

SEA TO SKY CORRIDOR RECREATION TRAIL STRATEGY



APRIL 2008

Sea to Sky Corridor Recreation Trail Strategy

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Prepared for

Ministry of Tourism, Sport and the Arts
Tourism and Resort Development Division
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by



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	V
INTRODUCTION	1
VISION	3
SCOPE	3
PLANNING CONTEXT	5
EXISTING NETWORK	7
SEA TO SKY TRAIL	9
FIRST NATIONS	10
Long Term Goals	11
AUTHORIZED TRAIL NETWORK	12
COORDINATED TRAIL SYSTEM	15
RESPECT CULTURAL VALUES	18
ENVIRONMENTALLY RESPONSIVE TRAIL NETWORK	19
SUSTAINABLE AND ECONOMICALLY BENEFICIAL TRAIL NETWORK	21
MANAGEMENT ISSUES	25
INTEGRATED LAND USE	26
RISK MANAGEMENT	28
TRAIL USE CONFLICTS	30
FUNDING AND RESOURCES	37
TRAIL CLASSIFICATION	40
TRAIL TYPE CLASSIFICATION	40
SINGLETRACK TRAIL DIFFICULTY RATINGS	41
PEDESTRIAN TRAIL DIFFICULTY RATINGS	41
TRAIL GUIDELINES AND STANDARDS	43
TRAIL DESIGN AND CONSTRUCTION GUIDELINES	44
TRAIL CONSTRUCTION STANDARDS	44
SIGN GUIDELINES	47
REFERENCES	52
LIST OF ACRONYMS	53



APPENDICES

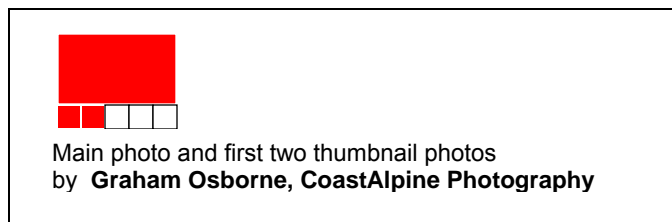
- Appendix 1. Prioritised Trails on Crown Land by Region
- Appendix 2. Code of Conduct
- Appendix 3. Whistler Trails Standards
- Appendix 4. Authorizing Recreational Mountain Bike Trails on Crown Land - Draft Policy Statement

LIST OF FIGURES

Figure 1. General Location Map	2
Figure 2. Strategy Area	4
Figure 3.1 Squamish Potential Expansion Areas.....	33
Figure 3.2 Whistler Potential Expansion Areas.....	34
Figure 3.3 Pemberton Potential Expansion Areas	35

LIST OF TABLES

Table I. Summary of Long Term Goals, Objectives and Strategies	vi
Table II. Summary of Management Objectives for Trail Network.....	vii
Table 1. Kilometers of Trail in Each Region by Land Ownership.....	7
Table 2. Allocation of Regional Singletrack Trails by Difficulty.	8
Table 3. Potential Motorized and Non-motorized Expansion Areas.....	31
Table 4. Trail Type Classification Table	40



EXECUTIVE SUMMARY

As a world renowned tourism destination, the Sea to Sky Corridor has garnered an international reputation for exceptional outdoor recreation. An extensive network of over 700 kilometres of recreational trails provides both residents and visitors of the Corridor with a wide range of trail based recreation opportunities. The close proximity of communities to a high quality network of trails nestled amongst mountains, forests, rivers and valleys offers immeasurable social, economic and environmental benefits to the entire Corridor and beyond.

The proximity of the Corridor to the large population base of the lower mainland and increased demand for unconfined, relatively unstructured outdoor recreation experiences exerts significant pressure on the expansive trail network. The majority of existing trails on provincial Crown land were built by individuals and clubs over time, with a recent proliferation of mountain bike trails constructed over the past decade. Most of these have not been authorized by the Province, which is a requirement under the *Forest and Range Practices Act (FRPA)*.

The Ministry of Tourism, Sport and the Arts (MTSA), the public agency responsible for recreation on Crown land, is increasingly challenged with managing this network to meet the respective needs of a wide and diverse range of users. Along with unprecedented growth in the Corridor, complex land use planning processes underway, competing interests amongst stakeholders and Olympic planning for 2010, careful consideration must be given to the future sustainability of the network.

The dramatic increase in demand for challenging trails by mountain bikers, dirt bikers, trials riders and other users brings liability and risk management concerns to the forefront. Responsible trail authorities are increasingly faced with balancing the demand for challenging trail experiences with the need to minimize exposure to liability.

Communities within the Corridor have taken different approaches to management of the trails that have become an integral part of their communities. Each municipality, community and the Squamish Lillooet Regional District function within different administrative and operational environments. At the same time the communities share a common vision for a well coordinated, sustainable and environmentally responsive trail network spanning the Corridor, managed for the benefit, health and prosperity of a diverse range of users.

All trails within the Corridor fall within one or more of the traditional territories of the Squamish Nation, Lil'wat Nation, N'Quatqua or Tseil-Waututh Nation. Consultation and involvement of First Nations in the coordination of trail management activities will strengthen the sustainability of the entire network and ensure all stakeholders have input in the process.

This document provides strategic direction for the realization of this vision through a corridor-wide coordinated approach in which regions, municipalities and stakeholders all benefit from each others experiences and challenges. This document outlines strategic directions for the realization of long-term goals for an authorized, sustainable and environmentally sound trail network provided in Table I. It also offers management direction to support trail managers and stakeholders in addressing the most critical and immediate challenges of the network, summarized in Table II.

Table I. Summary of Long Term Goals, Objectives and Strategies

GOAL	OBJECTIVE	STRATEGIC DIRECTION
Authorized Trail Network	Authorize rehabilitation and maintenance of existing, eligible trails on Crown land according to section 57 of <i>FRPA</i> .	Identify currently unauthorized trails on Crown land eligible for authorization.
		Develop framework for trail agreements with SLRD and municipal governments.
		Provide mechanism for local clubs and user groups to contribute to trail management activities.
	Establish “marquee” trails according to section 56 of <i>FRPA</i> .	Identify high priority ‘marquee’ or signature trails to authorize and establish according to section 56 of <i>FRPA</i> .
A Coordinated Trail Network	Increase collaboration amongst the Province, regional land managers, local governments and stakeholders.	Establish a communication and governance model for collaborative management of the Sea to Sky Corridor Trail Network.
		Adopt and implement Corridor wide trail standards and guidelines based on established standards and guidelines.
Respect Cultural Values	Ensure First Nation cultural values are considered and respected.	Engage First Nations communities in trail planning and management activities.
		Establish partnerships with First Nations to identify and enhance meaningful trail related opportunities.
		In cooperation with appropriate First Nations, develop a protocol and implementation plan for considering authorizations of trails on Crown land and within traditional territories.
Environmentally Responsive Trail Network	Minimize impacts to the natural environment from trail construction, maintenance and use.	Evaluate existing network to identify trails unduly impacting the environment and rehabilitate, relocate or de-activate.
		Establish environmental criteria for evaluation of future trail proposals.
		Adopt Corridor wide guidelines for trail construction and maintenance that minimize impacts to the environment.
A Sustainable and Economically Beneficial Trail Network	Develop coordinated, formal effort to address challenges to sustainability of trail network.	Conduct a SWOT analysis for the trail networks in each region.
		Develop regional and local action plans to address threats and weaknesses to trail networks.
		Identify strategic locations for establishment of network trail head staging areas on Crown land.
	Ensure ‘no net loss’ of trails in the Sea to Sky Corridor	Provincial, regional and local governments adopt and implement “no net loss” of trails policy in the Corridor.
		Identify potential trail network expansion and/or enhancement areas in each region that are consistent with integrated land use planning processes, regional and/or municipal plans completed or underway.

Table II. Summary of Management Objectives for Trail Network

MANAGEMENT ISSUE	MANAGEMENT OBJECTIVE
Integrated Land Use	Ensure trail management decisions are consistent with the LRMP.
	Ensure relevant ministries and agencies are involved in trail management decisions.
	Adopt standards and procedures for developing and managing trails in agricultural areas.
	Develop a framework for managing trails within the working forest in cooperation with the Ministry of Forests and Range.
Risk Management	Develop, adopt and implement trail standards particularly with respect to technical trail features (TTF's) and signage.
	Evaluate implementation of the Provincial Mountain Bike Trail Policy.
	Encourage adoption of formal risk management programs by responsible land managers.
	Continue to assess position of land managers with respect to risk(s) associated with trail use.
Trail Use Conflicts	Identify and maintain key access routes for motorized users
	Identify non-motorized and motorized-permitted trail expansion areas.
	Adopt and employ a hierarchy of management tools to reduce potential for conflict
	Establish framework for resolving trail use conflicts or disputes
Funding and Resources	Establish formal fund raising committee(s).
	Work with local Commercial Operators and MTSA to explore mechanisms to recover funding and/or resources for local trail maintenance
	Trail coordination committee(s) to explore concept and establish framework for trail 'adoption' programs.

INTRODUCTION



The Sea to Sky Corridor is internationally recognized for its outdoor, adventure based recreation opportunities. In recent years the demand for unconfined and relatively unstructured outdoor recreation experiences has increased dramatically. A vast network of recreation trails located throughout the Sea to Sky Corridor is a fundamental component of these recreation opportunities. The increase in demand and subsequent proliferation of trails combined with evolving use patterns has led to numerous challenges in managing the extensive trail network.

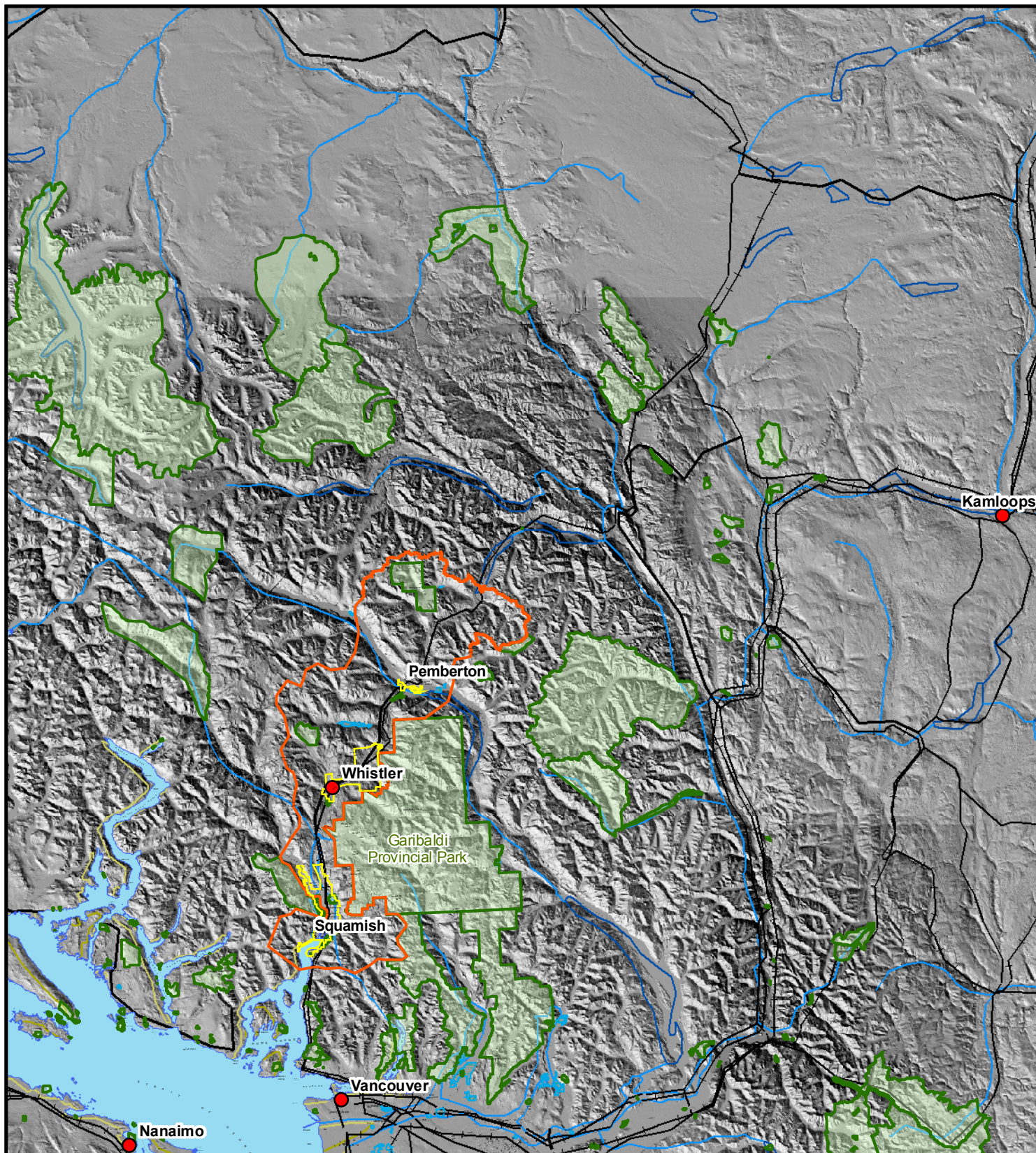
Corridor municipalities including Squamish, Whistler and Pemberton as well as the communities of Britannia, Mount Currie and D'Arcy recognize the trails and their associated recreation opportunities as valuable assets to both residents and visitors. As such recreational trails are widely recognized as playing a vital socio-economic role in the Corridor communities. They support a healthy, active lifestyle, strengthen social fabric and attract tourism. Recreational cycling has brought significant economic benefits to the three municipalities in the Corridor. Between June and September, 2006 mountain bike activities associated with the Sea to Sky trail network generated an estimated \$8.2 million in non-resident spending to Whistler and Squamish (WCMBTA, 2006). All the Corridor communities have a common interest in maintaining the integrity and sustainability of this world class network.

Of the approximately 710 km of known recreation trails outside of BC Parks, in the Sea to Sky Corridor, 551 km or 77% are located on Crown Land. Only 17 trails, accounting for approximately 117 km, are authorized or established under the *Forest and Range Practices Act*. Unauthorized trails on Crown land are therefore illegal and are not afforded consideration in land use planning processes. Most of the trails have been built and maintained by local clubs, groups and in some cases individual members of the general public. Authorization and establishment of the existing trail network has been identified as a priority by the Ministry of Tourism, Sport and the Arts (MTSA), the agency responsible for recreation on Crown land.

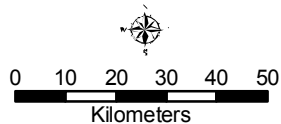
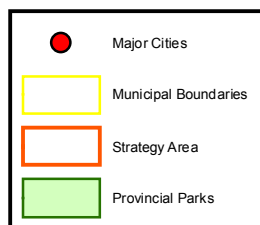
A dramatic increase in the popularity and demand for cycling in the Sea to Sky Corridor has led to a proliferation of trails over the past decade. As well, the cycling community has developed a growing passion for trails that provide a challenging experience by integrating man made and natural ramps, drops, elevated structures, jumps and other 'technical trail features' (TTF's) into trail design and construction. As a result, land managers are faced with serious concerns liability concerns. Conflicts over land use and amongst trail user groups are on the rise.

This plan endeavours to provide strategic direction to responsible authorities and other key stakeholders for the authorization and management of recreation trails on provincial Crown land within the Corridor. Since trails often cross multiple jurisdiction boundaries and are enjoyed by a diverse range of users, this plan can only prove effective if a coordinated and cooperative approach is taken by all interested parties including local government agencies and user groups.

Figure 1 provides an overview of the study area for the Strategy.



**Figure 1. General Location Map
Sea-to-Sky Corridor
Recreational Trails Strategy**



Date : January 4, 2007
 CERG File # 015-11-1
 Base Map : BCGS 92G/92J
 Projection : BC Albers
 Datum : NAD 83
 GIS Cartographer : Todd Hellinga

Prepared by:
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Vision

A well coordinated, Sustainable and environmentally responsive trail network spanning the Corridor, that respects cultural values and is managed for the benefit, health and prosperity of a diverse range of users.



Scope

This Strategy applies to trails in the Sea to Sky Corridor on provincial Crown land, outside of B.C. Parks. The Strategy intends to encompass all trails that originate or are contiguous with trails that originate within the Corridor. For the purposes of this plan, the Sea to Sky Corridor is defined, by the lands surrounding Highway 99 spanning from Britannia Beach in the south to Mount Currie northeast of Pemberton and includes the corridor along Pemberton Portage Road to D'Arcy as well as Pemberton Valley Road to the Lillooet FSR. This strategy does not address the intensively managed Whistler Bike Park or other trails within the Controlled Recreation Area (CRA). The Sea to Sky Corridor Trail Strategy area is identified in Figure 2.

“Trails consolidate and connect communities, rather than encourage them to expand and fragment.”

*-David Burwell,
Rails-to-Trails
Conservancy*

Strategic directions detailed in this document are provided for the management of trails on provincial Crown land. As the responsible agency for recreation on Crown land, MTSA will take the lead role in the implementation of these strategies.

However, this strategy is not intended for MTSA alone. Strategic direction is provided and intended for multiple stakeholders in the Sea to Sky trail network.



This strategy considers all recreational trail use on Crown land, including motorized and non-motorized use. Pedestrian walking and jogging, backcountry hiking, cycling, trials and dirt bike riding, ATV use, equestrian riders, climbing route access and other uses are considered in the development of the strategy. This Strategy focuses on summer use recreational trails. Snow based activity trails and associated management deserves consideration in a separate plan that can adequately address specific challenges unique to winter activities.

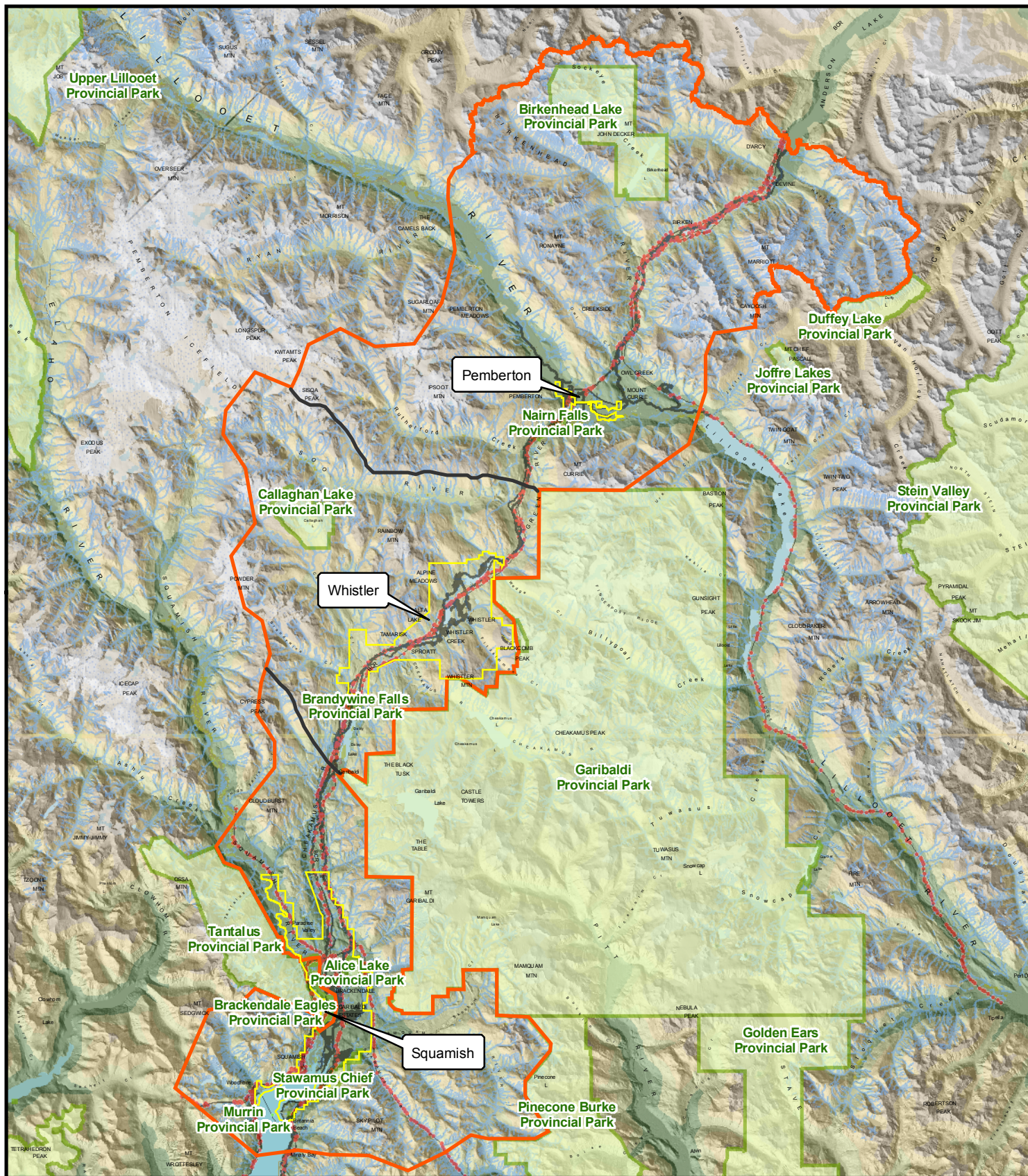
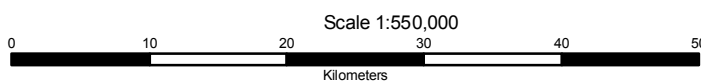


Figure 2 - Strategy Area
Sea to Sky Corridor Recreation Trail Strategy



Date : January 8, 2007
 CERF File # 015-11-01
 Projection : UTM Zone 10 N
 Datum : Nad 83
 GIS Cartographer: Todd Hellinga

Prepared by:
CASCADe ENVIRONMENTAL
 RESOURCES GROUP LTD.

Planning Context

This Strategy, considered as a planning document, fits within a context of other land use, resource and community planning processes that have taken place both 'above' and 'below' it in a planning hierarchy. The success of this Strategy will largely be determined by its ability to meet the objectives of higher level plans such as the Sea to Sky LRMP and its effectiveness at providing guidance and authority to more operational, community based plans.

Sea to Sky LRMP

The Sea to Sky Land and Resource Management Plan (LRMP) was approved in April of 2008 and provides direction for future planning and management of natural resources, and a framework to resolve land use issues.

The LRMP is built upon the outcomes of government to government discussions between the Province and First Nations, and on recommendations put forward by a public planning forum representing a range of resource sectors.



Recreation is a key component of the Sea to Sky LRMP. The Sea to Sky region is the only area in the province where tourism is the highest ranked basic economic sector.

The LRMP recognizes the need for management of recreation resources in the Squamish Forest District Crown land base. The plan establishes the following four goals, and related objectives for the management of recreation values:

- High quality natural recreation features and land base to support recreation activities.
- Adequate and appropriate access to Crown land for public and commercial recreation
- Types and levels of recreational use (commercial and public) managed to minimize impacts on other resource values, and prevent conflicts between recreational user groups.
- A comprehensive database of knowledge and tools to support recreation management.

To achieve these goals the LRMP identifies specific implementation direction which included, among other actions, to avoid or mitigate impacts to trails and trail systems during land disposition and development. This could involve:

- Ensuring trail maps are kept up to date and available to relevant parties, including agency decision makers; and
- Undertaking agency referral regarding application for land uses that may impact trails.

The LRMP further describes specific areas where resource management direction has been identified. These Land Use Zones include:

- The **All Resource Uses Permitted Zone**, which includes the **Front Country Area** and **Cultural Management Areas**;
- **Wildland (Mining/Tourism Permitted) Zones**; and
- **Protected Areas**, which include existing **Parks** and new **Conservancies**.

Each zone has associated management direction.

The planning area and scope of this Strategy is almost entirely within the Front Country Area of the All Resource Uses Permitted Zone. Among the objectives for this Zone is to undertake resource uses and activities in a manner consistent with the high quality of recreational experiences sought by public and commercial users of the Frontcountry Area. Specific implementation direction for this objective includes:

- Identify and manage recreation features throughout the Plan Area to ensure a high quality recreational experience
- Resource developers (e.g. forestry, mining, energy) are encouraged to consult with recreation and tourism users and consider their input during planning and management of land-based activities in recognition of the intensive public and commercial recreation use of the Frontcountry Area.
- Manage levels of recreational use to maintain aesthetic and ecological values and water quality.

Local Resource, Operational and Community Plans

Additional community, resource and local club planning that has been considered in the development of the strategic direction outlined in this document includes:

- Squamish Mountain Bike Plan (2004).
- Squamish Mountain Bike Management Plan (2005)
- Draft Squamish Official Community Plan (2005)
- Draft District of Squamish Trail Standards (2006)
- Whistler Trail Standards: Environmental and Technical Trail Features (2003)
- Whistler Recreational Cycling Plan (2006)
- Whistler Trails Master Plan (2006)
- Village of Pemberton OCP (2006)
- Electoral Area C Official Community Plan (2006)
- SLRD Amendment Bylaw # 734-2002

Existing Network

The current known recreational trail network spanning the Sea to Sky Corridor consists of over 700 kilometres of trail, outside of BC Parks. It is comprised of approximately 34 km of multi-user paved pathways, 555 km of singletrack and 115 km of doubletrack trails. As well, 134 km of gated and un-gated Forest Service Roads (FSR's) provide key access to the network but are not included in calculations as actual trails.

The expansive network is largely centered around the three municipal regions of Squamish, Whistler and Pemberton. Smaller communities such as Britannia Beach and D'Arcy also feature distinct network areas, however for the purpose of the plan the Sea to Sky network will be classified according to these three regions as identified in Figure 2. A description of the trails by type and land ownership is included in Table 1.

Table 1. Kilometers of Trail in Each Region by Land Ownership.*

Region	Land Ownership			Total
	Crown Land	Municipal Land	Private Land	
Squamish	173	8	41	222
Whistler	238	47	25	310
Pemberton	140	-	31	172
Total	551	55	97	704

The largest portion of trails in the Squamish region are singletrack, unsurfaced trail, the majority of which (77%) are located on Crown land both within and outside the Squamish District Boundary. Approximately 41 km of trails or 18% are located on private land within the district boundary. Additionally, an expansive network of trials bike trails exists above Britannia Beach. Although the exact location of these trails has not been identified in this planning process, it is estimated that there is approximately 75 km of singletrack trail used primarily by motorized trials riders and occasionally by heli-supported mountain bikers.

The Whistler Trail network is made up of 310 km of trails, the majority of which are un-surfaced singletrack. The Resort Municipality of Whistler (RMOW) also

constructed and manages the world class, Valley Trail System, with over 30 km of paved multi-user pathways spanning the RMOW and linking the residential communities of Whistler. The Whistler network is well positioned on Crown and municipal owned park land. Only 25 km or 8% of the network is located on Private lands.

For the purposes of this plan, the Pemberton region includes all trails contiguous with Highway 99 between the Rutherford River Valley to Mt. Currie, northeast to D'Arcy as well as trails northwest of Pemberton towards the Upper Lillooet FSR. There are approximately 196 km of known trails in the Pemberton region. Approximately 77% (151 km) are on Crown land with the remaining 33% on private land. A large portion of the Pemberton area trail network, originally located on Crown land has been recently transferred to the Lil'wat First Nation in a land disposition agreement reached with the Province.

BC Parks Trails

Within the Sea to Sky Corridor, vast networks of recreational trails exists within the numerous BC Parks, including Garibaldi, Alice Lake, Tantalus, Brandywine, Stawamus Chief, Nairn Falls

Provincial Parks and others. Trails on Crown, municipal and private lands often join or provide access to the Provincial Park trails and as such Park trails form an integral part of the Corridor network. While a comprehensive inventory of trails in BC Parks is beyond the scope of this strategy, it must be recognized that trails on Crown land that are contiguous with BC Parks trails are vital to the Parks trails themselves and vice versa.

Singletrack Trails

Off-road mountain biking constitutes the greatest intensity and volume of trail use in the Corridor. Other user groups including recreational cyclists, trials motorcycle riders, dirt bike riders, and equestrians also seek singletrack riding experiences. Singletrack and some doubletrack trails used by these riders are rated according to level of difficulty (see Trail Classification section) using the green circle, blue square, black diamond system used predominantly in the ski industry and adopted by the International Mountain Bike Association (IMBA). Table 2 shows the quantity of known trails in each region classified by difficulty rating. Trails used almost exclusively by pedestrians such as steep alpine hiking trails are rated according to the *BC Parks Trail Difficulty Ratings* and surfaced, valley bottom multi-user trails with grades less than 4% are not rated and not included in the table below.

Table 2. Allocation of Regional Singletrack Trails by Difficulty.

Region	Difficulty Rating	kilometers	% of regional network
Squamish	Green Circle	59	36
	Blue Square	56	35
	Black Diamond	34	22
	Double Black Diamond	10	7
	Sub-total	159	100
Whistler	Green Circle	33	16
	Blue Square	80	38
	Black Diamond	87	41
	Double Black Diamond	8	5
	Sub-total	208	100
Pemberton	Green Circle	16	20
	Blue Square	27	34
	Black Diamond	26	32
	Double Black Diamond	11	14
	Sub-total	80	100
Total	Green Circle	108	24
	Blue Square	163	36
	Black Diamond	147	33
	Double Black Diamond	29	7
	Total	447	100

SEA TO SKY TRAIL

The proposed Sea to Sky Trail embodies the concept of a coordinated trail network through the Corridor. A single, visionary trail that links the communities between Squamish at the northern end of Howe Sound and D'Arcy at the south end of Anderson Lake will provide the backbone for the Corridor trail network. A trail that passes through multiple jurisdictions including various municipalities, Provincial Parks, Crown land, and others, provides an exceptional opportunity for coordinated trail management.

This popular community project has seen intermittent progress over the past 12 years and while much of the proposed trail exists on the ground, the Sea to Sky Trail is not officially recognized as an entity. By 2004 in an effort to remedy this lack of official status, the Sea to Sky Trail Steering Committee was struck by the Squamish – Lillooet Regional District (SLRD), including the Village of Pemberton, the Resort Municipality of Whistler (RMOW), SLRD, and the District of Squamish. The Steering Committee is currently completing the Sea to Sky Trail Strategy.



Ideally the trail will be comprised of a 2m crushed gravel surface with an average grade less than 4%. The trail will be suitable for walking, cycling, and hiking, x-country skiing and snowshoeing. In addition, certain sections may also be designed to accommodate horseback trail riding, ATV riding, snowmobiling, and potentially dirt biking, depending on the desires of the communities through which it passes.

The Sea to Sky Trail will not only provide a linkage between communities in the Corridor and a fantastic recreation opportunity, it can play an integral role in linking the more diverse and likely challenging trails throughout the network. The Sea to Sky Trail will link the various regions, anchor the network in the landscape and raise the profile of the region as a world class recreation destination. As well, the Sea to Sky Trail has the potential to bring broader recognition to the entire trail network and increase the status of trails in general throughout the Corridor. The Sea to Sky Trail will be the backbone of the corridor network.

The Ministry of Tourism Sport and the Arts, local and regional agencies, user groups and clubs should recognize the importance and value of the Sea to Sky Trail to the entire network. The relationship of existing and proposed trails to the Sea to Sky Trail should be considered by MTSA, trail coordination committees and other planning agencies when making trail network management decisions.

FIRST NATIONS

The entire network within the planning area is located on lands within the traditional territories of the Squamish Nation, Lil'wat Nation, N'Quatqua Nation or Tseil-Waututh Nation and adjacent to the traditional territory of the In-SHUCK-ch.

Involvement and partnerships with First Nations in the coordination of trail management activities will strengthen the sustainability of the entire network. First Nations must provide input into the planning and management of trails on their traditional territories to ensure trails do not impact sensitive cultural, archaeological and historic sites. First Nations share concerns for the environmental impact of trails.

Recent dispositions of Crown lands in the Pemberton area to the Lil'wat First Nations and planned dispositions of Crown land in the Squamish area to the Squamish Nation places both groups in the role of private (and potential) land owner with community enjoyed trails on their land. Involvement of the First Nations in trail planning and management processes occurring in the regions will help to foster a cooperative and understanding relationship between trail users and the land owners.

First Nations and the LRMP

Outcomes from Government to Government discussions with First Nations in the Sea-to-Sky Area resulted in Land Use Planning Agreements between the Province and the In-SHUCK-ch, Lil'wat and Squamish Nations. The agreements set out specific changes and additions to the Sea-to-Sky LRMP based on the specific interests and concern of each Nation within their respective territory. Land use zoning and management direction specified in the agreements have been incorporated into the LRMP.

Lil'wat Nation Trail Use Agreement

The provincial government recently transferred over 400 acres of Crown land in the Mosquito Lake area to the Lil'wat Nation as compensation for land lost to the Sea to Sky Highway upgrades. The Mosquito Lake area contains a large portion of the Pemberton area mountain bike and walking trails. The Lil'wat Nation and the Pemberton Valley Trails Association (PVTa) reached an agreement that establishes the framework for a long-term cooperation. In exchange for allowing recreation access the PVTa provides liability insurance to cover the Lil'wat Nation. The Lil'wat have a representative on the PVTa board to ensure their interests are considered (Thompson, 2006).

Long Term Goals

The Sea to Sky Corridor Trail Strategy provides strategic direction for managing a trail network to achieve the following long term goals:

1. An Authorized Trail Network
2. A Coordinated Trail Network
3. Respect Cultural Values
4. An Environmentally Responsive Trail Network
5. A Sustainable and Economically Beneficial Trail Network

These five long -term goals will be realized by carrying out identified strategies to achieve more specific objectives.



GOAL

Authorized Trail Network

Only approximately 21% the 562 kilometres of trails located on Provincial Crown land (outside of BC Parks) within the Corridor are authorized or established as required by the *Forest and Range Practices Act* (FRPA). Unauthorized trails on Crown land are illegal and are not given consideration in land use management and planning processes. Section 57 of the *Act* enables eligible parties to construct, rehabilitate and maintain recreation trails on Crown land. Section 56 formally establishes a recreation trail on Crown land. The main purpose for establishing recreation trails under section 56 is to ensure they are recognized and accommodated during land use planning.

An authorized and established trail network will facilitate development of a formal planning and management structure. An authorized network provides the following additional benefits:

- Ensures trails and recreation opportunities are considered in land use planning processes.
- Provides opportunities for integrated forest management and balance of land uses.
- Ensures First Nations cultural values are considered.
- Easier to secure funding and resources for an authorized network.
- Provides a platform for partnerships and cooperative management amongst organizations.
- Secures government support for trail initiatives and management.
- Facilitates commercial recreation tenure and permit awarding processes.
- Ensure environmental and risk management considerations are addressed in trail planning and management.
- Ensures trail construction and maintenance is not carried out unlawfully.

Authorization and establishment of a particular trail does not guarantee preservation in the same sense as a park or protected area. Forest development may occur adjacent to an established trail providing a buffer or may impact a trail directly. Responsible agencies will evaluate and consider recreation objectives when making land use decisions.

As the agency responsible for public recreation on Provincial Crown land, MTSA recognizes the importance and significance of the vast existing trail network within the Corridor. MTSA's policy is to accommodate the demand for use of existing trails and to authorize the new trails provided, (1) the trails and facilities are properly located, safe and do not result in significant user conflicts or environmental damage, and (2) the proponent is willing to make a long term commitment to manage new trails (MTSA, 2006).

MTSA does not have the capacity to locate, maintain and manage all the trails that have been built on Crown land. MTSA will enter into partnership agreements with local government organizations, clubs or agencies, allowing them to use maintain and develop trails on certain Crown lands.

Partnership Opportunities

In the Sea to Sky Corridor, the Squamish Lillooet Regional District (SLRD) and municipal governments, on behalf of communities that benefit from the trails, are the best suited organizations to enter into trail agreements with the Province. Regional and municipal governments have the capacity to build annual trail funding into capital and operational budgets, provide required insurance similar to other recreation amenities such as playgrounds and enter into long term agreements with the Crown.

User groups, clubs and other local organizations are potential proponents for trail agreements with the Province. Often their members are the most frequent users and in the case of the existing trails, they may be the original builders. Their members are usually the most familiar with localized management needs. In considering partnership agreements with local clubs however, it should be recognized that participation and resources available to clubs often fluctuate and therefore clubs may be less able to appropriately manage an extensive trail network. Furthermore, local clubs may not be as well positioned as municipal governments to manage liability issues associated with the recent proliferation of more challenging mountain bike trails. Clubs and user groups will be well suited for individual trail agreements or agreements for portions of a trail network. Local clubs and user groups should be identified as one of a variety of potential trail agreement parties within any region in the Corridor.

Commercial recreation is defined as outdoor recreational activities provided on a fee-for-service basis, with a focus on experiences associated with the natural environment. The provincial commercial recreation management program requires existing and new recreation operators to acquire tenures or permits for the provincial Crown lands they need or utilize to operate. Numerous Commercial Operators provide guided cycling on Crown land trails throughout the Corridor. Commercial Operators utilizing the trails are logical candidates for trail agreements with the Province.

Objective

Authorize the rehabilitation and maintenance of existing, eligible trails on Crown land according to section 57 of FRPA.

Strategy #1

Identify currently unauthorized trails on Crown land eligible for authorization.

Trails do not follow land jurisdiction boundaries. Many trails span private, municipal and Crown land or any combination of the three. In cases where trails span both Crown and private land, MTSA should consider applications for authorization of trails where significant, contiguous portions are located on Crown land (>80%). Similarly, trails significantly located on private land or regularly interrupted by private lots should be placed on low priority for authorization.

A list of identified trails, with portions greater than 80% located on Crown land is included in Appendix 1.

Strategy #2

Develop framework for trail agreements with SLRD and municipal governments.

In order to meet policy objectives for public safety, liability, user conflict avoidance and long-term management of trails, proponents for trail agreements with the Crown will likely have to be established organizations with the capacity to develop and maintain

formal structured trail management programs. This is particularly true for the vast network of mountain bike trails in the Corridor with associated perceived and real liability concerns arising from the construction and use of TTF's.

As a regional government with jurisdiction spanning the Corridor, established relationships with the various municipalities, and the capacity to collect and allocate tax dollars in the Corridor, the SLRD is uniquely positioned to take the lead role in establishing trail agreements with the Province. A Corridor Trail Committee, led by the SLRD and made up of representatives from the municipalities, can provide leadership, direct local trail management activities, acquire and distribute funds as deemed appropriate as well as contribute to the coordination of the entire Corridor trail network. MTSA will enter into discussions with local governments, specifically the SLRD, Squamish, Whistler and Pemberton to determine the scope and extent of possible trail management agreements for trails on Crown land.

Strategy #3

Provide mechanism for local clubs and user groups to contribute to trail management activities.

Local cycling clubs (SORCA, WORCA), trails societies (STS,SAS,PVTA), equestrian clubs and other user groups (SDBA) play an integral role in the construction, maintenance and management of trails. Clubs and their members also foster the "ethos" that has made the Sea to Sky a world class trail network. While clubs may not be as well positioned as local governments to enter into trail agreements, effective management by local governments will depend largely on support by the clubs. Municipal governments will need to establish their own frameworks for working with local clubs and user groups to carry out the mandate required by the trail agreements. These may include "adopt-a-trail" programs, formation of local trail advisory or coordination committees that include municipal staff and club representatives as well as support for club based activities such as races and events.

Objective

Establish High Value trails according to section 56 *FRPA*.

Strategy #1

Establish High Value trails according to section 56 of *FRPA*.

While each trail in a particular region contributes to the character of the entire network, the public and other stakeholders view some trails as being more valuable than others. A particular trail may provide an exceptional recreation experience or form an integral part of the network due to location or access that it provides to other areas such as BC Parks. These trails are known to be the 'signature' or 'marquee' trails.

Not surprisingly, issues concerning these high value trails generate the strongest interest and opinions amongst the public and other trail stakeholders. Threats to their viability and existence of have serious impacts to the entire trails community and undermine the long-term sustainability of the network. Trails identified as high value, therefore should be given priority for authorization and subsequent establishment according to *FRPA* recreation regulations.

GOAL

Coordinated Trail System

The vast network of trails in the Sea to Sky Corridor is supported, managed and enjoyed by a diverse range of people and organizations. User groups, land managers, the general public, commercial operators and First Nations all hold a stake in this world class trail network. Although the network spans the Corridor, it is comprised of three distinct regions centered in Squamish, Whistler and Pemberton. Each region within the corridor faces unique operating and administrative environments. While it is recognized that each jurisdiction may take a different approach to management of their trails, that variation should not be considered a barrier to integration. A coordinated approach to trail management that fosters the sharing of information, resources and experiences is essential to ensuring the long-term sustainability of the network. A coordinated effort will benefit the entire region and achieve greater levels of success. Additionally the coordination of the trail network on a Corridor wide basis has the potential to offer significant economic benefits to the entire region.



A significant portion of the recreational trails are found in the many BC Parks throughout the Sea to Sky Corridor. Often these trails are contiguous with trails outside park boundaries. Trails on Crown or private land that provide access to BC Parks are critical linkages in the overall network. As well, Parks infrastructure including staging areas, trail heads and signage provide exceptional opportunities for integration and enhancement of the existing network outside of Parks. Coordination with BC Parks will be a fundamental component of achieving a coordinated trail network.

Objective

Increase collaboration amongst the Province, regional land managers, local governments and stakeholders.

Strategy #1

Establish a communication and governance model for collaborative management of the Sea to Sky Corridor Trail Network.

A collaborative approach to managing the trails within the Sea to Sky network would involve a managing committee made up of appropriate landowners and land managers. Ideally, a committee with all levels of government including First Nations would direct the management and planning of the trails.

Mechanisms to ensure stakeholder and user group input to the committee should be developed to guide management direction. Stakeholders and interested agencies may include:

- Ministry of Forests and Range
- Ministry of Environment / BC Parks
- Ministry of Agriculture
- Squamish Dirt Bike Association
- Corridor trials riders
- Corridor equestrians
- Squamish Trails Society
- Whistler Cycling Committee
- Federation of Mountain Clubs of BC
- Pemberton Valley Trails Association
- Corridor dirt bikes

MTSA , as the agency with responsibility and jurisdiction that spans the Corridor in partnership with the SLRD could be expected to take the lead role in development and implementation of the governance model.

Strategy #2

Adopt and implement trail standards and guidelines based on widely accepted standards and guidelines.

Each region within the Sea to Sky Corridor provides a unique trail experience. As well, trail administrators in each region are faced with different user demand characteristics and operate in differing administrative environments. Because trails do not necessarily fall within distinct regional areas however; and single trails may fall under multiple jurisdictions, a single set of trail standards based on similar guidelines are necessary to maintain consistency within the network. Consistent trail standards will provide the following benefits:

- Provides trail users with a consistent trail type and difficulty rating system throughout the Corridor.
- Adherence to established standards will reduce exposure to liability for land managers.
- Enhance the marketability of the Sea to Sky Corridor as a single recreational trail destination and facilitate coordinated marketing efforts.
- Enhance regional risk management programs by providing consistency and collaboration amongst trail management agencies.
- Provide clear and concise direction to trail managers, including local clubs for meeting minimum trail standards and guidelines.
- Meets the needs of the jurisdiction with the lowest risk tolerance.

Provincial land jurisdiction spans the Corridor and local governments or agencies necessarily share management responsibility for their trail networks with the Crown. By developing and adopting Corridor wide standards, the Province can facilitate consistency throughout the Sea to Sky area.

The Resort Municipality of Whistler (RMOW) has developed and adopted the *Whistler Trail Standards: Environmental and Technical Trail Features* (RMOW 2003), primarily focused on mountain bike trail planning, construction and maintenance. The standards identify trail types, trail difficulty ratings as well as trail and technical terrain feature (TTF) construction specifications. The Whistler standards are consistent with the International Mountain Bike Association (IMBA) guidelines for mountain bike trails as detailed in *Trail Solutions: IMBA's Guide to Building Sweet Singletrack*. Whistler Trail Standards have gained increasing recognition and have been adopted and applied in many jurisdictions within and outside of British Columbia.

MTSA will develop and apply trail standards and classification systems to trails on Crown land throughout the Corridor. The standards will be based on Whistler and IMBA guidelines with adaptations as required to address any provincial trail issues. Recommended trail standards are included as part of this Strategy.

GOAL:

Respect Cultural Values

Protection and respect for First Nations cultural values must remain a primary goal of the Sea to Sky Corridor Recreation Trail Strategy. Decisions, authorizations, planning and management of trails should be consistent with First Nation objectives and concerns as described in existing First Nation Land Use Plans, through government to government negotiations as outlined in the LRMP and as indicated through on-going discussion and engagement with appropriate First Nation communities.

Objective

Ensure First Nation cultural values are considered and respected in trail management and planning activities.

Strategy #1

Engage First Nations communities in trail planning and management activities.

All activities related to the planning, management and administration of recreation trails in the Sea to Sky Corridor should be done in partnership with First Nations. The degree and extent to which First Nation communities choose to be involved in trail planning and management activities should be established through agreements and protocols agreed to by the appropriate agencies, committees and First Nation communities.

Strategy #2

Establish partnerships with First Nations to identify and enhance meaningful trail related opportunities.

Trails have been demonstrated to provide significant, social, economic and cultural values for communities. Establishing partnerships with First Nations communities to identify and enhance these opportunities ensures those communities share in the benefits. Opportunities may include economic inputs associated with trail based events, enhancing First Nation awareness amongst non-aboriginals by developing interpretive and educational materials, enhancing opportunities for use of trails with significant historic and cultural values for First Nations and non-aboriginal trail users as well as ensuring trail management and use is consistent with First Nation objectives.

Strategy #3

In cooperation with appropriate First Nations, develop a protocol and implementation plan for considering authorizations of trails on Crown land and within traditional territories.

Trails have been demonstrated to provide significant, social, economic and cultural values for communities. Establishing partnerships with First Nations communities to identify and enhance these opportunities ensures those communities share in the benefits. Opportunities may include economic inputs associated with trail based events, enhancing First Nation awareness amongst non-aboriginals by developing interpretive and educational materials, enhancing opportunities for use of trails with significant historic and cultural values for First Nations and non-aboriginal trail users as well as ensuring trail management and use is consistent with First Nation objectives.

GOAL:

Environmentally Responsive Trail Network

All trails impact the natural ecosystem to some degree. By its' very nature, the establishment of a trail by grubbing causes localized damage to the immediate environment. The extent to which a trail negatively impacts the environment on a larger scale is highly variable and can be minimized by adhering to basic, established trail planning and construction guidelines.

An environmentally responsive trail network meets the following criteria:

- Is planned and located to optimize the landscape by making use of natural terrain and avoiding sensitive areas.
- Trail locations are chosen that minimize potential for erosion and avoid steep, erodible slopes.
- Trails resist erosion through proper design, construction and maintenance.
- Has the potential to provide users with an intrinsic natural educational experience.
- Provides amenities appropriate for the type and number of users (trail head staging areas, signage etc.).
- Is appropriate for the regional landscape in which it is located.
- Does not conflict with other environmental landscape management objectives such as sensitive ecosystems or wildlife areas.

Objective

Minimize impacts to the natural environment from trail construction, maintenance and use.

Strategy #1

Evaluate existing network to identify trails unduly impacting the environment and rehabilitate, relocate or de-activate.

A reconnaissance level assessment of the existing trail network should be completed to determine if any known trails are significantly impacting the environment. Local knowledge will be valuable in reaching this determination. Existing trails that are identified as harmful can be evaluated to determine if the impacts are a result of poor construction that can be rehabilitated, poor placement that can be rectified by re-locating a segment of the trail or if the trail needs to be de-activated.

If a trail is identified and determined to be adversely impacting the natural environment, MTSA will notify local agencies, user groups or stakeholders of a pending deactivation order. Groups would then have an opportunity to enter into a Trail Agreement with MTSA to rehabilitate and maintain the trail in question.

There are existing high profile and regionally significant trails that may pose an ongoing environmental risk due to their physical attributes. Often these trails are associated with higher risk (environmental or human safety) and the liabilities associated with the trails may preclude any trail agreement with a partner group. Further, modification or closure of the trails may diminish their value and result in a local backlash or lack of compliance

with closure. These trails should be identified and mitigation strategies developed to reduce the level of impact or risk.

It should be noted that trail de-activation is the least preferred option. Historically, de-activation of trails has proven difficult and largely unsuccessful. If trails are well established and well known, users will continue to use the trails despite clear indications of closure or deactivation. Rehabilitation and relocation is preferred and likely to be more successful.

Strategy #2

Establish environmental criteria for evaluation of future trail proposals.

All future trail proposals should be evaluated against an established set of environmental criteria. Evaluating proposals to meet minimum environmental criteria should not require extensive resources from decision making authorities. Baseline knowledge of the proposed area or route combined with assurances that proponents will adhere to well established industry guidelines (see *Trails Standards and Guidelines*) will help ensure environmental concerns are addressed.

In some cases, areas may be proposed for significant expansion of the existing trail network, possibly to address loss of trails to residential or forestry development. In those cases it may be appropriate for provincial officials to conduct base level environmental reviews to assess any potential impacts and facilitate pro-active management of the natural environment.

Strategy #3

Adopt Corridor wide guidelines for trail construction and maintenance that minimize impacts to the environment.

All trail construction, maintenance and rehabilitation, authorized by *FRPA*, must adhere to construction and maintenance guidelines as detailed in *Whistler Trail Standards*, *IMBA's Trail Solutions* and summarized in this document.

GOAL

Sustainable and Economically Beneficial Trail Network

The Sea to Sky trail network provides social, health and economic benefits to residents and visitors of the Corridor. The network increases quality of life for residents and recently has become a major attraction for people moving to corridor communities. The vast network of trails, increasingly viewed as a recreational facility is playing a vital role in the economic transition of both Pemberton and Squamish. As the international reputation for exceptional outdoor recreation grows, trails will play an increasing role in corridor communities.

The quality and diversity of the recreation experience offered by each trail within a region contributes to the character of that region. Each region in turn contributes to overall character of the Sea to Sky Corridor trail network. The impact to the network from the loss of a trail extends beyond the trail location itself and jeopardizes the sustainability of the entire network. Potential threats to the trail network therefore impact the social and economic well being of the immediate community and the region beyond.

The Western Canada Mountain Bike Tourism Association estimates that the Sea to Sky trails and associated mountain bike activity brought \$ 8.2 million in non-resident spending to Squamish and Whistler between June 4 and September 17, 2006 (WCMBTA, 2006). The popularity of mountain biking and the associated economic benefits directly or indirectly affect the entire Corridor.

As the agency responsible for public recreation on provincial Crown land, MTSA can play a critical role in ensuring the sustainability of the network. In order to achieve long-term success however, coordination amongst all trail stakeholders is essential. Threats to a sustainable trail network must be identified and coordinated action plans to address them put in place.

Challenges to the long-term sustainability to the trail network in the Sea to Sky Corridor include:

- Loss of trails or segments of trail to private land development (fragmentation).
- Loss of trails or segments of trails to forest development such as timber harvesting (degradation).
- A reduction in the quantity and quality of singletrack trails which exemplify the highest quality riding experience for most recreational trail enthusiasts.
- Loss of connectivity (trails or portions of trails that provide critical access to parts of the network including BC Parks).
- Lack of resources (funding, volunteers) to properly manage trails
- Liability concerns for private land owners, trail managers or partners.
- Loss of trail access points (trail heads) from existing neighbourhoods.

While some threats can be addressed at the Provincial level, many of them require involvement and cooperation with municipal and regional governments. Municipalities are able to address loss of trails to development by influencing the development approval process as well as instituting policies and by-laws. The Provincial government can work with local governments to identify solutions for lost trails that might include relocation to identified expansion areas. Sustaining and enhancing the existing trail network will

require all stakeholders in the area to identify the “tools” available to them and utilize them in a coordinated, systematic and integrated approach.

Objective

Develop coordinated, formal effort to address challenges to sustainability of trail network.

Strategy #1

Stakeholders in each region should conduct a strength, weakness, opportunities and threats (SWOT) analysis for the trail network in each region.

Each of the three regions within the Corridor are at different stages of developing trail management and planning strategies. As well, trails on Crown land outside district boundaries face different challenges from those within. It is critical therefore that each region and agency with jurisdiction over portions of the network identifies and addresses specific regional issues that affect their trail networks.

Strategy #2

Develop regional and local (municipal) action plans to address threats and weaknesses to trail networks.

Each of the three municipal regions in the Corridor are currently conducting or have completed this strategic process. Through a comprehensive planning process, the RMOW has completed the Whistler Recreational Cycling Plan. The plan specifies timelines and responsibilities for undertaking strategic action to realize the identified vision. The Squamish Off Road Cycling Association (SORCA) in conjunction with the District of Squamish has completed the Squamish Mountain Bike Management Plan. The Village of Pemberton is currently considering trail planning issues in various municipal planning processes. However, it should be noted that most of the existing trails in the Pemberton area are located outside municipal boundaries in the SLRD.

Each region must ensure that all key agencies and user groups work cooperatively to carry out specific regional initiatives to ensure the sustainability of the network. Local trail coordination committees will be essential meeting this obligation.

Strategy #3

Identify strategic locations for establishment of network trail head staging areas on Crown land.

Trail head staging areas can play a crucial role in sustaining a world class network. Similarly the lack of designated, well managed network staging areas presents a significant threat. Staging areas provide parking and access for regional visitors, provides a venue for information sharing amongst stakeholders and users, and formalizes the trails as legitimate recreation facilities.

In some cases local communities have viewed recreational trails negatively due to their impacts on neighbourhoods when staging areas are not available. Parking issues, heavy traffic, noise, dogs, lack of facilities and litter are all examples of complaints commonly raised by residents living at the end of the road adjacent to a trail. Community members with negative perceptions of trails and trail users do not enhance sustainability of the network.

The Sea to Sky Trail provides an exceptional opportunity for integration and collaboration of the entire Corridor trails community. The Sea to Sky Trail forms the spine of the

network and a majority of the other trails in the Corridor will stage from various points along the Sea to Sky Trail. Trailheads are automobile accessible and generally include vehicle parking.

Objective

Ensure ‘no net loss’ of trails in the Sea to Sky Corridor

Strategy #1

Provincial, regional and local governments adopt and implement “no net loss” of trails policy in the Corridor.

Private land development constitutes the greatest threat to existing trails in the Corridor. Municipalities have mechanisms available to them, in the development permit approval process, to ensure existing trails are maintained within planned developments, re-routed around planned developments or reconstructed elsewhere as compensation. The RMOW and Whistler Off Road Cycling Association has had high levels of success working together with developers to ensure kilometres of threatened high quality trails are not lost.

MTSA has committed to goal of ‘no net loss’ of trails in the Sea to Sky Corridor. “No net loss” of trails implies that over time the quality and quantity of (legally established) trails in the Corridor does not diminish. This does not imply that all trails will be free from impacts including forest development, land development and other uses.

Achieving “no net loss” of trails can be accomplished by:

- (1) Re-establishment after harvesting activities;
- (2) re-location during forestry or residential development, or
- (3) compensatory re-construction in identified expansion areas (by application of integrated forest management principles, LRMP objectives and in consultation with MoFR).

The “no net loss” objective applies to the quality as well as the quantity of trails in the existing network. Resource managers, land managers and responsible authorities need to consider the quality of the recreation experience a trail provides when weighing the costs of re-establishment, re-location or construction against development planning.

Strategy #2

Identify potential trail network expansion and/or enhancement areas in each region that are consistent with integrated land use planning processes, regional and/or municipal plans completed or underway.

Fourteen percent of trails in the Sea to Sky Corridor are located on private land. Additionally, of the 562km of trail on Crown land, only 117 kilometres are authorized. Anticipated Crown land dispositions will result in trails on existing Crown land ending up on private land. It is reasonable to assume that over time, existing trails will be lost to residential and forest development. Identifying areas for future trail establishment in each region is critical to sustaining the network. Identification of expansion areas facilitates a pro-active approach to trail planning and management.

Squamish

The trail network in the Squamish Region includes numerous destination hiking trails providing access to the surrounding alpine from the valley as well as an intensive and complex network of multi-use recreation trails located in and around the Squamish communities. These recreation trails allow Squamish residents and visitors to access and enjoy forested front-country recreation experiences often from their front doors. This nearby “deep forest” recreation experience is highly valued by residents and an integral component to District of Squamish claim as the outdoor recreation capital of Canada.

Many of the network trails in the Squamish front-country have been constructed on private land. Additionally, expected Crown land dispositions and potential future resort development will likely result in significant portions of the trails currently located on Crown land ultimately ending up on private lands. As well, existing and newly granted forest tenures in the Squamish front-country have potential to further impact the integrity and availability of the “deep forest” recreation trail experiences.

Existing areas of Crown land that provide a “deep forest” recreation trail experience, such as the Brohm Interpretive Forest area will be managed to maintain and enhance the integrity of that experience. MTSA will work with other Provincial agencies, the District of Squamish, stakeholders and other local governments to identify other areas of Crown land that can be managed to preserve quality deep forest trail experiences.

Whistler

The Whistler regions’ many recreation trails are largely located on municipal park lands, Crown lands or the Whistler-Blackcomb controlled recreation areas (CRA). Development of private lands has less potential to impact the trail network in the Whistler area than in neighbouring Squamish. As well, the proposed Whistler Community Forest, if approved will encompass a large portion of the network and will allow the community the flexibility to balance resource and recreation uses of the forest lands..

The RMOW has identified expansion areas in their *Cycling Trails Master Plan* as a component of the *Whistler Recreational Cycling Plan*. Trail expansion areas have been identified in the *Squamish Mountain Bike Management Plan*. User groups, responsible agencies and trail coordination committees must establish support for expansion of their networks where trails are proposed on Crown land. All network expansion on Crown land must be authorized (section 57 *FRPA*) and eventually established (section 56 *FRPA*).

Pemberton

The Pemberton trail network, distributed amongst both private and Crown lands is fairly dispersed relative to the community center. The Village of Pemberton has expressed an interest in undertaking a recreation trail planning process. MTSA will work with the Village of Pemberton, stakeholders and other local governments to develop and implement the results of a trail process, consistent with existing land use plans.

MANAGEMENT ISSUES



Integrated Land Use

This strategy is based on the principles of integrated land management and does not intend to affect trail management at the expense of other resources. Integrated land use principles ensure that decisions affecting land use consider economic, environmental and social concerns. Integrated land management aims to balance the diverse and complex uses of resources while ensuring the protection of ecological values.

In the Sea to Sky Corridor there is increasing pressure on the land base for a diverse range of uses including forest development (harvesting), recreation, mining, historic/cultural use by First Nations, agricultural land use, hunting, sightseeing, commercial tourism and many others. While the requirement for resource development and associated economic and community benefits are often viewed as being in conflict with recreation values, and specifically trails, MTSA recognizes that often apparently conflicting resource uses can not only co-exist but in fact are often mutually beneficial.

Financial benefits derived from a community trail network increase economic diversification and contribute to a sustainable local economy. A sustainable and diverse local economy benefits all industry sectors. Additionally, development of forest resources provides critical access to forested areas for recreation use.

The Sea to Sky LRMP provides specific direction for achieving the balance between economic, environmental and social concerns. The LRMP was developed in consultation with government agencies, First Nations, stakeholders and considerable public input. The LRMP provides guidance for resolving land conflicts that involve trails and other resource uses.

Issues:

- Increasing land use conflicts amongst recreation values and forest development, agricultural land use and other resource values.
- Need to ensure integrated forest management approach is applied to trail management decisions in the Sea to Sky Corridor.

Management Objectives:

1. Ensure trail management decisions are consistent with the LRMP.

In the case of irresolvable land use conflicts between competing forest resource values, the LRMP should provide the basis that guides final decision making.

2. Ensure relevant ministries and agencies are involved in trail management decisions.

An effective integrated approach to resource management requires constructive, representative input from all stakeholders and agencies. What often begins as competing requirements for resources can evolve into a balanced approach that considers the needs of all users, meets the needs of the greatest number of users and results in a satisfactory, sustainable solution.

3. Adopt standards and procedures for developing and managing trails in agricultural areas.

A Guide to Using and Developing Trails in Farm and Ranch Areas (MAL, 2002) provides specific guidance for trail management within agriculture and ranch areas. This document should be used as a starting point to address conflicts in the agricultural areas of the Pemberton Valley.

4. Develop a framework for managing trails within the working forest in cooperation with the Ministry of Forests and Range.

Various legislative and regulatory tools are available to ensure recreation values associated with trails are considered in forest management decisions. This included recreation provisions of the Forest and Range Practices Act section 56-58, including legal management objectives, the Recreation Regulation and Government Action Regulation (GAR).

Risk Management

Risk management and liability is a primary concern amongst public agencies responsible for trail management.

The term 'risk' as it applies to trail management describes the relationship of the trail user to the risks (both perceived and real) of traveling in an uncontrolled environment as well as the risks incurred by land managers (and private land owners) of providing access to recreational trails for a variety of uses. The practice of risk management does not intend to eliminate risks, but instead to identify, reduce and manage them in order to decrease both risk to the user and potential liability to land managers or partners.



The increasing popularity of free-ride mountain biking has led to the development of trails that incorporate natural or man made features intended to create exciting and challenging experiences. These 'technical trail features' (TTF's) and their associated risks are a primary concern amongst land managers and public agencies.

Free ride mountain biking is intrinsically linked to the perception of risk involved in the experience. The reduction or elimination of perceived risks to the user, particularly in the case of mountain bike trails, is counter productive to the purpose of the trail itself. Risk management therefore, should focus on eliminating unreasonable 'hazards' from the trail (including unsafe or unsound TTF's) and proactively reducing the exposure of land managers, partners or private land owners to liability arising out of lawsuits. A risk management strategy must identify the legal situation of the various land managers and then provide a framework for the reduction and management of their exposure to liability.

Liability Insurance

Liability insurance for trail use clubs, particularly those involved in trail management is available from some insurance providers. Available policies can insure clubs for liability arising from events like club rides, trail maintenance, trail patrols and other club activities. It can also provide coverage for completed operations, which means that if a club builds a trail and is subsequently sued by a trail user on the basis of that trail building, the policy will cover defence of the suit (McKay 2006).

Recreation Trails and the Occupiers Liability Act

The *Occupiers Liability Act* of B.C. governs the obligations of a land manager towards anyone who comes onto that land in British Columbia. Revisions to the *Act* in 1998 determined that a land owner or "occupier" has no duty of care to a person in respect of risks willingly assumed by that person other than a duty not to create a danger with intent to do harm to the person or damage to the person's property, or act with reckless disregard to the safety of the person or the integrity of the person's property. Furthermore it states that a person who enters a premises for the purposes of recreation is deemed to have willingly assumed all risks.

While the OLA is generally considered to provide reasonable protection for land owners and land managers with trails on their premises, there is an absence of case law in British Columbia to provide the necessary assurances to private property owners, the insurance industry and in some

cases public land managers. Therefore, issues around trail liability particularly with respect to mountain bike trails with technical trail features continue to present barriers to trail management efforts.

There is no one simple solution to addressing liability concerns faced by trail managers. Managing and thus minimizing exposure to liability is accomplished by employing a multi-faceted approach to risk management. Key factors that must be incorporated to reduce exposure include development, implementation and adoption of standards, a comprehensive signage program and coordinated risk management efforts.

Issues:

- Exposure to liability for land managers, and public agencies from recreational trail use
- Provincial policy requirement for general liability insurance
- Need for established “facility” standards

Management Objectives:**1. Develop, adopt and implement trail standards particularly with respect to TTF’s and signage.**

Establishing and adopting broadly accepted standards is a core strategy for reducing exposure to liability. The Sea to Sky Corridor is uniquely positioned to support the development of internationally recognized standards for trail and TTF construction. The *Whistler Trail Standards* are becoming increasingly accepted as an industry standard. Corridor wide adoption and implementation will further support the recognition of this standard, thus strengthening the position of land managers with respect to liability exposure.

2. Evaluate implementation of Provincial Mountain Bike Policy.

Successful implementation of the Provincial Mountain Bike Trails Policy will partly depend on the response by local organizations, including municipalities, to undertake trail agreements and providing the required general liability insurance.

3. Encourage adoption of formal risk management programs by responsible land managers.

Groups and public agencies responsible for management of trails will minimize their exposure to liability by pro-actively implementing risk management programs. The scope and complexity of programs will vary depending on the types and extent of trails being managed. Trail coordination committees can assist groups by developing guidelines, providing resources and fostering understanding about risk management programs.

4. Continue to assess position of land managers to risk associated with trail use.

Trends in trail use and applicable legislation are constantly changing. Land managers, public agencies, clubs and committees will be required to continually assess and re-evaluate liability and risks associated with trail use on lands they are responsible for or enter into partnership agreements to manage.

Trail Use Conflicts

Conflicts arising amongst different types of trail users in the Sea to Sky Corridor are indicative of the value users place on the recreation experience and the trails themselves. Conflict can be attributed to perception about activity style (mode of travel, level of technology), focus of trip, expectations, attitudes toward and perceptions of the environment, level of tolerance for others and different norms held by different users (Moore 1994). While various types of conflicts can arise in trail settings, this discussion refers primarily to conflicts between different user types.

The increased demand for unconfined, relatively unstructured outdoor recreation experiences is not specific to any one user group or type of use. Hikers, bikers, equestrians and motorized off-highway enthusiasts all hold expectations for use of Crown land. Increasing availability and advances in equipment technology have contributed to a proliferation of both motorized and non-motorized mechanized users, thereby increasing opportunities for contact amongst the different users and potential for conflict. It should be noted however, that contact is not always a pre-requisite for conflict.

Singletrack trail use is the most valued trail experience amongst all types of experienced trail users. The popularity and world renowned reputation garnered by the nearby “North Shore” and Sea to Sky Corridor can largely be attributed to the quality and quantity of the vast singletrack network. Often trail use conflict in the Sea to Sky Corridor can be attributed to competition over this resource.

The most common conflict is amongst non-motorized users and dirt bike riders; however conflict can and does exist between, hikers and mountain bikers, equestrians and mountain bikers or any other combination of users. Conflict is often asymmetrical where negative perception is held by one group towards another but the reverse is not true (Moore 1994).

Land managers are increasingly faced with addressing user conflicts over trails under their jurisdiction. It is increasingly important to employ a coordinated and multi-faceted approach to the issues. It may not be possible to completely eliminate conflict, however a pro-active approach to trail management can largely reduce the potential for conflict as well as provide a framework for addressing it if and when it arises.

Issues:

- High demand for limited recreation resource (high quality single-track).
- Increasing conflict between motorized and non-motorized users.
- Providing equitable access to Crown land for all users.
- Maintaining ability of users to achieve desired recreation experience.

Management Objectives:

1. Identify and maintain key access routes for motorized users.

Non-permitted, inactive forest roads located in ‘non-motorized use’ areas may provide access to motorized recreation areas. Trails, deactivated or inactive roads or double-track trails in non-motorized areas may be designated to provide access for motorized users. The Mashiter Connector providing access to Alice Ridge and Ring Creek is an example.

2. Identify non-motorized and motorized-permitted trail expansion areas.

Areas identified for potential expansion of motorized-permitted and non-motorized trail networks are listed in Table 4 and shown in figures 3.1-3.3. These areas do not match recommendations by the Summer Backcountry Forum, however by encouraging expansion areas based on usage type, MTSA is able to minimize potential for trail use conflict amongst motorized and non-motorized users, while meeting the needs of all groups.

Table 3. Potential Motorized and Non-motorized Expansion Areas.

Region	Motorized Expansion Area(s)	Non-motorized Expansion Area(s)
Squamish	Skookum - Raffuse	Ring Creek North - Alice Ridge
	Evans Lake/Levette Lake Area	
Whistler	Soo Valley	Identified in Whistler Trails Master Plan
	Rutherford Valley	
Pemberton	Rutherford Valley	All Crown lands as identified by the LRMP Process.
	Birken-Devine	

3. Adopt and employ a hierarchy of management tools to reduce potential for conflict.

The following management “tools”, listed in order of preferred use, applied pro-actively, have the potential to reduce trail use conflict. It is important for trail managers to respect the unconfined and unstructured nature of recreational trail use and use the ‘least intervention necessary’ principal when implementing various strategies.

i. Code of Conduct

Conflict amongst user groups is often a result of one group’s perceptions of attitudes towards another group. In many cases both groups are avid users of the same trails and recreation areas in the same community. A code of conduct provides a baseline for acceptable behaviors and demonstrates a willingness by all parties to cooperatively share the resource. Appendix 2 provides a suggested Code of Conduct for trail use in the Sea to Sky Corridor.

ii. Signage

Users’ expectations play a critical role in how they view their recreation experience. If a user does not expect to encounter other users of a particular type (ie. a hiker encountering ATV riders), once they encounter that user, they may not feel as though they achieved their objective and their recreation experience will be negative. If on the other hand, users know what to expect at the outset there is less likelihood of a negative encounter. Signage should be used at all trail heads and locations where user restrictions change to identify and inform users of appropriate use. See Trail Standards and Guidelines for more detailed specifications.

iii. User group involvement

Involving local user groups in trail management planning and decisions making provides a venue for each group to understand other users perspectives, attitudes and objectives. Actively involving groups in common tasks forces them to work together and often highlights similarities while eliminating misconceptions and stereotypes.

iv. Education

Uninformed, unintentional, unskilled and careless actions by users are often cited as the causes of many problems in outdoor recreation areas (Roggenbuck 1992). Trail user education can address many or all of these oversights. Delivery of educational information must be strategic and not overwhelming. Suggested methods include trail head signage, text on local area maps, websites hosted by local clubs and dissemination of information through trail coordinating committees to local clubs.

v. Designate trail use

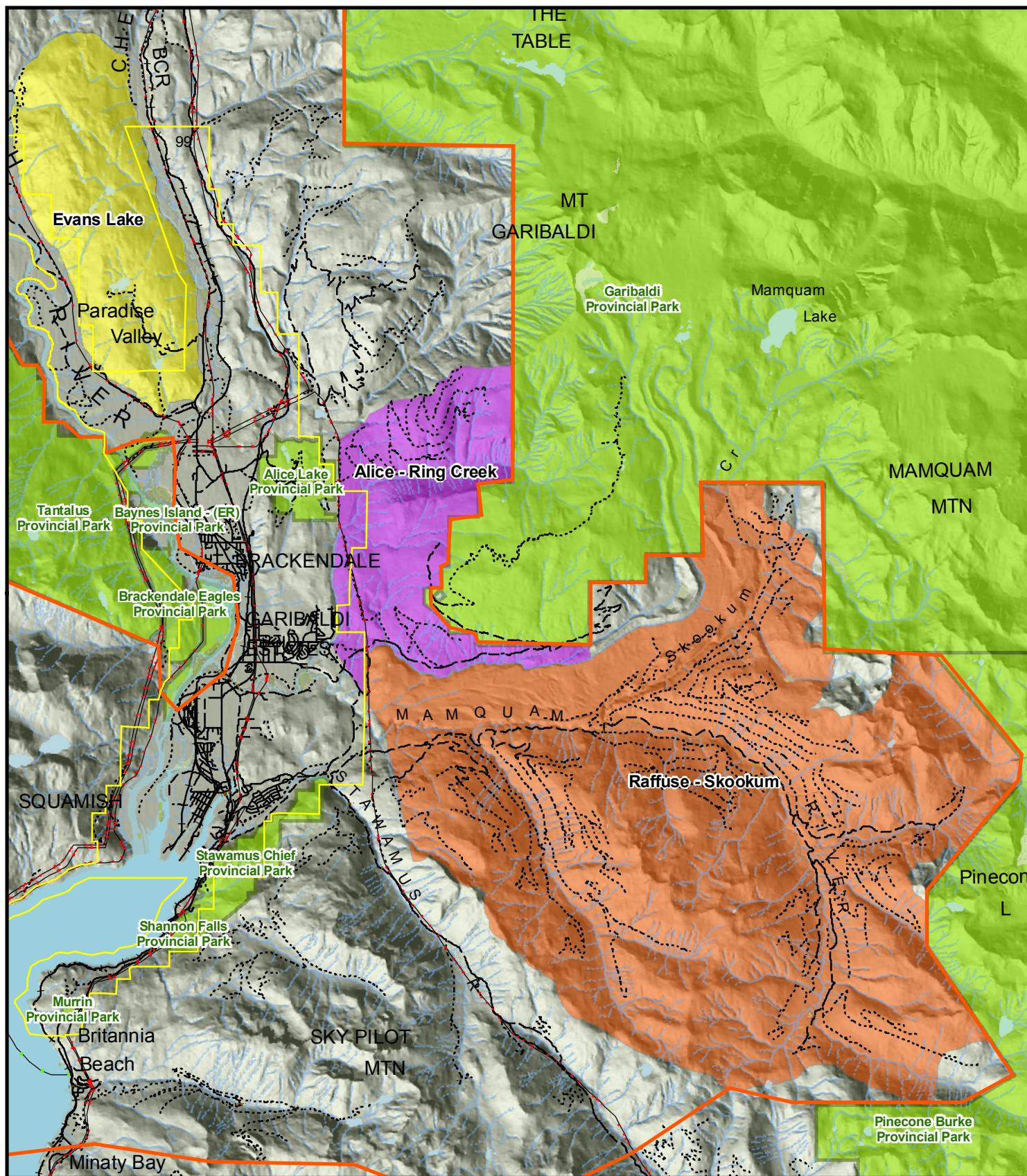
In some cases, trail use by different user types will prove incompatible for some areas. This could include areas close to residential development, areas within municipal boundaries or environmentally sensitive areas. Trail managers should consider designating appropriate trail uses in these areas. Recommended trail use designations are included in the Trail Inventory to accompany this Strategy.

vi. Enforcement of Regulations

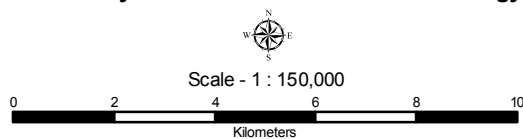
Enforcing regulations requires expending already limited resources and has the potential to spoil recreation experiences for trail users. While enforcement of regulations is a necessary component of any trail management plan it should be used in consort with other available tools, most notably education and user involvement. Users are more likely to accept regulation and cooperate with enforcement activities if they understand the reasons for regulations in the first place. Trail managers should respect the unstructured nature of trail based recreation and apply the “least intervention necessary” principal when undertaking enforcement of regulations.

4. Establish framework for resolving trail use conflicts or disputes

Trail use conflicts may arise from time to time despite implementation of management tools listed above and cooperation through trail coordination committees. Trail use conflict will be resolved in a civilized manner and within the context of this Strategy or mediated by the designated official of the Ministry of Tourism, Sport and the Arts. If mediation does not result in compromise and consensus the MTSA designated official may impose temporary or permanent conditions to resolve the conflict.



**Figure 3.1 - Squamish Potential Expansion Areas
Sea to Sky Corridor Recreation Trail Strategy**



Date : January 8, 2007
 CERF File # 015-11-01
 Projection : UTM Zone 10 N
 Datum : Nad 83
 GIS Cartographer: Todd Hellinga

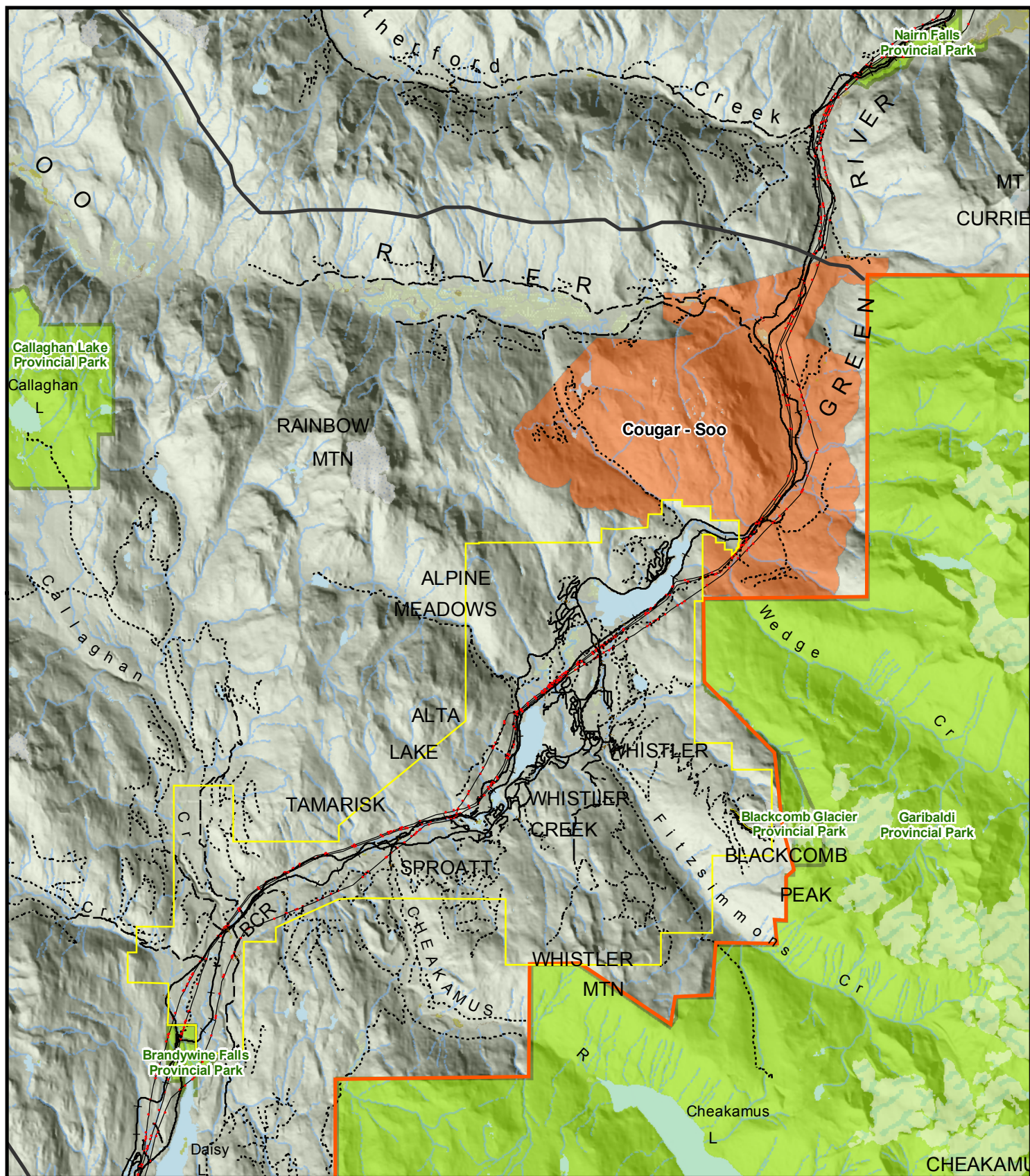
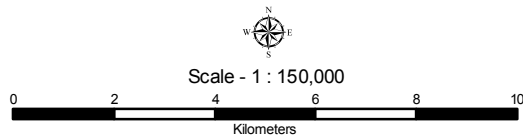
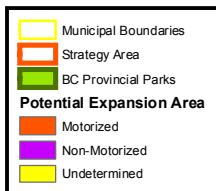
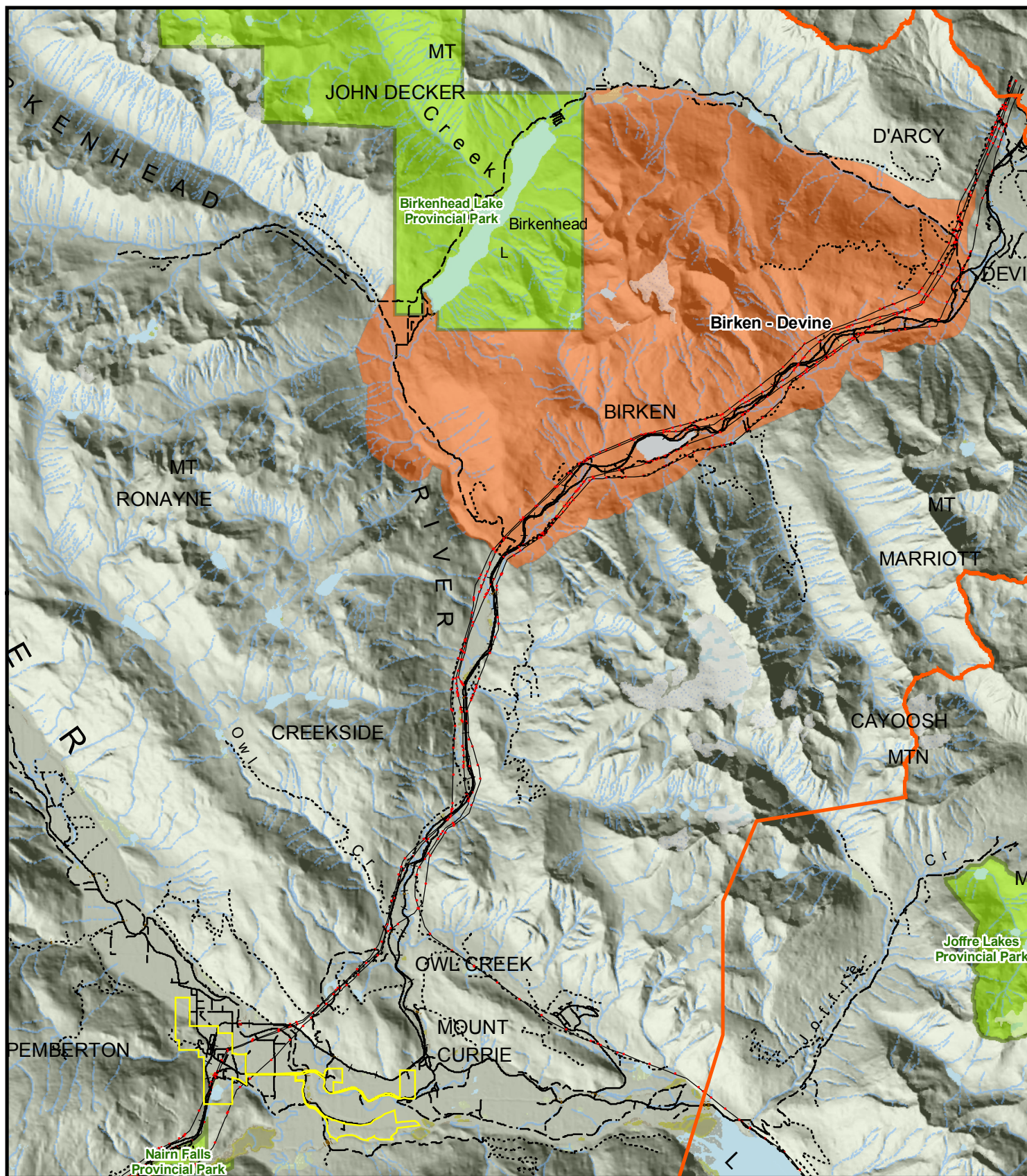


Figure 3.2 - Whistler Potential Expansion Areas
Sea to Sky Corridor Recreation Trail Strategy



Date : January 8, 2007
 CERF File # 015-11-01
 Projection : UTM Zone 10 N
 Datum : Nad 83
 GIS Cartographer: Todd Hellinga

Prepared by:
CASCADE ENVIRONMENTAL
 RESOURCES GROUP LTD.



**Figure 3.3 - Pemberton Potential Expansion Areas
Sea to Sky Corridor Recreation Trail Strategy**

- Municipal Boundaries
- Strategy Area
- BC Provincial Parks
- Potential Expansion Area**
 - Motorized
 - Non-Motorized
 - Undetermined



Scale - 1 : 150,000



Date : January 8, 2007
 CERF File # 015-11-01
 Projection : UTM Zone 10 N
 Datum : Nad 83
 GIS Cartographer: Todd Hellinga

Prepared by:
CASCADE ENVIRONMENTAL
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Funding and Resources

Trail managers, local governments, clubs and volunteers often cite lack of funding and resources as one of the biggest challenges facing trail planning, development and maintenance. Many trails in the Sea to Sky Corridor have been built by volunteer labour over many years. To sustain these extensive trail networks with necessary amenities that include such things as signage, building materials and trail head facilities, substantial funding is required. As municipalities take on increasing responsibility for trail management and clubs begin to consider formal risk management programs, greater funding is required just to maintain minimum trail standards. Trail managers, clubs and the local municipalities will need to become increasingly creative to acquire the funding needed to maintain trails.

Trail networks provide a recreational amenity to community residents. They provide social, economic and health benefits to communities, not unlike sports fields and arenas. As the perception of trails as municipal facilities continues to evolve (as has happened in Whistler and taking place currently in Squamish and Pemberton) municipalities will inevitably be called upon by local tax payers to provide funding and resources for trail management.

Clubs, user groups, associations and committees can provide funding for trail construction and maintenance by two primary methods; in-kind volunteer labour and direct money from fundraising or membership dues. The Sea to Sky Corridor experienced an unprecedented level of singletrack trail building, mostly by club members, during the early to mid nineties that reached a peak towards the end of the decade. Since that time, clubs have struggled with “volunteer burnout” as the enthusiasm for trail building has dwindled and the original generation of trail builders is increasingly focused on family and careers. In-kind volunteer labour is becoming increasingly scarce (while number of riders is ironically increasing) and membership dues are not increasing proportional to the increased users. Changes to community demographics, general trends and high demand for volunteer effort all indicate an unstable and fluctuating supply of volunteer and club resources. Clubs will need to look at additional fund raising and grant opportunities to secure funds for trail management.

In order to sustain the existing network and adequately plan for future trail development, all stakeholders will be required to address funding requirements in a formal and coordinated manner. Acquisition and management of appropriate funding will be a primary focus for the Sea to Sky Corridor Trail Coordination Committee.

To ensure adequate resources for trail management stakeholders will be required to pursue a number of different funding mechanisms:

Grants

The social, economic and health benefits of trails, and the contribution they make to healthy communities is becoming increasingly apparent. Recognition of trail building and maintenance as a legitimate activity critical to the sustainability of the networks and therefore beneficial to communities has fostered the availability of grants for various groups including municipalities.

Seeking out, identifying and applying for available grants requires a dedicated and consistent effort. Funding initiatives by government, non-profit and private enterprise are constantly being initiated or dissolved. A formal, coordinated effort to identify and seek funding through available grants will be a primary focus for trail coordination committees.

Provincial Funding

In June of 2005, the Ministry of Sport, Tourism and the Arts assumed responsibility for the management of recreational trails on Crown land. MTSA has adopted a mandate to double tourism revenue in British Columbia by 2015. The Ministry has committed to making targeted improvements to recreational trails to support tourism and improved health and fitness for all British Columbians. As one of the highest profile and most intensive trail use areas in the Province, an authorized and established trail network in the Sea to Sky Corridor will be well positioned to advocate for funds from the Ministry.

Through the Squamish Recreation District, Recreation Officer, funds have been and will continue to be made available for funding of trail related projects throughout the District.

Commercial Recreation Operators

Many commercial recreation operators rely on trails that have been built or maintained by clubs, municipalities or local individuals. The trails are a fundamental component of their tour operations. Operators are required to maintain commercial land use tenures. However in many cases for-profit operators use trails on Crown land in the Corridor without valid tenures. This type of use occurs in trespass and is a source of potential conflict and liability to the Crown. Illegal commercial operators do not have a contractual agreement with the Crown to pay fees and maintain trails in accordance with an approved Management Plan. There is a perception that exists with the public that this is the case of all commercial operators. As a result, conflicts can and do exist between commercial operators who gain financial benefit from the extensive trail network and the communities struggling to acquire resources to maintain them. Conflicts seldom occur between existing tenured operators and the public because their Management plans require conflict avoidance and resolution.

Through authorization of the network, tenures and permits can be issued to commercial operators who otherwise are operating illegally. Tenures and permits issued to commercial operators utilizing trails require them to support trail management efforts through in-kind contributions, trail or network sponsorship or re-allocation of collected fees. Additionally, fees paid to the Province by these operators could be allocated directly to trail management efforts rather than being received into general revenue.

Adopt a Trail

Local businesses and non-profit organizations may consider “adopting” a trail or trails. Adopting a trail may entail financial contributions to local trail clubs for maintenance or management, contributions to trail amenities such as signs or provision of labour. Recognition for organizations adopting trails can be given on trail signage, web based mapping, local trail or any number of ways. Adopt a trail programs should not be confused with trail agreements entered into with MTSA.

Issues:

- Expanding network with increasing usage requires increased resources (funding).
- Provision of funding/resources by clubs alone is inconsistent and inadequate.
- Municipalities looked to for larger role in providing resources.
- Commercial Operators currently use unauthorized trails without tenure and therefore do not formally support trail management and maintenance.
- Need for coordinated, formal fund raising efforts.

Management Objectives:**1. Establish formal fund raising committee(s).**

A formal, coordinated approach to acquiring and allocating funds on a priority basis throughout the network will be a key role of trail coordination committees. Terms and mechanisms for determining allocation of resources will be critical step to ensure Corridor wide support. Fund raising committees will function as a component of the Corridor or regional trail coordination committees.

2. Work with local Commercial Operators to ensure they are involved in the trail management processes. Local clubs, trail coordination committees and land managers can work with Provincial officials to ensure the Commercial Recreation Regulations are enforced in their trail networks. Additionally all licensed and tenured commercial recreation operators that use trails should be required to participate in trail management through committee processes. This will provide the basis for coordination of resources between commercial operators, MTSA and local clubs.**3. Trail coordination committee(s) to explore concept and establish framework for trail ‘adoption’ programs.**

Trail coordination committee(s) in conjunction with municipal trail managers and the District Recreation Officer should explore the viability and interest amongst local businesses for trail adoption programs. Terms, conditions and program requirements can then be developed.

TRAIL CLASSIFICATION

Trail classification is an important management tool that provides responsible authorities with a baseline from which to evaluate and plan trail management activities. Consistent trail classification also provide trail users with a clear understanding of what can be expected on a particular trail. This is increasingly important for mountain bike trails where risks may be present and liability concerns exist.

For the purpose of this strategy, trails can be classified according to two separate but loosely correlated criteria. Trail type classification is a description of trail tread characteristics and associated clearing specification. Trail difficulty ratings address the need to describe and present the degree of challenge a trail poses to certain types of users such as cyclists, dirt bikers, equestrians or hikers. Although trail difficulty ratings associated primarily with singletrack trails generally correlate with certain trail types, difficulty ratings are not necessarily dependant or based on trail type classifications.

Trail Type Classification

Trail type classification is a critical step in establishing trail construction objectives as well as providing managers with a baseline in which to evaluate management and maintenance requirements. In an effort to maintain consistency throughout the Corridor, this Trail Type Classification System has been developed using guidelines as described in the *Whistler Trail Standards* (2003) and the *B.C. Ministry of Forests, Recreation Manual*, Chapter 10 (2000).

Table 4. Trail Type Classification Table

	Type I	Type II	Type III	Type IV	Type V
Tread Surface	Concrete or asphalt	Surfaced with compacted aggregates	Unsurfaced	Unsurfaced	Unsurfaced
Tread Width	2-4m	2m for double-track trails; 1m for single-track trails	50-70cm	30-50cm	30-50cm
Clearing Width	Tread width plus 1m on each side	5m for double-track trails; 1.6m for single-track trails	1.1m - 1.3m	1m	n/a
Typical Use	<ul style="list-style-type: none"> Non-motorized multi-use 	<ul style="list-style-type: none"> Pedestrian Biking Equestrian Limited Motorized 	<ul style="list-style-type: none"> Hiking Mountain biking Trials riding Equestrian Limited Motorized 	<ul style="list-style-type: none"> Hiking Mountain biking 	<ul style="list-style-type: none"> Pedestrian Mountain bike
Tread Type	Paved double track	Double-track or single-track	Single-track	Single Track	Single Track
Typical Mountain Bike Difficulty Rating	n/a	Green circle	Green Circle Blue Square Black Diamond Double Black Diamond	Blue Square Black Diamond Double Black Diamond	Black Diamond

Singletrack Trail Difficulty Ratings

A singletrack trail difficulty rating is required for the expansive and intensively used network of singletrack trails on Crown land. This rating system is used to describe trails specifically designed to provide a riding experience,

Singletrack trails used predominantly by mechanized riders (and in some cases equestrians) are by nature quite different from traditional hiking, commuting, walking and most equestrian trails. Hiking trails generally strive to reach certain points of interest via the route of least resistance, i.e., low grade and wide, or steep with less regard for terrain features. These singletrack trails are constructed to maximize the aesthetic appeal of the terrain. Soil, logs, lumber, and rock are sometimes used to enhance and create new landforms. Trails meander through a landscape from one feature to the next; the most successful and popular trails “flow” through the landscape in this endeavour. Trails and man-made technical features have evolved with these technological advances to encompass astoundingly creative and sometimes extremely difficult trails and structures. For this document singletrack trails are not grouped by function but rather by degree of challenge or difficulty.

Classification is accomplished according to the green circle, blue square, black diamond, double black diamond system used predominantly in the ski industry and adopted by the International Mountain Bike Association (IMBA). Trail widths and standards generally match the difficulty of the trail, i.e. a narrower steeper trail will be rated as more difficult, a wider gentler trail as easier.

A difficulty rating has been applied to all trails in the Corridor where riding, whether on a dirt bike, horseback or mountain bike, can reasonably be expected to occur. Difficulty ratings associated with trails should not be considered as trail use designations for a particular type of use. Hikers, trail runners, equestrians and other users may very likely use trails of any difficulty rating. Singletrack Trail Difficulty Ratings details are provided in Table 6.

Pedestrian Trail Difficulty Ratings





Trails used almost exclusively by backcountry hikers and unlikely to be ridden on a regular basis are designated as hiking trails in this strategy. An obstacle or trail feature will pose a significantly different challenge to a hiker versus a cyclist. For example, a tight switchback with rock steps may be viewed as challenging to a mountain bike rider traveling down hill where as a hiker walking uphill will view the same feature as no more difficult than a stair case. Therefore hiking trails are rated according to the BC Parks *Trail Difficulty Definitions* as applied to Garibaldi Park trails.

The BC Parks *Trail Difficulty Definitions* are determined based on length of the trail section, change in elevation and trail type for the average user.

Trail Difficult Rating

E = Easy; M = Moderate; S = Strenuous; D = Difficult.

Pedestrian Trail Difficulty Ratings can be combined with *Trail Type Classifications* to provide users with a clear understanding of what to expect on the trail. For example, *E - Type II* will offer an easy walk on a surfaced 1.5-2.5 meter trails, whereas a *S - Type III* indicates to the user that a strenuous narrow trail with grades greater than 15% lies ahead.

	GREEN CIRCLE 	BLUE SQUARE 	BLACK DIAMOND 	DOUBLE BLACK DIAMOND 
APPROPRIATE USER	Beginners and Recreational Riders. Mountain Bikes recommended. Safety equipment required (including helmets).	Intermediate Riders. Mountain Bikes required. Increased challenges and difficulty. Full safety equipment required.	Advanced/Expert Riders. Difficult and technical challenges. Full safety equipment required. High level of fitness required.	Expert Riders only. Most difficult and technical challenges. Highest risk level. Full safety equipment required. Do not bike alone. Recommend carrying a cell phone with you.
TRAIL DESCRIPTION	Gentle slopes and easily avoidable obstacles such as rocks, roots and pot-holes.	Challenging riding with steep slopes and/or obstacles, narrower trails with reduced traction. Requires riding experience.	Mixture of long steep climbs and descents, loose trail surfaces, numerous difficult obstacles to avoid or jump over, drop-offs and sharp corners. Some sections easier to walk than ride.	Exceptional bike control skills and balance essential to clear many challenging obstacles. Higher risk level. Only a handful of riders will enjoy these rides. Some sections easier to walk than ride.
FEATURES	Embedded trail obstacles up to 10 cm. high.	Embedded trail obstacles up to 20 cm. high	Embedded trail obstacles may exceed 20 cm.	Same
MINIMUM WIDTH	1 metre	50cm	30cm	.3 m. or less
TRAIL SURFACE	Primarily soil and small loose rock, occasional compacted aggregates.	Rough natural terrain and increased rock and root debris. TTF's (see below)	Rugged natural terrain. See TTF's below.	Same
AVERAGE GRADE	8%	10%	15%	May exceed 15%.
MAXIMUM GRADE	15%, except rock faces at 25%	Climbing – 25%, Descending – 35%, Rock Surface - 45	Climbing – 35%	May exceed 35%
MINIMUM CURVE RADIUS	2.4 m.	1.8 m.	Sharp Corners	Same
EXPOSED NATURAL OBSTACLES (MAX. HEIGHT)	10 cm. max. height. Occasionally higher height for highly visible, easily avoidable obstacles.	20 cm. max. height	Various heights, some exceeding 20cm.	Same
BRIDGES (MIN. WIDTH)	Min. 1.0 m.	Minimum width of 50 cm. Flat decking is minimum one-half the height above surface.	Various widths. Minimum 30 cm. Flat width of decking is one-quarter the height above surface. Elevated bridges less than 3 m. high above surface.	Most difficult, exceeds Black Diamond.
TECHNICAL TRAIL FEATURES (TTF'S)	Small roots and logs to cross, embedded rocks to avoid.	TTF width to height ratio of 1:2. Small bridges (flat, wide, low and rollable from section to section). Small rollable drops. Small teeter-totters, less than 60 cm. high. Small jumps. Medium sized logs.	TTF width to height ratio of 1:4. Elevated bridges and teeter-totters with maximum deck height. Connected Bridges. Larger Jumps. Steep descents with sharp transitions.	Most difficult, exceeds Black Diamond TTF's.
ROCK FACE OR RAMP DESCENTS (MAXIMUM ANGLE)	Rock face descents not to exceed 25% grade.	45%	Not to exceed 120%	May exceed 120%
DROPS (MAX HEIGHT)	None	Drops up to 30 cm., with exit cleared of all obstacles	Drops greater than 30cm. Some mandatory air.	Mandatory air.
JUMPS (MAX HEIGHT)	None	45 cm. No jumps with consequences for lack of speed. Table top jumps max. 40 cm. high.	Table tops, no maximum height. No gap jumps.	Same, except may include gap jumps.

TRAIL GUIDELINES AND STANDARDS

Trail standards and guidelines must be broad enough to accommodate the multi-use nature of trails and at the same time be specific enough to provide clear direction for the design, construction, maintenance and management of the specific trails.

General guidelines can be applied to the broad spectrum of trails and uses expected throughout the Corridor. Guidelines provide overall direction for trail design, construction and management. Guidelines provided in this document should be applied as practically as possible but remain flexible enough to meet site specific or regional needs.

Standards, on the other hand provide a minimum baseline that should be adhered to as closely as possible. Establishing and maintaining standards allows trail managers to effectively evaluate progress and can provide a framework for reducing exposure to liability. Design and construction of trails according to established guidelines and standards is a critical step in realizing a sustainable, environmentally responsive trail network.

Seventy percent of trails on Crown land in the Sea to Sky corridor are singletrack. While surfaced, machine built, type I and II trails are constructed, they typically are undertaken by municipal or region authorities, adhere to adopted construction specifications and are associated with lower risk use. The Ministry of Forests *Recreation Manual* provides standards and guidelines on constructing type I and II trails. For the purpose of this strategy, construction guidelines and standards focus primarily on singletrack, non-surfaced trails.

The International Mountain Bicycling Association (IMBA) guide *Trail Solutions: IMBA's Guide to Building Sweet Singletrack* (2004) provides an invaluable guide to trail construction techniques and drainage solutions for trail builders. Based on frequency and intensity of use, mountain/dirt biking constitutes the highest potential for trail damage. Since cycling can be expected on almost any trail and since IMBA's guidelines are also applicable to hiking trails, they should be adopted as a comprehensive set of guidelines for trail construction.

The Sea to Sky Corridor is primarily a rain forest ecosystem with a maritime influenced climate. It must be recognized that water erosion is the largest detrimental force for trails throughout the Corridor. Trails located on steep slopes with shallow bedrock are especially prone to turning into drainages when not properly constructed. Care must be taken, especially on steeper trails, to provide for proper water management. All trail design and construction must be completed in consultation with an experienced trail builder familiar with local conditions.

Trail Design and Construction Guidelines

The following general guidelines should be adhered to in the planning and construction of trails:

1) Minimize environmental impacts

- Avoid environmentally sensitive areas or features including wetlands and critical habitat areas.
- Avoid historic, cultural or archeological sites.
- Avoid sensitive plant communities.
- Avoid constructing trails parallel to watercourses within riparian areas. Trails should approach streams and creeks at right angles to minimize potential for erosion.

2) Resist erosion

- Avoid highly erodable, steep slopes prone to erosion.
- Plan trail grades to avoid fall lines and flat spots; utilize grade reversals.
- Ensure trails have “outslope” to direct water off the surface.
- Understand soils you are working with and construct accordingly.

3) Blend with existing environment

- Plan contours and “flow” appropriately for trail type and expected use.
- Utilize existing natural features where possible including view points, rock outcropping, forest features.
- Plan trail networks to consider all users; easier trails located in proximity to trails heads relative to more difficult trails.

Trail Construction Standards

1. Single Track Trails

Refer to *Trail Solutions: IMBA's Guide to Building Sweet Singletrack* (2004).

2. Type I and II Trails

Refer to *BC Ministry of Forests, Recreation Manual, Chapter 10* (2000).

3. Technical Trail Features (TTF's)

These design and construction standards are based on TTF Construction Standards as detailed in Whistler Trail Standards.

Man-made Technical Trail Features (TTF) must exceed a minimum strength and stability standard. Poorly built features are a potential source of injury and increase the need for

maintenance. Design, proposed location and construction of TTF's must be authorized and approved by the responsible government official to ensure compliance to construction and safety standards.

TTF Design Principles

Construction of technical trail features should adhere to the following design principles:

Visibility

By making the most difficult section of the TTF visible from the entry, riders can make an informed decision if they wish to proceed or not. By placing a narrow or difficult section at the beginning of a longer TTF, where it is low to the ground, less skilled riders will dismount early where the consequences of a fall are the choice of the rider.

Strength and Stability

The Structure must be capable of supporting a centered vertical load of 225 kg and a horizontal load of an 80 kg adult leaning against the constructed feature with less than 5 cm of displacement. Every single rung should be capable of supporting a rider/bike and gear weight.

Height and Width

Maximum height and width are dependant on the trail, and the feature's difficulty rating. Difficult features should be located on difficult trails, and vice versa. Bridges on green, blue and black trails that exceed height standards as noted in Mountain Bike Trail Difficulty Ratings should be equipped with a railing for safety. Please note that handlebars can be as wide as 75 cm. Minimum distance between railings should be at least 1m.

TTF Materials and Construction Standards

The following construction standards must be adhered to when constructing TTF's:

- When possible, native materials should be used. Sills should be cedar or treated wood. Douglas fir is the preferred material for weight-bearing members (stringers, purloins, beams), split cedar rails are the preferred material for surfacing. Dimensional lumber may be used, it should be noted that standard SPF (spruce pine, fir) materials are not very durable when exposed to weather. Treated lumber is preferable.
- Weight bearing members should be notched and cross-braced where they join.
- Whole logs should be peeled to slow the onset of rot, and increase joint strength and fastener penetration.
- Acceptable fasteners are, in order of structural integrity:
 1. Galvanized Carriage Bolts and Nuts (with galvanized washers)
 2. Galvanized Lag Screws and Washers
 3. Galvanized Ardox Spikes and Nails (spiral spikes for their superior holding strength)

- Lag Screws and Nails should be of adequate length to allow for 2/3 penetration of the member being screwed or nailed into.

Bridge Rung Spacing and Surfacing

- Deck rungs shall be spaced 1-2 cm to allow for water and mud drainage.
- Rungs shall not overhang stringers by more than 5 cm.
- Rungs shall be securely fastened with a minimum of 2 or more (preferably 4, if practical) large bolts, lag screws, or ardox nails (see above).
- It is recommended that wood surfaces, particularly those with a grade, have an anti-slip surface. Expanded diamond lath or granular roofing materials are both acceptable. Chicken wire is not acceptable, as it wears quickly. The anti-slip surface should be fastened every 15 cm. square.

4. Fall Zone Standards

Fall Zones are areas adjacent to TTF's (Trail Technical Features), sharp corners, and steep descents which provide a reduced risk area for riders to deviate into. Fall zones cannot eliminate the potential for injury; however, a common-sense approach to establishing safer trails through the minimization of trailside hazards will be used to mitigate the potential for injuries. Fall zones will be cleared of the following materials:

- Large shrubs with hard woody branches
- Stumps cut flush with ground or pulled out
- Tree branches trimmed to branch collar
- Non removable hazards covered with mulch or decayed wood
- Rocks with pointed or sharp edges should be dulled, or removed

Not all ground covering vegetation should be removed from the fall zone. Moss, grasses, herbaceous and small shrub cover should be left to avoid soil erosion and to deter riders from enlarging the trail into the fall zone.

Fall zones shall be considered especially important on blue and black trails, where less experienced riders may be honing their riding skills and the opportunity of falling is increased.

Fall Zone Locations and Size

Fall zones will be established in the following locations according to size:

- Outside of steep corners - 1.5m
- Bottom of steep descents – 1.5m
- Adjacent to TTF's - <30 cm – 1m; >30cm – 1.5m

Sign Guidelines

Signs are a critical component of a coordinated trail strategy. Signs ensure users have the information they need to make informed choices about their recreation experience. Adequate and informative signage also constitutes a necessary component of a comprehensive risk management program. By clearly explaining risk associated with a trail and adequately marking those risks on the trail, managers minimize their exposure to potential liability.

Each municipality within the Corridor has municipal signage standards. Whistler and Squamish have also adopted signage standards specific to trails. This strategy provides signage guidelines that meet the needs of Crown land trails while optimizing opportunities for integration with the adopted standards.

Signage Hierarchy

A comprehensive signage program must establish standard of signage for the entire recreation trail experience. Adequate signage must be provided at network entrances, trail heads and at strategic points along the trail, namely junctions or as a warning of an approaching difficult section or feature. Each type of signage must balance the need for the appropriate amount of information while respecting the need to maintain the integrity of outdoor recreation experiences by minimizing signs.

Network / Entrance Signs

Network entrance signs, typically associated with parking lot kiosks, provide trail users with a variety of information about the trail network, individual trails and additional information about the surrounding community's relationship to the network. The signage must provide at a minimum, enough information for a prospective trail user to make an informed choice about the trails they are going to use based on degree of challenge, length of trail and permitted or expected use. Entrance signage can also provide information about the network including current issues, community involvement, trail stewardship or provide recognition to trail sponsors.

Network / entrance signage should include:

- Topographical map of network area
- Locations of trail heads, junctions and other network entrances
- Trail ratings
- Trail tread types (singletrack, doubletrack, access)
- Map scale
- Trail etiquette / rules
- Safety Information
- Permitted use(s)
- Environmental considerations (dogs in streams, fish-bearing streams)
- Emergency Contact Information
- Trail community information

Trailhead Signs

Trailhead signage is used to mark the entrance to a particular trail and provides users with adequate information to make an informed decision about using the specific trail.

Trailhead signage must include:

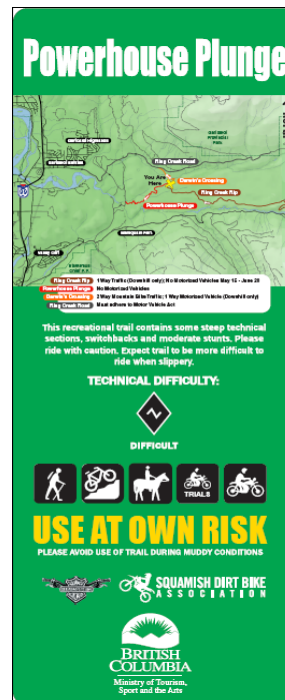
- Trail name
- Technical difficulty (Defined using Sea to Sky Corridor Trail Standards)
- Map of Trail occupying of 30-40% of the sign area. The map should also have a 'you are here' marker.
- Length of trail indicated by scale of map and/or in words.
- Elevation gain and loss indicated by profile, contour lines on map and/or % gradient.
- Type of user groups allowed on the trail (e.g. Mountain bikers, hikers, horseback riders, dirt bikes etc)
- Use at your own risk disclaimer.
- Warning of TTF's if present
- Applicable logo(s).
- When to avoid this trail (e.g. Please avoid use of trail during muddy conditions. Or Please avoid during September-October because of rutting season.)

Trailhead signage can include:

- Topographical map of trail
- Warning to inspect TTF's
- Organization(s) responsible for maintaining the trail.
- Sponsors or donors
- General description of the technical trail features found on the trail.
- Any designated camping, picnic, or look out spots can be marked on the map.

Trailhead Sign Specifications

Component	Description
Size:	140 mm x 370 mm
Background colour	Green: CMYK (100-0-100-0)
Mounting	<ul style="list-style-type: none"> wood post measuring 100mm x 100mm pre-treated or western red cedar top of post 1.0m above ground
Fonts Type /Size	Large Fonts: IMPACT Small Fonts: Franklin Gothic Medium
Icons	Difficulty Rating Symbol User Groups Clubs/Partners/Sponsors Province of BC
Font Colour	Yellow Text: CMYK (0-13-100-0) White Text: CMYK (0-0-0-0)



En Route Signs

En Route Signs provide users with trail specific information at junctions. These signs indicate the technical difficulty rating, the name of the trail and direction of travel. En route signs may also be placed along the trail where the route is difficult to follow.

En Route Sign Specifications

Component	Description
Size:	Trail Name: 90 mm x 38 mm Difficulty Rating: 90 mm x 76 mm Direction Arrow: 90 mm x 38 mm Trail Users: 90 mm x 76 mm
Background colour	White: CMYK (0-0-0-0)
Mounting	<ul style="list-style-type: none"> wood post measuring 100mm x 100mm pre-treated or western red cedar top of post 1.0m above ground
Fonts Type /Size	Tahoma
Icons	Difficulty Rating Symbol Green Circle Blue Square BlackDiamond DB Diamond Directional Arrows Users
Font Colour	Black



TTF Warning Signs

TTF Warning signs warn users of a technical trail feature of higher difficulty than the overall trail rating. If the feature cannot be walked an alternate by-pass route will be signed.

TTF Warning Specifications

Component	Description
Size:	90 mm x 140
Background colour	Yellow: CMYK (0-0-65-0)
Mounting	<ul style="list-style-type: none"> · wood post measuring 100mm x 100mm · pre-treated or western red cedar · top of post 1.0m above ground
Fonts Type /Size	Tahoma
Icons	Caution Symbol
Font Colour	Black



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LIST OF ACRONYMS

CERG - Cascade Environmental Resource Group Ltd.

CRA - Controlled Recreation Area

FRPA - Forest and Range Practices Act

IMBA - International Mountain Bike Association

LRMP - Land and Resource Management Plan

MTSA - Ministry of Tourism, Sport and the Arts

PVTA - Pemberton Valley Trail Association

RMOW - Resort Municipality of Whistler

SAS - Squamish Access Society

SDBA - Squamish Dirt Bike Association

SLRD - Squamish Lillooet Regional District

SORCA - Squamish Off Road Cycling Association

STS - Squamish Trails Society

SWOT - Strength, Weaknesses, Opportunities and Threats Analysis

TTF - Technical Trail Features

WORCA - Whistler Off Road Cycling Association

Appendix 1. Prioritized Trails on Crown Land by Region

Appendix 2. Code of Conduct

Appendix 3. Whistler Trail Standards

Appendix 4. Authorizing Recreational Mountain Bike Trails on Crown Land