proposed sanitary sewer upgrade on the Wagon Road and then along the Rail Grade with a cut over half way down.
4. The routing through Warfield has two options:
 - a. **Warfield Option 1** makes use of the existing highway pedestrian flasher crossing towards the Arnold-Lauriente Way MUP. The MUP continues east to James Webster Elementary school and then the route shifts to the Warfield Hill Road alignment. Once the route intersects with Highway 22, a tunnel is proposed to cross the highway as the highway has a wide five lane cross-section with a 70 km/hr speed limit. Grades are advantageous for a tunnel at this location. From here the route would head south on the Teck Resources parking lot access road towards the south extent where a MUP route down the bluff is in place. This is the old Teck access road that was decommissioned due to road sluffing. At the bottom of the hill, it is proposed that the route would switchback again behind the Best Western and McDonald's and come out at the Highway 3B / Pine Avenue intersection. Cooperation with Teck Resources is key for this option as it crosses their private lands.



- b. **Warfield Option 2** stays on the south side of the highway. It runs down Watmough Road and then cuts over through a large undeveloped lot zoned for residential as a cut through to Wellington Street. Wellington Street leads to the bridge at Wellington Avenue / Short Street and follows Haig Street towards the future bike boulevard outlined for Binns Street.
 - i. This routing is advantageous as the alternative would be to follow the very narrow Willow Drive switchback lane down to the bridge at Wellington Avenue / Short Street. Another option for connecting Warfield with Trail is proposed in the Trail ATNP. That plan suggested that the abandoned rail tunnel near Highway 3B / Annable Road as the tie-in point for Warfield, however, on the Warfield side of this tunnel there is no routing that makes sense except for the undesirable highway alignment.

5.1.2 Map 2b: Trail Area

1. From the Pine Avenue / Farwell Street intersection, there are two options through downtown Trail:
 - a. **Trail Downtown Option 1** is the preferred option. It heads east on Farwell Street towards the Columbia River. To accommodate the SKGL, parking adjustments on Farwell Street will be necessary. One option is to remove parking on one side of the street, while another is to convert the angle parking on both sides to parallel parking. These changes would create space for the SKGL, which could be designed as either a two-way or one-way protected bike facility. From the east end of Farwell Street, the Esplanade path should be expanded to accommodate cyclists south towards the Columbia River Skywalk MUP.
 - b. **Trail Downtown Option 2** is an option that can be implemented on a quicker timeline. This routing zig-zags along the downtown trails towards the Columbia River Skywalk. If this option is pursued, a quick-build philosophy is envisioned. Parking on one side of the route would need to be removed or the angle parking on both sides converted the parallel parking to provide space for the one-way protected bike lane quick-build infrastructure.
2. From the north end of the Columbia River Skywalk, there is one preferred route through East Trail east along Columbia Avenue to Highway Drive. The Trail ATNP calls for painted bike lanes here with a painted buffer. This treatment could be implemented with a quick-build approach and also enhanced given the 50 km/hr speed limit to provide more protection. In keeping with the MUP theme, a quick-build MUP with physical separation could be built along the waterfront side of the road to provide the best experience for active transportation users.
3. Between Glenmerry and Waneta there are two options.
 - a. **Glenmerry Option 1** follows an old road alignment through private lands as a shortcut and way to avoid a section of highway. It is unknown what the status of



the land is although the Trail ATNP also calls for this routing. The abandoned road ties into the highway at which point a separated MUP would be built along the south side of the highway until it is possible to tie into Old Waneta Road.

- b. **Glenmerry Option 2** is longer and follows Carnation Drive to the highway tee intersection. From that point, a separated MUP would be built along this section of the highway until it is possible to tie into Old Waneta Road.
4. Through Waneta, there is only one known option. It runs along Old Waneta Road. The Trail ATNP calls for painted bike lanes here with a painted buffer. This treatment could be implemented with a quick-build approach and also enhanced given the 50 km/hr speed limit to provide more protection. In keeping with the MUP theme, a quick-build MUP with physical separation could be built along the waterfront side of the road to provide the best experience for active transportation users.
5. On Old Waneta Road near Walmart, the route splits with multiple options for connecting Waneta with Montrose and Fruitvale. See the Map 3 section below for the full description of each Fruitvale option.

Secondary Links

1. If Warfield Option 2 is the preferred route, a link to Teck Resources from downtown Trail should be provided. This link would follow the Option 1 routing from the Highway 3B / Pine Avenue intersection, and then switchback up the bluff behind the McDonald's and Best Western to the old Teck access that has been decommissioned due to road sluffing and turned into a MUP. Cooperation with Teck Resources is key for this secondary link as it crosses their private lands.
2. At the north end of the Columbia River Skywalk consideration should be given to providing a AAA connection to the hospital and high school to serve this strong desire line. The link routing follows McQuarrie Street and then north on 5th Avenue towards the highway pedestrian tunnel. From the north side of the tunnel, there is a narrow trail in the unoccupied road right-of-way that could be expanded and paved to enable all forms of active transportation until it tees into Hospital Bench Road which would provide the final connection to the hospital and high school.
3. A secondary link should be provided to connect in with the proposed mobility hub and bus stop located at Walmart. The Trail ATNP calls for a painted bike lane along Highway 22A in this stretch, which would not be classified as a AAA active transportation facility. It might be possible to work with the business to route an active transportation connection along the alley behind Walmart and then along the south face of the building in an effort to provide a safe and direct connection.

5.1.3 Map 2c: Montrose and Fruitvale

1. Between Waneta, Glenmerry, and Fruitvale there are three options:



- a. **Fruitvale Option 1** follows Highway 22A towards Columbia Gardens Road and then onto Fruitvale but does not provide a primary connection to Montrose. Montrose would require an enhanced bus connection to shuttle to Waneta and Fruitvale.
- i. This option starts at the Old Waneta Road / Highway 22A junction and follows the highway south towards Beaver Creek Provincial Park. A Separated MUP on the west side (river side) of the road is proposed. There may be opportunities to have the option run closer to the river in the sections designated as crown land.
 - ii. Where possible the route should cut over into Beaver Creek Provincial Park making use of the bridge crossing Beaver Creek separate from traffic. The route continues south on Highway 22A towards Columbia Gardens Road with a MUP on the west side.
 - iii. At the intersection of Highway 22A / Columbia Gardens Road, a crosswalk with appropriate crossing control will be important. Along Columbia Gardens Road a separated MUP should be built in the road right-of-way until the Columbia Gardens Road / Maple Avenue intersection.
 - iv. At this point, a MUP is proposed along Maple Avenue and then along Beaver Street E across the Beaver Street Walking Bridge.
 - v. From the east end of the Beaver Street Walking Bridge, a MUP is continued on the south side of the road up until the Beaver Street E / Columbia Gardens Road intersection. There is an opportunity to construct this portion of the corridor with a quick-build approach.
 - vi. The final stretch runs north from the Beaver Street E / Columbia Gardens Road intersection across Highway 3B and terminates at the Pole Yard in downtown Fruitvale. This highway crossing will require special consideration. The facility type on this stretch could be a MUP on the west side of the road.
- b. **Fruitvale Option 2** follows the Highway 3B alignment for much of the route.
- i. This option starts just north of the Old Waneta Road / Highway 22A junction. In an effort to tie into Theatre Road as directly as possible the corridor could ramp up between Old Waneta Road and Highway 22A to cross the highway at the Theatre Road / Highway 22A intersection a crosswalk with appropriate crossing control will be important.
 - ii. The route would then run north on Theatre Road as a bike boulevard given its quiet residential nature.
 - iii. At the northern terminus of Theatre Road, the route would then ramp up the embankment in the road right-of-way to run along the south side of Highway 3B in the form of an off-street, barrier separated, MUP.
 - iv. Highway 3B has a steep grade, narrow paved shoulder, heavy truck traffic, and an 80 km/hr speed limit so separation from the highway for



active transportation users is important. Near the top of the hill, there has been a large amount of blasting done to construct the highway. This section will most likely be expensive to construct with a retaining wall necessary as the cross-section is constrained.

- v. Near Montrose, the MUP should cut over through an undeveloped road right-of-way towards 9th Avenue.
- vi. The route runs along the length of 9th Avenue through Montrose. The road cross-section is wide which gives the opportunity to reallocate road space with a quick-build approach.
- vii. At the east end of 9th Avenue, land would have to be acquired to provide a connection between houses to tie-in with Highway 3B at the east end of Montrose. The alternative would be to have the route run along 10th Avenue for the final block, but this is undesirable as the road cross-section is substandard since it is narrow and very close to the highway creating high risk turning conflict with traffic turning off of the highway.
- viii. Highway 3B has a 50 km/hr speed limit from Montrose to Fruitvale. As in the previous section of highway routing. Efforts should still be made to provide a separated MUP on the south side of the road up to a AAA standard for active transportation users.
- ix. The route heads off of the highway at Bluebird Road to cross over to Columbia Gardens Road where it follows the Option 1 alignment from there into Fruitvale. On Bluebird Road, the route should be constructed with a separated MUP.

- c. **Fruitvale Option 3** follows the same routing as Option 1 along the Waneta Highway up until Beaver Creek Provincial Park and then splits off to climb the large embanking towards Montrose and then towards Fruitvale making use of green space and the rail alignment where possible. There are many sections where land acquisition is required as well as cooperation with the rail operator.
 - i. Starting near Beaver Creek Provincial Park the MUP would cross Highway 22 with a crosswalk with appropriate crossing control.
 - ii. From here the corridor would switch back up the embankment and over privately held lands to connect with the west end of 9th Avenue in Montrose.
 - iii. The route runs along the length of 9th Avenue through Montrose. The road cross-section is wide which gives the opportunity to reallocate road space with a quick-build approach.
 - iv. At the east end of 9th Avenue, the route would shift to skirt existing development through the privately held forested lands and then eventually to the Scouts Camp near the Beaver Creek Falls.
 - v. North of the Scouts Camp the routing follows the rail corridor for a consistent alignment all the way into Fruitvale crossing Highway 3B and



terminating at the Pole Yard. Special considerations for a crosswalk and appropriate crossing control.

- vi. A popular secondary link to consider would be a connection to Beaver Falls from near the Scouts Camp along the railway corridor.

5.2 Steering Committee Workshop Highlights

The Steering Committee members participated in a two-hour workshop on April 24, 2023, which included a comprehensive agenda covering various aspects of the project. The workshop began with an overview of the plan process, a review of the baseline conditions report sections, and a discussion on the high-level route segment alignment options for Rossland/Warfield, Trail, and Montrose/Fruitvale areas.

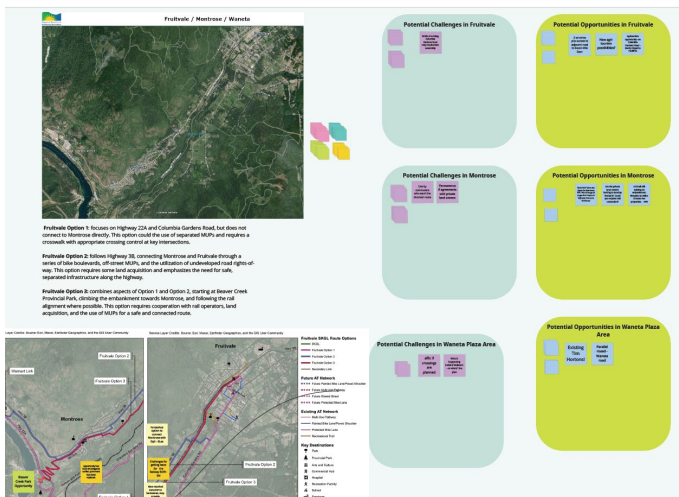
The baseline conditions were presented as a PowerPoint presentation, highlighting the key topics and findings related to the project. This presentation served as an opportunity to acquaint the steering committee with the different sections of the report.

Following the presentation, the workshop continued with an interactive virtual session using [Miro Boards](#). The attendees were guided through the preliminary routing described in **Section 5**, which outlined the different portions of the study area. The session was complemented by a sticky note exercise that allowed participants to provide initial feedback on opportunities and challenges that the project team should be aware of as they begin looking at more in-depth routing.

The feedback received during the session provided valuable insights into potential opportunities and challenges for different segments of the project area, including Fruitvale, Montrose, Waneta Plaza, Warfield, Rossland, East Trail, and Downtown Trail.

For instance, in Fruitvale, attendees identified new agri-tourism possibilities, including wineries and the Earthy Organics facilities, while Montrose's potential opportunities involved potential agreements with private landowners and exploring the Ministry of Transportation's plans for Montrose hill. Participants also mentioned the importance of connecting to Beaver Creek Provincial Park. While in Warfield, they highlighted potential challenges in securing access to Teck Resources' lands and the challenges with some of the residential roadway's connection lower Warfield with Trail.

Moreover, the workshop enabled the discussion of preferred routes for various sections, such as Rossland's preferred route from Red to Rossland, East Trail's preferred route beginning at the north end of the Columbia River Skywalk, and the potential preferred option for Downtown Trail, which starts at the Pine Avenue/Farwell Street intersection and heads down towards the Esplanade.



Screenshots from a Miro whiteboard where the virtual sticky note exercise was used to review preliminary routes and provide feedback on some of the areas perceived challenges and potential opportunities.

The workshop then proceeded to discuss the public and stakeholder plan, data collection methods, next steps, and the project timeline. The workshop concluded with closing remarks, summarizing the key takeaways and insights gathered throughout the session.

The outcomes of the workshop, particularly the preliminary routing work and input received on project messaging and the key stakeholder list, will be essential in advancing to the Listening Phase of our project. The next phases will involve various engagement events to gather valuable input from the broader community and ensure that diverse perspectives are considered in shaping the future of active transportation in South Kootenay.

5.3 Preliminary Multiple Account Evaluation (MAE) Criteria

The Multiple Account Evaluation (MAE) table will play a crucial role in assessing route options for the South Kootenay Green Link (SKGL) after the completion of Phase 2. By considering various criteria, the MAE allows for a thorough evaluation of preliminary routes, taking into account factors such as directness, community benefits, user comfort and safety, and cost-effectiveness. The proposed criteria for the MAE will be adapted based on feedback from the steering committee and public survey #1, ensuring that the evaluation process is aligned with the community's preferences and priorities. The MAE, combined with key stakeholder feedback and findings from the What We Heard report, will serve as the most important inputs for selecting the final SKGL routing. This well-rounded approach ensures that the chosen route is not only viable but also maximizes the benefits for the community, promotes sustainability, and aligns with the overall goals of the project.



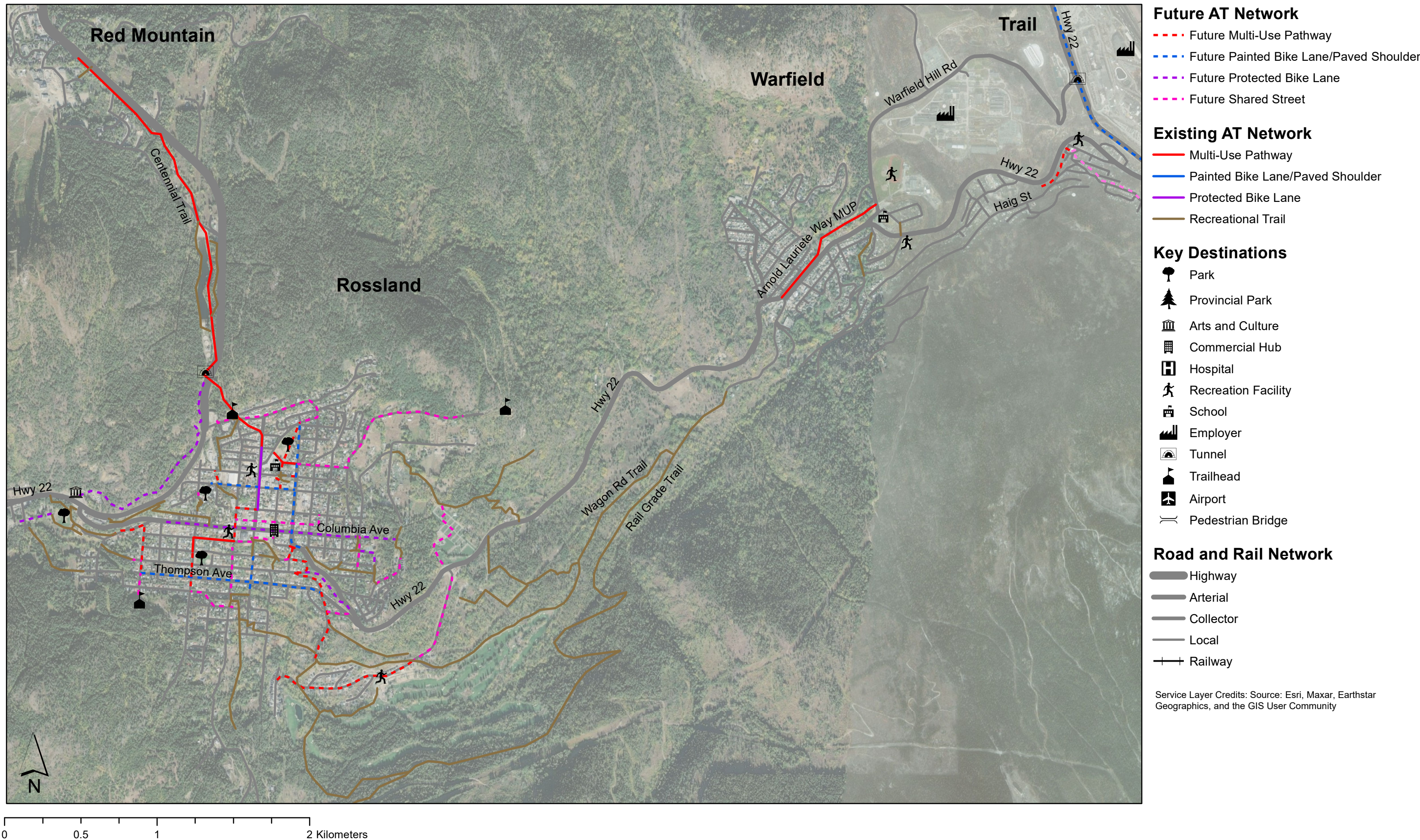
Criteria Category	Criteria	Measurement
Directness (25%)	Travel time	GPS data or manual timekeeping to determine average time in both directions
	Time penalties for queuing at signals and crossings	Count waiting times at signals and crossings and calculate total waiting time
	Topography	Determine elevation gain/loss and slope of the route
Connections (25%)	To destinations within	Count the number of important destinations directly along route
	To the greater AT network	Determine connectivity to other active transportation routes and ease of access
	Transit mobility hubs	Assess proximity and access to transit hubs
Cost and Constructability (25%)	Capital cost	Determine the cost of construction and installation of necessary infrastructure or improvements
	Annual maintenance cost	Determine the cost of maintaining the route and infrastructure over a one-year period
	Constructability	Assess factors such as topography, land acquisition, and partnerships
User Comfort and Safety (25%)	Volume and mixing with vehicle traffic	Assess road traffic volume and speed as well as user separation from traffic.
	Noise and Vehicle Pollution	Consider truck traffic and road classification to determine the degree to which vehicle sound and GHG pollution will effect the user experience.
	Aesthetic appeal and parks/nature integration	Conduct a visual assessment of the route and determine the extent to which it incorporates parks, nature, and aesthetically pleasing features



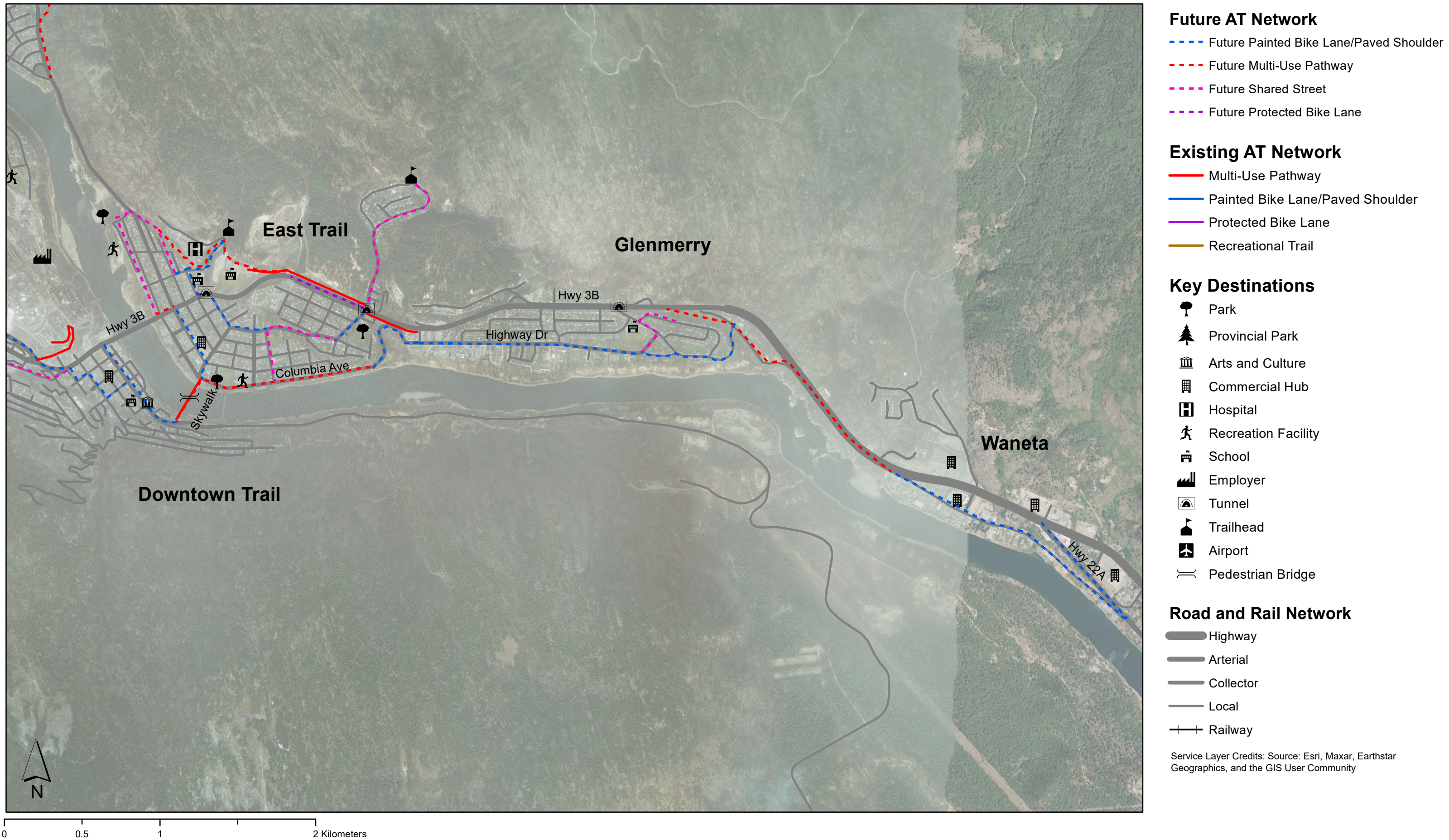
Criteria Category	Criteria	Measurement
	Placemaking opportunities along the route	Identify and assess potential locations for creating inviting, vibrant, and memorable public spaces that contribute to the overall user experience



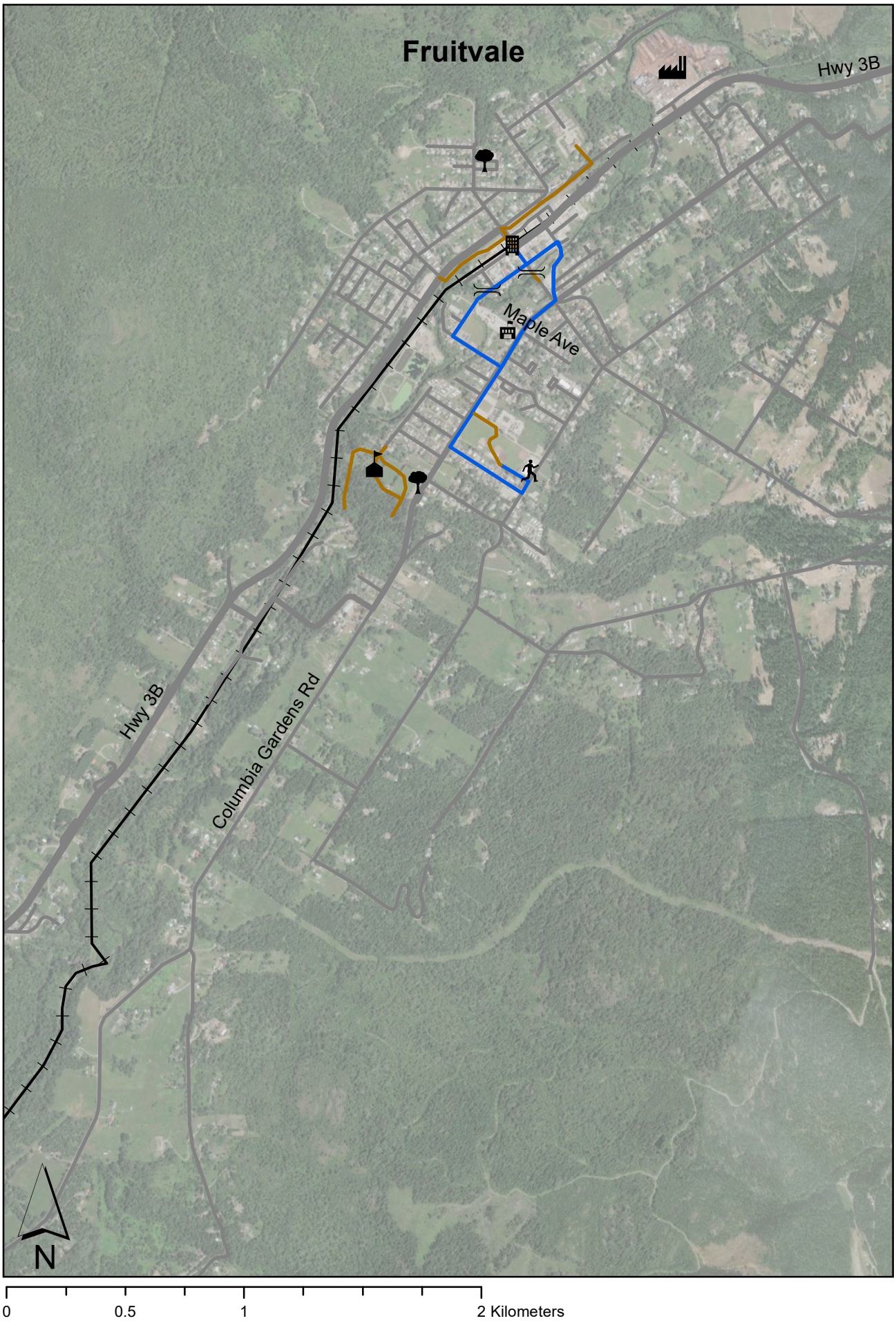
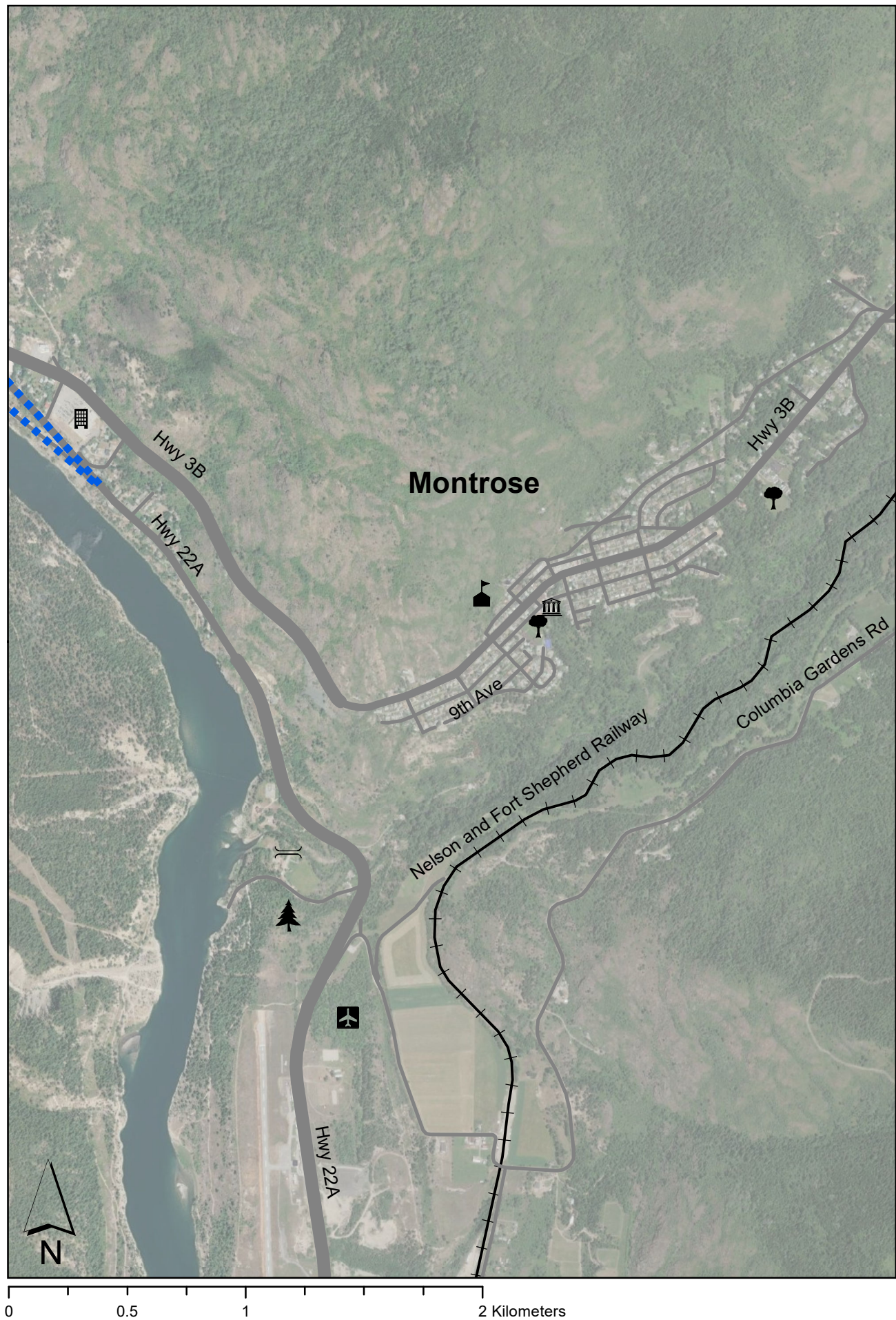
Appendix A - Existing and Future Active Transportation Network Maps



Map 1a: Existing and Future Active Transportation Network in Rossland and Warfield



Map 1b: Existing and Future Active Transportation Network in Trail Area



Future AT Network

- Future Painted Bike Lane/Paved Shoulder
- Future Multi-Use Pathway
- Future Shared Street
- Future Protected Bike Lane

Existing AT Network

- Multi-Use Pathway
- Painted Bike Lane/Paved Shoulder
- Protected Bike Lane
- Recreational Trail

Key Destinations

- Park
- Provincial Park
- Arts and Culture
- Commercial Hub
- Hospital
- Recreation Facility
- School
- Employer
- Tunnel
- Trailhead
- Airport
- Pedestrian Bridge

Road and Rail Network

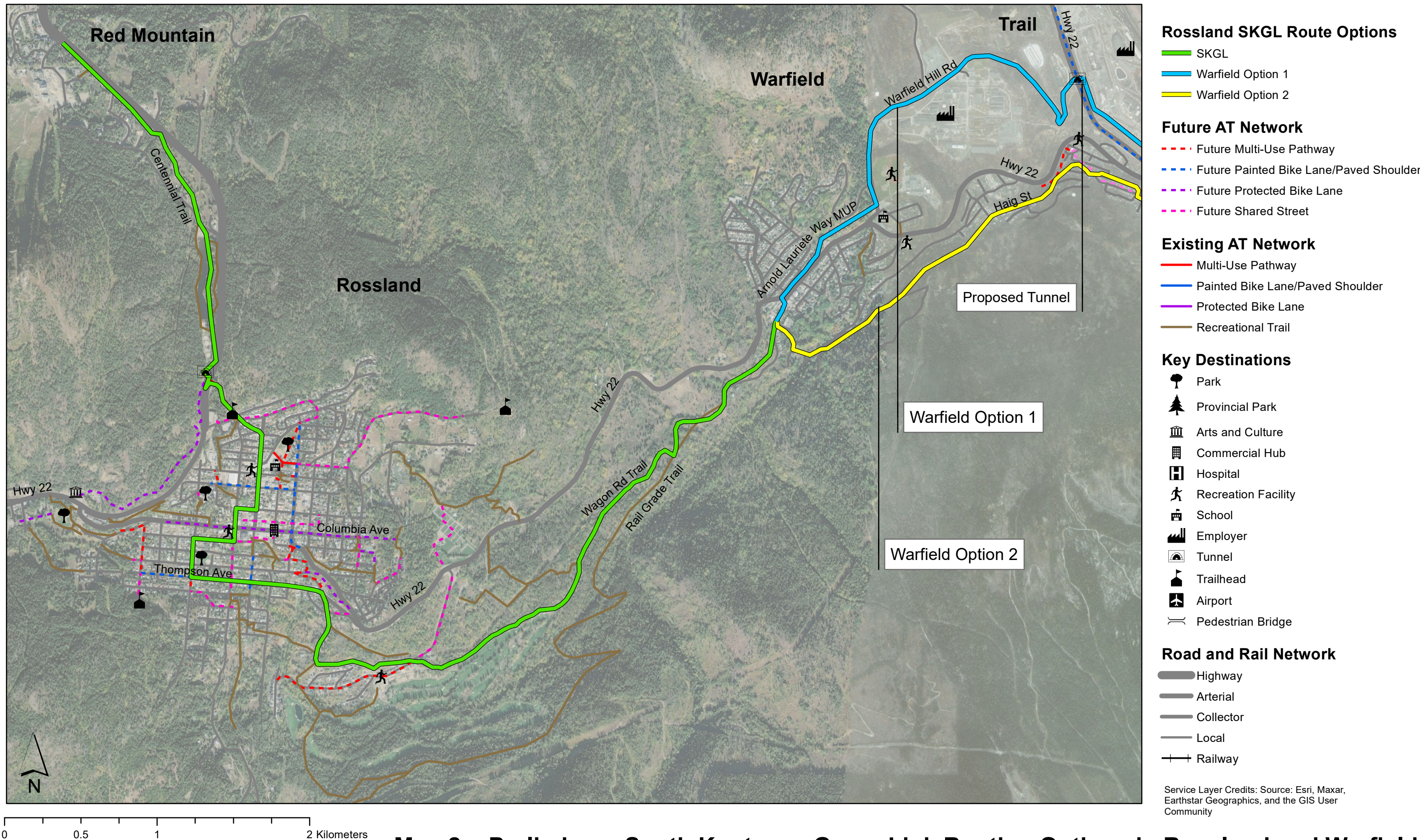
- Highway
- Arterial
- Collector
- Local
- Railway

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

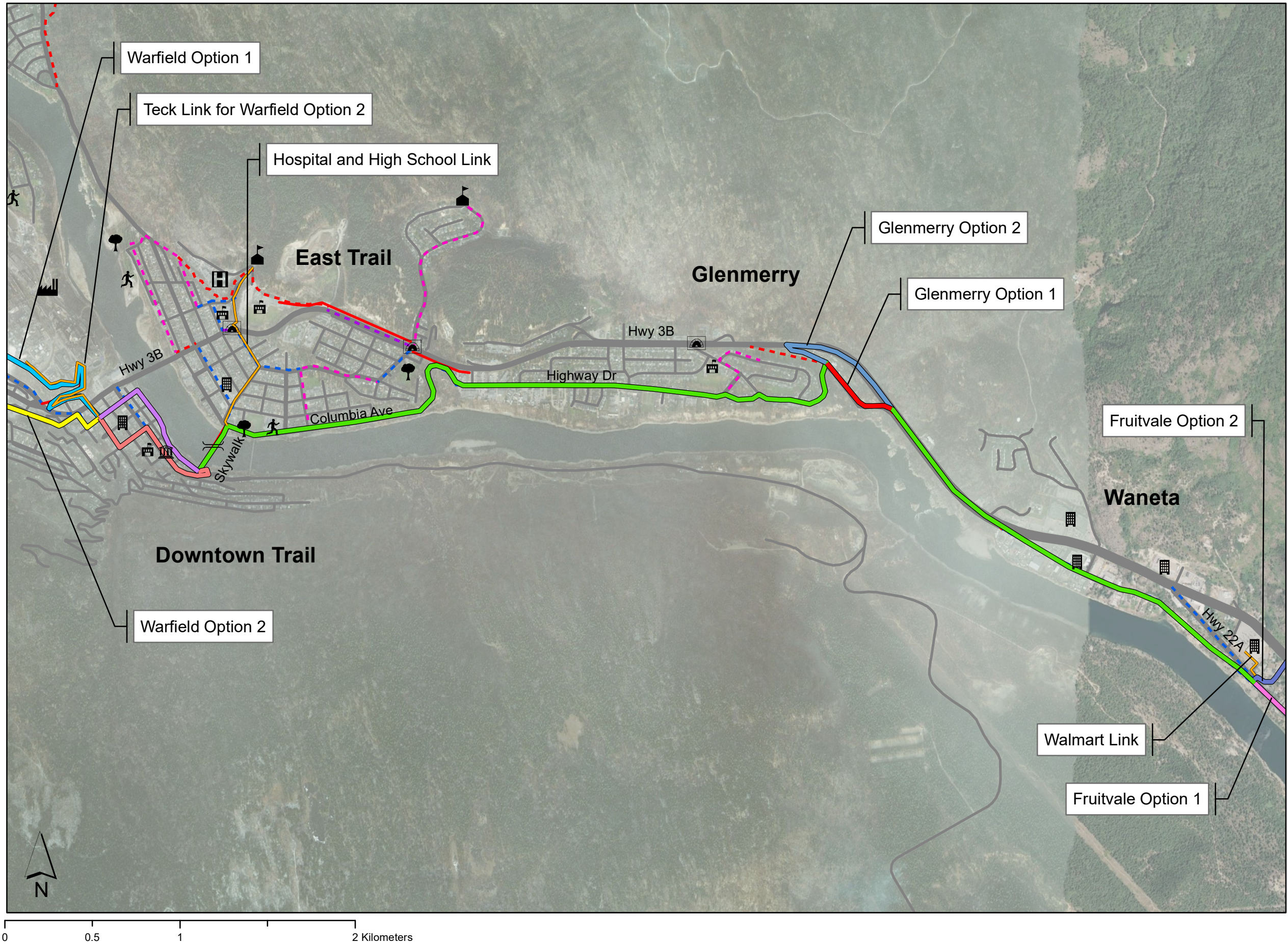
Map 1c: Existing and Future Active Transportation Network in Montrose and Fruitvale



Appendix B - Preliminary Corridor Routing Maps



Map 2a: Preliminary South Kootenay Green Link Routing Options in Rossland and Warfield



Map 2b: Preliminary South Kootenay Green Link Routing Options in Trail Area

Trail SKGL Route Options

- SKGL
- Warfield Option 1
- Warfield Option 2
- Trail Downtown Option 1
- Trail Downton Option 2
- Glenmerry Option 1
- Glenmerry Option 2
- Fruitvale Option 1
- Fruitvale Option 2
- Secondary Link

Future AT Network

- Future Painted Bike Lane/Paved Shoulder
- Future Multi-Use Pathway
- Future Shared Street
- Future Protected Bike Lane

Existing AT Network

- Multi-Use Pathway
- Painted Bike Lane/Paved Shoulder
- Protected Bike Lane
- Recreational Trail

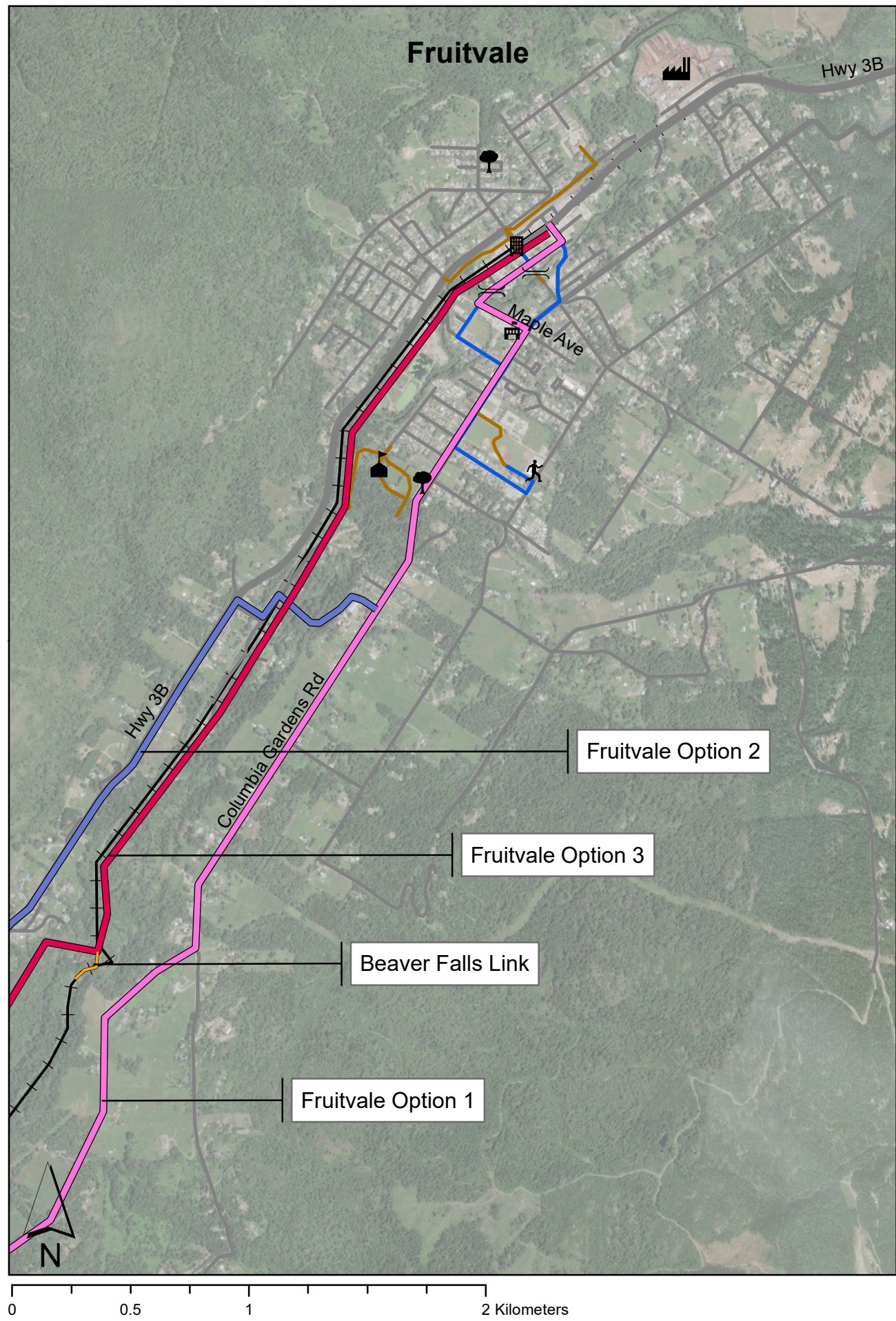
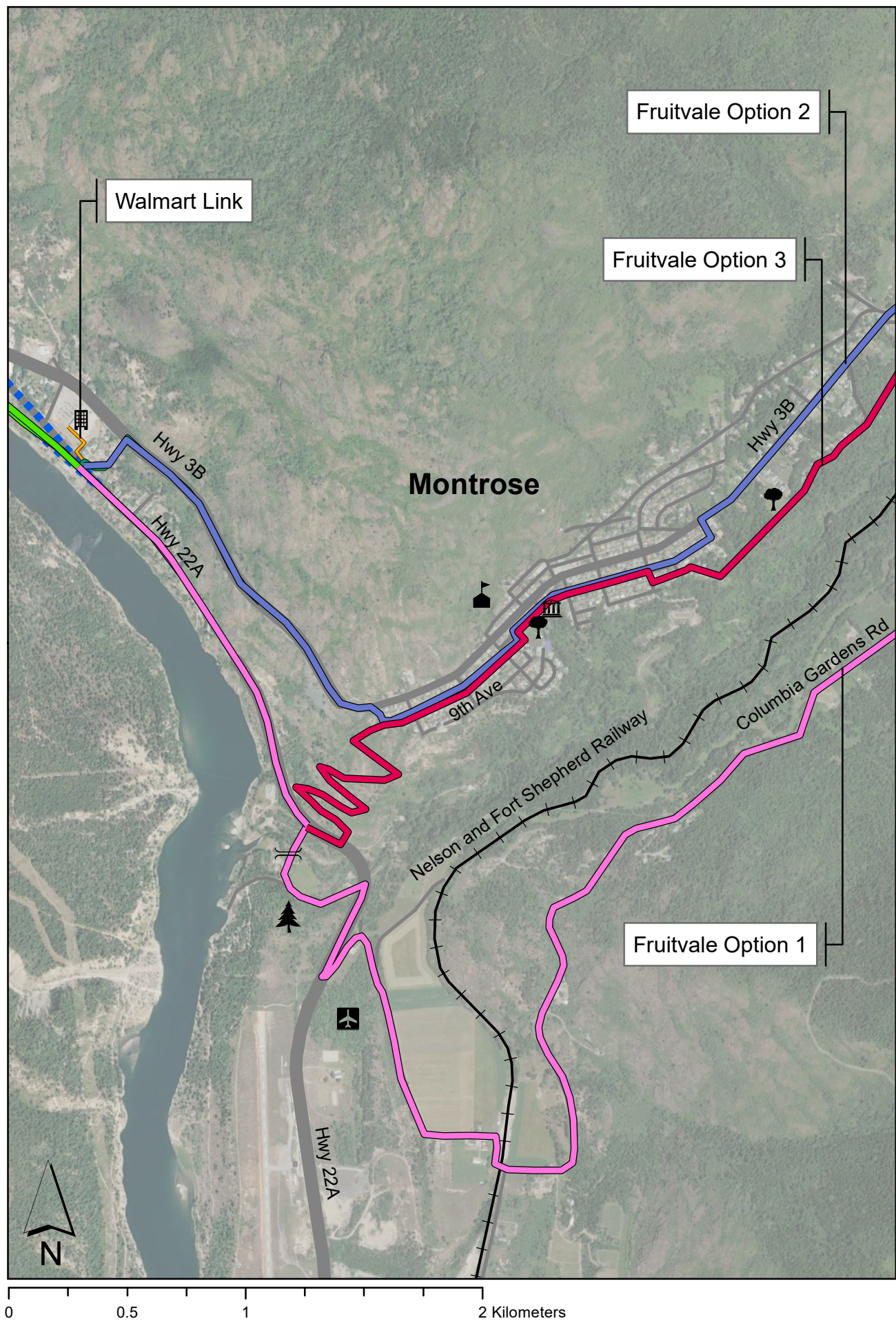
Key Destinations

- Park
- Provincial Park
- Arts and Culture
- Commercial Hub
- Hospital
- Recreation Facility
- School
- Employer
- Tunnel
- Trailhead
- Airport
- Pedestrian Bridge

Road and Rail Network

- Highway
- Arterial
- Collector
- Local
- Railway

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Fruitvale SKGL Route Options

- SKGL
- Fruitvale Option 1
- Fruitvale Option 2
- Fruitvale Option 3
- Secondary Link

Future AT Network

- ■ ■ Future Painted Bike Lane/Paved Shoulder
- ■ ■ Future Multi-Use Pathway
- ■ ■ Future Shared Street
- ■ ■ Future Protected Bike Lane

Existing AT Network

- Multi-Use Pathway
- Painted Bike Lane/Paved Shoulder
- Protected Bike Lane
- Recreational Trail

Key Destinations

- Park
- Provincial Park
- Arts and Culture
- Commercial Hub
- Hospital
- Recreation Facility
- School
- Employer
- Tunnel
- Trailhead
- Airport
- Pedestrian Bridge

Road and Rail Network

- Highway
- Arterial
- Collector
- Local
- Railway

Service Layer Credits:
Source: Esri, Maxar,
Earthstar Geographics, and
the GIS User Community

Map 2c: Preliminary South Kootenay Green Link Routing Options in Montrose and Fruitvale