

CVGTA Trails Vision – 2017



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1. Executive Summary – Using the Trails Vision

The intent of the Columbia Valley Greenways Trail Alliance (CVGTA) Trails Vision is to assist the CVGTA in collaborating as a single entity in considering trail development in the area. The Trails Vision will summarize the voices of the CVGTA stakeholders and general public who took part in a preliminary survey; it will outline important factors in considering trail development; and it will provide suggestions for trail alignments, based on “What we Heard” through the development process. The intent of the Trails Vision is to address the forms of trails encompassed by the users of the CVGTA, including cross country skiing, hiking and interpretative trails, mountain bike and running trails, as well as trails intended for motorized use.



View of Columbia Valley looking south from between Radium Hot Springs and Invermere

In addition to meeting the needs of the CVGTA, there are benefits to all residents in the Columbia Valley of the comprehensive trail network proposed by this Trails Vision. Studies have proven that dollars spent on a recreational trail system have a resulting reduction in health care costs, for the people who use the trails. Trails are not noted to be a great capital expense, and can actually be considered an investment in a region’s future health and well-being. In addition, the Trails Vision will provide validation that becoming a regional destination for trail use could help the area economically. Examples of recent studies that have considered economic impact of trails are as follows:

1. A 2004 study estimated that property values in Marion County, Indiana increased by over \$140 million due to the development of the Monon Trail system;
2. The overall economic impact of the Hatfield-McCoy ATV, UTV, and off-road motorcycle trails in West Virginia was over \$20 million in 2014;
3. Over \$10 million was spent by mountain bike tourists alone in the Sea to Sky corridor of BC in 2006;
4. The local benefit of the four day World Cup cross country ski races to Canmore, AB in 2012 was estimated to be \$2.41 million.

There is a multitude of studies corroborating the above information. It is this type of data that can assist various government bodies and local businesses in decision making.

The Trails Vision provides a collective set of goals and objectives for the direction that trail development should take over the course of the next number of years in the Columbia Valley. It is important that communities and stakeholders work together toward long-term goals in a strategic manner. In this way, the trail system will be developed to provide the best value for the community and region that it serves.

This Trails Vision is the first part of the process of trail development; this document is to initiate dialogue leading to the Trails Master Planning process. While some preliminary trail alignments are presented in the text, it must be understood by the users of this document that these are highly conceptual. In fact, they are only described in text and not included on the Maps of the various area. This was done on the request of the CVGTA, as they feel a “Visioning” document is too early in the process to show specific alignments.

It is also important to understand that a Trails Vision is based on a “snapshot” in time; it is a “living” document that must adapt to changing goals and priorities. Its intent is to chart a course for a singular vision that will create a better, stronger, and more varied trails experience for locals and tourists.

Based on discussions with stakeholders, CVGTA members, and field reconnaissance, we believe the Columbia Valley is ripe for trail development. The potential to make this region a world class destination is significant. In creating engaging trails and economic benefit to the regions, the following summarizes the top general recommendations. Specifics of these recommendations are provided in the text that follows.

General Recommendations

1. Work with government bodies and private landowners to sanction, unsanctioned trails, where appropriate.
2. Offer comprehensive, consistent signage, including trailhead kiosks, junction maps, trail difficulty rating, and wayfinding signage. Create comprehensive and consistent mapping for all trails in electronic and print format.
3. Make access to trails easier; build trailhead facilities at all trails.
4. Coordinate with each local government to act as a cohesive group in marketing the region, so all can have access to the potential economic benefits of trail development.
5. Investigate the potential for a “High Alpine Epic Trail” between Panorama, Invermere, and Nipika.
6. Create a fundraising mechanism and a detailed operations and maintenance plan.
7. Create a Central Hub for mountain biking activities in strategic locations, such as Mt. Nelson Athletic Park in Invermere, Panorama, and Nipika. Create a central hub for off-highway vehicle (OHV) use in Canal Flats and sanction OHV trails in the area.
8. Create easy access between communities and to the core of the communities.
9. Encourage development of additional campground facilities.
10. Use IMBA and other industry standard guidelines for trail design.

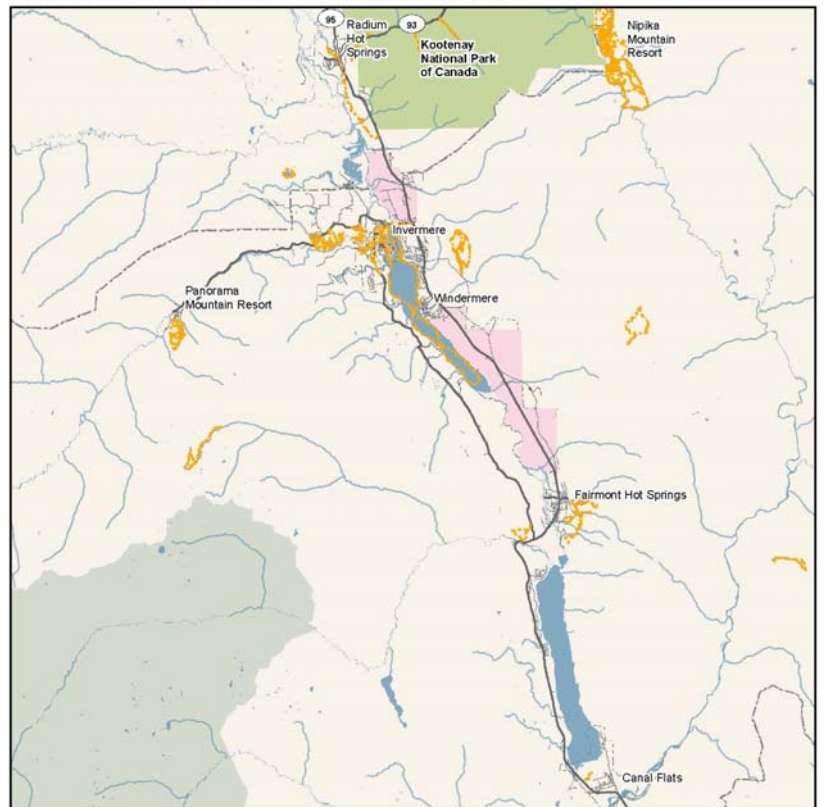
2. Introduction

The Columbia Valley is a popular resort area. Lake Windermere is one of the closest lakes to the Calgary area and is a popular location for second home owners. Situated between the Purcell and Rocky Mountains, it offers a multitude of recreation opportunities in both the winter and summer seasons.

There are many important existing features located within the study area. Canal Flats offers extensive motorized trails, the end of the white-water section of the Kootenay River, and access to Columbia Lake. Invermere is the geographic central hub to the region and is situated next to Lake Windermere (home of the WhiteWay ski and ice skate trails in the winter). Adjacent trail systems include the Kloosier and Johnson, as well as Lillian Lake trails, a short drive away. Around the Village of Radium are existing trails, such as the Old Coach Trail and Juniper network that offer some of the earliest season riding and running opportunities to residents and tourists (Canmore and Calgary being the primary weekend warrior group). Nipika is adjacent to the east and offers an extensive cross-country ski and mountain bike trail network with paddling and hiking opportunities. Panorama to the west offers downhill skiing, lift accessed mountain biking, cross-country skiing and hiking. The adjacent mountains bordering the valley offer extensive hiking trails to summits, glaciers, lakes, and alpine ridges.

The entire study area contains the Columbia River waterway which is a popular recreation corridor for bird watching, paddling and other water sports. In addition, construction of the paved Westside Legacy Trail from Invermere to Fairmont Hot Springs will begin in 2017. It is envisioned that this trail will eventually be extended to connect additional communities including Radium and Canal Flats. The map to the right shows the approximate extent of the study area, along with some of the known, existing trails; this includes “legally established” trails and those that are not legally established. For the purpose of this document, the terms “sanctioned” and “non-sanctioned” will be used to identify those trails “legally established” by the Government and those not, respectively.

COLUMBIA VALLEY EXISTING DESIGNATED TRAILS



LEGEND
ADMINISTRATIVE
FIRST NATION RESERVE
NATIONAL PARK
PROVINCIAL PARK
CENTRAL & EAST KOOTENAY REGIONAL DISTRICTS



HYDROLOGY
SMALLER RIVERS AND STREAMS
RIVERS, LAKES AND PONDS
ROAD NETWORK
TRAILS
ARTERIAL / SECONDARY HIGHWAY
COLLECTOR ROAD
LOCAL / STREET
HIGHWAY

0 1 2 4 6 8 10 KM
1:300,000
N

COLUMBIA VALLEY GREENWAYS TRAILS ALLIANCE:
TRAIL VISION



The CVGTA has engaged McElhanney Consulting Services Ltd. to prepare a Trails Vision document. This initiative is based on the fact that recreation is a major draw for residents and tourists alike in the area. A significant part of that recreation is currently focused on Lake Windermere. However, the CVGTA has also seen increased popularity in trail use in the region. Based on the common and differing goals of the members



Trailhead at the Old Coach Trail, between Invermere and Radium Hot Springs

of the CVGTA, a Trails Vision document was required to create a focused, sustainable effort for trail development. The visioning exercise which created this document represents the first phase of establishing a world-class sustainable trail network for the benefit of future generations.

Recreation trails have many important benefits, both for local communities and for individual users. They strengthen communities, they contribute to local economies, build pride and put places 'on the map'. Trails

offer users a wide range of rewards, physically, mentally and emotionally, many of which are directly transferable into both work and home environments. The benefits of recreation trails are well researched and documented. This Trails Vision provides trail enthusiasts, local government authorities, and community groups with a vision to begin to plan for and develop recreation trails. It provides information on the trail planning process, and suggests further relevant reading material and required "next steps" on the topics covered. The Trails Vision also outlines the importance of good planning in trail development, to ensure that trails are well designed.

2.1. About the Columbia Valley Greenways Trails Alliance

The Columbia Valley Greenways Trail Alliance is a trails advocacy group made up of eight local trail and stewardship groups including Columbia Valley Cycling Society, Summit Trail Makers Society, Toby Creek Nordic Ski Club, Panorama Mountain Resort, Nipika Mountain Resort, Crazy Soles, and Village of Canal Flats. Since the inception of the Trails Vision project, a local motorized group, the Windermere Valley Dirt Riders has joined to Greenways.



2.1.1. Vision, Mission, and Values

As noted on the CVGTA website, the Vision of the organization is as follows:

“To promote sustainable trail systems that contribute to a vibrant healthy community.”

Combined with the vision statement is the Mission, which reads:

“Community organizations working in partnership to advocate the development, maintenance and responsible use of sustainable trails on public and private lands to promote year round healthy living and community values.”

The Values of the group are summarized as follows:

- *Sustainable actions;*
- *Trust, collaboration and inclusiveness;*
- *Healthy living and family values;*
- *Education for responsible use of trails and environmental stewardship;*
- *Partnership for the benefit of all groups;*
- *Public knowledge, awareness and respect for trails and trail users; and,*
- *Economic benefits for the Columbia Valley*



Using Trails in the Columbia Valley

2.2. Goals and Objectives of the Trails Vision

Based on the feedback from the members of the CVGTA and confirmed through individual stakeholder meetings, eight distinct goals were created that were initially intended to guide the Trails Vision. These are summarized as follows. However, through the process of creating this document, the CVGTA decided that certain goals were not appropriate for the Trails Vision. For example, Goal vi. was deemed premature by the CVGTA; detailed trail alignments are more appropriate at a Master Plan level.

i. Goal: Increase Education of Trail Users
The Trails Vision should recommend methods (short & long-term) to educate users on trail etiquette / enforcement of rules and respect for trails. This will in-turn increase the legitimacy of both the CVGTA and the Trails Vision.
ii. Goal: Create a 'Trail Town' Culture in the Columbia Valley
The Trails Vision should identify ways to educate area citizens, businesses, politicians, etc. on the benefits to the whole community of embracing a culture of being a 'Trail Town' community (economic spin-offs, social/cultural growth). This could specifically mean citing economic studies related to trails within the Trails Vision as well as identifying some common 'messages' that all groups can use. This should also include educating locals on the great trails in the area.
iii. Goal: Partnership and Collaboration
Create a Trails Vision that is supported by all trail groups and creates long-term partnerships and collaboration between all trail groups (including motorized and non-motorized).
iv. Goal: Consistent Trail Signage and Wayfinding
The Trails Vision should recommend creation of consistent signage and wayfinding for all trail types and users.
v. Goal: Improve Trailhead Facilities and Amenities
The Trails Vision should identify standards for improved trailhead facilities and amenities.
vi. Goal: Prioritization of New Trails or Formal Designation of Existing Trails & Anticipated Costs
The Trails Vision should work with all groups to prioritize future new trails to develop or sanctioning of existing non-sanctioned trails (immediate, short & long term priorities). Prioritization of new trails should address a spectrum of user types (beginning, intermediate, advanced) as well as different user groups (cycling, hiking, running, walkers / families / strollers). The Trails Vision should identify approximate costs for new trails.
vii. Goal: Link all Geographic Areas / Create a Cohesive System in the Valley
The Trails Vision should make recommendations on how separated geographic areas (e.g. Nipika, Panorama, Invermere, Canal Flats, etc.) can be viewed as a cohesive system of complementary trail networks. The Trails Vision should identify ways for each area to provide great trail networks while creating a niche for each area that minimizes overlap with other areas.
viii. Goal: Identify a Framework for Sustainable Maintenance
The Trails Vision should make recommendations on the proper balance between creating new trails and being able to maintain existing sanctioned trails (given limited resources). The Trails Vision should identify approximate costs for new trail maintenance.

3. Development of the Trails Vision

3.1. Stakeholders

Based on the Vision, Mission, and Values of the CVGTA and the Goals and Objectives provided, a path to creating the Trails Vision was developed. A large and critical component of the Trails Vision surrounds stakeholder consultation. Listening to stakeholder concerns and feedback is a valuable source of information that can improve project direction and outcomes. It can also form the basis for future collaboration and partnerships and can legitimize the planning process, as it creates “buy in” from the community at large. For stakeholders, McElhanney’s consultation process enabled gathering information and educating residents about the project. This provides the opportunity to discuss issues and concerns, ask questions, and potentially help shape the project by making suggestions for the consultants to consider and respond to.

The consultation process that was performed for this Trails Vision was wide-ranging. Not only were each member of the CVGTA interviewed individually, a number of government bodies and First Nations were also consulted. An on-line survey and interactive map were used, as well as informal feedback. The responses to the on-line survey were significant and the information provided was invaluable. The following provides a summary of the process:



Columbia Valley Trails Alliance

Columbia Valley Cycling Society, Summit Trail Makers Society, Toby Creek Nordic Ski Club, Panorama Mountain Resort, Nipika Mountain Resort, Crazy Soles, Village of Canal Flats, and the Windermere Valley Dirt Riders.

Government Agencies

Regional District of East Kootenay (RDEK), Parks Canada, Recreation Sites and Trails BC, BC Ministry of Forests, Lands, and Natural Resource Operations, District of Invermere, Village of Radium Hot Springs, Village of Canal Flats.

First Nations

Shuswap First Nation, Akisqnuq First Nation.

Public and Stakeholder Engagement Highlights

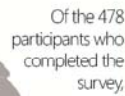
478 individual comments on the online survey, **74** individual comments on the online interactive map, **15** individual ideas on the sounding board, **342** individual votes on the dotmocracy board

While the previous section identified First Nations as a stakeholder, it is important to distinguish them separately. In the document prepared by the BC Government entitled, *Building Relationships with First Nations – Respecting Rights and Doing Good Business*, it states, “...First Nations are rights-holders, not stakeholders.” This is expanded upon further in Appendix C.

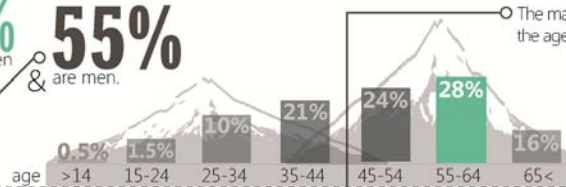
A graphic summary of the results of the consultation process is provided on the following page. This data forms the basis of the content of the Trails Vision.

TRAIL ASSESSMENT SURVEY RESULTS

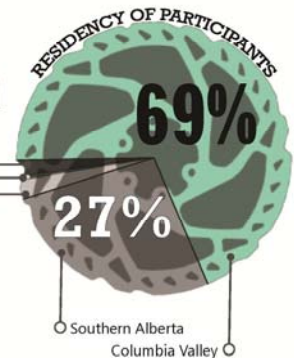
**YOU SPOKE, WE LISTENED. HERE'S
WHAT THE VALLEY HAD TO SAY.**



45% are women & 55% are men.



○ The majority of people participated are over the age of **45**



horseback riding

nordic skiing

hiking | walking

trail running

mountain biking

road cycling

motorized vehicles

other

95%

biking sports make up 50% of trail use.

of respondents are on the Columbia Valley trails. Here is how the trails are being used.

of respondents are on the Columbia Valley trails. Here is how the trails are being used.

The ratio of residents to non-residents is approximately **2:1**

USA | Other 1.5%
Canada 0.5%
Central Alberta 2%

The top three reasons that people are not able to access the trails in the Columbia Valley are:

1. Lack of information about the trails and pathways

2. Lack of trail connections

3. Trails are too far away or too difficult

It always comes back to communication. People are asking for better resources online and in print for trailhead locations, accurate distances, and difficulty ratings for the CV trails.

○ People are asking for better maintenance of their trails and access roads. Proper upkeep of existing trails will strengthen the argument for new ones.

There is a desire to link communities in the Columbia Valley through bike trails and pathways.

It's the little things that make the difference. Features like benches and picnic tables are gestures that can make a trail user's experience more enjoyable.

- Through calculated placement of privies and garbage collection we can greatly lessen our impact on the environment.

[illegible]

From this feedback, six key themes were revealed, as summarized below. These themes will be expanded on in the sections that follow.

- 1. Improve maintenance of trails.**
- 2. Improve mapping and availability of trail's information.**
- 3. Improved trail connectivity and access.**
- 4. Enhance tourism through marketing and economic development.**
- 5. Improve signage/wayfinding and user facilities.**
- 6. Accessible Trails for all ages and abilities.**

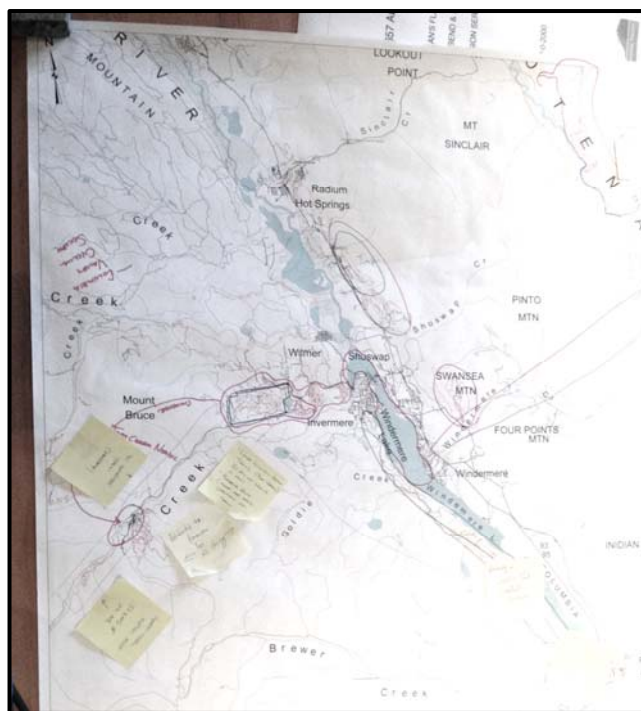
3.2. Trails Vision Process

To conceptualize trail alignments and formulate the recommendations in this Trails Vision, numerous processes were followed to collect information. The consultation with CVGTA and the public provided many sketches of existing and desired trail alignments. These took the form of the online interactive map, hand drawn lines on maps, sticky notes, and descriptions, as shown on the photo to the right.

Field reviews were done on many trails in the region by bike and foot, as well as driving to visit key view points and trail heads. Numerous years spent recreating in the study area prior to formulating the Trails Vision, as well as racing multiple Trans Rockies events helped the understanding of the landscape and trails. Further information as to the status and user experience of each trail was discussed with CVGTA members, conversations with local trail users, weekends spent in the study area, and through review of on-line comments. A desktop study was conducted using detailed imagery of the landscape and existing trail system.

Background information was gathered from numerous sources, listed in Appendix A.

Technical information comes from collective experience of the Trail Design Team and making use of the International Mountain Bike Association (IMBA) books. While these resources are specific to mountain biking, the fundamentals of design, layout, drainage, and signage are common to all forms of trail use. McElhanney has considered these standards and have provided specific information in Appendix E, geared towards all trail use. Please note that the intent of this Trails Vision is not to reiterate everything in these documents and it is expected that trail builders will use the appropriate resources for the intended trail users when designing and constructing trails.



3.3. Provincial Policy, Legislation, & Strategies

There are a number of government documents, policies, and acts that are relevant when looking at trail development. The bodies which regulate and / or mandate trails in BC, include the provincial and federal agencies responsible for lands and natural resource operations. These include BC Parks, Regional District of East Kootenay, and Parks Canada. The Provincial and Federal Acts include the Forest and Range Practices Act, Land Act, Local Government Act, Canada National Park Act, Wildlife Act, Water Act, Occupiers Liability Act, Off-Road Vehicle Act, the federal Fisheries Act, and potentially others.

In addition to the above, there are various plans and documents within local governance (including Official Community Plans and other “local” documents) that are relevant. Virtually all land in the Columbia Valley is encumbered in some respect by Tenures, Agricultural Land Reserve (ALR), Wildlife Management Area, or by other means.

It is not the intent of a Trails Vision to provide detailed descriptions of all the above documents. However, a summary of the main acts and some relevant sections are summarized in Appendix B. It is expected that the user of this Trails Vision will familiarize themselves with the requirements of these resources and ensure that trail recommendations follow the intent of these resources.

3.3.1. Trail Strategy for BC

In looking at a Trails Vision and future work during Trails Master Plan development, one important document worth mentioning is the Recreation Trails Strategy for British Columbia. The Province completed this document in 2009 and it makes it very clear that trails, whether motorized or non-motorized, are recognized for the benefits they provide and are a high priority in the Province.

The vision of the document is to create a multi-phased approach to developing a trails strategy. The key components of the strategy are Collaborative Planning, Good Governance, Sustainable Resources, Effective Management, Comprehensive



Information and Strategic Marketing. The goal of the Strategy is a world renowned network of sustainable trails accessible to all, which foster social, cultural, health, economic and environmental benefits for trail users, communities and the Province.

In dealing with Provincial bodies to propose new trails in the Columbia Valley referencing how a trail meets the recommendations in this BC Trails Strategy will be important in obtaining approvals and authorizations.

4. Benefits and Value of Trails

In looking at the reasons for the preparation of a Trails Vision in the Columbia Valley and the development of trails in general, the benefits and value of trails is of key importance. The following summarizes various benefits of trails from different important perspectives:

4.1. Health & Recreation Benefits

An interesting way to look at the added value economics of trail development is to consider the increased health benefits of trail users within the context of reduced health care costs. In *A Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails* (Wang, G. et al., 2004), it was estimated that for each dollar spent on building, maintaining, and using trails, nearly three dollars were realized in reduced health care costs by the trail users due to improvements in their health.

4.2. Safety and Social Benefits

When trails are built to last with the user's needs in mind, a venue is created to provide an acceptable level of safety for trail users. The use of industry standard trail design specifications is important, no matter the user. Trails that do not meet the needs of the users may lead to the creation of non-sanctioned trails with poor quality features which can create major safety risks for trail users.

Trails provide increased opportunities for social interactions, facilitating better connection to other trail users, community space and nature. These opportunities foster social relationships and shared responsibility. According to Canada's Go for Green, improved self-image and social relationships, reduced crime rates, and a lifestyle encouraging youth to find their entertainment in healthy, wholesome pursuits, are all found to be by-products of local trail systems.

4.3. Education Benefits

Trails can provide excellent opportunities for users to experience nature, history, and culture in an "outdoor" classroom. Interpretive signage, guided tours, or programming result in educational benefits when trail development includes the opportunities presented by the environment, historical context, and location of the trail.

Identification of these opportunities is part of the trail planning process to ensure that routing and interpretive signage at points of interest, trailheads, rest areas, and other strategic locations can help tell a story to trail users and provide a deeper experience for those interested in learning more about the Columbia Valley and its surroundings.



4.4. Environmental Sustainability Benefits

Trails also provide an opportunity for people to interact and experience the environment in an immersive way. Paired with interpretive signage and other educational information, trail users become more aware of the value they place on protecting the wilderness areas around their communities. The existence and use of trails are both catalysts for this heightened sense of environmental awareness.

Current research looking at non-motorized trail usage suggests that, when properly built, trails can be constructed and maintained with minimal environmental impacts. Protection of the environment typically has more to do with the location, alignment, construction, and maintenance of the trail rather than the actual trail usage itself. Another by-product of a great trail network, according to IMBA, is that it should be so enthusiastically received by users that it will naturally reduce the amount of non-sanctioned trails. The above is not to say that all properly built trails will not have any environmental impacts. These impacts and mitigations need to be considered on a case by case basis.

The above applies not only to non-motorized use, but may be even more important for motorized trail use. ATV's, dirt bikes and other motorized vehicles can cause significantly more damage to the environment than non-motorized activities. With the popularity of motorized trail activity in the Columbia Valley, the planning for, placement, and construction of appropriate trails is of utmost importance to keep riders on trails and limit non-sanctioned trail development.



4.5. Economic Benefits

Wellness tourism, recreational tourism, and other forms of tourism are popular and growing around the world. These trends show that sports and adventure tourism are often combined with wellness tourism and developing facilities to cater to these trends can have significant economic benefit.

Trail systems are a key attraction for visitors to a region. Visitors are drawn not only to the quality and array of trails available but also because of the experience they have in an area. According to research conducted by Tourism BC in 2009, 25 – 30% of all travelers from North America who participate in either hiking or biking chose their destination specifically for these types of recreation.

Engaging government bodies, and especially local governments are key in maximizing economic benefit; they should be made aware of trail development efforts and encouraged to market them along with other attraction and retention strategies for their communities.

4.5.1. Economic Benefit Examples

There is a multitude of research and data available that provides validation of trails as an economic driver of a region or community. The following are excerpts from various studies for both motorized and non-motorized trail use:

1. Sea to Sky Mountain Biking Economic Impact Study, 2009

"The combined expenditures of non-resident riders on the trail systems in the three communities resulted in a total of \$9.3 million in new economic activity (GDP) and supported 194 jobs through the payment of just over \$6.3 million in wages and salaries." These economic figures do not include lift accessed trails at Whistler.

2. Economic Impact of Recreational Trail Use in Different Regions of Minnesota, 2009

"Statewide trail spending of \$2,422 million was estimated to produce \$2,953 million in gross output (total sales of local businesses including indirect and induced effects but subtracting imports). This contributed \$1,542 million to gross state product (GSP). Some 30,900 full-time and part-time jobs were supported by trail spending in various regions."

3. The Economic and Fiscal Impact of the Hatfield- McCoy motorized Trail System in West Virginia, 2014

"The analysis indicates that the nearly \$1.7 million in spending conducted by the Hatfield-McCoy Trails for **day-to-day operations generated an additional \$1.6 million** in economic activity within the State, for a total operational impact of \$3.3 million. Even more notably, the Hatfield-McCoy Trails bring non-local visitors to the area whose spending is estimated to generate an additional \$19 million in economic activity in West Virginia. **Together, the total estimated economic impact of the Hatfield-McCoy Trails is more than \$22 million.**"

4. Economic Benefit of Trails and Greenways, Rails to Trails Conservancy

"Realizing the selling power of greenways, developers of the Shepherd's Vineyard housing development in Apex, North Carolina added \$5000 to the price of 40 homes adjacent to the regional greenway. Those homes were still the first to sell."

5. ECONOMIC IMPACTS of MVSTA Trails and Land Resources in the Methow Valley, 2005

"**The MVSTA trail network plays strongly into respondent's real estate purchasing decisions.** 81.3% of the 337 respondents who addressed the question, had considered buying real estate in the Methow Valley. Of this, an astounding 92.6% indicated that the trails network was either "most important" (65%) or "important" (27.6%) in their purchasing deliberations."

4.5.2. Destination Attractiveness

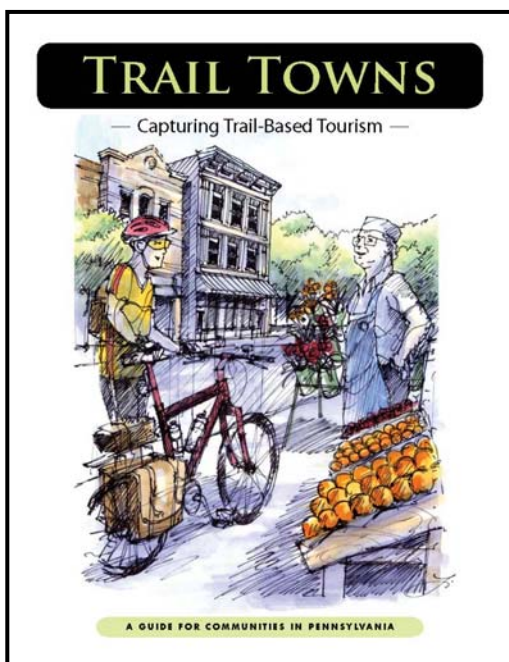
Trail systems are a key attraction for visitors to the region. Visitors are drawn not only to the quality and array of trails available but also because of the experience they have on the trails. In addition, the amenities provided are key. The adjacent slide was presented at the 2015 Western Canada Mountain Bike Tourism Symposium in Williams Lake, BC, by



Zachary Cole, University of North Carolina Greensboro, Bryan School of Business and Economics, when discussing the “ideal mix of attributes” that make for a mountain biking destination. Based on his research, the larger the letters, the more important was the attribute to having an economically viable trail. In looking at other trail destinations and at hiking, skiing, and other trail uses, there is some commonality in the research.

4.5.3. Economic Benefit to the Columbia Valley

The Columbia Valley has a huge potential for trails related tourism. The document, *Trail Towns – Capturing Trails Based Tourism*, captures the essence of what it takes for a town to become a trails destination. The following text from the document provides that description. The descriptions congers up a charming image and is what Invermere, or possibly the other communities in the study area could strive to become:



“A “Trail Town” is a destination along a long-distance trail. Whether on a rail trail, towpath, water trail, or hiking trail—trail users can venture off the trail to enjoy the scenery, services, and heritage of the nearby community with its own character and charm. It is a safe place where both town residents and trail users can walk, find the goods and services they need, and easily access both trail and town by foot or vehicle. In such a town, the trail is an integral and important part of the community.

A Trail Town is a vibrant place where people come together. It may have a bike shop, an ice cream parlor, casual restaurants, a grocery store, and quaint local shops. It has wide sidewalks, clean streets, bike racks, and benches at convenient locations. It has places to rest for the night. It generously meets the needs of both the trail users and the town residents. A Trail Town is a friendly place that encourages trail users to visit and welcomes them with warm hospitality.

Trail Towns are not stand-alone communities; they are linked by the trail corridor. Trail users may be passing through a town on a day trip or long-distance trek, or may drive to a community and park to access a river or trail.”

The 2012 document by the Outdoor Industry Association of America, *The Outdoor Recreational Economy*, states, “...outdoor recreation is a growing and diverse economic super sector that is a vital cornerstone of successful communities that cannot be ignored. Most importantly, outdoor recreation is no longer a “nice to have,” it is now a “must have” as leaders across the country recognize the undeniable economic, social and health benefits of outdoor recreation.” The Columbia Valley is ideally situated to take advantage of consumer and visitor spending by establishing a trail based recreational economy where, “For every dollar spent on gear and vehicles, an estimated four dollars in spending on trips and travel results”.

4.5.4. Economic Benefit by Trail Use

One additional important piece of information in considering strictly economic benefit is in regard to typical spending by different trail users. While trail development, in general, contributes to economic vitality, one of the fastest growing forms of recreational tourism is currently mountain bike tourism. As one example with recent data to support this rapid growth, in *An Economic Impact Analysis of the Proposed Alignment of the Trans Canada Trail in East-Central Alberta*, it states, “Bikers typically spend larger amounts of money than hikers and

cross-country skiers, preferring to stay in higher quality accommodations...rather than tents or hostels. As a result, they typically have higher daily expenditures than hikers or cross-country skiers.”

This is not to say that other forms of trail use do not bring economic value to a region and that other trail users do not contribute to a local economy. Nipika Mountain Resort is a perfect example of where cross country skiers will spend money for a quality experience. However, there is significantly more research and data on the effects of mountain bike tourism on a local economy than other forms of trail use.

In addition and in regards to motorized trail use, there is also significant data on the correlation between the cost of equipment needed to use the trails and the economic benefit to a region. Moab, Utah is a great example of the economic benefit to the region, as a result of the annual Jeep Safari.

5. Existing Trails Description

The landscape within the Columbia Valley, full of mountains, glaciers, rivers and lakes offers tremendous features of natural beauty as a draw to tourists and residents alike. It has excellent hiking, biking, paddling, and motorized trails that already exist on the landscape, linking people to many of the points of interest. With the warm dry weather the valley experiences and the early season snow melt, the valley bottom has an advantage of being able to market the shoulder season over many other areas.

There are a number of existing trails within the Columbia Valley; many of them are identified on the maps prepared for this document. However, many of the existing trails in the Columbia Valley are also showing the classic signs of an area without a trail vision. A number are sanctioned by the government but the majority are non-sanctioned. While the trails partially serve the needs of the seasoned locals, there appears to be a general sense of the trails being hidden from authorities, land owners, and consequently tourists. As such, the trail system has minimal promotion or signage to find the trail networks or stay on them after they have been located. As many trails “just exist” on the landscape without clear designation or ownership, these trails are being used by all modes of transportation, leading to conflict and erosional issues. Consequently, as the specific needs of each user group are not being met, users go build their own “pirate trails” wherever they desire hiding from the authorities. For these reasons, there is a need to address the non-sanctioned trails through a proper Trails Master Planning Process.

The following provides some general information on the existing state of the various trails and facilities by user groups. See Appendix G for maps of existing sanctioned and non-sanctioned trails.

1. Hiking/Walking

- Most hiking trails in the Columbia Valley are destination based leading to mountain peaks, glaciers, or lakes. Being a broad valley, most of these trails have very remote trail heads which have rough roads that may be washed out, and little to no signage or trailhead amenities. Pedley Pass and Brewer Creek are examples.
- There are some easy walking routes on the municipal paths within and near the communities. The Old Coach Trail helps serve this purpose, and the new Westside Legacy Trail will as well. The ITS (Invermere Trail System) is a well organized, well marked system.

2. Cycling

- Road cycling is limited to the main highway (93/95) and a few secondary roads.
- There are many mountain bike trails throughout the area ranging from beginner to advanced. Some are sanctioned, however, the majority are not, similar to other locations in BC.
- There are roughly 150km of sanctioned trails, versus areas of similar size typically have 400-600km sanctioned.
- Winter fat biking typically occurs on mountain bike trails or on selected trails in Nordic ski areas.

3. Trail Running

- Trail runners tend to use mountain bike or hiking trails for short and long distance trips.

4. Cross Country Skiing

- Both Panorama and Nipika offer groomed cross country skiing. The WhiteWay ski trail system on Lake Windermere and the Lillian Lake area are also both popular skiing locations.

5. Motorized Trail Users

- Summer motorized trail users consist of dirt bikes and All Terrain Vehicles (ATV). Some use is on sanctioned trails and some is not.
- The most popular locations are Paradise Mine, Bruce Creek, Steamboat, and Canal Flats.

6. Other Trail Users

- There are other trail users in the Columbia Valley, including equestrian. Given that no members of the CVGTA are involved in equestrian activities, it will not be discussed further. However, it is important that the potential for other trail user groups be considered when proposing new trail alignments.
- The Columbia River, from Invermere to Radium Hot Springs, could be considered a trail system. This is mostly an “easy float” in an area with much vegetation and wildlife; many users create longer trips further downstream. The Kootenay River is also a popular white water paddle running from the Nipika region to Canal Flats.



6. Proposed Trail System

The vision for the trail system in Columbia Valley is to develop a logical and inviting trail network that reduces user conflict, is environmentally friendly and is built to require minimal maintenance. A few overarching principles of trail layout and design were applied during the visioning as follows:

1. **Creation of Central Hubs for the staging of hikes and rides, provide consistent signage**
2. **Connecting existing trail systems to Community business centers**
3. **Reducing the reliance on vehicles to drive to trail heads**
4. **Build trailhead facilities at all trails and perform regular maintenance of existing trail heads**
5. **Creation of more trails for learning how to mountain bike and progressive difficulty stacked loops**
6. **Creation of more small loops close to communities**
7. **Amalgamation of intersections to decrease decision points**
8. **Providing adequate quantity of challenging trails to prevent rogue trail construction**

6.1. Central Hub

The vision for each community is to have a logical central hub from which trails and facilities radiate. Locating a central hub close to amenities like visitor centers, bike shops, and food and beverage businesses allows for a seamless flow from arrival to information gathering, recreating, and food/drink. The central hub is also an important welcoming stage to the visiting mountain biker or hiker. The trailhead kiosk should have a map on it that outlines the trail loops, lengths and difficulty of the loops, and relevant points of interest along the loops, allowing a trail user to plan their route.



City of Fernie – Central Hub

Part of the concept for the central hub at a mountain bike trail head is to have a bike “fixit” station, a bike wash station, and possibly a pump track and skills area located directly adjacent to the trailhead kiosk. Pump tracks and bike skills areas offer the bike enthusiast an opportunity to practice their technical riding abilities so that they will be prepared for the conditions encountered along the recreational trail system. This can be important when considering potential liability for riders on inappropriate trails compared to their abilities.

6.2. Proposed Trails

In coming up with a proposed trail network, it should be recognized that a Trails Vision document is general in nature. The suggestions provided are based on our knowledge of the area and what facilities and product make for a quality trail destination. It is also significantly based on feedback during the stakeholder and public consultation process. A Trails Vision document should be a “living document” and user groups should continually review this plan and make additional trail suggestions (or eliminate trails) as a trail system evolves.

The proposed trail system is meant to address many of the gaps in the current system. Through smart trail layout, it will also address many of the needs and wants of the locals and tourists by providing trails they desire. This in turn tends to reduce rogue trail construction. As an example, the process of creating this Trail Visioning document has already galvanized the local cycling community to reduce unsanctioned trail development and embark on a process of properly sanctioning trails. In addition, by providing great hiking, riding, and motorized areas, use will be focused in specific areas to decrease conflict currently present in the trails system.

When considering each type of user mentioned above, broad generalizations can be made. Users typically want to recreate on a loop. A loop provides twice the experience compared to an out and back. A loop also provides a sense of accomplishment, whereas unless an out and back provides a meaningful destination at the end like a viewpoint, waterfall, or mountain summit, it leaves something to be desired by the user. Most of the trails that are proposed as concepts in this document should either provide loops or connect existing trails to complete a loop.

Much of the previous recreation planning in North America is centered around the automobile. With the busy lifestyle of North Americans, time spent driving is time that could be better spent recreating. A central theme to the proposed trail design is to allow the vehicle to remain parked in the community and the user to recreate without having to drive to the trail head. This is crucial in terms of capturing economic spin offs from tourists. Take for example a visitor from Calgary, who drove to Invermere to ride the mountain bike trails at the Kloosifier. They need to drive to the trailhead on the roadside and park, go for their ride, and then hop in the vehicle again. Now they are already in the vehicle, and it is just as easy to point back to Calgary to eat at home or on the road, without spending a dollar in the local economy. However, if the main trailhead was directly in Invermere with excellent trails starting and ending right there in Invermere, users can finish their bike ride and walk to food and beverage locations.



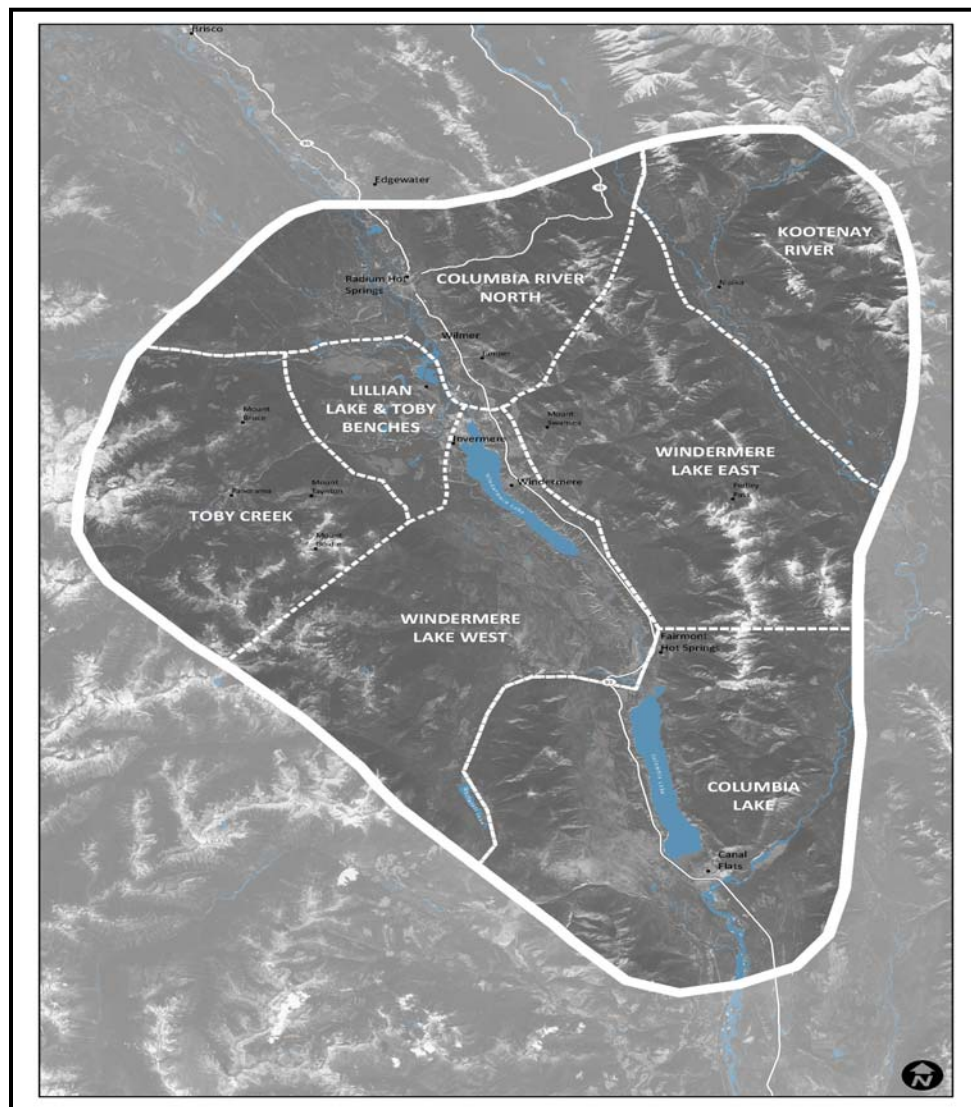
Undesirable Trailhead Parking Situation

The same logic applies to accommodation. Providing a recreation friendly community where a tourist can come and camp or stay in a hotel and recreate directly from their accommodation is extremely important for the destination attractiveness. As previously noted, camping is a major attribute that destination travelers are looking for and is something that the Columbia Valley could use more of. To compare the Columbia Valley to the adjacent successful ride centres of Golden or Fernie, both of these areas have a campground within easy distance to a significant trail network. Families with young children can allow one parent to recreate while the other cares for the children and then switch. For one parent to drive to the trail head with the family vehicle

becomes a logistical nightmare if the other parent is relying on it as a storage locker for food and gear. By eliminating the need to drive, another barrier to recreating, and hence visiting as a tourist is removed.

The following section describes two main trail systems connecting the Columbia Valley before discussing the specifics of each of the seven subsets of the study region. The North/South connector is the Westside Legacy Trail, and the East West Connector is the High Alpine Epic Trail. The subset regions shown below are; Kootenay River, Columbia River North, Windermere Lake East, Lillian Lake and Toby Benches, Toby Creek, Windermere Lake West, and Columbia Lake. All of the trails that are discussed are conceptual in nature and will require the complete approval process and ground truthing before any construction is initiated. As previously noted, the maps in the following sections only show the known, existing trails. It was desired by CVGTA that no proposed trail alignments be shown on the maps.

It is important to note that the trails have been conceptualized to provide an ideal network. Significant work with government, private land owners, tenure holders, and others will be required to see them move forward. Once unsanctioned trails have been approved, or plans for new trail construction are underway, each local government should also be informed to coordinate marketing efforts for the overall region.



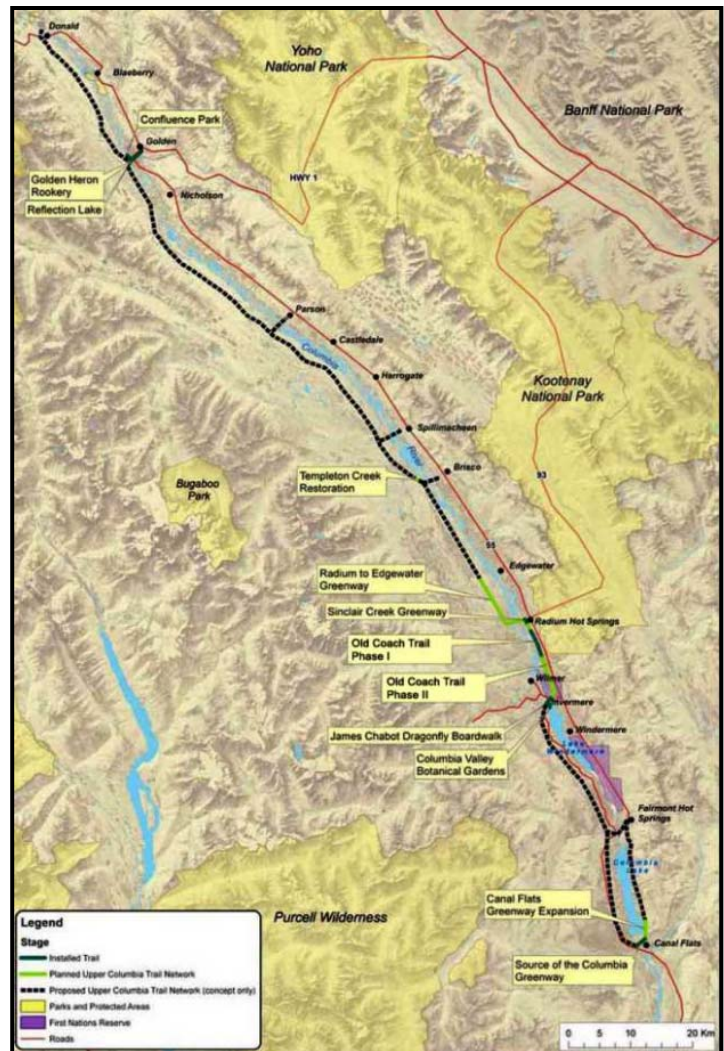
MAP 1 – SEVEN SUBSET REGIONS

6.2.1. Westside Legacy Trail

Planning for the Westside Legacy Trail has been spearheaded by the Columbia Valley Greenways Trails Alliance and is well underway. This paved multi use trail will cater well to users interested in: road cycling, recreational cycling, walking, running, roller skiing and other small wheeled activities. According to the CVGTA website;

“The Westside Legacy Trail will be a multi-use, non-motorized, paved trail. The initial phase will connect the communities of Invermere and Fairmont Hot Springs. It will be located on the west side of Lake Windermere paralleling Westside Road, constructed primarily on private land, and within Ministry of Transportation right-of-ways. The total length of the trail will be approximately 25 kilometers long, five meters wide with a three meter paved width and a painted centerline. The planned cost is estimated at \$5,000,000.

The Westside Trail will be a dynamic landmark that will have many positive effects on the area including community health, environmental awareness, economic development, and safety for the increasing numbers of non-motorized travellers along Westside Road.



MAP 2 – WESTSIDE LEGACY TRAIL

It is envisioned that the Westside Legacy Trail will eventually be extended south to Canal Flats and north to Radium Hot Springs.

Additional information on the trail can be read on the Greenways Trail Alliance website. Please also see Section 6.2.7 for related recommendations.

6.2.2. High Alpine Epic Trail

What will it take to bring a tourist to ride, run, or hike in the Columbia Valley? The high alpine epic trail is a proposed linkage of trails and communities that is unique and substantial enough to draw tourists from far afield. This proposed trail could be broken up into many segments, however with proper marketing it could be sold as the entire package. For best marketing results, the trail would cater mostly to trail users with endurance and competent back country skills.

The vision is that a user would arrive in Invermere and spend the night. From Town, they could access the Kloosifier, Johnson, and Barbour Rock trails before climbing to the ridge of Mt Bruce. From there, a number of options present themselves to ascend to a high alpine route through nearby mountain terrain and then descend into Panorama. The ridges would offer phenomenal views and a southern return route could be selected based on future assessments with the loop ultimately ending in Invermere.



Typical High Alpine Trail

Between Invermere and Mt Swansea a new trail would need to be built, connecting to the existing trail taking users to the top of Mt Swansea. From Mt Swansea the alignment could follow alpine ridges and take users to Nipika Mountain Resort where they would spend another night. A shuttle system could be utilized to take them back to Invermere.



Mountain Ridge in Nipika Area

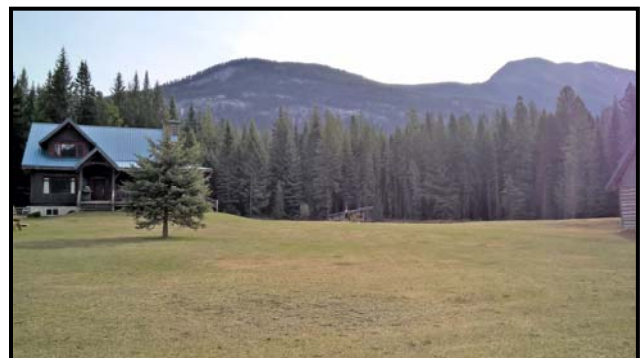
From Mt Swansea, the alignment to Nipika is conceptual and will need to be walked to ensure any rock and cliffs encountered can be navigated through. In addition, the concept could be contentious and there are many levels of approval required. To best showcase the area, this section should travel in the high alpine and as much as possible. It should also link into Nipika as directly as possible to ensure trail users stop in Nipika. Please note that while the Bear Creek trail exists in the vicinity between Mt Swansea and Nipika, this is an extremely challenging trail that would require extensive upgrading to make it usable. The connection

trail needed to get back to Nipika would also defeat the intent of the High Alpine Epic Trail.

It is envisioned that a trail of this nature could be navigated by cyclists in one day from end point to end point. However, hikers may take longer than one day and intermediate camping areas may be required.

6.2.3. Kootenay River

The Kootenay River Area includes the Cross River Canyon Recreation Site and Nipika Mountain Resort. This area offers significant cross country skiing and cross country mountain bike trails. The trail system is constructed in such a way that trails are also enjoyable to trail runners and hikers. Recently, fat bike trails



Nipika Mountain Resort

have been constructed and groomed, and there is room to grow the fat bike trail network.

The following are proposed key improvements. Map 3 shows Kootenay River Area.

1. Consistent signage and mapping are required.
2. Make trails of consistent difficulty along the entire length. Various trails are of beginner difficulty for kilometers with an expert difficulty section and no ride around.
3. Build trails wide enough to double as fat bike trails in the winter.
4. A significant portion of the trails at Nipika are constructed “old school” and are extremely rough with tree roots. Upgrading a selection of these trails to provide faster smoother riding would help Nipika to appeal to a wider clientele.
5. A pump track in the middle of the meadow below the fire pit is proposed.
6. Nipika could consider adding trails to the steeper rocky hillsides nearby. This would open up their trail system to hiking for views.
7. Consider serving food and beverages to day users.

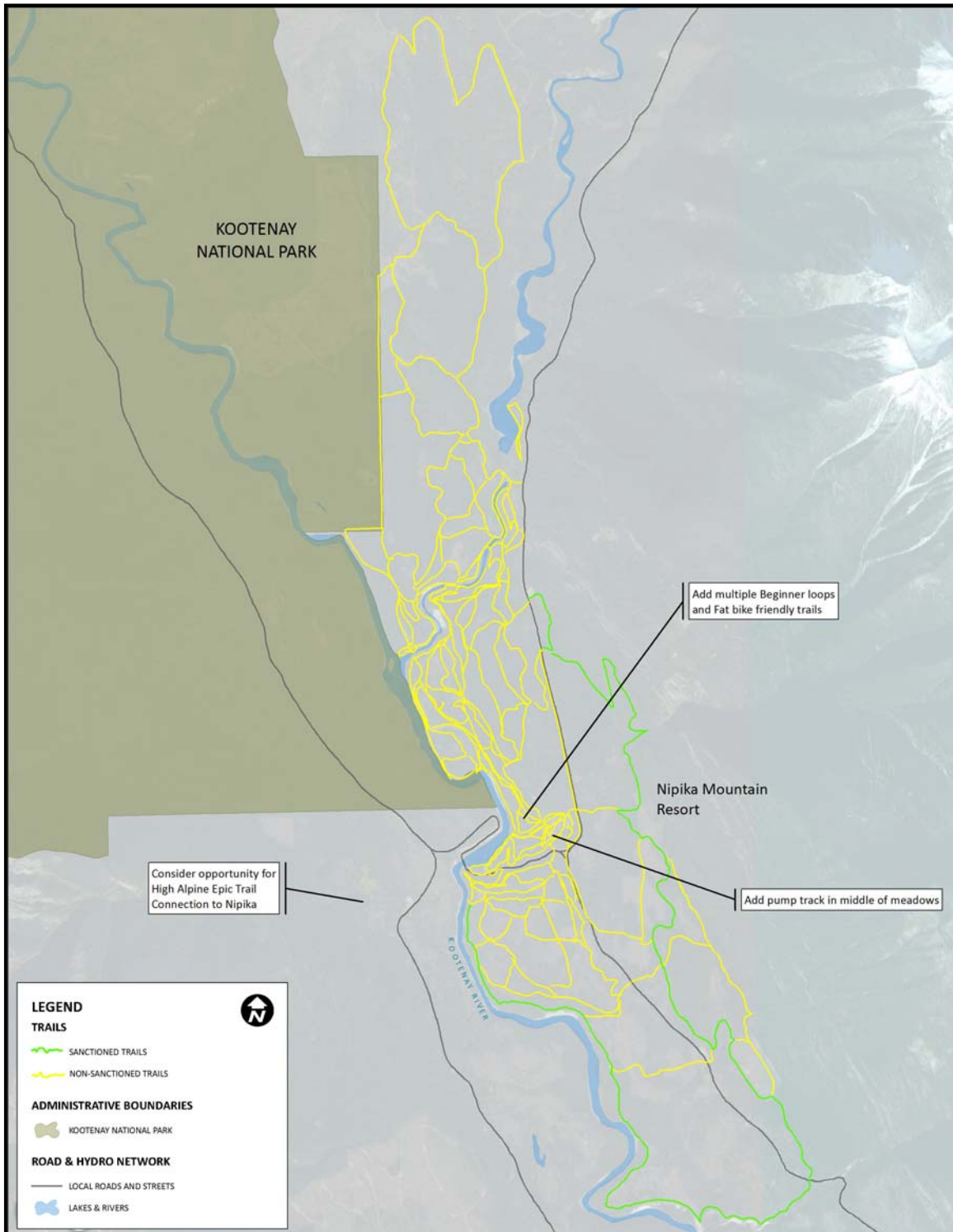
6.2.4. Columbia River North

Within the Columbia River North, the Radium Area is best known for their hot springs and golf course. Trails are proposed to link the entire area together and provide more walking, running, and riding opportunities in the core of the community with looped trails branching out. The following are proposed key improvements. Map 4 shows the Columbia River North Area.

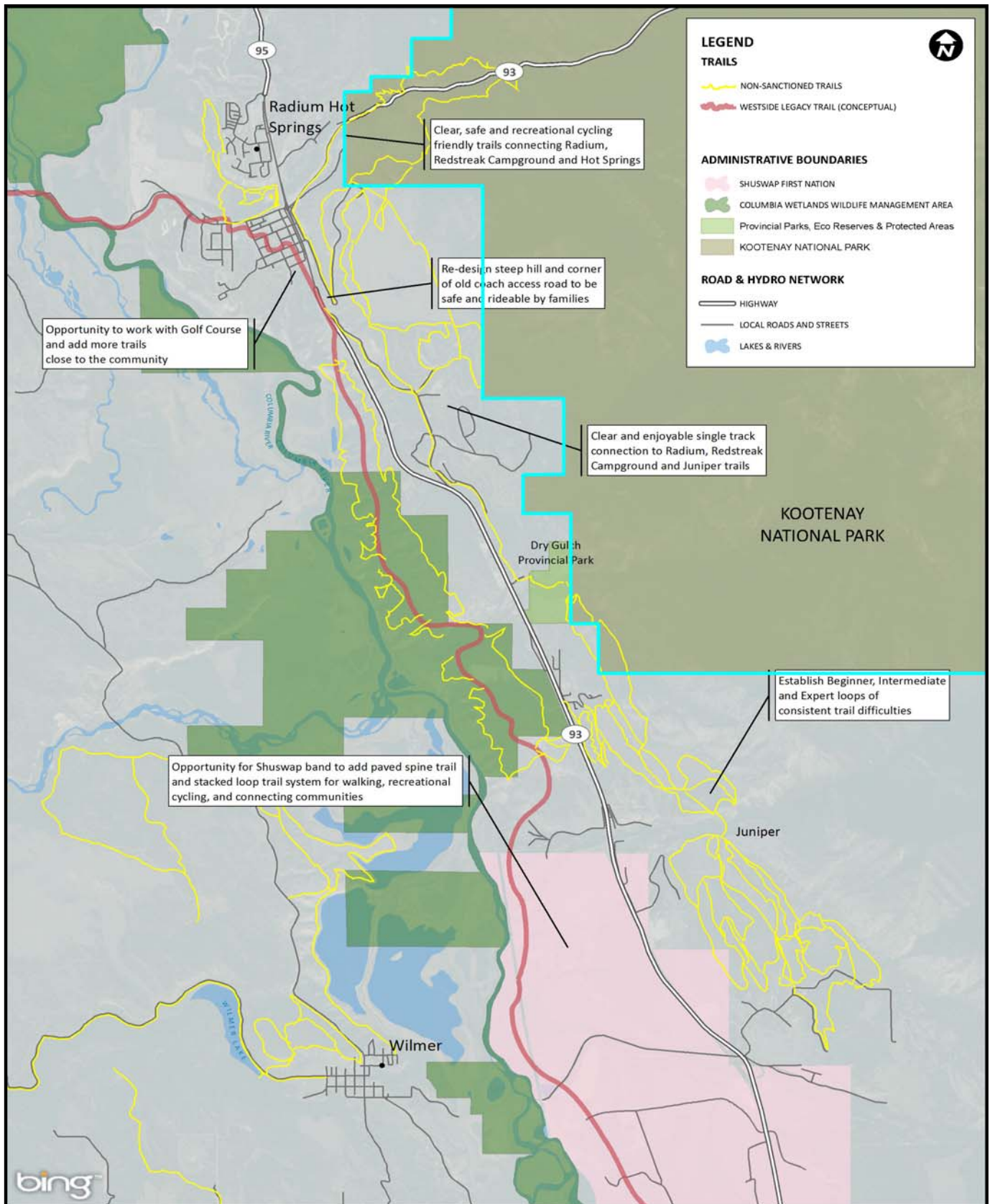
1. The Village of Radium Hot Springs should be connected to the Parks Canada Hot Springs and Red Streak Campground with a pathway that families can ride or walk. In addition, an easier trail would be beneficial from Redstreak to the Hot Springs, creating a loop between the most used amenities.
2. Deja View and Juniper trails south of Radium are popular trails, however, they are also unsanctioned. Meaningful discussion with the provincial bodies are required to either sanction these trails or take appropriate measures.
3. Connections from Juniper to the Dry Gulch Campground and Redstreak Campground are recommended. Especially the Dry Gulch Campground could offer a “stay and play” style of camping. Various stacked looped mountain bike trails with varying difficulty levels are suggested in the Juniper area.
4. A trail up Mt Redstreak from the campground would provide for a meaningful day use trail for campers.
5. A municipal trail system exists in Sinclair Canyon, however, some maintenance on the existing trail surface is required. Additionally, a pump track exists but is in a state of disrepair. While a good concept, the trail system needs better accessibility, signage and additional stacked loop trails to rejuvenate the area.
6. The Steamboat area on the west side of the Columbia River from Radium contains unsanctioned

motorized and mostly downhill mountain biking trails. All trails should undergo a sanctioning process and be constructed as per industry standards. Additional downhill beginner and intermediate level trails and a climbing trail should be constructed here.

7. Extend the Westside Legacy Trail north from Invermere to Radium Hot Springs.



MAP 3 – KOOTENAY RIVER



MAP 4 – COLUMBIA RIVER NORTH

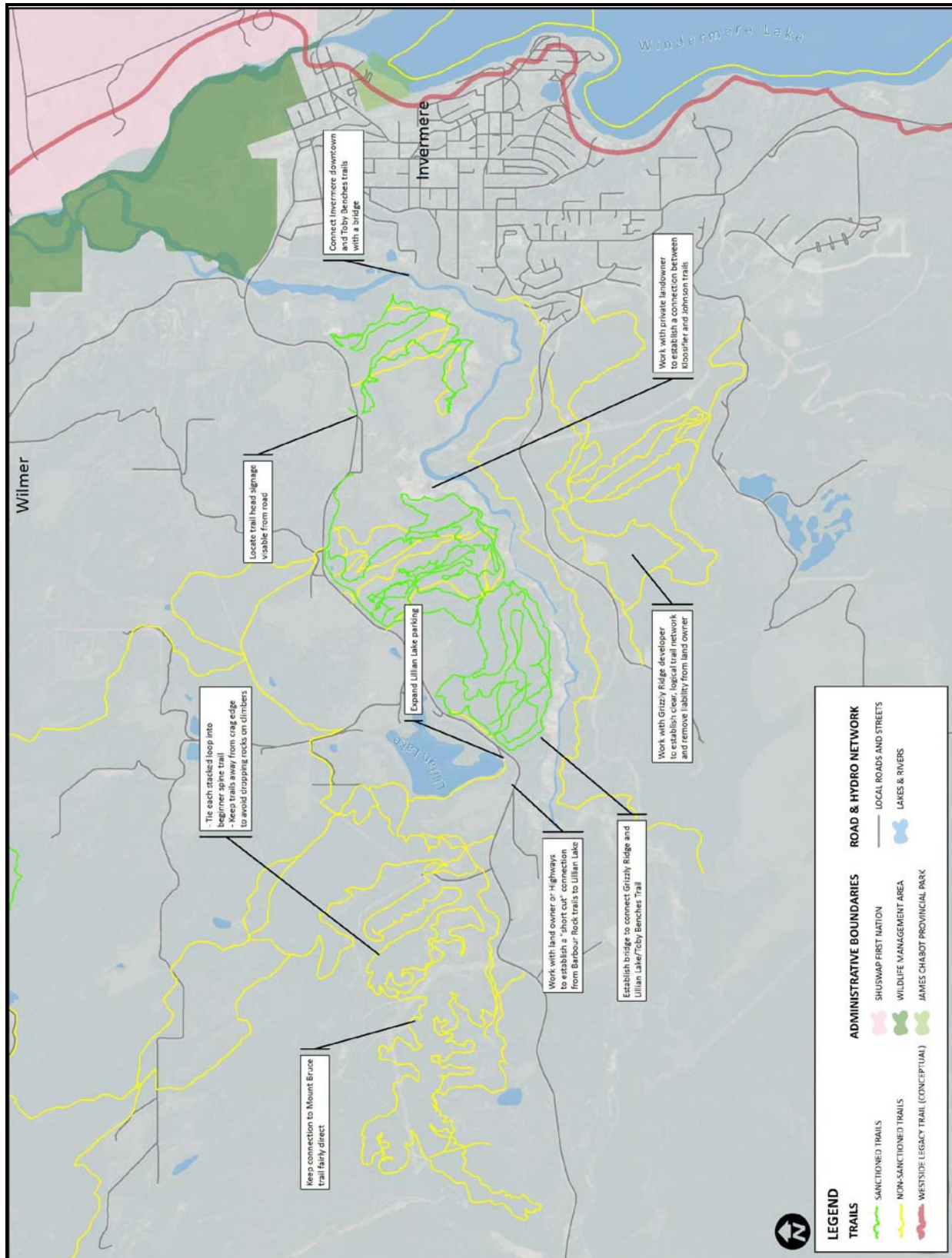
6.2.5. Lake Lillian and Toby Benches

A major aspect of making the Invermere area more trail friendly is based on concepts previously mentioned. These include establishing a Central Hub and creating a “Trail Town” culture. With Invermere currently being relatively isolated from the sanctioned trail network, the focus should be on linking the community with an interesting trail network nearby. The Toby Creek escarpment and the surrounding trail systems are a logical place to create an exciting network. Map 5 on the following



page shows the Lake Lillian and Toby Benches Area. The following are ideas and issues for the area.

1. A Central Hub should be created in Invermere. A logical place for this would be near the Mt. Nelson Athletic Park, as shown in the above picture. This location already has a paved trail to it, other recreational facilities, and washrooms.
2. A hiking/biking loop could be created from Invermere and along both sides of Toby Creek, offering spectacular views. Two bridges would be required over Toby Creek, which could be a spectacle in itself.
3. Because portions of the above trail are entirely on private land, partnerships would have to be reached. A properly built trail network adhering to industry standards can help to remove the liability from the land owner and insurance could be carried by a separate entity for the trail network.
4. Barbour Rock has been identified by the CVCS as an area to develop mountain bike trails. These trails are currently going through the application process with RSTBC, with the intent of becoming a “legally established” trail system. The following are suggestions, based on the current proposals:
 - Tie each loop back into the beginner spine trail so they can be ridden as individual trails;
 - Keep the trails away from the cliff edge at popular climbing routes to avoid the chance of dropping rocks on climbers;
 - Keep the trail to the proposed Mt Bruce trail fairly direct (but of 10% grades) to appeal to hikers as well as mountain bikers;
 - Investigate a short cut connection in the road right of way connecting Barbour Rock to Lillian Lake;
 - Construct multi-use trail network to be accessible by a larger user group.
5. The trail loop identified above could also be part of the access to the Kloosifier, Johnson, Lillian Lake, and Barbour Rock trails.
6. Feedback during the public survey indicated that many of the hiking trails were too far away and too hard or long from Invermere. The loop described above, with minimal elevation gain along the scenic banks of Toby Creek, would help provide an opportunity for these users. A few sections of the existing trail system would need to be straightened and rerouted to accommodate the more linear desires of hikers. The connection between the Kloosifier and Johnson would be imperative to making this hiking loop a success as it continues a logical trail loop and keeps the loop at a reasonable distance. The bridge location should be close enough to Invermere to keep the loop in a reasonable 8-12 kilometer range.



MAP 5 – LAKE LILLIAN AND TOBY BENCHES

6.2.6. Toby Creek

Currently the Toby Creek Area, which includes Panorama, is separated physically and psychologically from the rest of the Columbia Valley. The proposed trails augment what Panorama has to offer, as well as providing linkages to the Invermere area. The following provides recommendations for the Panorama area. Map 6 shows the Toby Creek Area.

1. A Central Hub would also be appropriate in Panorama, with facilities and trails previously described.
2. As part of the High Alpine Epic Loop, a trail is proposed which would take a user to the summit of Panorama and loop back to Invermere.



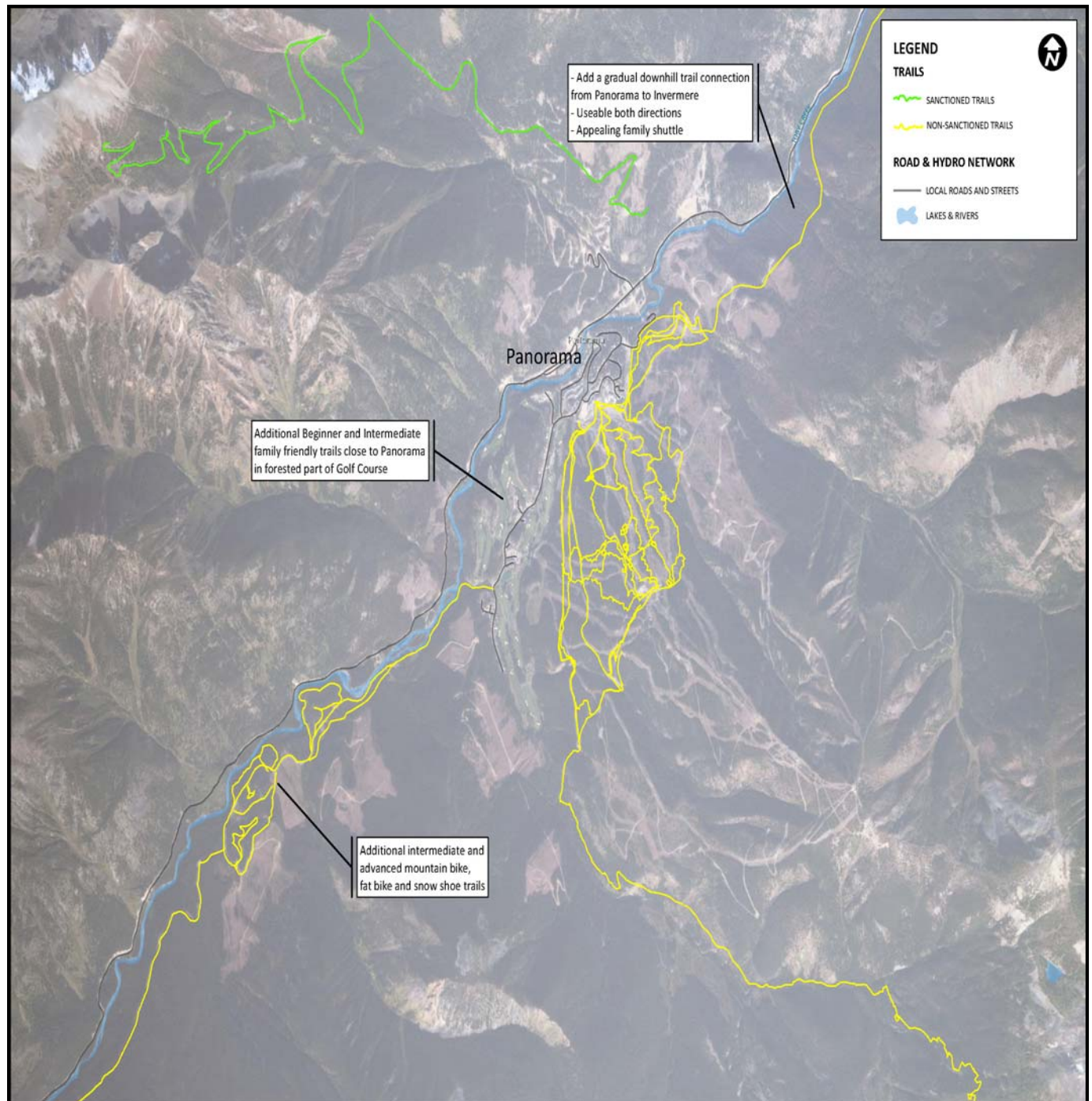
3. Between Lillian Lake and Panorama a trail is proposed to gain the ridge on Mt Bruce shown in the photo above. It would travel along the ridge and descend all the way to Panorama.
4. The 11.5 kilometer hiking trail at Brewer Creek is a popular hike. The access road needs upgrading so that users do not need a 4x4. Signage along Westside Road to the trailhead is also required to make it easier for tourists to find the trail.

6.2.7. Windermere Lake West

Increasing the connectivity between trails and the community of Fairmont is the main recommendation of the Trails Vision as discussed below. Map 7 provides for both the Windermere Lake East Area and the Windermere Lake West Area.

1. With the proposed Westside Legacy Trail currently connecting to the Fairmont area, this trail can be used as an economic driver for the community. Tying the trailhead and parking directly into the community to the local food and beverage amenities, shops, and beds will be the best way to capture tourist spending. Routing the trail alignment north of the airport, across the Columbia River, and directly through the community and downtown will maximize tourist visits; the current alignment could be a detriment.
2. The Hoodoos offer a significant point of interest of the local landscape. Visitors can see the Hoodoos from the highway, but few people stop to hike to them. Clear signage leading a user directly to the trail head will help increase user awareness and visitation.

3. A Central Hub would also be appropriate in Fairmont, with facilities and trails previously described.
4. Motorized use and damage to the trails has occurred in the Rushmere area. Discussion between user groups of this area needs to occur to determine if the entire area or portions of it should be sanctioned for motorized use.



MAP 6 – TOBY CREEK

6.2.8. Windermere Lake East

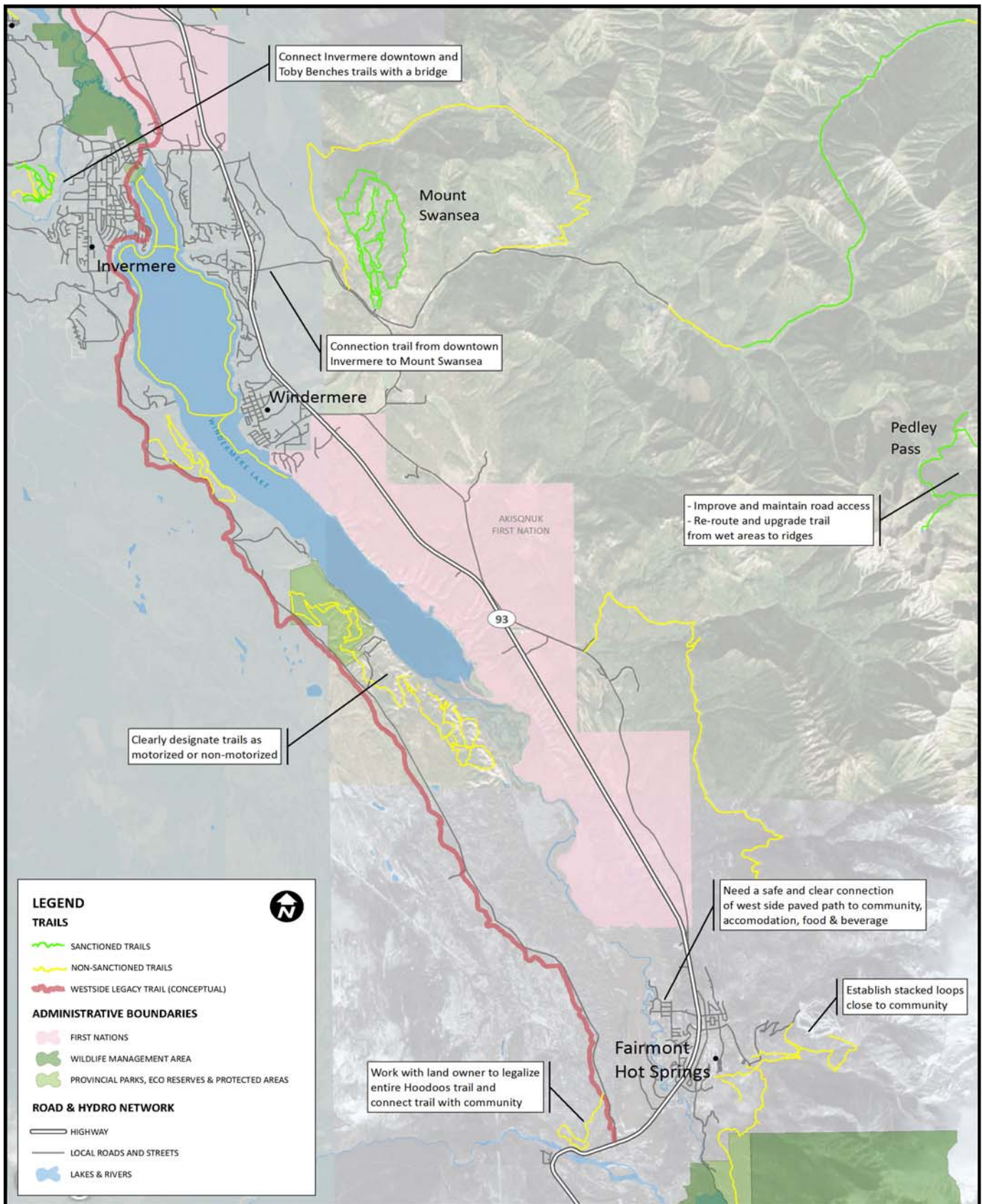
The general recommendations for the Windermere Lake East area are provided below. Map 7 provides for both the Windermere Lake East Area and the Windermere Lake West Area.

1. Pedley Pass is a popular hiking area taking users to a small tarn with fossils. The largest impediment to trail users is the driving access, as the CVGTA website indicates a “high clearance vehicle” is required. This eliminates many types of vehicles. Clear signage is required for easier access. Some trail re-routes and improved trailhead facilities are already proposed by the Summit Trail Makers Society.
2. The rebuild of the access road on Swansea Mountain is a success story of collaboration between the Summit Trail Makers Society, the Columbia Valley Cycling Society, and the hang gliding/ paragliding group. This has provided easier access to hiking trails. An easier mountain bike descent would eliminate riding downhill on the up track trail. A campground facility at the base of the road would increase the destination attractiveness of the area.
3. A connection between the community of Windermere, the proposed High Epic Trail, and Mt. Swansea would allow for non-vehicular access to the trails systems. In addition, a paved or gravel trail between Invermere and Windermere would have a huge benefit for Windermere and Lake Shore residents. Property locations along the lake may complicate this idea.

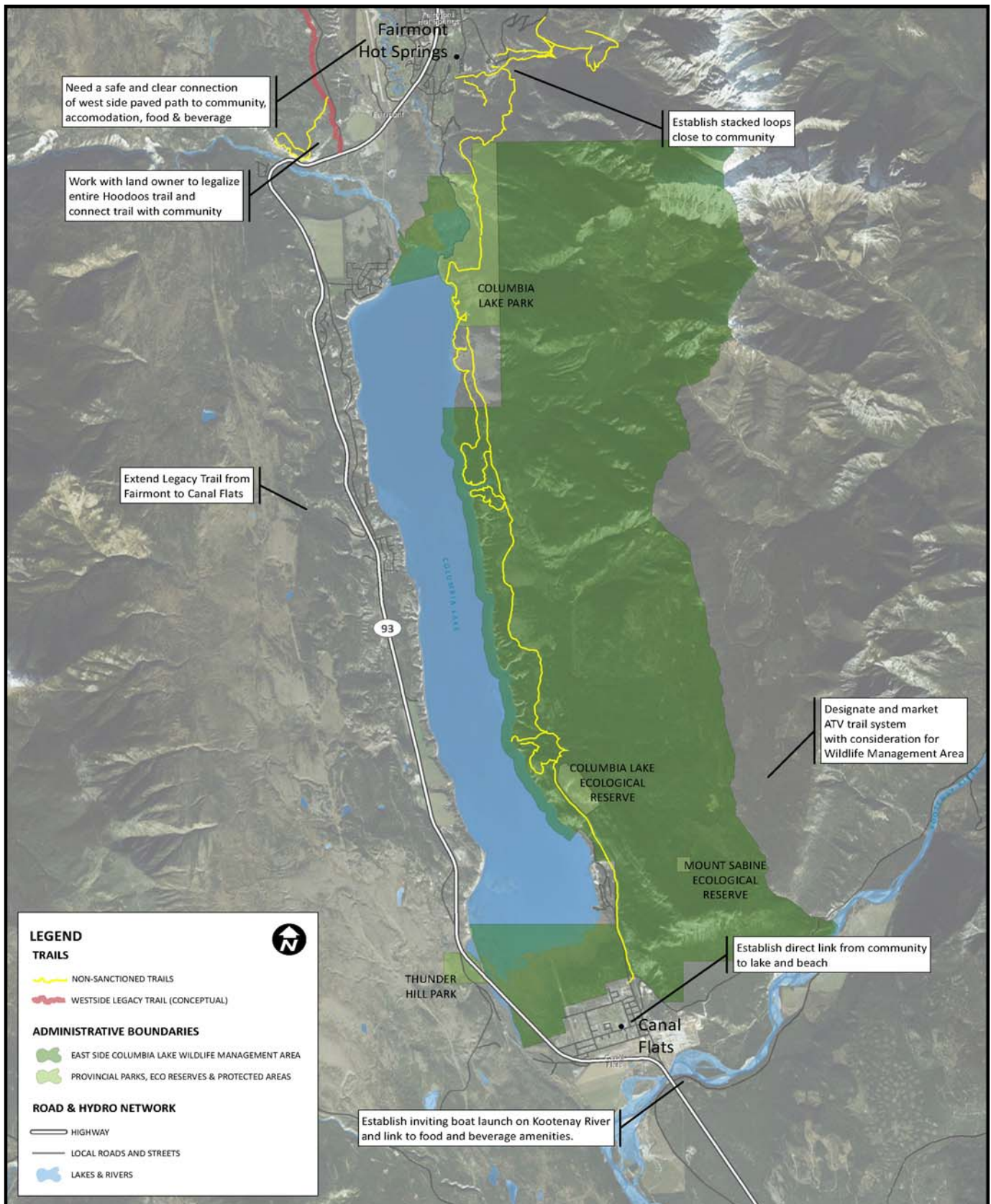
6.2.9. Columbia Lake

Map 8 shows the Columbia Lake Area. It encompasses the area including Columbia Lake to Canal Flats. The following are recommendations for the region:

1. The East Columbia Lake trail is an existing non-sanctioned trail that passes through Nature Conservancy of Canada Land, Columbia Lake Provincial Park, a wildlife preserve, and the Columbia Lake Ecological Reserve. It is also a very old trail with First Nations history to it. An analysis of its appropriateness should be done and appropriate measures taken.
2. Extend the Legacy Trail from Fairmont (once it is completed) to Canal Flats. Further study is required to determine which side of Columbia Lake is most appropriate considering environmental, economic, and social trade offs.
3. Canal Flats currently has a lot of motorized users at the nearby Mt. Sabine. Designating Canal Flats as the main motorized hub for the Columbia Valley is suggested. This would require a Central Hub area, specific to motorized use in Canal Flats.
4. An untapped economic driver for Canal Flats is the Kootenay River. As previously discussed, the waterways in the region could also be considered trails and Canal Flats is a popular take out. “Trailhead” facilities catering to paddlers are also recommended.



MAP 7 – WINDERMERE LAKE EAST & WEST



MAP 8 – COLUMBIA LAKE

6.3. Signage

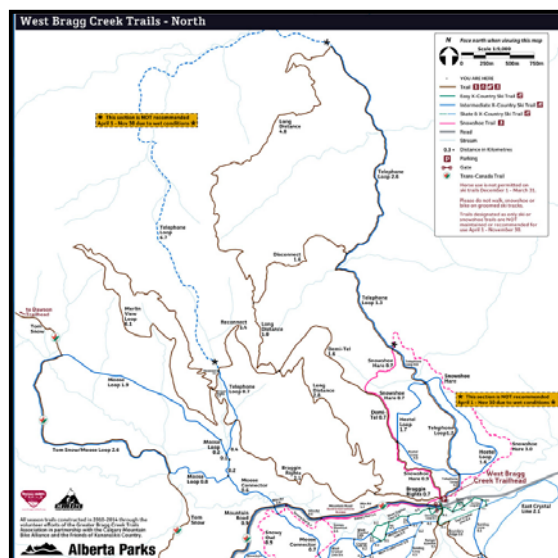
Signage is the largest barrier to a tourist navigating the trails system in a logical and efficient manner. In the Columbia Valley there is a significant lack of signage to take a tourist from the highway to the trail head. Signage that is not consistent and with enough information will be a hindrance to users figuring out trails.



By far the most successful trail signage system for wayfinding navigation is “the bread crumb” style. This means that a loop of consistent difficulty is all flagged with the same image or color (for example, an orange square) allowing a user to put the map away and make instant decisions at each intersections. This style of signage could be applied to all trails discussed in this plan. Trail maps or staff at outdoor shops can then inform users to follow a loop based on their desires for difficulty and duration.

As CVGTA works through the process of developing new trails in a phased approach, using a professional looking yet inexpensive Chloroplast sign for the maps would be economical as the map will need to be continually updated. The Bragg Creek Trail system is a good example of this and is shown to the right.

For users navigating the trail system, CVGTA could link their online map to the reputable and internationally renowned website and app Trailforks.com. This app is downloadable and with a smart phone a user can tell exactly where they are on the trail system, even without cell service. Users and CVGTA members can also use Trailforks.com to report damage to trails, trail status, and blow downs, thereby saving maintenance staff time from having to check an extensive trail system after every wind storm.



A more complete overview of signage highlighting trail head and junction signs is supplied in Appendix E.

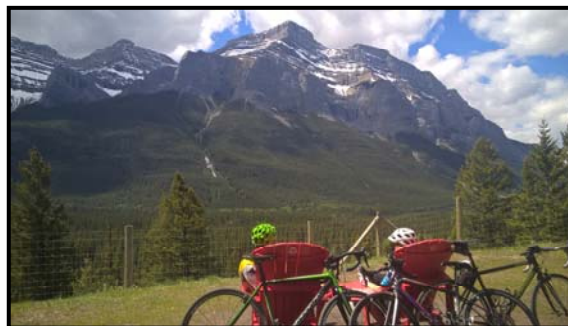
7. Implementation of the Plan

7.1. Marketing and Funding Strategies

In order to ensure success of the CVGTA trail system, marketing and funding strategies are required. Throughout all stages of implementing the Trails Vision, various strategies can be employed to strengthen grant applications, increase volunteer turnout, community interest, as well as promoting the trail system itself.

Techniques include:

- Quantify the existing users; this will allow for hard data to quantify the current economic impact of cycling. Some products include TrafX trail counters, wildlife cameras, and surveys.
- Use a not-for-profit organization as a vehicle to solicit funds and pay for trail construction. The CVGTA is already doing this well and has raised in excess of \$2 Million for the Westside Legacy Trail.
- Host “naming competitions” for the new trails being built. Working within this process to allow the communities to become involved can generate a lot of hype and enthusiasm for the new trail system. It also provides “ownership” by people outside of the core club members. This is also a great way to solicit donations.
- Develop a “Ride, Hike, or Ski the ?? Trail” passport. This could be paper or electronic and have key destination locations on the trail system with a stamp or QR code. Pair the passport with local businesses to offer discounts when enough stamps are collected. Collecting the passports at the end is also a way to quantify user numbers and trail use patterns.
- Run a bus that can transport hikers and/or bikes and riders from key areas to trail heads. “ParkBus” is a relatively new, national non-profit organization that operates buses to parks for this reason. Its bus services are growing across Canada. Alternatively, public and/or private enterprises could pilot a shuttle service to and from key locations at convenient times and locations.
- Pursue more and larger events such as long distance running races, bike races, a bike festival, and cross country ski races.
- Charge a trail fee as part of the event fees.
- Develop a branding strategy similar to Parks Canada red chairs.
- Pursue IMBA “Ride Centre” and “Epic Ride” status.
- Pursue partnerships and funding kickbacks with local Destination Marketing Organizations and businesses.
- Offer corporate volunteer trail building days to further engage the community.
- Provide trail building workshops while a professional trail builder is on site constructing parts of the new trail system.



7.2. Trail Planning and Design

The Trails Vision is a guiding document, not a detailed design. As such, all recommendations are considered conceptual and must be developed further before any construction can take place. The main steps along this path are as follows:

1. Determine the user; shared use trails have their place, however, all trails for everyone will never create an exceptional trail for anyone. Tourists travel long distances for exceptional trails.
2. Engage the community through public outreach sessions where plans can be shared and everyone can work together.
3. Ground-truthing the route is important to identify various positive and negative control points that help pull the trail alignment to take advantage of the terrain. It is common to walk alignments in both directions multiple times to explore areas on both sides of the proposed route to confirm that the best choices for the trail are being made, before the heavy work begins. Working with the terrain is especially important if heavy usage of technical trail features is planned for the trail.
4. Once the route is confirmed, it can be flagged in the field for further discussions with landowners and perhaps environmental approvals, if required.
5. Determine what level of detailed design is required to make the project a success. Are drawings required for contractor bidding or will this be built by the trail designers and local volunteers? Not every project has the same requirements.
6. Once all of the field and design work are complete and consent from the landowner and any approving bodies have been received, the project is then ready for construction.

7.3. Phasing Strategy and Cost Estimates

A detailed tabled version of typical 2016 contractor rates for trail construction is provided in Appendix F. Please note that these costs do not include volunteer labor. Many projects could be completed for significantly less if volunteering can offset or assist contracted labor.

In addition to the typical unit rates, an example of the Analytical Hierchy Process (AHP) is provided in Appendix D. One of the most common shortcomings of long-term plans is that proposed priorities and phasing are a reflection of sparse information at a given snapshot in time. This approach can result in a phasing plan that quickly finds itself obsolete due to any number of factors that change over time. Rather than provide a sequential list of projects to be completed in a rigidly specific order, the Trails Vision will provide the CVGTA with a decision-making method called the Analytical Hierarchy Process to help plan and strategize future work with a high degree of flexibility.

In order to demonstrate the AHP, 4 random project examples have been chosen. It should be emphasized that these are random and have not been reviewed with CVGTA to determine their applicability. They have been chosen, purely to demonstrate the AHP. The four projects and approximate cost are listed below:

1. Trailhead Facilities (Washrooms, signs, etc.) - \$20,000
2. High Epic Trail Section (Nipika to Swansea 35km) - \$1,225,000
3. Pump Track - \$35,000
4. Bridge over Toby Creek (20m span) - \$100,000

The results of the AHP exercise are provided in Appendix D.

8. Operations and Management

In any entity agreeing to own a trail network, design and construction is only the first part. Operating and maintaining this network is of utmost importance. With regards to this issue, there are key considerations, including reduction in liability and risk management, as discussed below.

8.1. Liabilities

8.1.1. Trails Construction and Maintenance

Trails need to be constructed to a recognized industry standard, following Professional Trail Builder Association, IMBA, or Whistler Trail Standards guidelines. A clear progression in difficulty of trails should be present on the landscape. Consistent and responsible trail maintenance may be the most important aspect to keeping trail users safe from injury and protected in the court of law. It is important to note that poor property management is the most common lawsuit due to the trail user's claims of improper design, construction, or maintenance. Therefore, it is essential to develop specific policies that fit to local situations since trail and infrastructure maintenance requirements depend on many unpredictable factors. These policies should include thorough documentation of the inspection and maintenance of trails in order to provide protection from potential litigation. Included in the maintenance policy should be achievable goals set with reasonable deadlines and complexity and should be flexible to account for the potential growth in user numbers. The CVGTA has jointly purchased a tool trailer for all member groups to maintain their trails and build new ones.

8.1.2. Decommissioning of Trails

Trails may become run down over time due to weather, poor maintenance, or by being replaced by a new trail. In each case, the trail must be decommissioned and must be done so in a way that is environmentally sensitive. Closure of trails can sometimes be difficult to enforce, however it is important that users stay off of the area. When done improperly, the trails recovery period to its natural state can take from 5 to upwards of 20 years for a full restoration.



Poorly Constructed or Maintained Trail

There are many ways to decommission and restore trails to their natural pre-existing state. The main methods include transplanting, replacing soil, rock and log placing, and strategically closing off the trail entrance. From past experience, signage, a simple gate or a blockade is not an effective method in

decommissioning a trail. Instead, a dense planting of vegetation and regrading the trail entrance to its existing slope is a much better method to effectively close the trail entrance. In all instances, the heavily compacted tread needs to be broken up and loosened to allow plants to recolonize the trail corridor.

8.1.3. Trail Inventory Mapping and Inspections

Routine documentation of all inspections, injuries, hazards, risks, and other related aspects of the trail network is essential. Having these records are the best defense against lawsuits to defend against any allegations of negligence. Keeping documents consistent, organized, and routine is a great way to defend and prevent lawsuits but also maintains a good relationship with partnered organizations. Documenting trail inspection and maintenance work will also help prioritize projects and helps with the overall flow of trails operations. Three main systems that should be in place and well documented are: an incident reporting system, maintenance system, and inspection system.

In addition, the trail inventory needs to be updated annually based on inspection results. Included in the initial inventory should be a map of each trail assigned with its difficulty rating as well as all main roads and water features. GPS information should accompany the map that includes trail line work, parking lots, roads and the location of features such as bridges, boardwalks, and other structures. An annual inspection of all trails and features should include trail name, difficulty rating, trail condition, the specific maintenance required, any concerns with safety or the environment, and the inspectors name and date. As well, any new trails or features will require the inventory to be updated.

8.2. Risk Management

8.2.1. Public Safety

Public safety may be the greatest concern during trail design, construction, and maintenance. A safe trail network maintains popularity and functionality while it is negligence that will cause the network to fail. Keeping the trail design reasonable and the trails well maintained will save time and money in the long-term while also keeping trail users and land owners satisfied.

It is important to implement a risk management program to prevent injuries and potential lawsuits. It is always important to plan ahead by identifying and correcting unreasonable hazards before they create injuries, and educating the users before and while they are on the trail. In addition, policies need to be established focused on design, construction, maintenance of trails.



Situation Potentially Affecting Public Safety

8.2.2. Emergency Planning

Sufficient emergency planning requires strong communication between the trail operators, the users, and emergency responders. Even with a strong risk management plan, injuries do occur but by planning for emergencies within the design and keeping the trails actively supervised, the network will remain safe and successful. The main steps to be considered in emergency planning are as follows:

- Design the network to have clear extraction zones for each trail segment and communicate to emergency responders on access routes to and from such zones. Educate staff, volunteers, and emergency responders on procedures and provide them with access to locked areas and medical supplies.
- Educate users with warning signs at trailheads, that includes emergency protocols explaining what to do and where to go in case of an emergency. Location identification is a great tool that can connect the user to trail patrol and first responders without confusion. Trail intersection signage that includes trail distance information or junction numbers would allow users to specifically identify which trail segment they were on which would help plan an efficient response. This type of signage is discussed in greater detail in the IMBA resources referenced by the Trails Vision.
- Create an action plan that anticipates emergency and ensures efficient injury response.



8.3. Conflict

8.3.1. Shared Use Trail Hazard Conflict and Impact Reduction Strategies

It is important to keep all users safe and comfortable while on the trails, however, there are many preconceptions regarding trail users. This can create conflict between the users. To limit this perception, there are four main solutions: education, user involvement, sophisticated trail design, and regulations.

The most important step to managing conflict and impact reduction strategies is to properly design the trail layout. Trail users seek different experiences and it is important to guide each user in a controlled manner. For specific user groups designating trails for single use will be necessary. This is further elaborated on in Appendix E, trail design considerations.



8.3.2. Winter Use

In recent years, there has been a flourish of winter fat biking in many locations in Western Canada. Some trails suggested as part of the Trails Vision will be suitable for shared use with self-propelled, non-motorized users. This includes snowshoeing, fat

biking, and potentially cross country skiing. In addition to the above, Nipika, Panorama, and Lillian Lake are known for quality cross country ski trails. It is very likely that fat bikes will want to use cross country ski trails.

Given the potential for fat bikes to ruin the track set on a cross country ski trail, it is important that policies be set around what trails fat bikes can use and rules need to be stated regarding the crossing of a cross country ski track by a fat bike. In addition, education of both the fat bikers and the cross country skiers will be needed to ensure that each respect the others' trails.

8.3.3. Dogs on Trails

Dogs on trails have the potential for social, environmental, and wildlife conflicts. Social conflicts may arise from dogs that may scare or obstruct other users from enjoying the trails. Environmental conflicts result from owners not picking up their dog's feces or dogs that disturb the natural state of the corridor by digging or eating the vegetation. Another conflict occurs when dogs interact with wildlife. These interactions may be attacks from bears or cougars, or dogs may chase moose, elk, deer, or other wildlife. Educating users of trail etiquette, implementing rules and regulations, and enforcing the rules through trail patrols is the best defense against these type of trail conflicts.



8.3.4. Trail Etiquette Education

Educating users on proper trail etiquette helps to manage user conflict, preserve the environment, and improve the experience of all users on the trails. Trail etiquette includes educating users on passing etiquette, the rule of leaving no trace, and the hierarchy of the trail between hikers, cyclists, and perhaps other user group. This includes the dismounting of cyclists when approaching equestrian traffic. There are many ways to educate users such as signs, paid staff trail patrols, volunteer trail patrols, peer education, clinics, and handouts. Avid trail users from other trail networks may also help in the education process by simply setting a good example.

MOUNTAIN BIKE RESPONSIBILITY CODE

Mountain biking involves the risk of injury. Common sense and caution can reduce the risk. For your safety and the safety of others, please adhere to the code.

1. Ride in control and within your ability level. You must be able to avoid other people or objects.
2. Stay off the trails and out of the skills park if your ability is impaired by drugs, alcohol, or fatigue.
3. Wear a helmet.
4. Inspect your bike or have it checked by a qualified bike mechanic before you ride.
5. Be aware of changing conditions on trails and features in the skills park. Inspect features before use and throughout the day.
6. Stay on marked trails. Obey all signs and warnings. Do not cut switchbacks.
7. Yield to other riders when entering a trail or starting downhill.
8. Do not stop where you obstruct a trail, or are not visible from above.
9. If you are involved in, or witness a collision, please identify yourself to a staff member.

**Know the code – Be safety conscious.
It is your responsibility.**

TRAIL INFORMATION AND SAFETY TIPS

- Single and double track trails are used primarily by mountain bikers, runners and hikers. Please respect the rights of all trail users.
- Maps with "You Are Here" are located at each major junction. By using the numbers and the map, you will be able to determine your location within the trail system. Please note: there are summer junction and winter junction numbers.
- Select appropriate trails according to your ability based on the designated difficulty ratings and current trail conditions.
- All trails are two way. Keep to the right hand side of double track trails.
- Obey trail closure signs.
- Trails are for non-motorized recreation only. ATVs and horses are not permitted.
- Notify Canmore Nordic Centre Provincial Park staff of any trail hazards you may encounter.
- Check the trail report for closures before heading out. (www.CanmoreNordicCentre.ca)
- Roller ski loop: This paved trail is designed for roller ski training. Please note that roller skiers have difficulty stopping; therefore, they have right of way. Absolutely no pets are permitted on the roller ski trail.
- Don't be deceived by a beautiful day at the start of your trip and then find yourself unprepared for a rapid change in the weather. Extreme weather conditions can develop quickly in the mountains. Since trails are not routinely patrolled, you should take precautions. Whenever possible, travel in groups. Always take extra clothing, first aid supplies, and plenty of water.

LIVING SMART WITH WILDLIFE

- Many large animals frequent the Canmore Nordic Centre Provincial Park. The wildlife you may see here includes bears (grizzly and black), cougar, elk and deer.
- Dogs must be kept on a leash at all times.
- Make noise often, especially when approaching blind corners, dense shrubs or when moving into the wind.
- Carry bear spray on your body or bike, and know how to use it.
- Travel in groups when possible.
- Do not approach wildlife.
- Please stop by the information counter in the Daylodge for additional information, or pick up a WildSmart brochure.

Report bear, cougar, and aggressive elk/coyote sightings by calling:
WILDLIFE SIGHTINGS: 403.591.7755
Or report sightings at the information counter in the Daylodge.

In the event you need:
EMERGENCY SERVICES: CALL 911
Ask for **KANANASKIS EMERGENCY SERVICES** or go directly to the information counter in the Daylodge.

INFORMATION COUNTER HOURS: 9 AM - 5 PM

9. Summary

As per the requirements of the Columbia Valley Greenways Trails Alliance, the Trails Vision created is a very general document. It has reviewed the Columbia Valley from a broad perspective and has attempted to not put emphasis on any one particular trail use. While in some cases, specific trail use needed to be reviewed, the intent is that all uses are equally important in the “eyes” of this document.

Sticking to the intent described above was a difficult task. There are many specific recommendations that could have been provided for each region and trail use. In fact, much more detailed work, than provided in the document, was done in fine tuning the recommendations to a Trails Vision level. However, the Trails Vision ultimately needs to be readable and understandable by many different groups of people, including government. With such a large area encompassing the scope and with the many different trail user groups involved, this document could have been massive. It has been intentionally simplified to meet the desires of the CVGTA. In addition and as per direction from CVGTA, the recommendations and descriptions for new trails has been intentionally kept vague and not shown on drawings to ensure no pre conceived notions of support.

As previously stated, the Trails Vision is a “living” document. What makes sense today, may not make sense tomorrow. It is important that the CVGTA take ownership of this document and use the information in it to further the development of trails in the Columbia Valley. The Analytical Hierarchy Process can be a valuable tool; it will allow the various trails groups to understand the importance of each others goals and desires in the context of all potentials. It will help narrow down priorities in the face of potentially differing goals of each group. However, it is essential that the CVGTA be the ones to guide and implement the process.

As noted in the Trails Vision, there are many benefits to trail development, including health, social, environmental, and possibly the most important, economic benefit. The building of quality, sanctioned trails and the creation of a “Trails Town” culture is well documented that it can add to the economic vitality of a region. This can have far reaching payback to the communities in the Columbia Valley.

In creating the Trails Vision, much work remains. The CVGTA needs to consolidate and rate the suggestions made in this Trails Vision. Government needs to be consulted to understand the vision. Additional community consultation may also be needed to make sure buy in is garnered from the community. However, most importantly, the trails users need to understand the importance of “one voice” and to act strategically as a unified group. Encouraging more people to get involved and volunteer in building trails and obtaining financial support is important. The development and maintenance of trails is a never ending process and ensuring succession is essential.



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Appendix A – References

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Appendix B – Relevant Legislation

Appendix B – Relevant Legislation

Official Community Plans

An Official Community Plan or OCP is a provincially regulated document that requires extensive public engagement. It sets out policies that guide Council's decisions on land use within the area covered by the plan. There are a number of OCP's within the scope of the Trails Vision. Relevant items to the preparation of the Trail Vision in the various OCP's are provided as follows:

Fairmont Hot Springs Official Community Plan (2004)

While we understand that the OCP for Fairmont is currently being updated, the existing plan already addresses trail development. As stated in Section 8.0 Open Space, Recreation and Trails, "There is strong support for establishing a recreational trail system throughout the plan area that links the individual subareas and connects with the commercial and recreational services being offered at Fairmont." In addition, the following are relevant policies to the CVGTA Trail Vision:

- This plan supports the establishment of a trail system linking the various subdivisions within the plan area to each other and the services and amenities offered in Fairmont. The routing of such a trail system has not been identified in this plan and would be the subject of a future community planning exercise.
- The development of a comprehensive multi-purpose non-motorized trail network that provides greater public access to linear corridors and open spaces is supported.

Lake Windermere Official Community Plan (2008)

The OCP supports enhanced trail and recreation opportunities through a comprehensive trail network. Section 11 Open Space, Recreation and Trails speak to this and the following are relevant policies to the CVGTA Trail Vision:

- Redevelopment and amalgamation with Windermere Beach Regional Park;
- Completion of Phase II of the Old Coach Greenway trail to the south to provide linkage between the village of Radium Hot Springs and the District of Invermere as a Regional Park;
- A non-road oriented alternative transportation route linking Windermere to the Athalmer Road corridor and the District of Invermere as a local park service.
- Development of a non-motorized recreation trail linking Panorama Mountain Village and the District of Invermere along the south side of the Toby Creek escarpment as an Electoral Area F trail.
- A non-motorized recreation trail along the west side of Lake Windermere from the southern boundary of the District of Invermere to The Nature Trust's Hoodoos property as an Electoral Area F trail.

Panorama Mountain Village Official Community Plan (1999)

The OCP supports off-road access between the Panorama Mountain Village and the District of Invermere. Their objectives promote year round trail use and active recreation activities. Section 4.7 Open Space, Recreation and Trails speak to this and the following are relevant policies to the CVGTA Trail Vision:

- Allow greater public access to important linear creek corridors and alpine areas through development of a comprehensive trail network.
- Encourage local trail user groups to create and maintain a comprehensive trail inventory within and surrounding the Plan area.

- A comprehensively planned, multi-purpose trail network within Trapper's Ridge shall be integrated in order to provide internal recreation opportunities and connection to the Village Core area of the resort.
- Trails developed for year round use.

Toby Benches OCP (2016)

The OCP indicates that both motorized and non-motorized trail use occurs in this area. Authorized mountain bike trails exist in the area and the south facing aspect of the Toby Bench area results in less snow cover and more use than other areas, in the Spring. Section 9 Open Space, Recreation and Trails speak to this and as noted below, the concept of a "master plan" is contemplated in the policies. The following are relevant policies to the CVGTA Trail Vision:

- Encourage the creation of a recreation and trails master plan for Crown land which considers the feasibility of new trail construction in the context of existing local and regional trail assets, environmental impacts and effects of recreation on private land owners.
- The development of a trail linking the Toby Benches with the District of Invermere and Panorama Mountain Village for non-motorized use.
- Supported access to Barbour Rock for non-motorized recreation.
- In order to ensure that private land in environmentally sensitive areas is conserved and protected, designation of land as OSRT, Open Space, Recreation and Trails within comprehensive development is encouraged. Opportunities within an area designated OSRT would include passive uses with minimal impact such as non-motorized recreation trails and non-land altering recreation activities.
- Prior to the creation of additional mountain biking and hiking trails in the Toby Benches, the development of a trails plan which includes input from residents and stakeholders such as the Toby Benches Society and the Columbia Valley Cycling Society is encouraged in order to limit the impact of trail development on wildlife, environmental values, private property and other users, while supporting opportunities for recreation, tourism and economic development.
- Motorized and non-motorized recreational trails should not be developed within Mountain Goat habitat.

It is clear that the vision for the Columbia Valley, built by the citizens of the communities, has a strong value for trail systems and outdoor recreation.

Occupier's Liability Act

In BC, under the Occupier's Liability Act, the person who has responsibility or control over the trail and the condition of that trail has a clear duty of care to ensure that the use of the trail is safe and well maintained for the intended use. Trails that are being built are not to create a danger and those building must not act with willing disregard for safety.

To reduce risk and liability, clear trail standards should be maintained for the development of new trails and the monitoring of the existing network. When a user enters into a trail area that is clearly marked as a recreational trail area, they are deemed to have willingly assumed all risk. All trailheads should therefore have signage that informs riders of the risks they undertake by entering the area.

Corridor Recreational Trail Management Plan

Chapter 14 of the BC Ministry of Forests Recreation Manual defines a recreation corridor as "a ribbon of land and/or water along which people can travel for recreation purposes" and states that some of those purposes are scenic road touring, trail walking, river-rafting and whitewater kayaking.

Management of these corridors is said to include the entire viewshed of the area and is to account for other commercial or industrial uses. This document defines the different types of recreational corridors and the different programs that the Ministry of Forests has for Trail Management, noting that “trail corridors include old trails that were developed as exploration and trade routes, as well as newer trails that have been developed specifically for recreation travel.” The programs take into account the unique characteristics and challenges of each of the different type of trails, including recreation, heritage and forest service roads.

The last section of the plan boasts a complete listing of all of the provincial agencies with the corridor programs they administer. This is a fantastic resource for researching and planning of a full regional trail system.

Trails Strategy for British Columbia

The Trails Strategy for British Columbia was developed by provincial agencies, recreation organizations, local governments, land users, First Nations, and others across the province to address issues from a provincial survey. The document is to “serve as the hub of a wheel connecting the broad range of organizations and initiatives that have historically worked independently, drawing them together in a shared vision to effectively and consistently develop and manage a world class B.C. trails network.”

The guiding principles of the Strategy are:

- Sound Environmental Stewardship and Management;
- Respect and Recognition for First Nations’ Interests;
- Mutual Respect between Trail Interests and Other Resource Users;
- Respect and Understanding among Diverse Trail Interests;
- Partnerships and Collaboration;
- Secure Recreation Opportunities for All Trail Users; and
- Benefits for Individuals, Communities and the Province.

The documents estimates that there are hundreds of thousands of kilometers of recreational trails in BC, with approximately 30,000km formally recognized and managed. It recognizes some of BC’s most spectacular rail, heritage and regional trails, such as the Western Rail Trail, Nuxalk-Carrier Grease/Alexander Mackenzie Heritage Trail and the world famous West Coast Trail as well as the trends that are influencing them. The action items included in the plan are an excellent source for information in regards to:

- Environmental Stewardship;
- Collaborative Planning;
- Good Governance;
- Sustainable Funding;
- Effective Management;
- Strategic Information; and
- Marketing.

The Trails Strategy for BC is a forward thinking document with a vision for “A world-renowned, sustainable network of trails, with opportunities for all, which provides benefits for trails users, communities and the province.”

Forest and Range Practices Act

The Forest and Range Practices Act (FRPA) is act is arguably the most important act to authorization of trail development. This act applies to trails within crown land that are not within a Park boundary. Two sections are of particular importance, Sections 56 and 57.

While an Act can be complex and difficult to read in some cases, Recreation Sites and Trails BC has attempted to simplify the process of trail authorization in the document, *Authorizing Recreational Mountain Bike Trails on Provincial Crown Land – Operational Policy – Updated May 2013*. While mentioning mountain biking specifically, the procedures outlined in this policy could apply to non-motorized trails. The following is an extremely simplified summary of the process:

- An approved entity submits an application at Front Counter BC to, "...construct, rehabilitate or maintain trails on Crown land..."
- Authorization is provided under Section 57 of the Act to perform the work outlined in the application.
- Section 56 of the Act enables the designation of trails by Ministerial Order.

In order for a trail proposal to be considered, there are 3 separate categories that the trail must fall under. This includes both the proposal for new trails and the process for legitimizing existing trails.

"(i) An approved, integrated land-use plan exists which recommends the area for mountain bike trail development/use; or

(i) The proponent is a local government, or has the written support of the local government; or

(iii) The proponent is representative of a multi-user, broad, community based trail organization and has support of the local trail community; and

(iii) The proponent is willing to take on a long-term trail management role and can demonstrate the capacity to take on such a role."

As noted in the above referenced document, "An authorization pursuant to Section 57 of FRPA is granted to a specified party and will include conditions including a commitment by the applicant to enter into a Trail Partnership Agreement upon completion of the trail construction and subsequent establishment of the trail pursuant to Section 56 of FRPA."

Further to the above, Trail Partnership Agreements are essential in creating authorized trails. As noted in the above referenced document, Recreation Sites and Trails BC, "will negotiate the terms of a Trail Partnership Agreement with the proponent. The trail agreement will include appropriate provisions for addressing safety, conflict and impact issues..."

Land Act

The Land Act applies on Crown Land outside of parks and protected areas. Under the Land Act, the provincial agency responsible for trails has the obligation to authorize Crown land for commercial recreation purposes through tenures and licenses or occupation. Tenured 'commercial recreation trails' are generally recognized under a license and occupation.

The Adventure Tourism Policy is related to the Land Act and outlines the recreation tenure process. The Province requires that commercial recreation operators submit a management plan as part of their tenure application.

BC Environment Guidelines

The BC agency responsible for Provincial Parks maintains that trail builders take in consideration environmentally sensitive areas, parks and protected areas, species at risk, and flood protection areas when constructing or improving a trail. Environmentally sound trail building guidelines are also provided as a reference in this Trail Vision.

Ecosystem Branch

The Ecosystems Branch of the provincial government is the first point of contact for development that may disrupt natural areas and / or habitats. This branch considers development proposals in accordance with land use planning directions, overall protected area strategic plans, and recreation and conservation values.

Environmental Stewardship

This branch includes management and development of ecological reserves, protected areas and parks. Under the Protected Areas of British Columbia Act; Park Act; Ecological Reserve Act and Environmental and Land Use Act, all trail construction and development within these areas must be conducted with consultation with the relevant provincial agency.

Parks and Protected Areas Division (BC Parks)

While each provincial park has its own rules and regulations regarding trails, there are some broad applications within the provincial legislation that support specific rules regarding motorized recreation, dogs off leash, and other concerns.

Appendix C – First Nations

Appendix C – First Nations

The Columbia Valley study area falls within the traditional territory of the Ktunaxa and Secwepemc Peoples, which includes the local communities of the Kenpésq't People (Also known as the Shuswap Indian Band) and ʔakisq̓nuk (Akisq̓nuk) First Nation respectively. These communities, though they share the same territory, are culturally and politically distinct entities and hold affiliations to different tribal associations and traditionally spoke completely different languages. Each community has priorities relating to concerns specific to their unique needs and meets those needs through their community organization, which act as local and territorial government. It is imperative to work with these communities when planning regional recreation systems, especially for systems that are proposed to go through reserves, or through culturally and/or spiritually significant sites. A set of best management practices, recommendations and resources for planning with First Nation Community consultation engagement has been compiled for review.

Why Involve First Nations

“...First Nations are rights-holders not stakeholders.”

Government of British Columbia, *Building Relationships with First Nations*

Due to their relationship with and occupation of the land previous to European Settlement, Indigenous Communities hold *constitutionally protected rights* recognized by national and provincial governments. These rights and the traditional ecological knowledge and management practices of the community, uniquely position these communities to inform contemporary land-use planning that preserves ecological and cultural heritage.

Initiatives that have potential to adversely affect communities may also have potential to stimulate local economies and improve social conditions. It is essential to consult indigenous communities early on with project initiatives that have potential to impact their territory and their rights, in accessing and using this territory, as well as consulting on methods and strategies for reconciling these interests.

Ultimately it is the responsibility of the Crown and Province to ensure indigenous rights are upheld. However consultation of a project with local First Nation Communities can avoid unnecessary and costly delays necessary for accommodating First Nation Interests in project approval and permitting processes.

Strategical Strengths for Including Local First Nation Governments in Regional Planning Initiatives

Certainty for Processes, Social Responsibility, and Support for Government Consultation

The B.C guide for Building Relationships with First Nations states that a positive relationship between a project initiator and a First Nation Community can facilitate certainty for timely progression of development processes and decisions while averting costly delays. This is in part because direct engagement of the project initiator with the First Nation and development of a positive relationship supports the Province's consultation obligations. Based on consultation feedback, project coordinators can modify plans in order to avoid adverse impacts to Indigenous Interests (what may be considered as legal accommodation). Unmitigated potential impacts to Indigenous Interests can delay decision making and other related processes, and development plans may require modifications to avoid adverse impact to indigenous interests.

Expanding Tourism Appeal through Sharing and Celebrating Indigenous Culture

Understanding local indigenous culture and learning proper ways of engaging with indigenous people is a large part of the Reconciliation Movement championed by national, provincial and local governments and organizations. In this way opportunities for sharing and celebrating indigenous culture act as a public service.

Opportunity for economic development in the provision of services to visitors may also appeal to First Nation Communities. At the same time, many cultural groups have strict protocol for the sharing of cultural knowledge, and receiving monetary payment for Cultural and/or Spiritual teachings is usually strictly taboo. Exploring tourism potential and opportunities during consultation will give a chance for First Nation Communities to engage the tourism industry in a way appropriate for them.

Access to Local Knowledge

First Nation communities hold generations of intimate ecological knowledge of their traditional territories, and may also have conducted independent studies that have information useful for protecting heritage and ecological resources during development. While it is important not to view a community as a well of knowledge to be mined for one-sided benefit, both communities and development organizations may benefit from the sharing of knowledge in order to build new practices for planning. These practices should respect and protect cultural protocol, local heritage and the environment. They should also recognize traditional knowledge as a gift, and respect the choice and comfort level of the community in what they share.

Access to Human Resources and Services in Rural Areas

Projects operating in remote and rural areas often face challenges in sourcing labor and accessing services. First Nation communities are often positioned closest to projects of this nature and have potential to provide services and local populations that would otherwise be difficult or costly to arrange access to.

A Pro-Active and Best-Practices Based Approach

Informing and allowing opportunity for locals to contribute input in design/planning initiatives will increased likelihood of local community buy in, local pride, use and stewardship of installed infrastructure, and lessen the risk of protest/rejection of the project by the community. Along with these more typical benefits of community engagement; the cultural relationships indigenous peoples have with the land of their territories provide unique opportunities for innovative conservation, recreation and tourism initiatives.

Multiple Provincial Land Use planning documents respect local heritage and culture, and benefit future generations by improving community capacity and economic independence. These documents promote the engagement of indigenous communities within a framework safe-guarding the integrity of the environment. Engagement of Indigenous Communities presents opportunities for lasting and mutually beneficial partnerships.

Best Practices Recommendations for Engaging Indigenous Communities

These Recommendations are influenced by government documents advising development organizations and businesses on the conduct and approaches for first nation consultation (references provided).

- Engage Early – Listen Carefully. Ensure clear communication while building relationships from initial stages of development. Confirm what you think you have understood.
- Be Open and Transparent; Be Open to Innovation and Adaptation
- Engage First, Plan and Act Second
- Recognize Capacity Limitations and Challenges. Allow consideration and time for decision makers to juggle multiple roles and consult community members
- Understand Operational Realities
- Provide and Enable Opportunities for Partnership and Collaboration
- Work with Local Indigenous Communities to Identify Economic & Capacity-Building Opportunities
- Consult with Communities on Best Ways to Respect Heritage.

Appendix D – Analytical Hierarchy Process

Appendix D – Analytical Hierarchy Process

The AHP was originally developed by Thomas L. Saaty in the 1970's as a structured methodology to facilitate group decision making using a combination of user-defined criteria as the measures of success for a given problem. By design, the AHP recognizes that there is never a 100% "correct" decision. What the application of the AHP does is steer the user toward the best decision available at the time.

The AHP involves five main steps as described below. Please note that an AHP template and example has been provided at the end of this appendix.

- **Step 1 - Analyze the Situation.** Within the context of the Trail Vision, the analysis of the situation will involve identifying all of the future work and projects, including routine maintenance work, related to the trail system. Estimated costs for the various activities will be required.
- **Step 2 - Create the Hierarchy.** The creation of the hierarchy will require that the AHP user group establishes a list of critical success factors with which to evaluate the different options. The metrics can be both objective and subjective; what is important when creating the hierarchy is to identify a complete list of factors which need to be taken into account when determining which projects move forward and which ones do not. Please note that cost or affordability is not yet part of the process!
- **Step 3 - Evaluate the Hierarchy.** The AHP users then evaluate the criteria created in the hierarchy and assign a weighting. Typically, a total weighting of 100 is split subjectively amongst the criteria, however any number can be used as the "total" weighting. What is important is use a number that allows users to split the weighting amongst the hierarchy in a meaningful way. This step usually involves group discussion and determination of an average weighting from various stakeholder asked to participate in the process.
- **Step 4 - Rank the Options.** Using a spreadsheet matrix, users can rank the various options relative to one another for each of the criteria. It is not necessary to assign a unique rank to each option. For example, three of seven options might be extremely challenging to construct and the users could rank all three examples as 1 on a "constructability" metric so that low scores are achieved for that category. Although scoring sheets can be filled out by hand, to avoid mathematical errors, the individually ranked options are typically input into a spreadsheet to calculate the individual and groups scores.
- **Step 5 - Calculate the Value Ratio.** Cost is intentionally left out of the AHP until the very end as it often clouds the fair judgment of other critical success factors. The weighted scores from the ranking step are divided by the estimated cost to establish a Value Ratio which is an expression of the score per unit cost for the various options. The "best" options are the ones with the highest Value Ratios.

A simplified, intuitive version of the AHP can occur when a group of friends arrive at a restaurant. After **analyzing the situation**, it is determined that a round of appetizers needs to be ordered. Some people at the table like spicy food, one person is allergic to shrimp, and another does not like anything deep-fried. The preferences for various foods help to **create the hierarchy**. A quick **evaluation of the hierarchy** occurs and the group realizes that any options with shrimp or deep-frying will score low. As the discussion progresses, the group begins to **rank the options** to determine which appetizer options represent the best choice to satisfy the tastes of the group. Even though beluga caviar might score very well when the options were ranked, when their empty stomachs considered the **value ratio**, the "best" decision for the overall group was a nacho platter. Obviously, the example above is overly simple and does not require a formal AHP, however, it illustrates that we all make decisions like this with our "gut" on a daily basis. What the AHP enables users to do is break multi-alternative, multi-criteria decisions down into bite-sized pieces. It also helps illustrate how the AHP can be applied to problems of any scale and scope if desired by the user.

The AHP example included on the following pages represent a group of criteria and evaluations with a sample analysis for several projects just to illustrate how the calculations work. The AHP provides the following flexibilities:

- Criteria can be added to, or subtracted from, the hierarchy as the AHP users see fit.
- Weighting of the criteria can be quickly and easily modified to adapt to changing criteria. For example, some planning years may have major differences in staff available for construction of projects. In this case, a criterion like constructability could be adjusted to reflect the ability of the crews for that particular season.
- The AHP allows for many participants in a decision-making process and is a repeatable, democratic, structured, defensible method to document the decisions made by committees and stakeholder groups.
- The AHP can be applied to options which are not known at the time of the writing of the Trail Vision.

Step 1 - Analyze the Situation

This example analysis is not intended to be a recommendation and has been prepared to illustrate how the AHP process works when applied to a group of projects. As the AHP is used by the CVGTA to develop short-term and long-term budgets and plans, we expect that the following projects may come up in discussion:

Trailhead Facilities (Washrooms, Signage, etc.)
High Epic Trail Section (Nipika to Swansea 35km)
Pump Track
Bridge over Toby Creek (20m span)

Project unit rates can vary widely based on project scale, complexity, and a variety of other factors. The use of volunteer labour, where appropriate, can significantly reduce the overall cost of many projects in the Trails Vision. For the purpose of comparing the constructed "cost" of different projects, it has been assumed that all projects will be built by contractors to illustrate the value that volunteer labour can provide, if available.

The following are the projects that are being used as an example of how the AHP can be applied to create a project prioritization plan. The costs shown are detailed in Appendix F.

Project Description	Project Cost
Trailhead Facilities (Washrooms, Signage, etc.)	\$20,000
High Epic Trail Section (Nipika to Swansea 35km)	\$1,225,000
Pump Track	\$35,000
Bridge over Toby Creek (20m span)	\$100,000

When using AHP to analyze a group of projects with a huge range of costs, subdivide the group into ranges so that the Value Ratio can produce meaningful comparisons. Note what happens in Step 5 to the High Epic Trail because it is significantly more expensive than the other projects.

AHP works best for analyzing options for a single project regardless of cost.

Step 2 - Create the Hierarchy

The Hierarchy should cover all of the things that are considered critical success factors. Some potential examples are as follows:

1)	Is the project's trail difficulty level of the appropriate for current needs?
2)	Will the project provide social benefits to the community?
3)	Will the project provide economic benefits to the community?
4)	Will the project provide environmental benefits to the community?
5)	Will the project address the needs of the local community?
6)	Will the project address the needs of the tourist/non-resident community?
7)	Will the project improve the quality of trail user experiences?
8)	Will the project result in improved connectivity?
9)	Will the project provide benefits to all areas of the trail system?
10)	Will the project result in benefits to the urban portion of the trail system?
11)	Will the project result in benefits to the backcountry portion of the trail system?
12)	Will the project provide any historical/cultural benefits?
13)	Is the project subject to a complex approvals process?
14)	Does this project require detailed designs?
15)	Does this project have the potential to be constructed by local trades?
16)	Does this project have potential to be built by volunteers?
17)	How many trail user groups will benefit from this project?
18)	Will this project result in any wildlife concerns?
19)	Is this project easy to construct?

Please note that the above questions are "random" and the CVGTA needs to develop questions suitable to their own situation.

Step 3 - Create the Hierarchy Weighting

Hierarchy Query		Weighting
1)	Is the project's trail difficulty level of the appropriate for current needs?	9
2)	Will the project provide social benefits to the community?	8
3)	Will the project provide economic benefits to the community?	10
4)	Will the project provide environmental benefits to the community?	8
5)	Will the project address the needs of the local community?	5
6)	Will the project address the needs of the tourist/non-resident community?	5
7)	Will the project improve the quality of trail user experiences?	6
8)	Will the project result in improved connectivity?	5
9)	Will the project provide benefits to all areas of the trail system?	7
10)	Will the project result in benefits to the urban portion of the trail system?	4
11)	Will the project result in benefits to the backcountry portion of the trail system?	5
12)	Will the project provide any historical/cultural benefits?	6
13)	Is the project subject to a complex approvals process?	2
14)	Does this project require detailed designs?	2
15)	Does this project have the potential to be constructed by local trades?	6
16)	Does this project have potential to be built by volunteers?	1
17)	How many trail user groups will benefit from this project?	2
18)	Will this project result in any wildlife concerns?	5
19)	Is this project easy to construct?	4
		100

Weighting is relative to other criteria. For the purposes of the example, the total weighting was arbitrarily set at 100 and subjectively divided amongst the 19 elements in the hierarchy. The weighting total could be any number, what is important is the relative weighting as it is spread among the hierarchy. In the example above, item #3 (economic benefits) scores 10 and is therefore ten times as important as item #16 (using volunteers). By focusing on the relative importance of the criteria, AHP users need not worry about hitting a round number for the weighting total.

Step 4 - Rank the Options

High quality options rank with high numbers - In this example the highest rank is 5.

Low quality options rank with low numbers - The lowest rank is always 1, there is no zero rank.

Ranks do not need to be unique if several options seem to be of comparable quality - For query #1 below, several projects were assigned a rank of 5.

Hierarchy Query	Weighting	Relative Rank of Options			
		Trailhead Facilities	High Epic Trail	Pump Track	Bridge over Toby Creek
1) Is the project's trail difficulty level of the appropriate for current needs?	9	1	5	5	2
2) Will the project provide social benefits to the community?	8	5	5	5	5
3) Will the project provide economic benefits to the community?	10	3	5	4	4
4) Will the project provide environmental benefits to the community?	8	4	1	2	2
5) Will the project address the needs of the local community?	5	4	3	4	3
6) Will the project address the needs of the tourist/non-resident community?	5	4	5	3	3
7) Will the project improve the quality of trail user experiences?	6	4	5	1	5
8) Will the project result in improved connectivity?	5	1	4	1	5
9) Will the project provide benefits to all areas of the trail system?	7	2	3	1	3
10) Will the project result in benefits to the urban portion of the trail system?	4	3	1	1	3
11) Will the project result in benefits to the backcountry portion of the trail system?	5	4	4	1	4
12) Will the project provide any historical/cultural benefits?	6	3	1	1	3
13) Will the project be easy to get approvals to complete?	2	5	1	4	1
14) Does this project require detailed designs?	2	4	5	4	4
15) Does this project have the potential to be constructed by local trades?	6	5	5	5	5
16) Does this project have potential to be built by volunteers?	1	1	3	1	1
17) How many trail user groups will benefit from this project?	2	2	4	1	4
18) Will this project result in any wildlife concerns?	5	4	1	5	2
19) Is this project easy to construct?	4	5	1	3	3
Weighted Score		337	346	295	341

The "Weighted Score" uses Excel's SUMPRODUCT formula to multiply the weighting and rank and add up the total weighted score for each option

Step 5 - Calculate the Value Ratio

Project Description	Weighted Score	Project Cost (\$)	Value Ratio (Weighted Score / \$ 000s)	Final Project Ranking
Trailhead Facilities (Washrooms, Signage, etc.) High Epic Trail Section (Nipika to Swansea 35km) Pump Track Bridge over Toby Creek (20m span)	337	\$20,000	16.85	1
	346	\$1,225,000	0.28	4
	295	\$35,000	8.43	2
	341	\$100,000	3.41	3

"highest value option"
"lowest value option"

Interpreting the results:

1. The highest value ratio is scored for Trailhead Improvements.
2. The lowest value ratio is scored for the High Epic Trail, due mainly to the fact that it is significantly more expensive than the other projects.
3. In terms of identifying which projects would produce the most community benefit, the weighted score is the sole indicator as it does not factor in project costs in any way. Affordability and perceived value only become a metric once calculated in the value ratio.
4. Although it was the lowest value option, the High Epic Trail scored the highest in terms of its weighted score. This confirms it would be well received if built, but the construction costs are a major hurdle to its acceptance based on the AHP comparison. This suggests that a phased approach may be more acceptable given the project costs.

Please note that this is a hypothetical example using actual projects identified in the Trails Vision. This has been done for illustration purposes to show a tangible example of how to use the Analytical Hierarchy Process. Although the queries used in the AHP as metrics of success may not change substantially from year to year, the relative ranking and total weighting will constantly evolve as the needs and desires of the stakeholders change with time. As the AHP is inherently democratic, it will help steer users toward the common good and identify "best value" for the community it serves.

Appendix E – Design Guidelines and Process

Appendix E – Design Guidelines and Process

Trailheads, Signage and Wayfinding Types

Approach and Rationale to Signage and Wayfinding

All too often it is a delicate balance of providing the required information to the trail users but not “polluting” the environment with what could be considered too many signs. Frequent existing trail users that have been using the trails many only require a sparse amount of trail head signs and wayfinding markers, because of their familiarity of the landscape. However, as the valley is developed, it is expected that many more visitors will travel to this location eager to experience all that this project will have to offer. Here could lie an imbalance, were existing long term users may regard the signage required to make the new visitors comfortable as over kill – a “glut” of signage. Understandably, new users would require more information so as to not decrease their experience.

The primary purpose of marking the trail is to guide trail users along their route. Identifiable trail markers assure travelers on the specific trail, at intersections and forks in the trail and also along long stretches in between, that they are proceeding along their desired route and in the correct direction.

Trail markers also serve to raise public awareness of their selected trail by identifying a given local trail segment as part of the total network. It is advisable to incorporate accepted branding (such as logos) of the property where the trail is located and the organization.

Trailhead Types and Designs

At trailheads, users make the decisions to travel along a trail based on their technical and physical ability as well as the time it would take to complete the trail segment or segments. Thus information affecting these decision based factors is vital for these users to make informed decisions. In addition, it is often preferred to have a map outlining the relative position of the trailhead and the trail to other features on the property, such as washrooms, parking lots and entrance gates.

The following example of an existing trail signage system serves as an excellent opportunity to analyze its properties with respect to developing a signage program for the Columbia Valley.



The photo to the left illustrates an overall view of a trailhead situation. The signage and trail notifications have been placed on a form of kiosk structure that offers weather protection, but still remains visible to a number of trail user groups that could be attempting to view the information at one time. For liability concerns a larger separate sign – shown on the right, repeats the explanation of the trail difficulty rating system, even though this information is included on the main kiosk trailhead map.



The suggestion of “Always ride within your own level of ability and at your own risk” is repeated four times on this separate sign, as well as on the main kiosk map. It should be noted that these examples of signage were developed by a land manager that endured a lengthy litigation process, prior to enacting this signage policy. The policy was developed in consultation with a trails litigation expert

The following information is provided on this example trailhead map (signage).

- Name and branding of the trail system – ie Grizzly Ridge.
- Land Managers name and corporate branding.
- Trail corporate supporters and sponsors.
- An over-view map of the trail network
- Topographical information
- Detailed description of each trail segment and the corresponding difficulty rating
- Authorized trail user groups
- Trail etiquette suggestions – rules of the trail



Signage and Wayfinding Types and Designs

Just as important as trailhead signage, is wayfinding, as the trail users’ confidence is bolstered knowing that they are on the right track and understand the time to complete the trail segment on which they are following.



Using the same example in the Trailhead signage section above – the following photos illustrate the suggested best practices for trail wayfinding signage.

Similar signage in the left hand photos is suggested at all trail intersections. Mounting is on a wooden post and frequently the signage is orientated facing north. Non permitted trail uses are sometimes attached to this post as is an IMBA style difficulty icon. Many of the existing signs in the Columbia Valley should have the “you are here” map added to them.

A close up of the trail intersection sign reveals the following:

- Name (number) and branding of the trail system.
- Land Managers name and corporate branding.
- Trail corporate supporters and sponsors.
- An over-view map of the trail network
- Topographical information
- Authorized trail user groups
- Trail etiquette suggestions – rules of the trail
- Indication of the location of the trail intersection



This is a typical example of along the route wayfinding indicators:

The suggested information is as follows:

- Trail name and/or number
- Difficulty Rating – blue square
- Logo branding
- Sometime a reminder of non-permitted uses
- Sometimes “mileage” indication numbers from last intersection
- It's important that these signs are non-offensive and try to blend in with their surroundings. At times wooden posts are used but often more durable composite materials are installed. Composite materials can be used around areas with cattle to flex out of the way instead of breaking off.



Information Kiosks

Information Kiosks are part of an overall positive experience for navigators of trail networks. They provide opportunities for trail users to engage with the Columbia Valley environment. Kiosks are important conveyors of trail system directional information, landmarks and historic sites. They can include maps, written information as well as historic images. Where appropriate, there may be opportunities to display relevant local information such as community events or wildlife warnings.

Kiosks can be located at rest nodes or situated as standalone amenities at key decision making points along the trail system. Kiosk design should be part of the family of trail amenities that conveys and supports authenticity for the trail user. Accommodate spatial and circulation considerations for walkers, hikers and cyclists as well as the space required for step off of the path to view the information panels.

Trail Design Considerations

Generally speaking, trails provide the most value when they are conceptualized and built as shared-use trails. Typically, trail users will follow the basic rules of trail etiquette and all users, regardless of their mode of transportation, will enjoy their trail experience. The following seven points illustrate why the establishment of shared-use trails is preferred over single-use systems, where practical, as an effective and popular strategy for trail systems (*Managing Mountain Biking – IMBA's Guide to Providing Great Riding, 2007*):

- 1) Shared-use trails best accommodate the needs of most users by dispersing users widely within the overall network. Single-use trails tend to concentrate and crowd users into bottlenecks defined by the trail usage limitations.
- 2) Shared-use trails help build a trail community by encouraging social interactions between users. Diverse user groups often form partnerships or alliances to protect a common resource.
- 3) Shared-use trails are typically more cost effective for land managers as they require fewer signs, and it simplifies monitoring and enforcement of the usage limitations.
- 4) Shared-use trails empower responsible, experienced users. When conscientious, experienced trail users lead by example, novice trail users can learn proper trail etiquette with minimal need for monitoring and enforcement.
- 5) Shared-use trails take better advantage of the available space. Trail networks can be designed to provide the highest number of trail kilometers for each user group when shared-usage is factored in.
- 6) Trail systems with shared-use trails require fewer kilometers of trails and therefore have less environmental impact than if trails were built separately for each user group.
- 7) Shared-use trails manage and accommodate the most visitors. Major travel corridors are typically more efficient when shared.

It is also recognized that certain combinations of factors can make single-use trails more practical than shared-use trails. The following six points illustrate scenarios where single-use trails are a desirable alternative to shared-use trails (*Managing Mountain Biking – IMBA’s Guide to Providing Great Riding, 2007*):

- 1) Overcrowded Trails – Single-use may need to be considered if user safety and the quality of experience are compromised by overcrowding and/or wide variations in the speed of different user modes.
- 2) Overcrowded Trailheads – Sometimes it may not be possible to expand trailhead facilities due to land constraints. In this case, single-use limitations for access trails to a shared-use network may help alleviate overcrowded trailheads. Trail usage demographics can be used to create an appropriate strategy to separate users and prioritize space available at other trailheads accessing the trail system.
- 3) Extraordinary Mountain Biking Trails – Some trails are designed with a preferred use in mind like mountain biking. A technical mountain bike trail with swooping corners which are built for speed and flow may not be an appropriate trail to encourage shared-use and/or two-way traffic. These trails are typically based on playing to the terrain and are much more focused on the exhilaration of the experience, whereas hiking trails are often focused on a destination such as a waterfall or viewpoint.
- 4) High-Speed Trails or Downhill Mountain Bike Trails – Trails that are designed for speed can improve safety for all trail users by providing advance warning that users of the trail need to be sufficiently skilled to enter the single-use trail.



- 5) Bike Parks or Technical Trail Feature Zones – There is typically little need for signage or enforcement to ensure single-usage as these types of trail features are typically designed with a preferred usage in mind. A shared-use bypass trail is typically all that is required to provide the separation needed for the comfort and safety of all trail users.
- 6) Nature Trails and Seasonal Trails – Sensitive natural areas, destination hikes, or areas where wildlife viewing is the primary goal may cause conflicts between user groups. There are sometimes areas where trail usage in ecologically sensitive areas may only be possible at certain times of the year.
- 7) In addition, we note that specialty trails like cross-country skiing or snowshoeing trail networks which operate in the winter months are often used as hiking and mountain biking trails during the summer months. In this scenario, they may be able to serve several user groups independently with different users separated by seasonal needs. However, these lines are becoming blurred by activities such as snow biking where mountain bikes with “fat tires” are able to ride in the snow. In other areas, there has been some conflict between cross country skiers and snow bikers due to the way that the snow bikes impact the quality of track-setting and grooming for the skiers. Based on the limited information available for snowbiking, for the moment, it is likely best if the various winter trail usages are considered single use unless the trail corridor width is such that each user type can have its own line. For example, a snowshoe track beside a backcountry skiing up-track is a common sight in areas where the two activities overlap in valley bottoms.
- 8) Motorized trails – Trails intended for motorized recreational use should be separated from non-motorized users where the speed differences are great and the sight lines are minimal.

Trail Difficulty Rating System

It is important to consider the needs of the typical user when developing and maintaining trails. Different users have different needs and expectations, both of which are a function of the difficulty level of the trail.

The white, green, blue, black, and double black difficulty level ratings for trails where mountain bikes are expected are based on the rating system adapted from downhill skiing and is widely used in mountain bike trail systems in North America and elsewhere (Trail Solutions – IMBA’s Guide to Building Sweet Singletrack, 2007);

The adoption of the IMBA difficulty rating system for mountain biking trails will provide the following benefits (Trail Solutions – IMBA’s Guide to Building Sweet Singletrack, 2007):

- Provide consistent difficulty ratings for all trails within the greater Columbia Valley area;
- Provide difficulty ratings which are consistent with other trail systems in North America and other parts of the world that also use the IMBA system;
- Ensure trail users are making informed decisions before riding a given trail;
- Provide trail users with a means to find trails appropriate to their skill level. This in turn reduces risks and injuries as well as frustration levels when riders “get in over their heads”;
- Provides all trail users with decision-making tools to have a high-quality experience; and
- By categorizing trails by difficulty level, it will help with future trail planning to address areas of the network



that may lack “more difficult” trails.

Please refer to Appendix D, 4.8 for Table 1 – Trail Difficulty Rating System

When using the IMBA difficulty rating system, it is important to note the following to ensure users understand how to interpret the information:

- **Rate technical challenge only.** The IMBA system relates to the technical challenges on a trail, not a rider's physical exertion level. It is recommended that trail length and elevation gain be shown on signage and mapping in addition to the difficulty rating so that riders can decide whether the three factors combine to form a realistic challenge for their planned outing.
- **Collect trail measurements.** Based on the objective criteria listed in the IMBA system, collect field measurements to begin the process of rating a trail. Some judgment may be required if trails have unusual combinations of “easy” tread width but “very difficult” trail grades.
- **Signage and maps should include difficulty rating, length, and elevation gain.** Hikers and mountain bikers review a trail's length and elevation gain to help decide if a trail is appropriate for their mobility and fitness levels. The physical exertion on a ride is a function of difficulty, length, and elevation gain so it makes sense to provide this information at key decision-making points within the trail network as well as on maps. Some trails with lots of undulation may also want to post total elevation gain and net elevation gain.
- **Employ sound judgment.** The assignment of a trail difficulty rating is not purely an objective exercise. Consider how subjective factors like corridor clearance, sightlines, turning radius, maximum and average grades, tread quality, exposure, natural obstacles, and technical trail features (TTFs) may influence the difficulty rating of a trail. Experienced mountain bikers and trailbuilders will be able to help determine an appropriate overall rating for a given trail.

When applied with care and sensitivity, the difficulty rating system will provide trail users with easy access to the information needed to plan an enjoyable ride that is suitable for their ability levels.

Trail Development Considerations

Stacked loops provide easier trails nearest to the trailhead and locate more difficult and very difficult trails further away from the trailhead. This allows more experienced riders a short warm-up as they pass through less technical areas of the network on the way to their more advanced trails. With well-planned stacked loops, it is possible to provide a wide range of trails for multiple user groups from a single trailhead while keeping the potential for user conflicts to a minimum using effective layout.

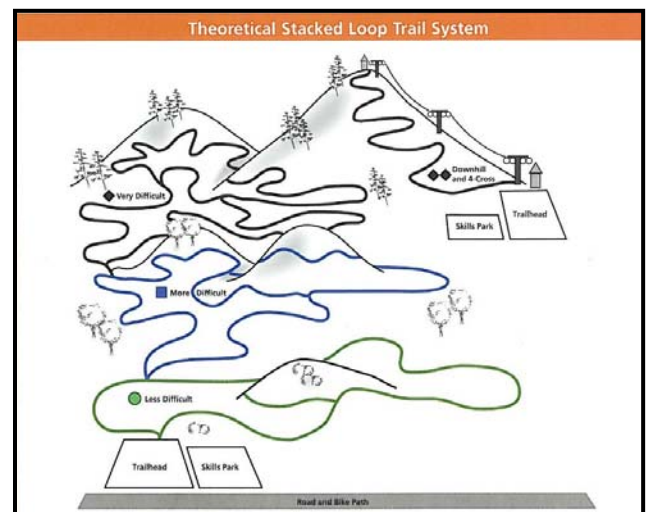







Table 1: Trail Difficulty Guidelines

	Easiest White Circle 	Easy Green Circle 	More Difficult Blue Square 	Very Difficult Black Diamond 	Extremely Difficult Double Black Diamond 
Trail Width	1.80m or more	0.90m or more	0.60m or more	0.30m or more	0.15m or more
Tread Surface	Hardened or surfaced	Firm and stable	Mostly stable with some variability	Widely variable	Widely variable and unpredictable
Average Trail Grade	Less than 5%	5% or less	10% or less	15% or less	20% or more
Maximum Trail Grade	Max 10%	Max 15%	Max 15% or greater	Max 15% or greater	Max 15% or greater
Natural Obstacles & Technical Trail Features (TTF)	None	Unavoidable obstacles 5cm tall or less Avoidable obstacles may be present Unavoidable bridges 0.90m or wider	Unavoidable obstacles 20cm tall or less Avoidable obstacles may be present Unavoidable bridges 0.60m or wider TTFs 60cm high or less, width of deck is greater than half the height	Unavoidable obstacles 40cm tall or less Avoidable obstacles may be present May include loose rocks Unavoidable bridges 0.60m or wider TTFs 120cm high or less, width of deck is greater than half the height Short sections may exceed criteria	Unavoidable obstacles 40cm tall or less Avoidable obstacles may be present May include loose rocks Unavoidable bridges 0.60m or narrower TTFs 120cm high or less, width of deck is unpredictable Many sections may exceed criteria

[Source – Trail Solutions: IMBA's Guide to Building Sweet Singletrack, 2007] as adapted to the metric system

Table 2: Trail Type Classification

Trail Type Classification (for Asset, Resource Conservation, and Visitor Experience Management)					
General Description and Technical Details					
Element / Trail Type	TYPE 1	TYPE 2	TYPE 3	TYPE 4	
Definition	<ul style="list-style-type: none"> Paved or hard-packed surfaced double track trail, all weather use, with no obstacles in surface. Use compacted crushed rock, mineral soil, asphalt or chip-seal coat surface. Minimum trail width of 1.5 metre. Provide interpretive and directional signs, benches, and viewing areas where appropriate. Machine- or hand-built and maintained. 	<ul style="list-style-type: none"> Natural surfaced packed single track trail or double track trail. Use natural mineral soils or rock for surfacing, or native material from site. May be a paved surface. Minimum trail width of one metre. Provide interpretive and directional signs, benches, viewing areas where appropriate. Machine- or hand-built and maintained. 	<ul style="list-style-type: none"> Natural surface single track trail. Trail tread may be constructed or established by clearing a corridor and marking the route. Whenever possible use natural native material from site. Minimum trail width of 0.25 metre. Provide minimal signage. Hand-built and maintained. 	<ul style="list-style-type: none"> No construction. Suggested trail route. Trail tread may consist of wildlife paths or may not exist. Provide minimal or no signage or facilities. Not maintained. 	
Park Zone (applies to National Parks only)	Zone III, IV, and V (Natural Environment, Outdoor Recreation, and Park Service). <i>May be found in Zone II (Wilderness) under special circumstances.</i>	Zone II, III, V (Wilderness, Natural Environment, Outdoor Recreation and Park Service)	Zone II, III, IV, V (Wilderness, Natural Environment, Outdoor Recreation and Park Service). <i>May be found in Zone I (Special Preservation) under exceptional circumstances.</i>	Zone I, II, III, and IV (Special Preservation, Wilderness, Natural Environment, and Outdoor Recreation).	
Typical Visitor Type	Suitable for all visitors including those with no trail experience. Visitor may be prepared for trail or may not be prepared (proper equipment and water).	Suitable for most visitors with some basic trail experience who are generally prepared (proper equipment and water).	Suitable for visitors who have trail experience and are prepared (proper equipment and water).	Suitable for visitors who have exceptional trail and navigation experience and are well prepared (proper equipment and water).	
Trail Rating	Easy or Moderate	Easy, Moderate, or Difficult	Moderate, Difficult or Unrated	Difficult or Unrated	
Image					
Technical Details	Distance (km / m)	Crushed rock or natural mineral soil surface Typical distance of trail does not exceed 10 km. In certain cases a Type 1 trail may exceed 10 km. Flat to gently rolling	Crushed rock or natural mineral soil surface Typical distance of trail does not exceed 20 km. In certain cases a Type 1 trail may exceed 20 km. Gently rolling with short steep sections	Natural mineral soil surface May exceed 20 km. Riding with steep sections that may continue for long periods	Suggested trail route N/A
	Trail Profile (general description and typical elevation gain)	Typical Elevation Gain 0 – 100 metres May be greater in certain situations.	Typical Elevation Gain 0 – 1,000 metres	Typical Elevation Gain 0 – 1,000+ metres	Elevation Gain N/A
	Trail Surface (Material Type and Typical Average Width)	Paved or surfaced Hard packed and stable Typical Average Width 1.5 – 3.0 metres	Surfaced or natural Firm and stable Typical Average Width 1.0 – 1.5 metre	Natural May be loose in areas Typical Average Width 0.25 – 1.0 metre	Average Width N/A
	Quality of Marking (General Description and Information Provided)	Trailhead information, interpretive panels, route markers, trail orientation maps Maximum information provided	Basic trailhead information, route markers, and trail orientation maps Moderate information provided	Basic trail head information and minimal route markers, or no signage provided Minimal or no information provided	N/A
	Obstacles or Stairs	Few or no obstacles, no stairs or minimal use of stairs	Infrequent obstacles, stairs may be present	Obstacles common, stairs may be present	N/A
	Visitor Facilities	Parking lot, washroom, bridges, benches Maximum visitor facilities	Parking lot, outhouse/pit toilet, bridges Moderate visitor facilities	Bridges or other water crossing including fording Minimal visitor facilities	N/A • No visitor facilities
	Level of Use	High to Very High	Moderate to High	Low to Moderate	Low





Source: Parks Canada, Trail Classification System

Table 3: Level of Service, Visitor Safety and Experience Tools

Level of Service, Visitor Safety and Visitor Experience Tools				
Element / Trail Type	TYPE 1 High	TYPE 2 Moderate	TYPE 3 Low	TYPE 4 N/A
Level of Service				
Level of Service Inspection	Weekly/monthly or upon visitor comment	Seasonal or as required upon visitor comment	Yearly or as required upon visitor comment	N/A
Deadfall Clearing	As required	As required / seasonal	Yearly	N/A
Infrastructure	Major bridge, boardwalk, viewing platform)	Moderate (bridge, boardwalk, viewing platform)	Low or none (bridge, boardwalk)	N/A
Trail Materials and Surface Preparation	Asphalt, concrete or crushed rock • Repair cracks, fill holes, repack surface, create drainage, clear corridor	Crushed rock or natural mineral soil and rock • Fill holes, repack surface, create drainage, clear corridor	Natural mineral soil and rock • Create drainage, clear corridor	N/A
Equipment	ATV, mechanized equipment, horse, hand or bicycle	ATV, mechanized equipment, horse, hand or bicycle	Non-motorized, horse, hand or bicycle	N/A
Visitors Definition	Visitor may not understand all risks and may not be self-reliant in the event of an incident.	Visitor may have a general understanding of some risks and may be partially self-reliant in the event of an incident	Visitor has an understanding of most risks and may be self-reliant in the event of an incident	Visitor has an understanding of risks and will be self-reliant in the event of an incident
Risk Mitigation	Maximum effort made to mitigate risk.	Moderate effort made to mitigate risk.	Low effort made to mitigate risk.	Low to little effort made to mitigate risk.
Risk Identification (Cautions and Warnings)	High detailed explanation of risk – typically provided at trailhead, on maps and at areas of risk along the trail.	Moderate detailed explanation of risk – only significant risks identified. Information typically provided at trailhead and at areas along the trail	Low detailed explanation of risk – only site-specific or unusual risks. Information typically provided at trailhead.	Low detailed explanation of risk – only site-specific or unusual risks. Information typically provided at trailhead.
Risk Inspection	Weekly/monthly or upon visitor comment. Risk inspection can occur during level of service inspection	Seasonal or as required upon visitor comment. Risk inspection can occur during level of service inspection.	Yearly or as required upon visitor comment. Risk inspection can occur during level of service inspection.	N/A
Targeted Visitor	Family-friendly, suitable for all visitors looking for an easy trail experience.	Suitable for most visitors who are generally active and have some basic trail experience.	Suitable for visitors who have trail experience and are active.	Suitable for visitors who have exceptional trail experience and are very active.
Trail Highlights	The purpose of this section is to give visitors a sense of what they can expect along this trail, but to describe it in a non-technical way. Example: This trail is an easy walk through a conifer forest and will bring you to a beautiful sand beach along Lake Superior.	The purpose of this section is to give visitors a sense of what they can expect along this trail, but to describe it in a non-technical way. Example: An enjoyable hike that will allow you to discover the animals of the boreal forest. Observe a beaver lodge, be on the lookout for a wide variety of songbirds and if you are lucky, you might catch a glimpse of some moose.	The purpose of this section is to give visitors a sense of what they can expect along this trail, but to describe it in a non-technical way. Example: A challenging trail that winds through a variety of terrain from valley bottoms to scenic hill top views. Enjoy lunch while taking in some scenic ocean views, be on the lookout for whales and seals.	The purpose of this section is to give visitors a sense of what they can expect along this trail, but to describe it in a non-technical way. Example: A challenging and spectacular route that the park recommends for experienced backcountry travelers. Route finding skills are essential since there are no trails or route markers to show the way. Weather in the mountains can also quickly reduce visibility.

Source: Parks Canada, Trail Classification System

Table 4: Trail Rating Classification

Trail Rating Classification (for the Visitor)				
Element / Rating	EASY	MODERATE	DIFFICULT	UNRATED
Definition	<ul style="list-style-type: none"> Suitable for all visitors including those with no trail experience. Visitor may be prepared for trail or may not be prepared (<i>proper equipment and water</i>). Hard packed surface with no obstacles and minimal stairs. Estimated time to complete the trail is no longer than two hours. Little or no elevation gain or loss. 	<ul style="list-style-type: none"> Suitable for most visitors who have some basic trail experience and are generally prepared (<i>proper equipment and water</i>). Mostly stable surface with infrequent obstacles, stairs may be present. Estimated time to complete the trail is no longer than five hours. May experience moderate elevation gain with some short steep sections. 	<ul style="list-style-type: none"> Suitable for visitors who have trail experience and are prepared (<i>proper equipment and water</i>). Variety of surface types including non-established surface. Estimated time to complete the trail may exceed five hours. May experience major elevation gain with long steep sections. 	<ul style="list-style-type: none"> Suitable for visitors who have exceptional trail and navigation experience and are well prepared (<i>proper equipment and water</i>). Non-established trail only a suggested trail route, not maintained. Estimated time to complete ranges from 1 day to 10 days or longer. May experience a variety of terrain including wet areas, loose rocks, exposure, and thick forest.
Trail Type	Can be 1 or 2	Can be 1, 2 or 3	Can be 2, 3 or 4	Can be 3 or 4
Symbol				
Distance (return)	0 – 5 km	0 – 15 km	0 – 15+ km	N/A
Trail Profile	Flat to gently rolling	Gently rolling with short steep sections	Rolling with many steep sections that may continue for long periods	N/A
Trail Surface (material type and average width)	Typical Elevation Gain 0 – 100 metres Paved or surfaced • Hard packed Typical Average Width 1.0 – 3.0 metres	Typical Elevation Gain 100 – 500 metres Surfaced or natural surface • Firm and stable Typical Average Width 0.5 – 1.5 metre	Typical Elevation Gain 500+ metres Natural surface • May be loose or may not exist Typical Average Width 0 – 1.0 metre	Typical Elevation Gain N/A Typical Average Width N/A
Quality of Marking (general signage and information provide)	Trailhead information, interpretive panels, route markers, trail orientation maps • Maximum information provided	Basic trail head information, route markers, and trail orientation maps • Moderate information provided	Basic trail head information and minimal route markers, or no signage provided • Minimal or no information provided	N/A
Obstacles or Stairs	Few or no obstacles, minimal use of stairs	Infrequent obstacles, stairs may be present	Obstacles common, steps common	N/A
Visitor Facilities	Parking lot, washroom, bridges, benches • Maximum visitor facilities	Parking lot, outhouse/pit toilet, bridges • Moderate visitor facilities	Bridges or other water crossing including fording • Minimal visitor facilities	N/A • No visitor facilities
Recommended Experience Level or Service	High Little or no experience required	Moderate Some experience recommended	Low Experience recommended	N/A

Source: Parks Canada, Trail Classification System

Appendix F – Typical Costs for Backcountry Trails

Appendix F – Typical Costs for Backcountry Trails

<u>ITEM</u>	<u>UNIT</u>	<u>UNIT RATE</u>
Trail Clearing on Existing Abandoned Road	l.m.	\$ 10.00
Clearing and Pruning Trail Corridor	l.m.	\$ 5.00
New Trail Construction	l.m.	\$ 25.00
Rugged New Trail Construction (flat wet areas or side slopes >40% grade)	l.m.	\$ 35.00
Trail Decommissioning	l.m.	\$ 10.00
Insloped or Climbing Turn Construction	L.S.	\$ 1,000.00
Log Retaining Wall Construction	l.m.	\$ 250.00
Log Retaining Wall With Deadman Construction	l.m.	\$ 350.00
Skiing-Hiking Bridge Construction	l.m.	\$ 550.00
Type A Bridge Construction	l.m.	\$ 2,000.00
Metal Bridge Construction	m ²	\$ 550.00
Large Span Bridge (custom pre-fabricated)	l.m.	\$ 10,000.00
Large Span Suspension Bridge	l.m.	\$ 5,000.00
Puncheon Construction	l.m.	\$ 400.00
Trailhead Kiosk	ea.	\$ 3,500.00
Trail Markers/Signage (5 signs/km typical)	ea.	\$ 60.00
Trail Interpretive Signage (1 sign/km typical)	ea.	\$ 800.00