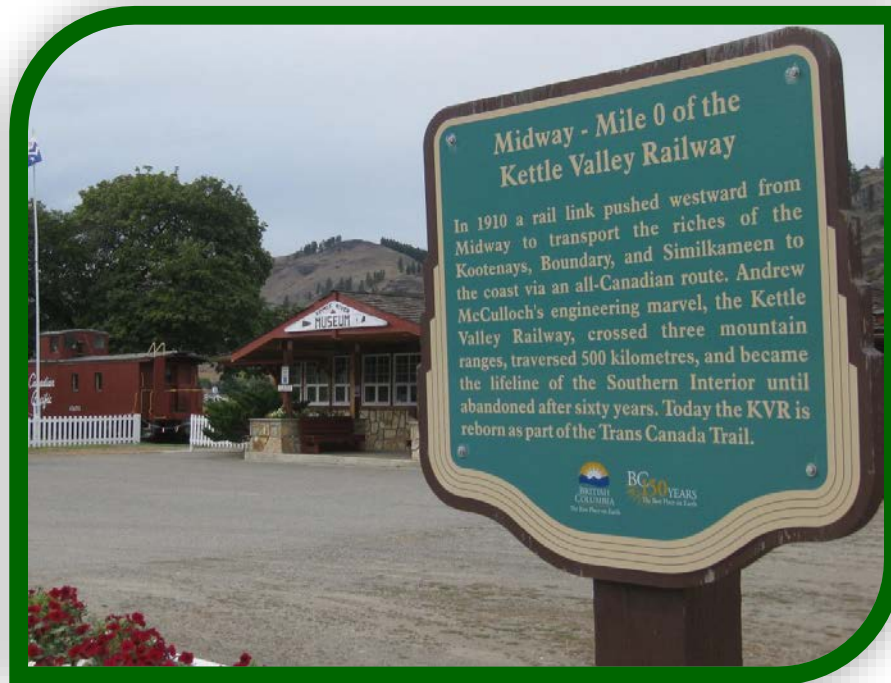


Phase 2 – Consultation Primer

Boundary Recreational Trails Master Plan

Regional District of Kootenay Boundary



Prepared for:



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Kootenay Boundary**

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CASCADE ENVIRONMENTAL
RESOURCE GROUP LTD

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1 List of Abbreviations

2 Introduction

This Primer was assembled to support the online survey as an information package about trail planning, management and maintenance. It summarizes current knowledge regarding the value of trails and some of the best practices for managing trails. Trail terminology and classification is discussed, in an effort to familiarize the reader with all of the different types of trails, trail users and trail management approaches and the challenges associated with different types of users on different types of trails. It attempts to build off the information gathered in Phase 1 of the project and includes some of the information from the Phase 1 report. The Primer talks about the benefits of trails to the community, the economy and the region. It also describes the value of partnerships between communities, trail associations, user groups, government agencies and First Nations. In short, this Primer is intended to inform the reader about the Boundary Recreational Trails Master Plan process and to help with completing the survey. Thank you for your participation in this worthwhile exercise.

2.1 Background

The Regional District of Kootenay Boundary (RDKB) is investigating, researching, and consulting with the public, to determine if it should develop a Boundary Recreational Trails Master Plan (BRTMP) for the Boundary Region of the RDKB (Electoral Areas D and E including Midway, Greenwood, and Grand Forks).

“The Master Plan is intended to, at a high level, identify economic, cultural and societal benefits of developing a Recreational Trails Master Plan but more specifically is to present a short, medium and long term plan for the maintenance and development of recreational trails throughout the Boundary, developed through extensive public and stakeholder consultation, identifying options for service delivery and identifying the required resources – financial, human and otherwise – to meet the needs of the community.”

In support of this initiative, a Working Group was struck, consisting of staff, elected representatives, stakeholder groups and interested parties to help provide input on the process.

2.2 Purpose

A purpose statement for the BRTMP was developed by the Working Group and is as follows: Successful management of trails for recreational opportunities requires that all trail users work together to achieve a common purpose, being the creation of sustainable and environmentally sensitive trail networks for the benefit of all users recognizing individual needs and requirements. The achievement of this goal will require all parties to work together in the identification and establishment of networks that fulfill this goal. The overriding philosophy will be: *“Trails for everyone, but not every trail for everyone.”*

2.3 Vision

To provide collaborative input and planning into recreational projects and operations for the social/economic benefit of the Boundary.

2.4 Objectives

With the commitment to work together, the following objectives were developed:



- To work together in a cooperative and collaborative manner openly sharing any pertinent information that may affect the collective memberships and/or all recreational activities in the Boundary Country.
- To identify the differences between the various types of recreation and the differences in their activities based on the season of operation (Summer/Winter) and type of recreation (motorized/non-motorized) and to represent all issues with the best interests of our combined users and recreational activities in mind.
- To provide a means through local planning and activities to resolve and reduce current and future trail conflicts and promote voluntary compliance in the preservation of the trails regardless of their designated use.
- To enhance the recreational opportunities in the local area that will not only benefit the local user but also provide opportunities for the development of the local economy through tourism opportunities.
- To identify and develop protocols that will lead to enhanced trail safety and trail etiquette.
- To work together in maximizing trail sustainability and opportunities.
- To collectively manage, share and promote recreational opportunities in the area be they motorized or non-motorized.
- To create an atmosphere that promotes mutual respect between all trail users, including neighbours on adjacent properties, and the combined use of all available resources in the development of opportunities.
- To work together in the education of the public and trail users to the benefit of all recreational activities regardless of type.
- To inform and educate their members or unaffiliated trail enthusiasts on the need for safe and responsible use of recreational trails.
- To foster shared environmental stewardship behavior among all users.
- To take a cooperative and collaborative approach to protect and enhance our opportunities for backcountry recreation in the Boundary Country.
- To work together in a cooperative and collaborative manner to increase or enhance sustainable trail initiatives or networks that will be of mutual benefit to all parties including the needs of other trail users both motorized and non-motorized regardless if the trails are single or mixed use.

Cascade Environmental Resource Group Ltd. was retained to lead a master planning process over four phases. The process is now in the second phase:

- Phase 1 – Analysis and Review
- **Phase 2 – Community and Stakeholder Engagement**
- Phase 3 – Key Finding, Strategic Directions and Recommendation
- Phase 4 – Development of the Master Plan and Presentations

2.5 Phase 1 - Analysis and Review

Phase 1 of the Boundary Recreational Trails Master Plan is complete and available on the RDKB website <https://www.rdkb.com/LinkClick.aspx?fileticket=sydU70mxiAE%3d&tabid=656>

Phase 1 brought together all of the available information regarding trails in the RDKB study area. Phase 1 focused on *research, analysis and quantification of the economic, societal and community benefits of the development and maintenance of a regional recreational trail network*. Included in this was the identification of possible downsides.

2.6 Existing Recreational Trails

In Phase 1 of the process completed an inventory of the trails in Areas D and E. The maps of the trails are available here: <https://jointheconversation.rdkb.com/15159/widgets/96820/documents/60932>

Table 1: Existing Recreational Trails in the Boundary

Trail/Network Name	Predominant Trail Use	Partnership Agreement Holder	Length(m)
5 O'Clock Lake	Non-motorized	RSTBC	996
Al Donaldson Trail	Non-motorized	RSTBC	1556
Atta Fire Trail	Motorized	Grand Forks ATV Club	208
B.C. Mine Road	Non-motorized	Kettle River Mountain Bike	3219
Black Train Bridge	Non-motorized	Grand Forks Community Trails Society	394
Boundary - Roderick Dhu Lookout	Motorized	Grand Forks ATV Club	6646
Bundschu Trail	Non-motorized	Kettle River Mountain Bike	2658
Bundschu Trail	Non-motorized	RSTBC	569
City Park Loop	Non-motorized	Grand Forks Community Trails Society	848
Copperkettle Lake	Non-motorized	RSTBC	1297
Crook Lake Trail	Motorized	Grand Forks ATV Club	5630
Dam Site Trail	Non-motorized	RSTBC	1423
Dan O'Rae - Sand link	Motorized	Grand Forks ATV Club	4409
Dan O'Rae Morrissey Link	Motorized	Grand Forks ATV Club	1642
Dewdney Trail (Christina Ik – Santa)	Non-motorized	RSTBC	4971
Eholt South Pass Trail	Motorized	Grand Forks ATV Club	5911
Eholt Wilgrams Lake Trail	Non-motorized	RSTBC	2378
Evergreen Cemetery & Johnson Flats	Non-motorized	Grand Forks Community Trails Society	2397
Filth	Non-motorized	Grand Forks ATV Club	851
Firemen's Park	Non-motorized	Grand Forks Community Trails Society	406
Fisherman Creek Trail	Non-motorized	RSTBC	315
Fiva Windfall link	Motorized	Grand Forks ATV Club	5518
FSR Network	Motorized	Grand Forks ATV Club	902366
Goat Mountain Trail	Hiking/Snowshoe	RSTBC	2597
Granby River Trail	Non-motorized	RSTBC	3862
Granby-Burrell Overlook	Motorized	Trail Forks	2190
Grand Forks View	Motorized	Grand Forks ATV Club	2992
Graystokes Snowmobile Trails	Snowmobile	RSTBC	31881
Greenwood Trails	Non-motorized	RSTBC	5062
Harpold Double Track	Non-motorized	Kettle River Mountain Bike	1746
Harpold Trail	Non-motorized	Kettle River Mountain Bike	6259
Highlands Trail - High Rim Trail	Hiking	RSTBC	19100
Highway Three	Non-motorized	Grand Forks Community Trails Society	3975
Howe Savage link	Motorized	Grand Forks ATV Club	6216
Hwy3 to Barbara Ann Park	Non-motorized	Grand Forks Community Trails Society	1857
Jewel - Rhoderick Dhu Trail	Motorized	Grand Forks ATV Club	5398
Jewell Lake Trail Network	Non-motorized	RSTBC	9996
Kelowna Nordic Snowshoe Trail	Snowshoe	RSTBC	26282

Kelowna Nordic XC Ski Trail Network	XC Ski	RSTBC	35911
Kettle Lakes Trail Network	Non-motorized	RSTBC	28134
Kettle River	Non-motorized	RSTBC	72260
Kettle Windfall Link	Motorized	Grand Forks ATV Club	3630
Little Fish Lake Trail	Non-motorized	RSTBC	3239
Lynch - Miller link	Motorized	Grand Forks ATV Club	9895
Lynch Creek Bike Trail	Non-motorized	RSTBC	6324
Marshall/Providence Lake Trail	XC Ski	RSTBC	15217
McCullough Snowmobile Trail Network	Snowmobile	RSTBC	296690
McKinney XC Ski Trail Network	XC Ski	RSTBC	9914
Midway Hiking Trail Network	Non-motorized	RSTBC	13155
Moody Dan O'Rae Link	Motorized	Grand Forks ATV Club	1379
Mt. Rhoderick Dhu North	Non-motorized	RSTBC	16156
Northwest Lynch Trail	Non-motorized	Kettle River Mountain Bike	165
Observation Mountain	Non-motorized	Grand Forks Community Trails Society	4806
Powerline Link	Motorized	Grand Forks ATV Club	533
Providence Creek Bypass	Non-motorized	RSTBC	483
Ripper Trails	Non-motorized	RSTBC	6636
Roderick Dhu Powerline Trail	Motorized	Grand Forks ATV Club	1229
Roderick Dhu Summit Trail	Motorized	Grand Forks ATV Club	995
Saddle Lake Downhill	Non-motorized	Kettle River Mountain Bike	1016
Saddle Lake Trail	Non-motorized	Grand Forks ATV Club	1338
Saddle Lake Trail	Non-motorized	Kettle River Mountain Bike	1144
Sand - Stewart Link	Motorized	Grand Forks ATV Club	2574
Savage West Trail	Motorized	Grand Forks ATV Club	5514
Thimble Mountain Trail Network	Non-motorized	RSTBC	12744
To Beacon above Saddle Lake	Hiking/Snowshoe	RDKB Trails	937
Trans Canada Trail (KVR) (C&WR)	Non-motorized	RSTBC	175238
Trans Canada Trail to City Park	Non-motorized	Grand Forks Community Trails Society	3019
Trapping Creek Horse Trails	Equestrian	RSTBC	113939
Under Observation Loops	Non-motorized	Grand Forks Community Trails Society	5505
Upper Granby Trail	Non-motorized	RSTBC	4624
V.V. & E. Railgrade (E)	Motorized	Grand Forks ATV Club	7359
V.V. & E. Railgrade (W)	Motorized	Grand Forks ATV Club	5686
Volcanic Trail	Non-motorized	RSTBC	5398
VV&E Railbed East - Reservoir Road	Non-motorized	Grand Forks Community Trails Society	1364
VV&E Railbed West - Spencer hill	Non-motorized	Grand Forks Community Trails Society	3748
W. Burrell - Gloucester link	Motorized	Grand Forks ATV Club	6356
Wallace Windfall link	Motorized	Grand Forks ATV Club	6512
Waterfront Trail	Non-motorized	Kettle River Mountain Bike	2447
Williamson - David Cr link	Motorized	Grand Forks ATV Club	2799

Trails data utilized for the preliminary analysis was comprised of datasets provided by the RDKB and other local stakeholder groups including the Grand Forks Community Trail Association, Grand Forks ATV Club, and the Kettle River Mountain Bikers' Association. Additionally, the Provincial Recreation Polyline dataset was also utilized to complete the inventory.

Data from these various sources was compiled into a single dataset containing 735 unique features. This GFATV trails dataset includes 51 motorized trails and other existing or retired/decommissioned resource roads primarily in the Granby area. The remaining data from the RDKB included 27 non-motorized trails from the GFCTA and KRMBA in the immediate Grand Forks area. The Provincial data consisted of the remaining 667 trails which are primarily non-motorized and include equestrian, hiking, mountain biking in addition to winter use trails for snowmobiling, snowshoeing, and cross-country skiing, covering key trail networks including the Midway trails network, the Kettle River Trails system in Rock Creek, and the extensive network at Trapping Creek, with the latter two systems seeing primarily equestrian use. Big White Ski Resort also features many purpose-built mountain biking trails of a commercial nature, with the McCullough snowmobile and Kelowna Nordic trail systems within close proximity, mostly serving the Kelowna area. Overall, the trails dataset contains over 1000 km of trails.

The study area contains over 2000 km of identified motorized and non-motorized trails and routes. Additionally, within the study area there is a further 8300 km of permitted resource roads (DataBC, Forest Road Dataset). However, that may not be the complete inventory, which could include more than 15,000 km of resource roads (Coleshill and Watt, 2015). The study area would appear to have considerable, readily available trail opportunities, since resource roads, like rail beds (subject to consultation with the permit holders) can be potential trails.

The majority of non-motorized use is along the main highway arteries along Highway 3 from Christina Lake through to Rock Creek, and then clustered in the north-western part of the Regional District along Highway 33 closer to Big White and Kelowna. Much of the motorized use and routes seems to be focused north of Grand Forks towards and adjacent to Granby Park. A proliferation of high-density resource roads in the entire region provides thousands more kilometres of available terrain for motorized use.

Given the remoteness of many of the areas in the region, and the lack of information about trails in these areas, the plan will rely heavily on local knowledge and information from local land partnership agreement holders, residents, and other stake holders to help ensure that the dataset is accurate, up to date, and captures the important features and trails in each area.

2.6.1 The Trail Master Plan Working Group

A Working Group was struck during Phase 1 of the process to provide local information, connections to other stakeholders, and guidance to Cascade in the preparation of the planning documents. The Working Group was not intended to exhaustively represent stakeholders, but rather serve as a community liaison. The Working Group was composed of the following people:

1. Brian Fletcher
2. Chris Moslin
3. Doug Zorn
4. Gary Champagne
5. John Lebrun
6. Karen Mehmal
7. Roly Russell (RDKB)
8. Vicki Gee (RDKB)
9. Grace McGregor (RDKB)
10. Ciel Sander
11. Barry Noll



3 Why Trails?

Trails have been with us a long time. They pre-date roads and just about everyone uses them to some degree. Trail use is the most popular mode of outdoor recreation in the world. Trails have come full circle and are more increasingly being used for transportation once again.

Trails are fun. Trails can have motorized and/or non-motorized activities on them.

Trails are good for us. They get us outside in nature. Trail use combats inactivity and obesity. Trails reduce health care costs in BC by up to \$6.7 M annually (MNP, 2011).

Trails in close proximity to homes are used more often and increase the property's value (Racca and Dhanju, 2006) (<https://www.railstotrails.org/resourcehandler.ashx?id=4482>).

Trails are economic drivers. Economic studies show that trails have an economic multiplier effect that benefits local and regional economies (DBC, 2011) (https://www.destinationbc.ca/content/uploads/2018/12/RosslandGoldenMntBike_EI_FINAL.pdf).

Trails are often taken for granted and unvalued because many are historic trails that “have always been there”. In reality, trails are a legitimate recreation facility. Not unlike a community arena, they have costs to build, manage and maintain.

Trails, especially popular trails, need to be managed. Sound planning and management can avoid user conflicts, ensure health, safety and risk reduction, promote education and fitness (RSTBC, 2010) (<https://www.for.gov.bc.ca/ftp/DKA/external/publish/Recreation/Trail%20Information/Provincial-Trails-Strategy.pdf>).

The questions asked in the survey will help to answer the following question: How does the RDKB position itself to best support trails-based opportunities and to what degree should it support trails?

3.1 Other Trail Initiatives

While each area is unique in its culture and values, there are literally hundreds of trail initiatives that can be used as templates and to learn from. Here are just four examples that highlight different sectors and values:

The Province of British Columbia recognizes the value of trails. Dating back to 1939, Recreation Sites and Trails BC has developed a strategy for the province (RSTBC, 2013) (<https://www2.gov.bc.ca/assets/gov/sports-recreation-arts-and-culture/outdoor-recreation/camping-and-hiking/rec-sites-and-trails/trail-strategy.pdf>).

The Thompson Okanagan Tourism Association recognizes the tourism value of trails and have developed a strategy to promote rail trails (TOTA, 2017) (<https://static1.squarespace.com/static/5ba2ca080dbda376f55bcf1d/t/5d1a5abb6d0d9e00012bf2a4/1562008302477/TO-Tourism-Rail-Trails-Strategy-2016.pdf>).

The Regional District of Okanagan Similkameen recognized the value of trails:

“In 2011, the Regional District of Okanagan-Similkameen, in cooperation with its member municipalities, developed the [Regional Trails Master Plan](#) (RTMP). This foundational document sets out priorities and direction for trail development and promotion in the region - since its release, the Regional Trails program has grown tremendously and is quickly becoming a model for other local governments.” (<https://www.rdos.bc.ca/community-services/regional-trails/>)

The Sea to Sky Corridor has positioned itself as a global facility for mountain biking and Whistler mountain biking is now recognized as a significant economic engine for the province generating \$46M for Whistler and \$75M for the province (CSTA, 2017) (<https://www.mbta.ca/wp-content/uploads/2017/09/2016-Whistler-Mountain-Biking-Economic-Impact-Study.pdf>).



3.2 The Need for Planning

There are many different types of trails and classification systems. There is no universal standard although a number of organizations have produced standards that are widely adopted. Cascade produced a set of trail descriptions for the Trans Canada Trail, now referred to as the Great Trail, that can be used as a foundation in the development (see Appendix 1.). The Whistler Trail Standards, a widely recognized classification system and one of the few, if not the only, set of standards for non-motorized trails (RMOW, 2003) (https://cyclingbc.net/wp-content/uploads/2014/10/trail_standards_first_edition.pdf). Both the Whistler Trail Standards (WTS) and the Great Trail descriptions used the BC Forest Service Recreation Manual Chapter 10 (FSRM, 1996) as a foundation (<https://www.for.gov.bc.ca/hfp/publications/00201/chap10/chap10.htm>). However, the FSRM is very detailed and best used as a resource document for agencies and contractors.

3.3 Basic Trail Use Definitions

The terms motorized and non-motorized are the generally accepted category distinctions when discussing trail use types. Mixed-use typically refers to both motorized and non-motorized users sharing the same trails, while multi-use trails usually mean different user groups of the same category type, while Single-use trails are designated for only one user group, such as hiking only, for example.

On both Mixed and Multi-use trails it is important to recognize that there is almost always an impact hierarchy, whereby one user can be disproportionately impacted or subservient to encounters by another user. For example, a dirt biker is generally unaffected by an encounter with non-motorized user, while the inverse is typically not the case

Non-Motorized

Generally, non-motorized is an exclusionary classification, designed to separate the two groups for reasons of conflict, quality of experience, environmental concerns, and safety. Within the non-motorized sector there are purpose-built trails and multi-use trails. Some trails are designated as hiking-only, where the grades, surface, or area are deemed to be inappropriate for mountain bikes or horses. Other trails may be designated as mountain bike trails, where hiking, while not prohibited, may not be an enjoyable experience. Recent studies, like the South Chilcotin Park Facilities Design, recognize the value in certain conditions, of separating horse trails from other non motorized uses, in particular, mountain bikes (Cascade, 2016). While the Province of BC has determined that Class 1 e-bikes can ride on any BC Parks trail where mountain biking or other cycling is already allowed.

(https://www2.gov.bc.ca/assets/gov/sports-recreation-arts-and-culture/outdoor-recreation/camping-and-hiking/rec-sites-and-trails/ebike_policy_final_04-25-2019.pdf) BC Parks have closed some parks to e-bikes on mixed use, non-motorized trails and Recreation Sites and Trails BC (RSTBC), working with local land use authorities have issued Crown land prohibitions on specific established trails for e-bike use.

Summer

- Hiking
- Trail running
- Equestrian - horse
- Mountain bikes, including Class 1 E-bikes unless prohibited

Winter

- Snowshoe
- Ski/Nordic/Backcountry/Downhill

Motorized/Mixed-Use

Motorized trails are generally undesignated with motorized use as the default. Due to the size of BC and its resource-based history, there are more kilometres of motorized trails in the province than any other



trail type. Except for select cases where safety is an issue, most motorized trails are available for all types of trail users. These trails are considered to be mixed-use or shared-use trails. As the dominant user, motorized use determines the condition of the trail and the level of maintenance required. Conflicts arise where two competing user types want to use the trail with different experiential objectives.

Summer

- Trials Motorcycle
- Dirtbike – motocross, dual sport
- ATV/ORV/OHV – ATV, Side-by-Side, 4X4

Winter

- Tracked ATV/Side-by-Side
- Snowmobile/Snowbike

3.3.1 Trail Difficulty Rating

Trail difficulty classification systems vary and can be inconsistent, locally, regionally, nationally and internationally. A number of years ago the mountain biking community elected to follow the North American ski industry for the symbology and difficulty rating system due to its prevalence and generally wide spread use and understanding by the general public. This decision was driven by the recognized need to educate the users and mitigate risk of injury from riding trails which could be beyond the skill level of the user. This system has gained a level of acceptance throughout the rest of trail community because it is logical and consistent regionally.

Rating System

While the rating system has evolved toward a standard, there are differences between regions and between trail user groups. While there is general agreement on the symbology, the evaluative criteria vary considerably. For example, an intermediate trail in one region could be classified as an expert trail in another. The second area of inconsistency amongst regions and trail partnership agreement holders relates to mapping of black diamond (expert/difficult/more difficult) and double black diamond (expert unlimited/more difficult/extremely difficult) trails. Cartographically, both cannot be coloured black without causing confusion. In some areas or activities, black diamond is red and double black diamond is black, while other activities reverse the colours. Ratings are generally unique to the regions type of terrain as well as the range and style of trails in that area.

3.3.2 Staging Areas

Staging areas are a key component of any type of trail network; they are the marshalling point for starting and/or ending trail activities. Staging areas may contain some or all of the following depending on location and levels of use:

- Parking for vehicles
- Safe load/unload area for bikes, ATVs, dirt bikes, snowmobiles, horses
- Signage or information kiosks
 - o Trail network map
 - o Trail use designations and closures
 - o Safety or hazard information
 - o Codes of Conduct on the trail
 - o Interpretive or educational information
- Toilet facilities
- Waste collection facilities

4 Invested Parties

The following is a list of identified parties and potential stakeholder organizations with an interest in trails in the region. The list includes potential and existing managing partners, stakeholders, community groups, governmental organizations, tourism organizations and/or individuals who have an interest in the development, maintenance and operation of recreational trails.

Back Country Horsemen of BC – Okanagan Chapter

<http://www.bchorsemen.org/bchbc/component/contact/contact/98-chapter-contacts/70?Itemid=435>

Baldy Mountain Resort <https://skibaldy.com/>

BC Timber Sales (FLNRO)

Beaverdell/Carmi (Community)

Big White (Community)

Big White Mountain Resort

Boundary Horse Association <https://www.facebook.com/groups/367622369927707/>

Boundary Invasive Species Society <https://www.boundaryinvasives.com/>

Boundary Area All Nations Aboriginal Council <http://bccic.ca/property/boundary-all-nations-aboriginal-council/>

Boundary Metis Community Association <https://www.mnbc.ca/chartered-communities/view/78-boundary-community-m-tis-association>

Boundary Snowmobile Club – Grand Forks <https://www.facebook.com/boundarysnowmobileclub/>

Bridenville (Community)

City of Grand Forks

City of Greenwood

Government of British Columbia, Recreation Sites and Trails

Grand Forks ATV Club <http://gfatv.ca/>

Grand Forks Community Trails Society <http://www.gftrails.ca/Home.html>

Grand Forks Cycling Club <http://www.grandforkscyclingclub.com/>

Grand Forks Fire Rescue <http://www.gffr.ca/>
Grand Forks Search and Rescue <https://www.gfsar.ca/>
Granby Wilderness Society <https://www.facebook.com/granbywilderness/>
Idabel Lake (Community)
Interfor (Forest Licencee)
Jewel Lake Environmental Protection Society
Kettle River Mountain Bikers Association <http://www.kettlerivermba.com/>, bmfletcher@telus.net
Midway Trails Society <http://midwaytrails.tripod.com/>
Mount Baldy (Community)
North Fork Trails Maintenance (signatory in Boundary Country Trails Agreement)
Okanagan Nation Alliance <https://www.syilx.org/>
Osoyoos Indian Band <http://oib.ca/>
Penticton Indian Band <http://pib.ca/>
Phoenix Mountain Alpine Ski Society <http://www.ski phoenix.ca/phoenix-mountain-alpine-ski-society/>
Phoenix Cross Country Ski Society <http://phoenixccc.tripod.com/>
Regional District of Kootenay Boundary, Electoral Area C
Regional District of Kootenay Boundary, Electoral Area D
Regional District of Kootenay Boundary, Electoral Area E
Rock Creek (Community)
Rock Creek Horse Association
Trails to the Boundary Society <https://www.facebook.com/trailstotheboundary/>
Trans Canada Trail, <https://thegreattrail.ca/>
Village of Midway Community
Vaagen Bros. Lumber, <http://www.vaagenbros.com/>
Westbank First Nation <https://www.wfn.ca/>
West Boundary Community Forest, <http://bccfa.ca/boundary-community-forest-association/>
Westbridge / Christian Valley Community

5 Provincial Role in Trails

Public trail authorization, construction, establishment, and management on Provincial Crown land falls within the purview of Recreation Sites and Trails BC. Under the current structure, Recreation Sites and Trails BC (RSTBC) operates under the Integrated Resource Operation Division within the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD). This allows RSTBC to consider tourism and associated socio-economic values as part of its mandate. While this shift may appear to be of minor nature, it has resulted in a significant shift in the operational direction of RSTBC.

Originally, forest recreation management on Crown lands was managed by the Forest Service and mostly consisted of rustic backcountry camping areas developed in association with timber harvesting and road building. This program was the core of the provincial recreation program outside parks in BC for many



decades. Through the 1990's and 2000's as public demand increased for a greater diversity of public recreation facilities on Crown lands the forest service focus began to explore development of trails and other facilities. The recreation program was reinvented in 2006 and was incorporated into the Ministry of Tourism Culture and the Arts with a strong focus on development of market ready tourism products adjacent communities. While the Recreation Sites and Trails BC branch was reincorporated back into the Forests Lands and Natural Resource Operations Ministry in 2010, the focus on providing world class opportunities for all users remains. With a focus of service to communities, integrating resource operations and rural economic development the RSTBC branch has emerged from its rustic backcountry roots into a program that delivers on a vision of world class recreation opportunities for communities across BC (pers comm. T. Trent, email, June 28, 2017).

For all approvals, development and management of trails on provincial Crown land, RSTBC is the approving agency and a partner.

5.1 Funding Mechanisms

Planning, building, managing, and maintaining trails requires money and resources. Funding can come from three sources – provincial, regional, and granting agencies.

Grants – Grants are generally not intended for operational purposes and as such, developing grantable projects for every funding cycle is difficult to sustain. Grants are important for incubating grass roots initiatives. As a trail culture develops, the desire for a managed trail network may become widely endorsed.

Resources - Project teams need to be developed and trained. There are typically two choices; develop in-house expertise with employees and volunteers, or retain contractors on a job by job basis. Contractors are efficient and cost effective with broad experience. Hybrid trail stewardship models similar to Fish Stewardship Groups or Invasive Species Councils are another good viable option. Staff with engaged partners (RSTBC, community groups) expands local expertise and increases trail management capacity.

6 Stakeholders

Trails partnerships - Local stakeholder groups traditionally form partnerships with other stakeholder groups or agencies within the trails sector. This sector may be composed of any of the user types, including hiking, running, cycling, ATVing, dirtbiking, 4X4, snowmobiling and equestrian stakeholder groups.

Management - The stakeholders are necessary partners in trails management initiatives. Successful stakeholder partnerships can mitigate conflicts through voluntarily negotiated solutions. Trails management initiatives can be community builders encouraging and helping diverse users groups work together to achieve shared goals and outcomes.

Conflict Resolution – As long as there are people and trails, there is potential for tension between and within motorized and non-motorized user groups. Where it is left unmanaged, it can easily and quickly develop into conflict. The conflict may be triggered by issues like overcrowding, safety considerations, environmental concerns or importantly, experiential quality. Stakeholders are encouraged to organize into representative organizations and clubs, thereby giving them a seat at the table. Organization of clubs promotes trails and builds capacity at the local level.

Facilitation is time and labour intensive. This will inevitably require additional staff time to manage and resolve conflict as issues arise. A benefit of the facilitation of conflict resolution is the identification and mentoring of local trails champions. Trails champions are at the core of a successful trails culture.

As the communities' trail capacity builds, economic opportunities will be realized for trail partnership agreement holders and builders. However, local trail contractors will need the assurance of long-term



commitment to trails initiatives to allow them to invest in the specialized equipment and training of staff for trail development and management work. A buy local policy will give local trail builders the opportunity to offset the costs of their venture.

7 Marketing and Tourism

The *Outdoor Adventure Tourism Sector Profile* (Destination BC, 2014) reports that British Columbia has approximately 6,300 public trails totaling more than 28,000 kilometres. Parks and public land are both key ingredients for hiking and mountain biking. The top four outdoor recreational activities for BC residents are day hiking, beach activities, swimming at a lake or river and road biking or cycling. The top motivators for BC residents for outdoor recreation activities are to spend quality time with family and friends, to rest, relax and recuperate and to keep fit and healthy.

Trails are a sought-after amenity by destination tourists. This is particularly true in British Columbia and trails infrastructure is a relatively low-cost economic generator. However, to be successful, the trails product must be of sufficient quality to attract attention in a highly competitive and very broad market, or it must support another high value attraction. If the trails product is of sufficient quality to stand out and it is supported by strong marketing, the entire tourism product of the region will be elevated. This is a critical question for stakeholders: “Does the trails sector wish to invest the effort to develop a trails product of suitable quality to market to a wider audience?”

If the answer is yes, and the product is of sufficient quality, the increased attention on trails will attract additional tourist dollars, which will ripple through the region’s communities. For example, the Thompson Okanagan Tourism Association has developed a 10-year tourism strategy that includes a Regional Rail Trail Program for promoting tourism on rail trails; particularly the KVR.

8 First Nations

Court decisions like *Delgamuukw v. British Columbia* (Supreme Court, 1997) and *Tsilhqot’in Nation v. British Columbia* have clarified and subsequently upheld the First Nations role in land use issues on Crown land (Supreme Court, 2014). As such the province has a legal obligation to consult with First Nations on the use of Crown lands. Consultation can only occur between the First Nation and the Province. However, the Province is increasingly encouraging local and regional governments, non-government organizations (NGOs) and private sector companies to establish relationships with First Nations to encourage cooperation.

Trails are increasingly identified as a concern by many First Nations because of the potential for trail users to enter into special cultural places and traditional use areas. The RDKB and the Province coordinate participation but outreach to First Nation communities by local trail groups is encouraged as a way of building meaningful relationships. Trails can be a valuable vehicle for relationship building by fostering capacity building and skills development.

9 Statutory/Regulatory

Section 56/57 FRPA – Section 56 (and Section 118) of the *Forest and Range Practices Act* (FRPA) allows a third party to enter into a trails partnership agreement with FLNRORD. This effectively makes the third party a stakeholder and mandates referral from any competing land uses like forestry or mining.

Section 57 of FRPA authorizes construction of a trail on Crown land. This does not extend to Forest Service Roads (FSRs), which remain under the jurisdiction of FLNRORD, but can be used by the public.

Most trails in the Province are a legacy of individual and unsanctioned efforts, also referred to as rogue trails. In the absence of a simple, streamlined method of permitting, and given the abundance of Crown land in the Province, hikers, mountain bikers, dirt bikers, ATV riders and snowmobilers have built and maintained unsanctioned trails for decades. Many trails are even older, dating back to the era of the fur

trade and gold rush. With increasing use, these trails can degrade; sometimes to the point of becoming unsafe. RSTBC's objective is to bring as many trails as possible into compliance under Section 57. A second objective of RSTBC is to download maintenance responsibility to regional and local government or volunteer groups and the private sector through Section 56 partnership agreements.

Occupiers Liability Act – Liability is mitigated under the Occupiers Liability Act (OLA) if the minimum duty of care is met. Duty of care may include: trail standards (consistency through trail ratings), trail maintenance, usage (i.e. single use type or multi use may require specific design), skill development areas, technical trail features and ride arounds, trail filters as gateway or qualifier, optional lines, adequate fall zones, regular inspections of trails structures and facilities, including documentation of inspections, up to date, visible, effective and consistent signage system with code of conduct signage. Whether or not this applies to unsanctioned trails on Crown land, remains to be seen. However, the OLA was designed to protect an occupier by clarifying that there is no duty of care to a person in respect of risks willingly assumed by that person other than a duty not to (a) create a danger with intent to do harm to the person or damage to the person's property, or (b) act with reckless disregard to the safety of the person or the integrity of the person's property.

Signatories of a Trail Partnership Agreement have access to a Stewardship Partners Insurance Program through RSTBC.

10 Economic and Community Benefits

A well-managed regional trail network brings significant economic and community benefits to a region area. Trail-based recreation including hiking, biking and ATVing attracts both tourists and residents. A trail network can boost an area's economy through the growth of tourism related businesses, the positive impact that it has on property values and the added use of local services. The outdoor recreation values from a trail network include promotion of healthy lifestyles, which can reduce healthcare costs to both an individual and to the region. Well-planned trails can provide opportunities for commuting and car free access to local services. By preserving linear parks and corridors, both tourism and community infrastructure needs are achieved.

The 2015 Washington State Economic Analysis of Outdoor Recreation gives a breakdown of the economic impact by each activity (Table 2). The number in each user groups effects the total impact.

Table 2: Activity Analysis Washington State

	Total Expenditures	Equipment Expenditures	Trip Expenditures	Number of Participants	Participant Days
Walking	1,897,762,956	112,100,208	1,785,662,747	3,651,662	357,132,549
Hiking	2,164,952,296	38,459,600	2,127,027,847	2,772,177	47,404,231
Biking	3,136,644,285	113,494,490	3,023,149,796	1,897,836	67,373,165
Horseback	2,292,986,614	1,534,994,148	757,992,466	396,025	12,633,208
Off Roding (Summer)	2,292,961,301	1,416,433,424	876,527,876	786,907	20,223,522
ATV snow/ice (Winter)	71,539,346	11,084,536	60,454,810	123,436	1,394,832

Activity analysis of total expenditures for Washington State found that if walking and hiking are combined, they have the greatest impact. This is followed by biking, horseback riding, off roading (summer) and then ATV snow/ice (winter), in that order. The top three activities for equipment expenditures are horseback riding, off roading and biking. The highest total costs for trips in order, are biking, hiking, walking, off roading, horseback riding and finally ATV snow/ice. The number of participants in order of most to least, is walking, hiking, biking, off roading, horseback riding and ATV snow/ice. However, with respect to participant days the order is walking, biking, hiking, off roading, horseback riding and ATV snow/ice.

From an economic standpoint, consider the potential numbers of different user groups and the amount of spending per person per day in each group for different activities (Table 3).

Table 3: 2009 Minnesota Trail Users by Activity

Activity	Average trip expenditures, <30 miles (48.3 km) from home	Average trip expenditures, >30 miles (48.3 km) from home	Annual participants (% of MN population)	Total annual economic impact from trip spending
ATV	\$28	\$46	357,300 (10%)	\$137.9 million
Cross-country skiing	\$12	\$54	227,000 (6.5%)	\$41.1 million
Cycling	\$8	\$35	1,010,500 (29%)*	\$337.6 million
Horseback riding	\$27	\$43	157,000 (4.5%)	\$49.9 million
Mountain biking	\$2	\$12	1,010,500 (29%)*	\$89.8 million
Off-highway motorcycles	\$32	\$63	Not available	\$11.9 million
Off-road vehicles	\$23	\$69	Not available	\$4.4 million
Snowmobiling	\$42	\$49	342,000 (10%)	\$172.8 million
Walking and hiking	\$5	\$39	1,896,400 (54%)	\$1,425.6 million

* Only total cycling participation estimates were available, so the authors split participation between road cycling and mountain biking.

The total trail use is an important factor to be considered and the breakdown in the 2009 Minnesota Study is walking/hiking followed by biking and running. Walking for example though at low per day cost, has the highest number of participants. Overall statewide the total trip spending in millions is walking/hiking - \$1,425, biking (road & mountain) - \$427.5, snowmobiling - \$172.8 and ATV - \$137.9. The lower numbers of trail use in the cases of snowmobiling and ATVs is compensated by the higher costs to participate in those activities.

From an economic standpoint, the per day spend of different users does vary slightly, but the key is considering the overall number of each user group to estimate the cumulative economic impact. For this reason, “gross domestic product” is used as the key indicator. It is scalable and can be used in a local, regional, provincial or national context. The cost of building and maintaining trails for the different user groups also will increase the gross domestic product (the total value of goods produced and services provided during one year) since input minus output provides the true account for gross domestic product.

10.1.1 Hiking

Day hiking is the most popular outdoor recreational activity of BC residents according to research published by Destination BC in 2013. In Canada, there are an estimated 4.5 million hikers and backpackers who according to the Canadian Tourism Commission, over one third have an annual income of over \$60,000 and an average age of 39 years. The over 55+ demographic of hikers is expected to

increase from 13% to 22% by 2026 (Rogers, 2003). The River Trail within the study area is an example of a well used hiking trail.

10.1.2 Cycling

The most recent research demonstrates that mountain biking in British Columbia has a significant economic impact. *Mountain Biking Impact Study- Pemberton 2016* reveals how much out of town mountain biking visitors benefit the local economy. For 2016 the amount of visitor spending directly from mountain biking in Pemberton was \$858,000. The average expenditure for out of town riders was \$325 with \$97 spend at restaurants and \$73 on groceries. Half of the visiting bikers stayed overnight in Pemberton. Mountain biking provided \$276,000 in wages and salaries in this area and created 6.5 direct jobs.

The quality of a trail system influences users' attraction to the area. In the Pemberton study, 41% of out-of-town riders used the mobile app Trailforks for information on the trail network. The total number of riders calculated for 2016 in this area was 6,939 riders, while the population of Pemberton is 5,260 (2016) including the surrounding area. In the survey, 77% of the riders were local residents and 38% of that group reported that the trail system was a very important reason they chose to live in Pemberton. Interestingly, in the *Mountain Biking Economic Impact Study- Squamish 2016*, 82% of the local riders rate the trail system as very important for choice of living location.

The key economic indicator of impact is the Gross Domestic Product (GDP) which is the net measure representing the value of the goods and services produced less the cost of inputs used. For Pemberton, the GDP of mountain biking in 2016 was \$389,000. One of the costs is trail maintenance and construction. The Pemberton Valley Trails Association has a maintenance budget of \$10,000 per year and has spent \$40,000 in trail construction during the past two years.

The Squamish study also reflected the growth in mountain bike tourism over a recent 10 year period in the area. Compared to equivalent data in 2006, the spending for out of town riders increased from \$2.3 M to \$9.3 M in 2016. The percentage of overnight stays for riders doubled from 21% to 44%, with the average length of stay growing from 3.2 days to 5.8 days. More riders came from outside of BC, up from 10% to 23% with a dramatic increase of US visitors from 4% to 14%. The GDP for Squamish in 2006 for mountain biking was \$1.1 M and by 2016 was \$5.2 M.

The Economic Impact of Mountain Biking in Whistler 2016 quantifies the value of this sport at a local and provincial level. This study includes the Whistler Mountain Bike Park which is the premier lift accessed system in North America. As such, a significant number of destination visitors and locals are primarily riding the bike park. The additional costs of lift tickets and downhill rental gear also increase spending. Being a resort community accommodation expenditures are higher as there is a broad range of lodging options. The statistics are a quantum difference and difficult to make a direct comparison as visits and rides are measured, not visitors and riders as in the Pemberton study. In 2016, from 102,500 visits and 533,00 rides, 46.6 million in spending directly from mountain biking was generated in Whistler and this supported 389 Whistler jobs. The GDP for Whistler for 2016 was \$25.2M, with \$14.7M from the Bike Park, \$4.0M from the Lost Lake cross country trail network and the remaining \$6.5M from other cross-country riding.

In the Economic Impacts of Mountain Bike Tourism, a summary of the characteristics of the destination rider is described as follows:

".... mountain bikers who destination travel spend comparable amounts per day, spend as much time and are willing to travel as far as other groups such as golfers who tourism marketers typically chase. A useful study from the Canada Tourist Commission displaying average spend and duration of average stay for all tourists (all years) shows mountain bikers coming in about average or above average on counts as compared to other summer visitors. In general, the EIA's show that the profile of a typical visitor is as follows:



- *Predominantly male (approx 75%)*
- *25-45 years old (approx 65-70% on a bell curve distribution with tails dropping off dramatically on each end except in Moab and Whistler where there were a significant number of younger travellers). 19-29 year-olds are generally the second largest category at approx 27%.*
- *A majority (55%) had household income levels greater than \$80,000. As a datapoint 31% of all BC outdoor recreationalists had household income levels greater than \$80,000. Mountain biking visitors were generally in line with all tourists to Canada going on guided tours (59% had incomes of greater than \$100,000)*
- *Average stay at each location 3 to 5 days (longer if the visitor is from far away; shorter if the visitor is from close by)*
- *Average spend per day \$60 - \$100 (inclusive of accommodations, food, recreation, etc but exclusive of travel costs to get to a destination)" (Lau, 2014)*

The *Mountain Bike Tourism - Tourism Essentials Guide* (Destination BC, 2015) reports that mountain biking is a travel motivator and riders will come to a specific area for that unique trail experience. The examples of the Whistler Bike Park and Rossland's Seven Summits Trail are used for the downhill and cross country type of trails respectively. The Rails to Trails trail network featuring the Kettle Valley Trail is described as a classic off-road route for mountain bike touring, as well as inter-community links. The development of family oriented trails is a growth area as more families are looking for a vacation which can include their children participating in mountain biking. The Lost Lake trails in Whistler provide this family friendly opportunity with green and blue trails that are suitable for beginner and intermediate riders.

Regional economic impacts from mountain biking can be significant. In the 2006 *Mountain Biking-Sea to Sky Corridor including the Whistler Bike Park Study* the economic impact was \$10 million to the area. In the *Mountain Biking in Rossland and Golden Report* based on data collected in surveys of riders in the summer of 2011. The total revenue generated in Rossland was \$589,000 and in Golden was \$930,000 indicating a notable economic impact to each community. In Rossland the average spend per person per day was \$62.82, whereas in Golden the daily rate was \$87.19.

In the "Gaining the Edge 2015-2018: British Columbia's Tourism Strategy", the action to invest \$18 million between 2015-2018 in cycling infrastructure for bike lanes and trails by partnering with communities is outlined. This is part of the goal to enhance tourism products and experiences. The plan identifies the creation of jobs in the tourism sector as a priority and reports a 4% increase from 2012 to 2013, which is the first increase in the tourism sector since 2008.

Rail Trails provide a unique opportunity to include a wider range of users and the Kootenay Boundary Regional District has part of the Kettle Valley Rail Trail to Midway and the Columbia & Western Rail Trail from Midway to Castlegar. These rail trails are part of the Great Trail, formally known as the Trans Canada Trail.

The Kettle Valley Rail Trail (KVRT), attracted almost 300,000 users in 2018, based on research by the Thompson Okanagan Tourism Association using cell phone data (Gov of BC 2018). The target demographic is multi-use trail recreationalists who participate in hiking and gentle biking. The Thompson Okanagan Regional Rail Trails Strategy 2016-2022 includes the Kettle Valley Rail Trail (KVRT) in the Regional District of Kootenay Boundary. The current state of the KVRT with its strengths and weaknesses is pertinent. According to the report strengths of the KVRT include natural assets, trail features, communities, crown ownership, trail stewards and business development. The weaknesses identified equate to the focus for recommendations to move forward. Some of the areas to improve are trail amenities, trail condition, signage, trail maintenance, trail management and use conflict, perception of allowed use, stewardship burnout, cell services, visitor expectations and visitor services.

The KVRT, besides connecting communities and regions to one another, and providing opportunities for commercial guiding and accommodation, also links significant tourist attractions such as lakes, fruit farms and wineries. This combination of rural and urban characteristics differentiates the KVRT from other rail trail experiences.

"The rural trails that pass-through town centers may perhaps enjoy the largest economic impact of all the trail types. The rural trails tend to have fewer road crossings than other trail types, following the course of a rail corridor that frequently skimmed the edge of a creek or a farmer's hedgerow. The rural trail that passes through or stops and ends in small town centres and becomes a focal point may appear to have greater economic impact..." (ULIW, 2012). The growing demographic of active families and retirees means the rail trail component of the district will continue to be an important feature of the network. Highlighting the Kettle Valley Rail Trail as a key connector of The Great Trail for the province of British Columbia is another cornerstone for the regional product offering.

10.1.3 Off-Highway Vehicles

In the 2012 Regional Trails Master Plan prepared for the Regional District of Okanagan Similkameen by Cascade Environmental the growth of motorized tourism or off-highway vehicles (OHVs) was reported (Cascade, 2012). As of 2011, ATV/BC represented 40 clubs in the province and with 3,000 registered members, which is approximately 3% of the estimated 95,000 recreational ATVs in BC. There are roughly 975,000 operating ATVs in Canada with 24,000 individuals directly employed or self-employed serving ATV users.

The most significant example of an area where successful ORV marketing and trail construction strategies have been positive for the local community, is the Hatfield-McCoy Trail project. *The Economic and Fiscal Impact of the Hatfield-McCoy Trails System in West Virginia 2014* determined the total economic impact of the network is more than \$22 million USD for the state. This initiative began in 2000 and now there are 700 miles (1,126.5 km) of trails in 7 economically distressed counties in southern West Virginia. These counties are experiencing higher regional income growth and labour force participation than the rest of the state. The number of regional businesses in accommodation has increased 45% between 2000 and 2011. Payroll for food services has increased 44% since 2000 and the total amount in payroll has increased 19%. This is a user pay model with an annual permit fees in 2017 of \$50 for non-residents and \$26.50 for residents.

The 2015 study by Smith Gunther & Associates estimates the total number of ATV (including side by sides) in BC as between 94,932 and 99,592. Using annual sales data, the total value of ATVs in BC before depreciation is estimated as between 94 million and 100 million. There are additional estimates of total operating costs but the breakdown of amounts in the formula used to calculate these costs are unclear. There appears to be varied costs province to province but the assumptions appear varied.

The Iron Horse Rail Trail in northeastern AB is an example of local authorities allowing the use of ORVs on a trail. Trails with motorized and non-motorized use may be a good option depending on remoteness, population, local input and culture.

Off road motorcycling is another economic driver, with the BC Off Road Motorcycle Association (BCORMA) representing about 40,000 riders (BCORMA 2015).

10.1.4 Equestrian

In terms of horseback riding, three commercial business are listed offering horseback riding in the Boundary. Trail rides on private and crown lands are part of their services, in all cases. In the 2015 Economic Analysis of Outdoor Recreation in Washington State, horseback riding is one of the activities evaluated. The out of state participant per person per day cost for horseback riding reported is \$115 with a total number of 1,263 participants, resulting in a total expenditure of \$145,768 for the state of Washington.

10.1.5 Demographics of the Regional District

The population of the Regional District of Kootenay Boundary has remained stable and does not follow the provincial trend of growth. In 2010 the population was 31,316 and in 2016 it was 31,489. According

to Statistics Canada in 2016 the communities in the Kootenay Boundary region population breakdown was as follows:

Table 4: Population Centres in the Boundary

Community	Population
Area D	3,225
Grand Forks	4,049
Niagara	NA
Area E	2,155
Baldy	25
Beaverdell/Carmi	151
Big White	251
Bridesville	NA
Greenwood	665
Idabel Lake	NA
Jewel Lake	NA
Midway	649
Rock Creek	181
Westbridge	NA
Total:	13,787

NA – No information available

The overall unemployment rate of the district is higher than the provincial average, largely due to fluctuations in the natural resource sector. The 2016 district unemployment rate was 9.2% versus the provincial rate of 7.9% (BC Stats). The percentage of people living in low income households is 20% in the East Boundary and 35% in the West Boundary, which for the latter is double the provincial & national average (Phoenix, 2019).

In the *2017 Kettle Valley Express Adventure Guide Business Directory* 138 tourism related business are listed in the Boundary area, with the majority being in Grand Forks, followed by Christina Lake.

10.1.6 Recreation Trails Summary

In the Social and Economic Impacts of BC Recreation Sites and Trails a summary of the benefits of trails is provided and is paraphrased as follows:

Economic Benefits

1. Reduced healthcare costs,
2. Diversification - create jobs, improve economy through tourism and civic improvements,
3. Creation of partnerships, local trails groups, first nations,
4. Provide opportunities for interns, trainees,
5. Increases property values.

Community & Social Benefits

1. Recreational, active alternative, fitness and mental health benefits,
2. Social and Educational, belonging, building community, more livability,
3. Increase awareness of nature, environmental stewardship, preserve and restore open spaces,
4. Preserve/ enhance local heritage and cultural impacts,



5. Develop transportation alternative, commuting, connect communities (MNP, 2011).

Regional studies show that there can be many positive impacts from a network of multi-use or single-use trails. There are costs and challenges associated with building these networks, maintaining them, and balancing the interests of various stakeholders and user groups. British Columbia has multiple examples of trail networks that have generated tourism. There appears to be potential in the Regional District of Kootenay Boundary for a trail network that would benefit visitors and residents.

11 Environmental Considerations

Impacts associated with trail development and use are well understood and documented. For the most part however, trails are considered to have a relatively low impact on the land. Factors affecting impact levels include the following:

1. Intensity of Use – The higher the use levels, the greater the potential risk of adverse impacts
2. Trail Design – Poor trail alignment/design results in ongoing and often unmitigable impacts
3. Trail Planning – Well planned trails anticipate potential impacts and can incorporate mitigation or avoidance of impacts in the design.
4. Use Type – Purpose built trails anticipate the type of user and are constructed using appropriate methods for the intended range of uses.
5. Environmentally Sensitive Areas – Trails that avoid impacts to sensitive areas, like riparian zones, will have a lower risk of negative impacts. Examples like the Kettle River trail that fall within the riparian zone, will have a higher risk.
6. Wildlife and wildlife habitat – trails that avoid known wildlife occurrence and wildlife habitat areas have less risk of adversely impacting wildlife. Studies have shown strong correlations between trail density, acoustics and speed with wildlife impact (Mowat, et al, 2017, and FPB, 2017).
7. Invasive species – trails and transportation corridors provide vectors for the spread of invasive species.

As a result of concerns arising from environmental impacts relating to trails, a number of trail organizations have developed best practices. Trans Canada Trail has developed a set of Trailbuilding Guidelines (2010) and the International Mountain Bike Association (IMBA) has developed a series of trail stewardship guidelines (IMBA, 2004 and 2007). There are a number of trail standards in the province; FLNRO and BC Parks both have hiking trail standards, and the Resort Municipality of Whistler (RMOW) has developed a set of standards for mountain bike trails (Government of BC, 2002, RMOW, 2003). The RMOW standards are scheduled to be replaced by a provincial set, currently under development by RSTBC. The standards and guidelines focus on promoting good trail design for both safety and environmental protection. Currently, avoiding potential impacts to wildlife through design remains a gap in the best practices and standards in trails planning.

12 Trail User Conflict

When it comes to trails, the main source of conflict occurs between motorized and non-motorized uses, although it is not limited to those two sectors and can occur within categories. In most cases mixed-use trails, especially busier ones, become *de facto* motorized trails. This is because non-motorized users are inherently subordinate, being more sensitive to the trail surface condition, noise, air quality and interaction velocities (Kirkbride, 2010, Badaracco, 1976, and Kockleman, 1983). The level of sensitivity ranges from high sensitivity with hiking and running, through to moderate sensitivity with mountain biking. Conflict can and does arise between hikers and mountain bikers as well and largely for the same reasons. Equestrian trail users are sensitive to all users except hikers, due to the issues associated with interactions and startling horses. However, being subordinate to horses, hikers are adversely affected by deep hoofprints and manure on the trail bed. Motorized users tend to be less affected for the simple reason that they are less concerned with the condition of the track, acoustic impacts, or the presence of other user groups. With the exception of the so called 1%, users that have no concern or care about their impact to the trails



or other users, trail users generally desire conflict-free coexistence. However, the conflict generated by that 1% typically forms the core of trail issues associated with shared use and conflict.

Conflict can be associated with trail type and the following is a good general listing of the range of trail types developed by Cascade for the Trans Canada Trail Trailbuilding Guidelines (2010). Sensitivity to conflict from interaction occurs in descending order.

- Low Impact Nature Trail.
- Unsurfaced Single Track (hand built).
- Unsurfaced Single / Double Track (machine built).
- Gravel Trail (single track).
- Gravel Trail (double track, can include rehabilitated rail bed).
- Cycle Lanes / Sidewalks.
- Paved Trail.
- Gravel Road.
- Paved Road.
- Undeveloped Rail Bed (ballast surface).
- Water Route.

A number of design factors have been identified as contributors to shared use trail conflict. They are:

- Gradient of trail – steeper trails can be more prone to wear-and-tear and erosion
- Surface material – fine material, like loam is more susceptible to wear
- Twists and turns – Twisty trails are more heavily affected by tires, especially on motorized vehicles with locking or minimum-slip differentials such as ATV's
- Intensity of use – busier trails wear faster and contribute to sensory impact
- Rate and proximity of interaction – speed of converging users, and width of trail affects enjoyment and safety
- Drainage management – with the exception of culverts, most other drainage structures, like cross ditches and water bars, are susceptible to damage from vehicular traffic. Water on trails contributes significantly to trail degradation.
- Line of sight – blind corners and vegetation overgrowth reduce visibility and reduce safety which contributes to fright response, inevitably leading to conflict
- Barriers – used to prevent access by the public onto private land can generate conflict. The most common cause is trail use of a right of way across private land.

12.1 Landowner – Trail-user Conflict

Many landowners, particularly in rural areas, are generally uncomfortable with trail users on or adjacent to their properties. Trail users are often considered to be trespassers, whether real or perceived, because rural landowners are typically highly protective of their privacy. Extensive regional trail networks like the Trans Canada Trail or the Bruce Trail in Ontario have been challenged with this issue for decades. In Canada, the model for negotiating access to private land finds its origins in British Common Law, and this tool was used to negotiate access through private land for the Bruce Trail.

Railways, like the Kettle Valley, are private or publicly held land parcels that traverse through larger privately held properties. When converted to rail trails, the rights of passage are protected through ownership of the railway parcel. However, this type of use also has the potential for contributing to conflict. Depending on the sympathies of the individual landowner, motorized uses are generally less tolerated than non-motorized – although not always. Motorized users, although noisier and more likely to generate dust, move through a property more quickly; whereas non-motorized users are less disturbing,

but tend to spend more time in visual contact with the private land and can be perceived as being more invasive.

Local and regional government are well positioned negotiators since they control land use. Armed with a Trails Master Plan, planners will know when to include trail access in negotiations with landowners requesting changes in land use for their properties.

Regardless of the perception of, or sensitivity to conflict, the net positive impact of trails on property values is well known in real estate circles (National Association of Realtors, 2016). As such, trails are easily negotiated during rezoning or subdivision discussions.

13 RDKB Coordination

This section sets out the levels and type of involvement by the RDKB with respect to trails planning and management.

13.1 Partnerships and Partnership Agreements

Currently a number of multi-stakeholder agreements in various forms have been developed by trails interest groups in the Boundary area. They include, but are not limited to:

1. Boundary Country Trails Agreement. Collaborative agreement between 20 organizations. June 5, 2013 (2013-2018).
2. Agreement Regarding Collaboration and Cooperation For the Benefit of All Recreational Resource Users (2013-2018).
3. RSTBC Partnership Agreement with Grand Forks Trails Society (March, 31, 2014 and May 19, 2016)
4. RDKB Agreement Regarding Collaboration and Cooperation. with Grand Forks Community Trails Society, Grand Forks ATV Club, City of Grand Forks (undated, 2013, unsigned).
5. Trails to the Boundary Society (2023)
6. Grand Forks ATV Club Agreements
7. Kootenay Region Mountain Bike Association (KRMBA),
8. Phoenix Cross-Country Ski Society;
9. Okanagan Backcountry Horsemen Society;
10. Midway Trails Society.

Another favourable model in effect and close by, is the RDKB and the Kootenay Columbia Trails Society (KCTS) agreement. The KCTS has been receiving annual funding from the RDKB to support the society's operational expenditures. The funding is provided through the RDKB's Lower Columbia Culture, Arts and Recreation Service. The participants in that service are the City of Trail, City of Rossland, Village of Fruitvale, Village of Montrose, Village of Warfield, Electoral Area 'A', and Electoral Area 'B'. Funding is provided by the service participants on the basis of property assessments in the participating jurisdictions. In 2017, the Kootenay Columbia Trails Society is receiving \$80,000 in funding from the RDKB. Funding at similar levels has been provided for several years. As a condition of funding, the RDKB requires the KCTS to provide the RDKB with annual audited financial statements.

Of particular interest for the RDKB context is the model used by the Regional District of Okanagan Similkameen (RDOS). The RDOS completed a Master Trails planning process in 2012. In addition to providing a blueprint for development and maintenance of the trail system, it made trails a service with a budget commitment by the RDOS. The plan is also used to set policy and the type of trail use for every

trail in the 800+ trail inventory. It also uses the plan for classification of new trails (pers comm. Mark Woods, November 17, 2017).

Partnerships have the added value of shared costs and increased influence for fundraising and awareness raising. Stakeholder group cooperation and community consultation is critical to the success of any trails initiative. Local clubs have the power to elevate the level of community engagement with trails. Social media is the tool of many clubs. Trailforks and Strava are widely used social media trail mapping and activity tracking applications used by trail user sectors, although not exclusively used as there are other activity tracking apps out there.

Agency partnerships bring staff time allocation commitments. In order for trails initiative to succeed, adequate staff time needs to be available to keep the plan relevant and on track.

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15 Appendix 1.

List of trail descriptions for the Trans Canada Trail, now referred to as the Great Trail, that can be used as an introduction

15.1.1 Paved Road (plus temporary road links)

Overview

Paved roads are usually part of the public road system in Canada. Sections of trail that cannot (or have not yet) been linked may require connection along paved road ways.

Material

Asphalt, cement or pavers may be used to surface a roadway.

Grade

Maximum grade likely to be encountered on a paved road is approximately 8-12%.

Tread width

No tread width is defined for recreational travel along a paved route, however where possible road lines or physical barriers should be used to separate recreation users from highway traffic.

Cleared width

No cleared width is defined for recreational travel along a paved route.

Maintenance considerations

Maintenance of paved routes is done at the sole discretion of the contractor or government agency in charge of maintaining the road.

Appropriate uses

All uses are subject to the “motor vehicle code” or “highway traffic act” or other relevant legislation.

15.1.2 Gravel Road (Forestry or Resource)

Overview

Forest Service roads and rural gravel highways are essentially the same by both design and construction. The provincially regulated Motor Vehicle Act (or Highway Traffic Act) may dictate types of recreational use.



Material

Two lane gravel roads are frequently and repeatedly top coated with $\frac{3}{4}$ minus crushed gravel. These roads receive regular maintenance that can include grading, watering and oiling. Gravel roads are maintained in rustic state due to their status as a temporary route associated with resource extraction, or as a cost saving measure in areas of infrequent use or potential damage (for example due to use by heavy machinery). When a gravel road has exceeded its useful life expectancy it may be deactivated in a number of ways which may render it unusable for a variety of users.

Grade

Maximum grade likely to be encountered on a 2-lane gravel road is ~16%. At grades approaching 16%, logging trucks are no longer able to operate and maintenance becomes increasingly costly.

Tread width

Tread width of a 2-lane gravel road will be dependent on motor vehicle requirements rather than recreation trail users. Standard road width is typically 3-4 meters per lane.

Cleared width

Right-of-way clearing will vary regionally with both frequency of use and topography influencing this characteristic. Cleared rights-of-way provide both a measure of safety in providing clear line-of-sight and maintenance benefits.

Maintenance considerations

A 2-lane road should always be built to engineered standards. Cross-ditches and culverts should be maintained on a regular basis, while the road bed should be graded and/or resurfaced until such time that the road is de-activated.

Appropriate uses

Legal considerations may restrict the type of activity that may take place on 2-lane roads but, logistically these routes are appropriate for multiple user groups with few restrictions in either summer or winter.

15.1.3 4x4 Trail

Overview

4x4 trails are single lane gravel or dirt roads that often exceed normal operating grades. Motor vehicles traveling on these trails require both high clearance and 4x4 capabilities.

Material

These routes are built by skidders or tracked plows by scraping off organic soils and leaving a track of mineral soil and bedrock.

Grade

Maximum grades along 4x4 trails may reach grades of up to 20%.

Tread width

Tread width of 3-4 meters can be expected.

Cleared width

Cleared width need not exceed tread width on these types of trails.



Maintenance considerations

These trails usually exist for a special purpose, which may be access to utilities corridors or temporary access to resource extraction locations (mining or forestry related). Although they are usually built with appropriate engineering standards, they are subject to excessive wear and tear and have considerable potential to cause environmental harm. Regular inspection and maintenance is required for this type of trail.

Appropriate uses

These trails have the ability to accommodate all potential users in both summer and winter.

15.1.4 Abandoned Rail Bed (Rail Trail)

Overview

Abandoned rail beds have become very popular recreation routes that can cater to almost all trail users. When a rail line is deactivated, potential trail can become available and these trails have the ability to cater to a wide spectrum of users. Although rail trails may be indistinguishable from other gravel roads, several regulated characteristics of these trails make it appropriate to maintain an independent designation.

Material

Rail beds are constructed of large diameter crush making them hazardous to bicycles and horses, and difficult for hiking. When converting a rail line into a recreational trail, the route needs to be graded flat and resurfaced with an appropriate road bed material (e.g. $\frac{3}{4}$ minus crush).

Grade

Traditional rail lines cannot exceed a maximum grade of 3.3%. Occasionally a recreational trail along a rail bed will make brief diversions around damaged trestles or landslides, however the route will generally maintain exceptionally low grades.

Tread width

Tread width for converted rail beds will typically be equivalent to a single lane gravel road. Standard road width is typically 3-4 meters per lane.

Cleared width

Rail lines do not make dramatic changes of direction (switchbacks) and therefore line-of-site clearing along the right-of-way may be only minimal although it may not be required.

Maintenance considerations

Once established, a rail-trail requires very little in the way of maintenance.

Appropriate uses

Low grades, wide tread widths and clear lines of site should be appropriate for any combination of users.

15.1.5 Paved Trail

Overview

Paved trails are popular as non-motorized transportation routes both within and around cities and towns. These trails may be divided with either physical barriers or with lines to denoted direction of travel or type of use (inline skates, bicycles, pedestrian).



Material

Any type of hard surface is appropriate although asphalt or chip-seal coast surfacing are the most likely candidates due to cost and maintenance considerations.

Grade

Grades should be kept as low as possible to allow ease of use to the broadest spectrum of potential users. General guidelines should consider maximum sustained grades of 10% while short sections may reach up to 15%.

Tread width

Tread width should allow for multiple user groups or multiple direction of travel. 2-3 meters of tread width should be acceptable in most situations.

Cleared width

A minimum of 1 meter of cleared width should be maintained on each side of a paved trail to prevent tree and shrub limbs from contacting users as they travel on the designated surface.

Cleared heights

3m cleared height is required on paved trails.

Maintenance considerations

Maintenance of paved trails is similar to maintenance of paved highways. Depending on initial build quality, the paved surface may last several years before needing any maintenance. Regular inspections should be conducted to look for damage. Any damaged sections should be repaired immediately to minimize “expansion” of the damaged section.

Appropriate uses

Paved trails are suitable for pedestrians and non-motorized “wheeled” transportation. Paved trails are not suitable for Motorized use, while equestrian access should be considered in a case-by-case situation since they have the potential both damage the trail surface and “pollute” the trail with excrement. Where horses may need access to a paved trail route, a cleared shoulder should be maintained to allow for their passage. In the winter these routes may be appropriate for cross country skiing or snowshoeing.

15.1.6 Gravel Trail

Overview

Gravel trails provide the best opportunity to get the widest user group to enjoy a wilderness experience on a rough surface trail.

Material

Compacted gravel or other suitable material.

Grade

Grades should be kept as low as possible to allow ease of use to the broadest spectrum of potential users. General guidelines should consider maximum sustained grades of 10% while short sections may reach up to 15% or more.



Tread width

Tread width should allow for multiple user groups or multiple direction of travel. 2-3 meters of tread width should be allowed for double-track trails, 1 meter of tread width should be allowed for single-track trails.

Cleared width

A minimum of 0.5 meter of cleared width should be maintained on each side of a paved trail to prevent tree and shrub limbs from contacting users as they travel on the designated surface. Where equestrian travel is expected to be significant, an additional cleared shoulder of at least 1m should be allowed.

Cleared heights

2-4 meter cleared height is required on gravel trails. Where equestrian gravel is expected to be significant, a minimum cleared height of 4 meters is required.

Maintenance considerations

These compacted trails should be very low maintenance. Occasional grading with hand tools will fill in some ruts, while some rough sections may need to be smoothed.

Appropriate uses

Gravel trails are suitable for all non-motorized modes of transportation capable of traveling on a rough surface including pedestrians, equestrians and mountain bikes. Specific guidelines should be adopted on these trails to avoid user conflicts. In the winter these trails are appropriate for snowshoeing.

15.1.7 Unsurfaced Single/Double Track (hand built)

Overview

Unsurfaced single/double track would appropriately describe many of the most popular hiking and mountain biking trails across Canada.

Material

Surface material is composed of anything found in the natural landscape. Materials can vary across distances on a given trail and may include; mineral soil, organic soil, bedrock or constructed features made of locally sourced rock and trees.

Grade

Grades on these trails are dictated by the desires of end-users and potential for erosion. Average grade should be maintained at less than 8% when possible to minimize erosion and impact on the environment. Short sections may significantly exceed 10% grade, and in these cases potential damage caused by the trail should be mitigated through erosion control measures.

Tread width

Tread width should restrict non-target user groups from accessing the trail. Tread width of 0.30-0.50 meters will be sufficient to allow target users groups to enjoy the trail.

Cleared width

A minimum of 0.5 meter of cleared width should be maintained on each side of an unsurfaced single track to prevent tree and shrub limbs from contacting users as they travel on the designated surface.



Cleared heights

2-3 meter cleared height is required on single track trails if they are intended for hiking or mountain biking. Equestrian use may require 4 meter cleared height.

Maintenance considerations

These trails have the potential to be high maintenance if they are not well built in the beginning. Strict adherence to erosion mitigation recommendations as well as regular inspections for minor maintenance will minimize long-term maintenance expense.

Appropriate uses

Unsurfaced single track trails are suitable for experienced trail users who are able to safely navigate natural obstacles on a narrow trail. These user groups may include hikers, mountain bikers, dirt bikers and equestrians. Winter activity is not expected as the routing becomes obscured by snow. Specific guidelines should be adopted on these trails to avoid user conflicts.

15.1.8 Unsurfaced Single/Double Track (machine built)

Overview

Unsurfaced machine built single/double track is an efficient way to build rustic trails that may experience heavier use by less skilled trail users. Machine built trails will be slightly wider than hand built trails and they may have fewer natural obstacles (i.e. large rocks and roots).

Material

Surface material is composed of anything found in the natural landscape. Materials can vary across distances on a given trail and may include; mineral soil, organic soil, bedrock or constructed features made of locally sourced rock and trees.

Grade

Grades on these trails are dictated by the desires of end-users and potential for erosion. Average grade should be maintained at less than 10% when possible to minimize erosion and impact on the environment. Short sections may significantly exceed 10% grade, and in these cases potential damage caused by the trail should be mitigated through erosion control measures.

Tread width

Tread width should restrict non-target user groups from accessing the trail. Tread width of 0.50-0.70 meters will be sufficient to allow target users groups to enjoy the trail.

Cleared width

A minimum of 0.5 meter of cleared width should be maintained on each side of a unsurfaced single track to prevent tree and shrub limbs from contacting users as they travel on the designated surface.

Cleared heights

2-3 meter cleared height is required on single track trails if they are intended for hiking or mountain biking. Equestrian use may require 4 meter cleared height.

Maintenance considerations

These trails have the potential to be high maintenance if they are not well designed and constructed. Strict adherence to erosion mitigation recommendations as well as regular inspections for minor maintenance will minimize long-term maintenance expense.



Appropriate uses

Unsurfaced single-track trails are suitable for experienced trail users who are able to safely navigate natural obstacles on a narrow trail. These user groups may include hikers, mountain bikers, dirt bikers and equestrians. Winter activity is not expected as the routing becomes obscured by snow. Specific guidelines should be adopted on these trails to avoid user conflicts.

15.1.9 Low Impact Nature Trail

Overview

These are typically hiking-only trails that are common in remote areas of the backcountry.

Material

Surface material is composed of anything found in the natural landscape. Materials can vary across distances on a given trail and may include; mineral soil, organic soil, bedrock or constructed features made of locally sourced rock and trees.

Grade

There are no specific grade restrictions on low impact nature trails.

Tread width

Tread width should be minimized as part of an effort to reduce overall imprint of the trail on the natural environment. Typical tread width will be 0.30-0.50 meters.

Cleared width

There are no requirements for clearing low impact nature trails beyond the necessary tread width.

Cleared heights

2-3 metre cleared height is required on low impact nature trails so they may comfortably accommodate hikers.

Maintenance considerations

If trails are well built and follow erosion prevention guidelines then these trails should be very low maintenance. Common maintenance concerns may include erosion after a storm event or fallen trees that may be blocking the trail as well as overgrowth of side vegetation.

Appropriate uses

Low impact nature trails are suitable only for hikers. Winter activity is not expected as the routing becomes obscured by snow.

15.1.10 Water Route

Overview

A water route is an established line of travel along a water course.

Material

Water routes will invariably have sections of dry land trails (portage). Access to these portages will be often be difficult so the trails will typically be hand-built single track trail.



Grade

Slope grades are not applied to water travel. Instead, whitewater classifications are the appropriate means to describe grade and difficulty along a water route. Any time river grade exceeds class 1 or class 2 white water an alternative portage route should be made available. Hiking grades along portage routes should be maintained at less than 10% if possible, as steeper grades quickly become hazardous when transporting canoes and kayaks over land.

Tread width

Portage routes should be built to wider standards than regular trails. Trails should be at least 50-70 cm wide and tight corners and switchbacks should be avoided.

Cleared width

A minimum of 0.5 meter of cleared width should be maintained on each side of a unsurfaced single track to prevent tree and shrub limbs from contacting users as they travel on the designated surface.

Cleared heights

3-4 meter cleared height is required on portage routes as carrying a boat overhead is a common practice.

Maintenance considerations

Maintenance of many portage routes will be difficult due to their remote settings. This difficulty should be considered during construction of routes.

Appropriate uses

All non-motorized boat traffic is appropriate along these routes. In some cases motorized boat traffic may also be present along a water route. In the winter some of these routes may be passable on a frozen water surface, however travel is not recommended in most cases.

15.1.11 Boardwalk

Overview

Boardwalk trails are short routes found in popular destinations where high levels of traffic have the potential to cause considerable environmental harm.

Material

Surfacing materials are either wood, engineered product or plastic lumber.

Grade

Grades on these trails are nearly flat. Where a significant changes in elevation occur along the trail a ramp or a set of stairs will be installed.

Tread width

Tread width will be determined by expected volume of visitors. Tread width of 2 -4 meters is common on boardwalk trails.

Cleared width

A minimum of 0.5 meter of cleared width should be maintained on each side of a boardwalk trail to prevent tree and shrub limbs from contacting users as they travel on the designated surface.



Cleared heights

2-3 meter cleared height is required on boardwalk.

Maintenance considerations

Boardwalk trails should be built to meet or exceed local building codes. Maintenance of constructed features will vary based on building material used and local environmental variables.

Appropriate uses

Boardwalk trails are appropriate for summertime pedestrian traffic only. Wheelchair access