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1. INTRODUCTION

1.1 Introduction

The people of Squamish are very passionate about mountain biking and have enjoyed tremendous personal and competitive success through this sport. It is also becoming a defining aspect of the town and one of the reasons this community has heart. It also separates Squamish from the many undistinguishable suburbs and small towns around most urban centres in North America.

The current mountain bike network is estimated at over 265km of trails consisting of single-track trails (+/-55% of the network), logging roads and multi-use trails. Over the past 12 years the Squamish Off Road Cycling Association (SORCA) has been the lead advocate for mountain biking in Squamish, including maintenance of the mountain bike trails. Through the hard work of many volunteers (SORCA has volunteered an estimated \$12,800 - \$21,400 worth of trail maintenance each year; dollar amount based on Stats Canada value of volunteer labour in BC) over the past 12 years SORCA and others have developed one of the most enviable off-road mountain bike networks in the world. Not only has this proven to be a valuable resource to many of the local residents, it has drawn tourists from all over the world. Squamish's mountain bike network is one of the key features that make this town unique and a desirable place to live.

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Mountain biking has become a large part of Squamish culture; it has also created a community within a community. It provides numerous benefits including:

• Social Benefits

- Social opportunities for all residents - Riding is very much a social activity. SORCA also hosts numerous social events throughout the year.
- Positive outlet for Squamish youth - Mountain biking is a positive social and recreational activity for Squamish's youth. It also provides a great competitive outlet and Squamish high-school mountain bikers have become the best in the province.
- Positive outlet for Squamish adults - There is no age restriction to this sport. All of the benefits mentioned above for our youth apply exactly to our adults.
- Community spirit - Squamish is proud of its mountain biking and although this is apparent throughout the year, it reaches a feverish pitch during the Annual Mountain Bike Festival in June and the various other races held here.

• Economic Benefits

- Mountain biking generated an estimated \$5,000,000 in economic activity for the local Squamish economy in the past year.
- Tourism - Throughout the entire year, people are travelling to Squamish from all over the world to mountain bike whether for recreation or for the numerous races held here each year (Annual Mountain Bike Festival, BC Cup Races).
- Full-Time & Part Time Employment - 2 bike stores, trail guides/instructors, clothing & frame manufacturers.
- Attracts New Residents & Retains Existing Ones - Both recreational riders and world-class competitive riders are buying homes here to mountain bike.
- Potential to attract new businesses.

• Health Benefits

- One of the few sports that includes skill, fitness and outdoor exploration providing an all-body workout.
- Requires considerable concentration which sharpens mental skills and provides natural stress relief.
- Offers our increasingly inactive youth an exciting alternative to video games and computers.
- One of the few sports an entire family can do together that is challenging, rewarding and just plain good exercise.

- The fountain of youth for adult riders providing a tremendous opportunity to achieve a high-level of fitness and act like a kid again. 25% of SORCA members are over 40 while 66% are over the age of 30.

Squamish is expected to experience an unparalleled level of real estate development in the next 10 years which will significantly impact the future of mountain biking in the area. According to the "Squamish Mountain Bike Plan, A long term strategy to ensure that the sport of mountain biking continues to flourish and enhance life in Squamish" (SORCA, 2004), currently, almost 50% of the existing trails in the Squamish area are situated on or access through private land that could be developed, with the remaining trail located on crown lands that could be logged or otherwise developed. Further complicating matters is that the single-track, the key to the network, is the type of trail most likely to be displaced by development. If typical development practises found in other municipalities around North America and historically here in Squamish take place, SORCA expect all of the single-track on these lands to disappear. Having developers build a network of 2m wide multi-use gravel paths through new developments is an important goal for the community of Squamish which SORCA fully supports; however, these are not mountain biking trails and they can't replace the true trails that are lost.

In addition, the majority of trails located immediate adjacent to the District are "unauthorized". To legitimize the mountain bike trail network, and promote Squamish's recreational aspects and tourism potential it is important to obtain authorization for the network of trail on which the sport depends. It is also important to involve other users and stakeholders into discussions to avoid both present and future trail user conflicts. By involving others in discussions, each user group can more fully appreciate other user's interests, and hopefully adopt a more fully integrated trail plan that addresses their concerns.

In recognition that a long-term mountain bike management plan is required, the District of Squamish's Municipal Council approved a grant in aid to SORCA to prepare a Squamish Mountain Bike Management Plan. This document would be the beginning of a planning process to address the multifaceted issues of a sustainable mountain bike network.



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1.2 Scope/Purpose of the Management Plan

The Squamish Mountain Bike Management Plan was approached on a temporal and spatial basis, identifying the existing mountain bike trail network as well as future trail and network locations/connections, and potential amenities. A Geographic Information System (GIS) approach was used to create a digital database (ESRI's ArcInfo software) to examine and analyze terrestrial and hydrological features and current land use in the Squamish area and to develop a geospatial database for the Squamish Mountain Bike Management Plan. This geospatial database includes the following: existing mountain bike trails; potential future trail locations; potential future trail connections; potential future locations for staging areas and other related amenities; and currently known environmentally sensitive areas (ESAs) and future expected areas for logging. The geospatial database includes associated attribute information for all of the features and can be updated over time as the landscape changes, new information becomes available, and the management plan evolves.

Accompanying the digital GIS mapping component, is this companion document that forms the strategy of the Squamish Mountain Bike Management Plan. This strategy would be an extension of the vision developed in the "Squamish Mountain Bike Plan" document prepared by SORCA and presented to, and adopted in principal by, the District of Squamish Municipal Council in April 2004. The purpose of the Management Plan is to investigate and present governance models which could be used to legitimize and manage the Squamish mountain bike network, and minimize user conflicts through appropriate consultation. The Management plan will investigate steps and provide recommendations to bring the Squamish Mountain Bike Plan (SORCA, 2004) vision into reality.

In addition to being a vital tool for both SORCA and the District in identifying and defining present and future goals and objectives as they relate to Mountain Biking and securing appropriate land tenure for mountain bike trails, the Management Plan can also be used to secure funding from other agencies for implementation of the plan. This could include development of an overall Squamish Outdoor Recreation/Trail Management Plan, trail planning and construction, trail standards development, and/or trail signage.



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2. SQUAMISH MOUNTAIN BIKE STRATEGY

As the leading advocate for mountain-biking in the Squamish area SORCA took the initiative and prepared a Mountain Bike Plan (SORCA, 2004) which SORCA Executives' Cliff Miller and Neil Plumb presented to the District of Squamish Municipal Council on April 6, 2004. The plan showed how the sport of mountain biking has grown to play a prominent, positive role in Squamish and could play an even larger role in our town's future development. The Municipal Council passed a motion "that Council approves in principle the Squamish Off Road Cycling Association's April 2004 'Squamish Mountain Bike Plan'; and refers the Plan to staff to provide recommendations and to the Select Committee on Outdoor Recreation and to the Squamish Trails Society to provide feedback and report back to Council". In a subsequent Council meeting on May 18, 2004, the Select Committee on Outdoor Recreation recommended, and Municipal Council carried at motion, "that Council allocate appropriate staff resources to the development of a long term trail masterplan in accordance with that proposed by the Squamish Off Road Cycling Association".

The Mountain Bike Plan vision document outlined:

- Why mountain bikers are passionate about the sport,
- The many ways it contributes to life in Squamish and how extremely valuable it is to our community,
- The dedication and capabilities of SORCA, the advocate for mountain biking in Squamish, and their commitment to implementing the Plan,
- The jewel of a world-class mountain bike trail network that already exists in Squamish,
- How the sport cannot exist without single-track and trails close to existing residential areas,
- Why there is an immediate need for a long-term plan,
- The brief window of opportunity that exists in the next 12 months to implement a long-term planning strategy,
- SORCA's vision for the future of mountain biking, an 8 step Plan that would secure the future of the sport in the corridor for the foreseeable future,
- The numerous initiatives that are required to implement this plan including amendments to the OCP, District Planning policy and Zoning by-laws, potential boundary expansions, funding models, etc., and
- The many elements that are already in place to make the Plan a success including a dedicated partner in SORCA, the support of the residents in Squamish, the support of local government, the existing network & reputation of Squamish mountain biking and numerous other success stories to draw on.

SORCA's vision for the long term sustainability of mountain biking in Squamish includes 8 steps believed to be needed to ensure that mountain biking will continue to flourish as

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the town grows and possibly play an even larger role in the future development of our community. These steps detailed in the sections below are:

1. Ensuring Continued Access to the Existing Mountain Bike Network,
2. Preserving Existing Mountain Bike Trails As Best As "Reasonably Possible",
3. Ensure Close Access to Trails From Existing Neighbourhoods,
4. Maintain Safe Off-Road Access to Mountain Bike Trails,
5. Establish Squamish as a True Mountain Bike Destination,
6. Expand Squamish's Trail Capacity For The Future Growth of Squamish and Mountain Biking,
7. Formalize the Test of Metal Course, and
8. Implement Steps 1-7 by Establishing a "Squamish Mountain Bike Partnership" between SORCA and the District of Squamish.

2.1 Ensuring Continued Access to the Existing Mountain Bike Network

Approximately 50% of the Squamish mountain bike trail network is on or accessed through private land, with the balance on Crown Land. The members of SORCA are extremely grateful for the privilege of biking on these properties over the past 12 years, enabling our sport to grow. The private land is predominately owned by the Diamond Head Land Company Ltd., Merrill and Ring, and Townline Developments, who have all been extremely supportive of mountain biking in Squamish. As a result, SORCA will continue to work diligently with the various landowners and governing bodies to demonstrate that we will continue to respect our access to their lands.



SORCA believe that the efforts of the landowners who have supported mountain biking in the area should receive some recognition for providing an important community amenity to Squamish over the past 12 years. Further discussions between the District and SORCA will identify areas where this recognition could be achieved.

The remaining 50% of mountain bike trails are located on Crown Land administered by the Ministry of Forests and Range. At present the vast majority of these trails are unauthorized, as is the maintenance of these trails. Cooperation with the Ministry of Forests and Range is essential for the continued viability of the trails network (See Section 3.2.2).

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2.2 Preserving Existing Mountain Bike Trails

One of the truly unique aspects of mountain biking in Squamish is the abundance of trails located in close proximity to large residential areas, especially single-track trails. The existing trail networks in Valleycliffe and the Garibaldi Highlands provide a significant amount of Squamish's mountain bike trail capacity and safely and easily accessible to all riders; they don't require long climbs up a logging road or force you to put your bike on a car to reach the trail head. Failure to preserve mountain biking single-track in these areas will reduce the recreational opportunities for many to mountain bike in Squamish; those that are just learning the sport, practising after school for the high-school mountain biking teams, those in the twilights of their biking careers or simply those who like to get in a quick ride after work.

As stated above SORCA recognizes that its existing trail network through key areas in the Valleycliffe and Garibaldi Highlands areas will be reduced through future development of these properties. SORCA's goal is to retain those trails that truly are key to sustaining the sport in the area. This means retaining those trails that are required to enable mountain biking to continue in the area yet are located on the least developable portion of the property. SORCA has proposed that the District of Squamish develop a mountain bike planning process for each new development, much like a servicing study or other typical pre-development studies. This process could occur as follows:

- District adoption of the Squamish Trail Society's "Proposed Squamish Trail Network" as part of the revisions to the Official Community Plan (OCP). This network would link all neighbourhoods in Squamish through a safe, off-road multi-use trail network. On April 20, 2004 Municipal Council passed a motion to "allocate appropriate staff resources to the development of a long term trail masterplan in accordance with that proposed by the Squamish Trail Society". The Squamish Planning Department is currently looking at incorporating elements of the "Proposed Squamish Trail Network" into the OCP. The OCP is slated for completion in the fall of 2005.
- District planning documentation should be changed to communicate to prospective developers of properties that a "Mountain Bike Plan" needs to be prepared prior to any applications to the District regarding its development. The plan would consist of the following steps:
 - 1) District staff, SORCA and Squamish Trails representatives will meet and tour the proposed development property to agree on the location of any additional "access" trails like those identified in the Squamish Trails Network.



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- 2) The District staff and SORCA representatives will then develop an "Existing Mountain Bike Inventory" which will identify all mountain bike trails on the property.
- 3) This Inventory will then be presented to the developer, and representatives from all parties will tour the property together.
- 4) A "Mountain Bike Plan" will then be prepared for the property with agreement from the Developer, the District and SORCA. It is suggested that the mountain bike trails and the "Proposed Trail Network" proposed by the Squamish Trails Society can be fully or partially addressed through parks dedication and any other community amenity requirements.
- 5) Upon finalizing the "Mountain Bike Plan", trails that will be lost to development and have to be relocated elsewhere will be identified. One possible way of funding the cost of relocating the trails is to allocate moneys from Development Cost Charges (DCC's).

In order to achieve the goal of maintaining trail capacity, the SORCA vision is for the District and SORCA enter into discussions with the Crown (Ministry of Agriculture and Lands (formerly administered by LWBC) and/or the Ministry of Forests and Range) regarding the long-term dedication of existing mountain bike trails on Crown Lands within the District of Squamish (and exterior to the District), especially those in relatively undevelopable areas.

2.3 Ensuring Close Access to Trails from Existing Neighbourhoods

Trails lost to development as discussed in Section 2.2 need to be relocated in close proximity to their previous locations. Also, as stated in Section 2, retaining true mountain bike trails for biking close to the residential neighbourhoods of Valleycliffe, Garibaldi Highlands and Brackendale is critical to the future of the sport and the youth of Squamish. Therefore, there is also a need for room to expand the network close to these neighbourhoods. There is a need to create large "mountain bike areas" near the Garibaldi Highlands, Valleycliffe and Brackendale.

In order to achieve this goal, SORCA suggest the following for the Crown Lands in either DL 2059 (Valleycliffe), the unsurveyed Crown Land between Alice Lake Provincial Park and the M&R Lands (Garibaldi Highlands) and the Crown's DL3293 (Garibaldi Highlands):

- To remain in their green-space state,
- Available for the relocation of trails lost to development, and
- Available for the expansion of the trail network to meet future increased demand for mountain biking as the surrounding neighbourhoods increase in size.



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2.4 Maintain Safe Off-Road Access to Mountain Bike Trails

The current OCP has established an "off-road" trail network in Schedule I. Squamish Trails Society has also recently prepared a "Proposed Squamish Trail Network". SORCA heavily endorses this "proposed network" because it will:

- Firmly establish a safe off-road network like the one that virtually exists now. This network is a key component in our mountain bike trail network because it provides safe off-road access to mountain bike trails near existing residential areas and areas further into the backcountry.
- Ensure long-term access to Squamish's backcountry, the terrain that contributes heavily to Squamish being the Outdoor Recreation Capital of Canada and makes this community such a desirable place to live.
- Increase Squamish's chances to become a mountain biking destination. This off-road network is critical because it will enable tourists to access the backcountry from their accommodations anywhere in Squamish. Forcing tourists to shuttle by car into the backcountry will be a considerable deterrent to attracting tourists.
- Help to create epic rides that attract tourists because this off-road network will provide a considerable amount of the distance required to build some of the epic rides close to town.
- Secure the trail alignment to prevent future conflicts, such as the proposed highway by-pass around Squamish.

2.5 Establish Squamish as a True Mountain Bike Destination

Squamish's mountain bike network has drawn a significant amount of tourists and new residents over the past 10 years. Although it is situated directly between two of the most famous mountain biking Meccas in the world, Whistler and Vancouver's North Shore, it offers a much broader riding experience through a wider range of trail options for beginners right up to the most advanced riders. Further, we also have a network that is rideable for the majority of the year.



This could create a significant increase in tourist revenue year round giving Squamish one more tool in the "Outdoor Recreation Capital of Canada" toolbox, and creating another world-class recreational venue to go along with the Chief, the windsurfing spit and the backcountry hiking in Garibaldi Provincial Park.

In order to make this happen, Squamish needs to offer a greater variety of "epic rides", longer, backcountry rides with spectacular views that could link into the existing network as well. SORCA has already completed preliminary research into creating these types

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of rides in the backcountry surrounding Squamish, more particularly in the following areas:

- Alice Ridge
- Ring Creek/west of Garibaldi Park
- Squamish Valley (up to Cloudburst Mountain)
- Paradise Valley (Butterfly Lake/Cheakamus Challenge)
- Cat Lake area (adjoining proposed Garibaldi @ Squamish resort)
- Mamquam Main South Side
- Others to be identified later

2.6 Expand Squamish's Trail Capacity for the Future Growth of Squamish and Mountain Biking

There is a tremendous opportunity to expand the trail network into several other areas of Squamish that currently are not home to mountain bike trails. Areas such as the Cheekye Fan and the Paradise Valley offer tremendous expansion potential for our existing network to accommodate:

- The population growth of Squamish,
- Increased future demand for mountain biking from local residents, and
- Increased future demand for mountain biking from tourists



2.7 Formalize the Test of Metal Course

The Test of Metal mountain bike race and associated festival has become an institution in Squamish and is recognized as one of the most successful community run events in Canada. The Test has sold out consistently, with the 800 rider spots selling out in just 6 days for the 2005 race, its earliest sell-out in its 10 years history. The 67km long race course, much like the off-road network in Squamish, is situated on a mixture of private and Crown land and its future access is uncertain. Therefore SORCA believe the time has come to recognize the Test of Metal Race as a key social and economic contributor to Squamish and dedicate lands to ensure the existing race course, or a reasonably facsimile, will exist for the foreseeable future.

2.8 Establish Squamish Mountain Bike Partnership to Implement the Strategy

Perhaps the most important part of the Plan is the establishment of a Squamish Mountain Bike Partnership. While SORCA has willingly taken on the task of administering the sport over the past 12 years, implementing the steps of the Plan

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requires many new initiatives that are beyond SORCA's scope including amending the District's Planning Policy.

The proposed Squamish Mountain Bike Partnership could be a component of a larger Trail Management Committee within and adjacent to the District of Squamish. Which ever way it is developed, it will require the participation of the District, other trail users, other stakeholders and other levels of government (particularly MOF). The creation of a Squamish Mountain Bike Coordinating Committee and/or a Squamish Trail Coordinating Committee is explored further in Section 3.2.3.



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3. SQUAMISH MOUNTAIN BIKE MANAGEMENT PLAN

The following sections outline the extents and attributes of the existing trail network, and the requirements necessary to secure the sustainability of the network. This includes characteristics and features required to take it to the next level, as well as future networks opportunities. Governance issues are investigated as are attributes that could establish Squamish as a true mountain bike tourist destination.

3.1 Trail Network

3.1.1 EXISTING TRAIL NETWORK

The current mountain bike network consists of over 265 km of trails, consisting of single track, forest service roads (FSR) and multi-use trails (Map in Appendix 7.1). Approximately 53% of the network consists of single track, and of this single track, 38% is considered novice trail, 32% is considered intermediate trail, and 30% is considered advanced/expert trail (See Tables 1, 2 & 3). Over the past 12 years SORCA has been the lead advocate for construction and maintenance of the mountain bike trails in Squamish. Records maintained for the past 7 years indicate that through the numerous Trail Maintenance Days and Test of Metal Trail Days, SORCA has volunteered an estimated \$13,000 - \$21,000 worth of trail maintenance each year based on Stats Canada value of volunteer labour in BC. The entire 142 km single-track network would take an investment ranging from \$700,000 to \$1,800,000 to construct, based on construction costs of \$5 to \$13 per linear metre (Benton Co., 2003; BRAG, 2002). This cost does not include the acquisition of the lands upon which the trails are situated, or the 123km of double-track.

A significant portion of the Squamish Mountain Bike Management Plan is the Geographic Information System (GIS) digital database (developed using ESRI's ArcInfo software) that accompanies this report. This geospatial database includes the following:

- Existing trail network (including access and Forest Service Roads (FSRs) used to reach singletrack trails)
- Existing mountain bike zones,
- Potential future expansion areas,
- Potential future trail connections,
- Location of existing parking and staging areas,
- Currently known environmentally sensitive areas (ESAs): deer and mountain goat winter range, community watersheds
- Visual Resource Management Classes
- DOS current Official Community Plan (OCP) designation, and
- Current approved and proposed future forest harvesting locations (BC Timber Sales)

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The geospatial database includes associated attribute information for all of the features and can be updated over time as the landscape changes, new information becomes available, and the management plan evolves.

Existing trail network line feature class (SORCA_trails_all) attribute information includes the following:

- Difficulty: Trail difficulty has been assigned the following categories; FSR, Access, Easier, Intermediate, Advanced, Expert, Hiking and Parking Lot
- Type: The trail network has been divided into a variety of types including: MTB singletrack, MTB double track, MTB access, and hiking
- Name: Name of the trail or access road. Some access routes and some portions of trails are not currently named.
- OCP_Desig: This represents the current land designation for that segment of trail according to the Squamish Official Community Plan.
- Mtb_Zone: The existing mountain biking zone in which the trail lies
- GPS_reqd: A "yes" in this field denotes a trail that was hand drawn and requires GPS to establish accurate alignment
- Include: A "no" in this field denotes a trail that was part of the initial dataset from TerraPro but was deemed no longer part of the mountain bike trail network (predominantly old paved road between Ross Road and Highway #99).
- Source: Source of the data used to locate the trail. There are currently three possibilities for this: TerraPro, suppliers of the original GPS'd dataset; TRIM, data was obtained from BCGS 1:20,000 TRIM data; or Hand-Drawn, data was digitized into the network. It is expected that both TRIM and Hand-Drawn data is less accurate than the TerraPro data collected using GPS equipment.
- Shape_Length: Length in meters of each trail segment. (note that individual trails may be made up of several segments).

Existing mountain bike zones polygon feature class (SORCA_zones) attribute information includes the following:

- Shape_Area: Area in square meters of each mountain bike zone
- Name: Name of mountain bike zone

Potential future expansion areas polygon feature class (SORCA_fr_zn) attribute information includes the following:

- Shape_Area: Area in square meters of each mountain bike zone
- Name: Name of potential future expansion area
- Type: Type of expansion area, either Expansion Area or Relocation Area

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Potential future trail connection line feature class (SORCA_ftr_trail) attribute information includes the following:

- Name: Name of potential future trail connection
- Shape_Length: Length in meters of each potential future trail connection segment

Potential future trail connection area polygon feature class (SORCA_ftr_trail) attribute information includes the following:

- Name: Name of potential future trail connection area
- Shape_Area: Area in square meters of each potential future trail connection segment

Location of existing parking and staging areas point feature class (SORCA_prk_stg) attribute information includes the following:

- Name: A numerical assignment given to each parking or staging area

The following data has been included in the spatial database in the original format it was received from the distributing agency and has accompanying associated metadata:

- Deer winter range
- Mountain goat winter range
- Community watersheds
- Visual Resource Management Classes
- DOS current Official Community Plan (OCP) designation
- Current approved and proposed future forest harvesting locations (BC Timber Sales)

Squamish's mountain bike network offers a unique riding opportunities; combing a variety of riding experience, spectacular terrain and scenery, and quantity of trails. The variety of trail experiences are critical to a sustainable trail network, whether it is geared toward recreation or the tourism market (see Section 3.3). Any and all types of mountain biking can be found within the existing Squamish mountain bike network:

- wide open logging roads with views
- long climbs into the backcountry
- tight technical single-track through deep forests
- advanced, steep descents down mountainsides

Tables 1, 2 and 3, utilize the data contained with the G.I.S. data base to analyse the trail network based on the trail skill level and trail type (i.e. singletrack vs. doubletrack) for both the entire network and by mountain bike zone. The mountain bike zones are defined as Brohm/Cat Lake zone, Alice Lake – Garibaldi zone, Brackendale zone, Mashiter West zone and Valleycliffe zone. For example, within the Alice Lake –

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Garibaldi zone, there is 50.1 km of singletrack, and 24.4 km of doubletrack access trail. Of the singletrack, 32.8% of the trails within the Alice Lake – Garibaldi zone are considered easier, which in turn is 45.7% of all the easier trails in the Squamish Mountain Bike Network. This information is important for planning a balanced trail network with regards to both the skill level and trail surface types.

The vast majority of the single-track trails within the mountain bike network are user built through the hard work of many volunteers. While this has proven to be a valuable resource to many of the local residents, and has drawn tourists from all over the world, the majority (but not all) of these user-built trails are unauthorized and constructed without the appropriate land manager/owners permission. In addition, the maintenance of these unauthorized trails on Crown land is in contravention of Section 57 of the *Forest and Range Practices Act*, and in trespass on private lands if the owner's permission is not received. This is a situation that must be rectified to legitimize the Squamish mountain bike network (see Section 3.2).

The current trail access and staging areas typically rely on street parking in residential neighbourhoods and parking lots constructed for other purposes. There is also a bike wash station set up at the Brennan Park Recreation Centre parking lot. The current demand appears to be met by these faculties/arrangements, however, any increase in demand could lead to conflicts with other user groups, and residents where parking in residential neighbourhood occurs (such as is happening on the North Shore at present; North Shore News, 2003).

There are several trail map kiosks set up by SORCA at key locations; these include at the small parking lot at the corner of Westway Avenue and Plateau Drive, at the parking lot on Mamquam Road near Mashiter Creek, between Rob's Corners trail and Cliff's Corners trail (above Alice Lake Provincial Park), at the top of the Powerhouse Plunge trail, and at the top of Pseudotsuga trail. There is also a trail map at the southern Alice Lake parking lot, set up by BC Parks. Signage on the trails themselves is generally lacking, except for a few authorized trails, as is signage which would indicate trail difficulty (other than at the previously mentioned kiosks), trail etiquette, distances to landmarks, etc.

Table 1: Squamish Mountain Bike Trail Network by Zone

Mountain Bike Zone	Trail Type														
	Double-track / Access & FSR			Easier			Intermediate			Advanced			Expert		
	Length (km)	% of zone total	% of Networks	Length (km)	% of zone total	% of Networks	Length (km)	% of zone total	% of Networks	Length (km)	% of zone total	% of Networks	Length (km)	% of zone total	% of Networks
Brohm / Cat Lakes	19.57	60.54	15.85	5.19	16.07	9.71	6.59	20.38	14.77	0.87	2.70	2.57	0.10	0.31	1.06
Alice Lake - Garibaldi	24.40	32.77	19.77	24.42	32.79	45.66	11.34	15.22	25.41	11.59	15.56	34.13	2.72	3.66	28.74
Brackendale	11.83	53.89	9.58	2.28	10.38	4.26	7.49	34.13	16.79	0.35	1.59	1.03	0.00	0.00	0.00
Whistler West	62.48	56.33	42.51	20.66	22.18	38.63	6.91	7.42	15.50	8.93	9.59	26.32	4.18	4.49	44.13
Valleycliffe	15.17	35.22	12.29	0.93	2.17	1.74	12.29	28.53	27.54	12.21	28.35	35.95	2.47	5.74	26.08
TOTAL (Within All Zones)	123.44	46.59	100.00	53.48	20.19	100.00	44.61	16.84	100.00	33.95	12.81	100.00	9.47	3.57	100.00

Table 2: Squamish Mountain Bike Network - Double/Single-Track

Trail Type	km	% overall	% of singletrack
Double-track			
Access	64.6	24.4	n/a
FSR	58.8	22.2	n/a
Sub Total	123.4	46.6	
Single-track			
Easier	53.5	20.2	37.8
Intermediate	44.6	16.8	31.5
Advanced	34.0	12.8	24.0
Expert	9.5	3.6	6.7
Sub Total	141.5	53.4	n/a
Total - All Trails	264.9	100.0	53.4

Table 3: Squamish Mountain Bike Network - Singletrack by Zone

Mountain Bike Zone	All Trails		Singletrack	
	Length (km)	% of Trail Network	Length of singletrack (km)	% of Trail Network
Brohm / Cat Lakes	32.3	12.2	12.8	9.0
Alice Lake - Garibaldi	74.5	28.1	50.1	35.4
Brackendale	21.9	8.3	10.1	7.1
Whistler West	93.2	35.2	40.7	28.8
Valleycliffe	43.1	16.3	27.9	19.7
TOTAL (Within All Zones)	265.0	100.0	141.5	100.0



3.1.2 FUTURE TRAIL NETWORK OPPORTUNITIES

The Squamish mountain bike network has developed in several distinct areas/polygons. Connections, or additional connections (bridges), to these areas would greatly increase the recreational and tourism potential of the network, by providing improved flow between the different areas as well as options for longer rides. In addition, potential areas to expand into were explored using the GIS database. Unanswered questions are what is the carrying capacity of the trails, and how may trail users/visitors can be expected in the future. Such questions are beyond the scope of this study, and would require a multidisciplinary economic/tourism/recreation study to ascertain. However, for comparison, the Lower Seymour Conservation Reserve attracts 600,000 users per year, with an area of 5,700 ha (approximately 70% of the area of the existing Squamish Mountain bike network), and on Vancouver Island, the Mont Worth-Hartland mountain bike park attracted 70,000 mountain bikers in 2002 (with an area of 196 ha, approximately 2.5% of the area of the Squamish network).

Potential expansion areas capitalize on Squamish's unique terrain that can supply additional crosscountry trails that are in close proximity to the town's centre. Potential connections and/or additional connections include (see Map 3 in Section 7):

- A bridge over the Cheekye River to connect the Alice Lake trail polygon to the Brohm Lake trail polygon. This trail link would expand the trail experience to include several rides of medium to long duration (4 – 8 hour rides).
- A trail from Red Heather Hut, with Garibaldi Provincial Park, (or alternatively from just outside the park from the top end of Upper PowerSmart Trail) along/down Mashiter Creek Ridge.
- A trail link past Evans and Butterfly Lakes to connect to Lucille Lake. This link would provide for a backcountry experience, which could be done as a long day ride, or as a multi-day ride, with potential connections with the "Sea to Sky Trail" (see Map2 in Section 7), and
- A trail connection behind the Stawamus Chief to connect the Shannon Creek FSR (via the Stawamus FSR) to Britannia Beach via Petgill Lake. This link could be ridden as a long destination day ride.

Two potential polygons have been identified where trails lost to present development within the District could be relocated. These polygons were selected due to their close proximity to existing development (See Map 3 in Section 7), and include:

- Valleycliffe East Area – DL 2059. This area is bound by DL 515 to the west, and DL 514 and 513 to the north, and the Stawamus Chief Provincial Park to the south. While some trails already occur in this area, the trail network could be greatly expanded to provide great crosscountry riding experiences and unique vistas of Squamish's scenery, in close proximity to town. This area could be used to replace trails lost to development in the adjacent District Lots.
- Hop Ranch Creek Area. This area is the unsurveyed crown lands bound by DL 510 to the south, and Alice Lake Provincial Park to the North. This area could provide intermediate to advanced crosscountry riding that is in close proximity to the Garibaldi Highlands and Brackendale neighbourhoods for resident's

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recreation, as well as close to Alice Lake Provincial Park, an existing staging area for mountain biking tourists. As with the Valleycliffe East area, the Hop Ranch Creek area could be used to replace trails displaced from adjacent development.

Potential polygons which could be developed as future mountain bike areas (See Map 3 in Section 7) include:

- The Mount Mulligan / Alpen Mountain Area. This area could be developed with both crosscountry and freeride trails, with climbs into the sub alpine and descents of various lengths to the Mamquam FSR, the Stawamus FSR or the Rafuse Creek FSR.
- Ring Creek Area. The Ring Creek polygon is presently used to some extent for downhill and free riding, with more technical descents. The Garibaldi Park Road is presently used to gain access to this area, with riders either climbing or shuttling to the top of the trails. This trail network could be expanded.
- Alice Ridge. This area could provide crosscountry and free riding opportunities, with ascents up the existing decommissioned forest service roads, and moderately technical descents.
- Brohm Ridge: The Brohm Ridge polygon lies within the Garibaldi Alpen Ski Resort Tenure Application area. This area could be developed as a lift access downhill park which would compliment the remainder of the Squamish mountain bike network.

There are a number of variables that should be considered when evaluating potential new expansion areas for mountain bike trails. Terrain and vegetation characteristics of the landscape suitable for the type of riding experience desired, accessibility, interconnectivity with existing network, logical staging and parking availability, and proximity to population centres. It is important to bear in mind that a large portion of the land both surrounding and within the District of Squamish is considered part of the Timber Harvesting Land Base (THLB). Attempts should be made to locate future expansion areas, which meet the above mentioned criteria, in locations that will minimize conflict between mountain bikers and resource extraction activities. Portions of the THLB have existing constraints that limit the degree of harvesting. Expansion into already constrained areas, if recreation is deemed compatible with the identified harvest limiting value, has the potential to alleviate conflict. Identified Wildlife Habitat Areas (WHA), Special Resource Management Zones (SRMZ) and Recommended Visual Quality Objectives (VQO) are examples of areas that may have imposed timber-harvesting restrictions. A brief analysis and discussion of the current proposed and potential harvesting plans and the potential and existing constraints on the THLB are outlined below.

Future timber harvesting activities

The THLB surrounding and within the DOS is currently managed by British Columbia Timber Sales (BCTS), under the jurisdiction of the Ministry of Forests and Range (MOFR). Existing Forest Development Plans (FDP) for the area surrounding the DOS have been provided for this study by BCTS. Polygons denoting both approved and

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proposed, as well as information blocks (neither approved or proposed but under consideration) are illustrated on Map 4 in Section 7. There are two things to remember when considering future harvesting activities in an area as it concerns mountain biking trails. First, the polygons provided by BCTS do not represent everywhere that may be harvesting in the future. FDPs usually represent a one or two year cycle, so areas that are not currently under consideration for harvesting may be explored in the future. Secondly, a proposed cutblock does not immediately guarantee approval by MOFR, there is a public process and the presence of a legitimate, economic and socially beneficial trail may result in alteration of harvesting techniques to accommodate the recreational resource.

Current plans for future harvesting (Map 4 in Section 7) show that there are approved, proposed, salvage and information cutblocks of varying size throughout the proposed expansion areas. The proposed Ring Creek expansion area, as well as the proposed Petgill Lake / Britannia Beach and Cheekye Bridge connections are the areas that will be most affected by current future harvesting plans. Valleycliffe East and Hop Ranch Creek relocation areas, Brohm Ridge and Mt. Mulligan / Alpen Mtn expansion areas as well as the Evans / Butterfly / Lucille Lakes connection are relatively untouched by current future harvesting plans supplied by BCTS.

Wildlife Habitat Areas (WHA) and other wildlife values

Wildlife habitat areas (WHAs) are areas managed for selected species and plant communities that have been designated under the Forest Practices Code as "Identified Wildlife". Both deer and mountain goat winter range have been identified as areas that would be suitable for the expansion of mountain biking trails. Harvesting is limited in these regions and the wildlife use occurs at a time when mountain biking is minimal or non-existent. Locations of deer and mountain goat winter range are illustrated on Map 6 in Section 7. Brohm Ridge and Alice Ridge proposed expansion areas each contain both types of ungulate winter range, while the higher elevations of the Ring Creek expansion area is within deer winter range. The proposed Mt. Mulligan and Alpen Mtn expansion area contains two polygons of identified mountain goat winter range. Relocation and trail connection areas currently show no ungulate winter range. Trail planning should incorporate information concerning wildlife as it is collected and updated over time. Other wildlife values that may influence both timber harvesting and mountain bike trail location include both identified spotted owl and grizzly bear habitat as well as Old Growth Management Areas (OGMA).

Community Watersheds

Boundaries for the two official community watersheds located in the DOS are illustrated on Map 6 in Appendix 2. Extra care must be taken when designing trails within either of the two community watersheds, the Stawamus and the Mashiter, particularly around water crossings. Portions of the proposed Alice Ridge and Mt. Mulligan / Alpen Mtn expansion areas are located within the Mashiter and Stawamus watersheds respectively. Timber harvesting techniques are also adjusted due to the sensitivity of these watersheds.

The District of Squamish also has three drinking water wells at the Powerhouse Springs, located at the base (southern end) of the Powerhouse Plunge trail (Map 2 in Section 7).

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While this area is not presently designated as a Community Watershed, the District is currently developing a "Well Head and Aquifer Protection Plan", to ensure the integrity of this drinking water supply (Mick Gottardi, Director of Community Development, District of Squamish, Pers. Comm., July 5, 2005).

Visual Quality Objectives (VQO) for timber harvesting

Visual Quality Objectives (VQO) refer to the level of acceptable landscape alteration in terms of desired character, condition and quality of a scenic landscape and how it is perceived, preferred, and valued by the public. Known scenic areas with established visual quality objectives in the Squamish area are illustrated on Map 5 in Section 7 (MELP, 2001). There are 4 identified visual quality classes of landscape alteration:

- **Retention:** Human caused alterations are visible but not noticeable. In perspective, opening sizes are generally 0.1 to 1.5% of landscape unit assessed.
- **Partial Retention:** Human caused alterations are visibly apparent but remain subordinate to the landscape. In perspective, opening sizes are generally 1.6 to 7% of landscape unit assessed.
- **Modification:** Human caused alterations dominate the landscape but borrow attributes that are in keeping with the landscape character. In perspective, opening sizes are generally 7.1 to 18% of landscape unit assessed.
- **Maximum Modification:** Human caused alterations are out of scale on the landscape and exhibit attributes that are not in keeping with the landscape character. In perspective, opening sizes are generally 18.1 to 30% of landscape unit assessed.

The establishment of mountain biking trails in regions that have been either recommended or approved at a minimum VQO level of modification or greater preservation reduces the potential conflict between resource extraction and trail users.

Land and Resource Management Plan (LRMP) and Tourism Value

The Sea to Sky LRMP, the public participation phase of which was completed in October 2004, was a process for defining a future vision for public land and resources in the Sea to Sky area. The LRMP identified the high tourism capability of the landscapes surrounding Squamish. Map 7 in Section 7 illustrates the area identified as high summer tourism capability and proposed tourism zones for the area. The entire existing network and the majority of the proposed expansion areas occur within the identified high summer tourism capability area and are within lands proposed to be zoned either front or mid country recreation. The LRMP indicates that the majority of the area has been proposed to be designated multi-use by the Outdoor Recreation Council, indicating that both motorized and non-motorized public recreation use is appropriate.

3.2 Governance

Without a secure land and trail base, there will be no sustainable mountain bike trail network in Squamish. Squamish is experiencing an unparalleled level of real estate development which will significantly impact the future of mountain biking in the area. Currently, almost 50% of the existing trails in the Squamish area are situated on or

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access through private land that could be developed. Further complicating matters is that the single-track that is key to the network is the type of trail most likely to be displaced by development. If typical development practises found in other municipalities around North America and historically here in Squamish take place, it is expected that all of the single-track on these lands would disappear. The remainder of the lands include a variety of tenure and land management practices, including private fee simple lands, Crown lands both within the outside the District of Squamish, Municipal Parks and greenways, Transmission line Right-of-ways, and Provincial Parks. Each of these land tenure types presents unique opportunities and constraints to the Squamish mountain bike trail network.

Several models from other jurisdictions were explored in developing a governance model for the Squamish mountain bike network. Within British Columbia, the trail networks systems in Rossland, Whistler, Kamloops and Fernie were explored. Each of these communities has grappled with the issue of multijurisdictional trail networks. In Rossland, for example, the "Trails for Rossland Society" was created to deal with a multi-use non-motorized trail network. The Society has a fulltime paid (\$45k/yr) "Trail Coordinator", with the funding shared by the City of Rossland and the Regional District of Kootenay Boundary. A Recreational Trail Master Plan was prepared. The society manages trails (75% of use is in the summer months) by providing comprehensive signs, maps, and user education pamphlets, maintaining trails by removing downed trees, correcting water flow problems, etc. They plan to have a trail patrol system, and have a phone number where trail problems can be reported. All land owners and managers who grant access to trails on their property sign an agreement that clearly defines the responsibilities of the Society and rights of the landowners. The term is for 5 years, through owners may cancel at any time. General liability insurance coverage is provided to the landowners, with the premiums being paid by the Society (Stewart Spooner, Presenter, NSMES, 2005 and; TFRS, 2005).

In Whistler, a need to develop a summer activity to offset winter skiing resulted in the Resort Municipality of Whistler (RMOW) taking an active role in the sport of mountain biking. The RMOW has since joined forces with the Ministry of Forests and Range and the Whistler Off Road Cycling Association (SORCA's counterpart) to create a highly successful partnership. The result has been the development of many kilometres of new mountain bike trails in the Whistler area. These initial efforts demonstrate the RMOW's support for the sport and its importance in the overall recreation picture in Whistler.

Outside the country, mountain bike networks within Moab Utah, Fruita Colorado, and Coed y Brenin, Wales were explored. These three areas differ significantly from the situation in Squamish, in that they are generally managed by a single agency, and in the case of Wales, the mountain bike network was purpose built for destination mountain bikers.

Moab has become one of the world's most publicized mountain biking areas, and along with neighbouring Fruita Colorado, accounts for 38% of the mountain bike related trip in the United States. They are both examples of communities that have engineering an economic recovery through the development of a recreational activity. From the ruins of an ex-mining town, Moab, and a bankrupt farm supply town, Fruita, the area has become one of the world's premier mountain biking destinations along with Whistler and

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Vancouver's North Shore. The vast majority of the trails within both Moab and Fruita are managed/operated by the Bureau of Land Management, a branch of the U.S. Department of the Interior.

In the case of the Mountain Bike Wales project, an underused recreational/interpretive facility went from 14,000 visitors a year to over 150,000 visitors per year in four years after the establishment of a destination mountain bike trail system. A survey of the spending habits of the overnight visitors found that they spend \$20 million/year in the Wales Park areas. With funding supplied by the Wales Forestry Commission, the Welsh Mountain Bike Initiative has built highly durable trails that can withstand riding all year. As a result, Wales has become a major mountain bike destination, transforming an area characterized as a dying mining area to a vibrant recreational Mecca. With appropriate governance and secure land access, Squamish has the potential to join these world mountain biking Meccas.

3.2.1 WITHIN THE DISTRICT OF SQUAMISH

As previously mentioned, the Squamish Municipal Council passed a motion in 2004 "that Council allocate appropriate staff resources to the development of a long term trail masterplan in accordance with that proposed by the Squamish Off Road Cycling Association". The Squamish Planning Department is currently looking at incorporating elements of the "Proposed Squamish Trail Network" into the Official Community Plan, with the OCP being slated for completion in the fall of 2005. Once the trail network forms part of the Official Community Plan, there are several tools which the District can use to secure the trail network based on the land tenure.

Crown Lands

Approximately one third of the existing trail network within the District of Squamish is administered by the Crown. At present, the majority, if not all, of the mountain bike trails on Crown land within the District of Squamish have no tenure status, or authorization. Several governance options are available, including:

- Status Quo, untenured, not authorized,
- Free Crown Grants or Nominal Rent Tenures,
- Authorization under Section 57 of the Forest and Range Practices Act.

Maintaining the status quo, unauthorized trails on untenured Crown lands, is not a viable option for a sustainable mountain bike trail network. Not only is the construction of the trails unlawful, but so is the maintenance of unauthorized trails. It is difficult to secure outside funding for unauthorized trails, difficult to build partnerships with other organizations, and even harder to secure government support.

The provincial government has historically provided Crown land to municipal governments and community organizations to support public purposes (LWBC, 2004) through Free Crown Grants and Nominal Rent Tenures. Note that only the municipality would be eligible for a Free Crown Grant, while either the municipality or a community organization (such as SORCA) could be eligible for a Nominal Rent Tenure. Since April 2004, all new Free Crown Grant and Nominal Rent Tenure applications (where the land

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values is greater than \$100,000, or the NRT is for greater than 30 years) must be sponsored by a provincial ministry (such as the newly created Ministry of Tourism, Sports and the Arts). Applications for Free Crown Grants or Nominal Rate Tenures will be considered where the land will be used for a broad public purpose, where a clear public benefit to the community-at-large is identified, where there are no reasonable alternatives to a FCG/NRT, or where the applicant meets the goals of a sponsor ministry under the categories of:

- ✦ Health,
- ✦ Education,
- ✦ Public Safety,
- ✦ New community infrastructure,
- ✦ Transportation (i.e. bicycle paths), and
- ✦ Facilities oriented to recreation.

Each sponsor ministry will use six standard selection criteria to determine whether or not they will sponsor an application and to prioritize applications against the ministry's available budget. These are in order of priority:

- ✦ Proposal meets regional, local or First Nations community priorities,
- ✦ Generates local or regional economic benefits,
- ✦ Contribution to community health, safety or education,
- ✦ Supports sustainable infrastructure development,
- ✦ Contribution to environmental quality, and
- ✦ Other support (\$ or in kind) contingent on access to Crown land.

The establishment of a sustainable mountain bike network for both recreation and tourism potential clearly meets the objectives of the selection criteria, and therefore, the use of Free Crown Grants and/or Nominal Rate tenures to secure the lands for the Networks should be explored

The other option is to rely on authorizations under Section 57 of the *Forest and Range Practices Act*. This option is explained more fully under the section dealing with Crown land outside the District of Squamish.

Municipal Parks

The inclusion of trails within Municipal Parks is a logical use, providing that the trails meet the park's mandate, and the trails are built and maintained to an appropriate standard. The District is currently involved in the preparation of trail standards through a working group that includes various user groups. The importance of trail standards, and their link to limiting liability, is more fully explored in Section 3.3.2

Private Lands

With the incorporation of the Squamish Trail Network and Mountain Bike Plan into the Official Community Plan, the District is indicating to prospective developers the

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community's desires to maintain a viable trail network throughout Squamish. Any development proposal needs to reflect the intent of the OCP, through retention of existing trails, relocation of trails (with consultation with trail groups), and development of new trails and infrastructure to support those trails.

At present, the District of Squamish Planning Department advises prospective developers to consult with SORCA and the Squamish Trails Society, to deal with Mountain Bike Trails and hiking/walking trails, respectively. While this approach is working at present, with the number of development proposals before the District, these non-profit societies and their volunteers will quickly become over inundated with trail planning and management activities. In addition, the prospective developer can become frustrated in dealing with two groups (or more), that may have conflicting mandates and agendas.

One possible option is for the District to require prospective developers to prepare a "Trail Plan" which would include mountain biking as well as hiking/walking trails (and possibly trails for equestrian and other non-motorized users). This plan would then be vetted through the District, SORCA and STS much as comments are received at present. The trail network with the proposed development site could then be preserved via park dedication, easement or other suitable mechanism. Trails that will be lost to development and have to be relocated elsewhere will be identified in the "Trail Plan"; possible funding for the costs of relocating the trails is to allocate moneys from Development Cost Charges (DCC's). Two polygons have been identified in the previous section where displaced could be relocated. These polygons were selected due to their proximity to the developed portion of the District. An alternative to referring the "Trail Plan" to various agencies and societies is to establish a Squamish Trail Coordinating Committee, as detailed in Section 3.2.3 of this report. The committee would consist of representatives from various governments and non-profit societies who would coordinate the activities of their membership/department so that the objective of sustaining an overall trail network in Squamish is achieved.

In Park City, Utah, for example, the city has adopted a "City Trails Master Plan". Under their bylaws, there is a requirement for developers to provide/construct trails that are delineated within the City Trails Master Plan, and to provide an easement for such trails. There is also a bonding requirement if the trails are not constructed in the early stages of development. Park City's requirements are stipulated within their Title 15 - Land Management Code – Chapter 7.3 Requirements for Improvements, Reservations and Design, and reads as follows:

15-7.3-8. SIDEWALKS, HIKING TRAILS, BIKE PATHS, AND HORSE TRAILS.

5) Hiking trails, bike paths, and horse trails shall be provided by the Developer in accordance with the City Trails Master Plan and where otherwise necessary as determined by the Planning Commission. Trails should connect traffic generators such as schools, recreation facilities, commercial Areas, parks, and other significant natural features. Such trails shall be built to City specifications and easements shall be dedicated for such trails. The trails shall be constructed at the time of road construction, unless the Planning Commission determines otherwise, in which case cash deposits shall be required pursuant to Section 15-7.2 of this Code.

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3.2.2 OUTSIDE THE DISTRICT OF SQUAMISH

Crown Lands

Approximately 94% of the province of British Columbia is Crown Land, and about 75% of the Squamish Mountain Bike Network is also situated on Crown Land, with about 90% of this Crown land occurring outside the District of Squamish boundaries. Free Crown Grants and Nominal Rent Tenures for Crown Lands within the District of Squamish boundaries have been previously discussed to secure the trail networks; however, an alternative for Crown Land, both within and outside the District of Squamish, is to authorize and protect the trails under Sections 56 through 58 of the *Forest and Range Practices Act (FRPA)* administered by the Ministry of Forests and Range.

Section 56 of the *FRPA* stipulates that "the minister may order the establishment of Crown Land as an interpretive forest site, a recreation site or a recreation trail except Crown Land that is subject to another enactment and is being administered by another minister, branch or agency of government, is in a timber supply area, or is subject to a tree farm licence, a woodlot licence, a community forest agreement or a timber licence.

Section 57 of the *FRPA* stipulates that "unless authorized in writing by the minister (MOFR) or under another enactment, a person must not construct, rehabilitate or maintain a trail or other recreation facility on Crown Land". The minister may also impose conditions (such as trail standards) in any authorizations.

Section 58 of the *FRPA* stipulates that "If the minister determines that it is necessary to protect a recreation or range resource or to manage public recreation use on Crown land, he or she by order may restrict or prohibit a non-recreational use of any of the following":

- a resource management zone;
- a landscape unit;
- a sensitive area, or
- a recreation site or recreation trail.

Note that a recreation site or recreation trail is defined as those established under Section 56 of the *FRPA*.

The Ministry of Forests and Range has a process whereby an individual or group can apply for authorization for an existing or new trail or recreational facility under Section 57 of the *FRPA*. The applicant needs to state the purpose of the works, and provide a description of the work, location, dates, expected use, standards that will be followed, and demonstrate a capacity and commitment to provide maintenance over the long term. The applicant may also request what actions or assistance is requested from the District Manager, these include, among others:

- Consent to proceed with the proposal (i.e. trail construction or maintenance),
- Inclusion of the trail or recreation facility in the Forest Services recreational inventory (the inventory is consulted when harvesting activity is proposed),

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- Creation of a trail or recreation facility as a map notation (again this notation would be referred to in any harvesting plans),
- Establishment of the trail or recreation facility as a Forest Service trail or site (as per Section 56 of the *FRPA*, which would allow protection under Section 58 of the *FRPA*),
- Establishment of the trail or recreation facility as a "Resource Feature" (again , additional protection under Section 28 of the *FRPA*),
- Cooperative management of the trail or recreation facility, and/or
- Inclusion of the trail or recreation facility as a managed facility on maps and the Forest Service website.

It is likely that there would be a variety of trail types; inventoried trail, Forest Service Trail, or Resource Feature. In addition, it is likely that there would be some sort of recreation use agreement, between MOFR and SORCA or the District or some other agency, to cooperatively manage the trail network that falls within MOFR's jurisdictions. As part of the research for this document, initial discussions with MOFR (Squamish Office) have taken place (Neil Edwards – Operations Manager Zone 2 and Don McDonald – Acting Recreation Officer). The MOFR process as proposed so far is as follows:

1. Discussion and Dialogue (Meeting with MOFR and SORCA on June 8, 2005)
2. Authorize Trails
 - a. Inventory (being conducted as part of this report)
 - b. FS trails
 - c. Section 57 authorization
3. Identify use
4. Establish Standards
 - a. Trails
 - b. Structures
 - c. Signage
 - d. Best Environmental Practises
 - e. Maintenance
5. Enter Agreements
 - a. Recreation use agreements
 - b. Liability Issues/Insurance (MOF could provide insurance or co-sign)
 - c. MOFR could provide materials, engineering services, standard drawings etc.

BC Parks

The Squamish mountain bike network includes trails within Alice Lake Provincial Park and Garibaldi Provincial Park. Mountain bike activity in the latter park is restricted in that park's master plan (MOP, 1990) "to encourage mountain bike access to park trailhead parking areas, but to limit cycling to two areas: the Red Heather Ridge trail up to Elfin Shelter and the proposed south Cheakamus River trail" (Whistler area). Current use of the park for mountain biking in the Squamish region; therefore, is restricted (although

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supported by BC Parks Service in these instances) to the Red Heather Trail, and the upper extents of the 19th Hole and Blow Out Your Candles trails (off the Garibaldi Park Access Road), in addition to use of the road for access (both riding and shuttling) and use of the park's parking facilities. Any additional mountain bike trail construction within Garibaldi Provincial Park would require a Master Plan amendment, and would be contingent on the trail's acceptability to the parks planning staff (Tom Bell, MWLAP, Pers. Comm., June 14, 2005). In addition, any changes to signage, parking, etc., would need to be discussed with BC Parks.

Alice Lake Provincial Park contains numerous mountain bike trails, and is a key to providing access to trails beyond the park. In addition the park provides parking and other amenities to the riding community. According to the park's purpose statement and zoning plan (MWLAP, 2002), "the primary role of Alice Lake Provincial Park is to protect a system of four lakes and the surrounding forest environment for overnight and day use recreation. Opportunities include camping, water play, hiking, mountain biking, fishing and nature study for both local residents and destination visitors."

Trails within Alice Lake Provincial Park are multi-use trails, and include Jack's Trail, the Four Lakes Trail, Bob McIntosh Memorial Trail, Mike's Loop, Tracks from Hell, Of Mice and Men, DeBeck's Hill access road, and the park access road. The Four Lakes trail is presently restricted to hikers only from May 1 to September 15, to avoid overcrowding the trail and potential user conflicts. There are presently no plans to change this policy, although it is being addressed through an adaptive management strategy, and its use could change with time. In addition, there are also plans to develop a strategy to close the gravel road that provides access to forestry and private lands beyond the park, as alternative vehicular access is now available (i.e. from the yellow gate near the park's office to Edith Lake). The existing mountain bike activities are being managed through the present policies, purpose statement and zoning for the park. Expansion of mountain biking within the park is not identified as a "known management issue" in the park's purpose statement. Although there are no current plans for additional trail construction within the park, should additional trail be desirable, they would have to be planned, constructed and maintained in consultation and agreement with BC Parks and the park's purpose statement and zoning plan.

Private Lands

There are only minimal private lands outside the District of Squamish, in close proximity to the District's boundaries. At the present time, there are no mountain bike trails on these lands; however, in the future there may be a need to have discussion with the Squamish Lillooet Regional District planning staff to discuss trail related issues. To date, no discussions have taken place.

Squamish Nation

To date, there have been no discussions with the Squamish Nation with regards to mountain bike activity on their traditional lands. As a major stakeholder, dialogue with the Squamish Nation should commence as soon as is possible, and their representative invited to participate in the Squamish Trail Coordinating Committee (if that committee is established) as outlined in Section 3.2.3 below.

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3.2.3 SQUAMISH TRAIL COORDINATING COMMITTEE

It is difficult to develop a trail strategy in isolation of other user groups and land managers. It is important, therefore, to identify and involve potential partners to identify challenges and make the best use of resources. Access to funding sources is typically more successful when sought by an inclusive group, as opposed to a single user group. One model used in other jurisdictions (Rossland, BC; Welsh Mountain Bike Initiative) is the development of a Trail Coordinating Committee. The Trail Coordinating Committee would consist of a core group of stakeholders and land managers. (An alternative approach would be for SORCA to "go it alone", and deal directly with the respective land managers, i.e. the District of Squamish, Ministry of Forests and Range, BC Parks, and Ministry of Agriculture and Lands, now administering Crown lands instead of LWBC. That approach would negate opportunities for partnerships and minimize opportunities for joint management of resources.) The Squamish Trail Coordinating Committee make up could consist of the representatives from the following organizations and associations:

- ✦ District of Squamish – Planning Department
- ✦ Ministry of Forests – Recreation Officer/Operations Manager
- ✦ Squamish Off Road Cycling Association
- ✦ Squamish Trail Society
- ✦ Squamish Valley Equestrian Association
- ✦ Squamish Dirt Bike Association
- ✦ Other Land Managers and Stakeholders as necessary (Ministry of Tourism, Sports and the Arts)

The goals of the Squamish Trail Coordinating Committee would be decided by the committee itself, but will likely follow a process similar to that previously discussed for resolving Ministry of Forest issues in the previous section of this report. Key issues would likely include:

- ✦ Inventorying and authorization of trails,
- ✦ Identification of trail use and potential conflicts (single use and multi use trails),
- ✦ Establishing standards and protocols,
- ✦ Entering into joint use and recreational agreements,
- ✦ Identifying deficiencies in the network and future needs, and
- ✦ Liability issues.

It is likely that the Committee would break into smaller subcommittees to discuss, and provide recommendations for specific issues, such as:

- ✦ Trail and structure standards,
- ✦ Signage, education, trail code of conduct,
- ✦ Trail maintenance protocols, environmental best practises, consistency

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The Committee would also likely delegate specific tasks to the appropriate user group or agency. For example, the Committee make ask SORCA to report back on a trail rating system, so that all mountain bike routes are marked with a rating that is consistent throughout the trail network. Trail maintenance is also a task that will likely be delegated by the Committee.

Specific mountain bike issues that the Squamish Trail Coordinating Committee may want to explore include:

- ✱ Adopt the "Proposed Squamish Trail Network",
- ✱ Seek authorization for trail use and maintenance,
- ✱ Explore land tenure and trail preservation options,
- ✱ Formally Recognize the Test of Metal and Gear Jammer Courses,
- ✱ Identify new trails to be constructed,
- ✱ Securing Long-term Land Use on Crown Land,
- ✱ Recommendations for Official Community Plan Amendments,
- ✱ Recommendations for changes to Zoning By-Laws,
- ✱ Recommendations for changes to Subdivision By-Law
- ✱ District of Squamish Boundary Expansion,
- ✱ Establish funding model for relocation of existing trails and expansion of trail capacity,
- ✱ Explore expansion of the Brennan Park Leisure Centre to better serve needs of mountain biking tourists,
- ✱ Establish/review Mountain Bike Plans for each new development as they occur,
- ✱ Identify any required additional access trails,
- ✱ Identify trails to be preserved or receive special status,
- ✱ Identify areas to relocate trails lost to development,
- ✱ Determine which new trails to build each year,
- ✱ Reviewing sub-area plans, development permits and subdivision plans to reconcile with Mountain Bike Plan established for each new development,
- ✱ Construct new trails
- ✱ Ongoing maintenance of trails
- ✱ Construct Bridges over Cheekye River and Mashiter Creek
- ✱ Installing signage on all trails
- ✱ Annual review of long-term trail expansion plan

As the Trail Coordinating Committee has a fairly daunting task before them, balancing the needs of the numerous area specific trail societies with the requirements of the various levels of government, it would be unreasonable to assume that this work

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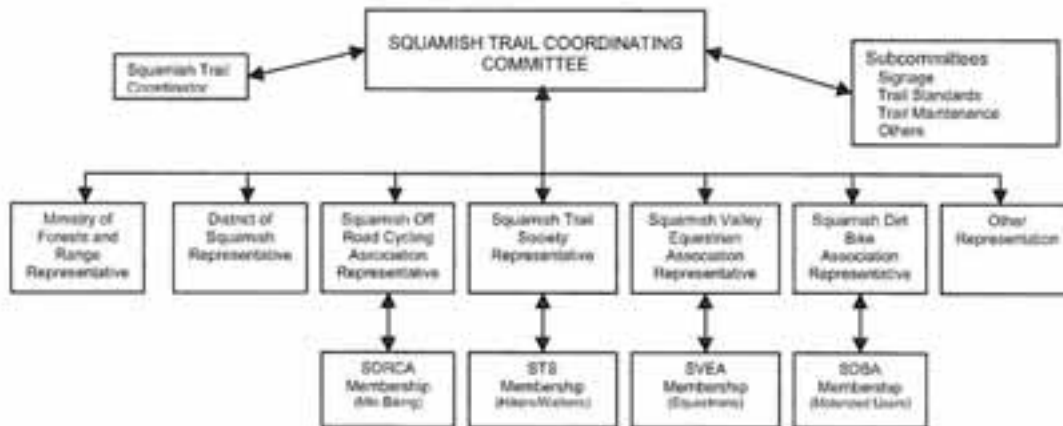
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could/would be accomplished solely with volunteer labour; therefore, there is a need to retain a paid Trail Coordinator. The Trail Coordinator would report to, and take direction from, the Squamish Trail Coordinating Committee, and would perform some of the day to day activities, such as trail planning, signage installation, trail construction and maintenance, and fund raising. The Trail Coordinator position could be funded through grants from the local land managers and/or other provincial or federal initiatives.

A proposed model for the Squamish Trail Coordinating Committee is illustrated below:

Figure 1: Squamish Trail Coordinating Committee



3.3 Establish Squamish as a True Mountain Bike Destination

What makes a mountain bike destination, and does Squamish want to become one? Mountain bike destinations generally have a sustainable trail network with an abundance of consistent trails, and a reputation of providing for mountain bikers. A sustainable trail network requires a level of trail protection or permanency, which in turn will depend on trail and trail maintenance being authorized by the land manager or owner. Consistent trails require a level of maintenance, planning and signage to ensure that the calibre of trail is the same throughout the network, and from year to year. A consistent trail network also implies a consistency in trail ratings and standards, so that visitors know exactly what sort of experience they are likely to expect. A mountain bike destination's reputation is comprised in part on tourism infrastructure, such as accommodation, restaurants, entertainment, staging facilities, mapping and signage, and the above mentioned trail network attributes, as well as intangible aspects ranging from bike storage faculties at motels, to the local gas station attendant's knowledge of the mountain bike trails. Whether Squamish wants to become a mountain bike destination hinges on the difference between providing for recreation and providing for tourists.

The establishment of a mountain bike destination also is dependant on knowing your market (also see Section 3.3.1). One recent survey on mountain bike tourism (Green, 2003), conducted on International Mountain Bike Association members, found that there were 10,000,000 mountain bikers in the United States. Approximately 80% of those

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riders had taken a trip of at least one or more nights specifically to go mountain biking. Of the riders surveyed, 89% had been crosscountry riding, 23% has ride freestyle, and 18% had been down-hilling (overlap is due to mountain bikers riding more than one style). The average trip length was 4.6 nights, of which 3.8 days were spend mountain biking (indicating that the mountain biking was almost the exclusive activity). The average age was 38 years, and the average annual income was US\$75,000. Factors influencing the destination choice included reputation, variety /difficulty of terrain, number of trails and scenery. Over 30% of the survey respondents had visited Moab Utah, the highest percentage of any mountain bike destination in the United States (by a significant margin). This is interesting, as Moab is not an easy destination to get to, being a 5 hour drive from Salt Lake City, and an 8 hour drive from Denver Colorado (the closest population centres); Squamish is about an hour north of downtown Vancouver, and about 4.5 hours from Seattle.

At a recent conference (NSMES, 2005) Peter Robinson, the Chief Executive Officer, Mountain Equipment Coop, confirmed that although sales in camping gear and backpacking equipment are down, activities such as cycling, climbing and paddling are on the rise. Overall, the adventure industry is increasing at the rate of 11% per year.

Squamish is in a unique position to capitalize on this boom in adventure tourism, particularly as it relates to mountain biking. The location of Squamish between the noted downhill riding areas on Vancouver's North Shore, and the riding areas in Whistler, makes the corridor as a whole a desirable, marketable mountain bike region. The terrain in Squamish is also unique in proving crosscountry riding opportunities, which, as the survey above noted, is what the vast majority of mountain bikers' ride.

The trail network must also provide for the skill level of rider that one is anticipating attracting. While there is little definitive data on the skill ranges of the mountain bikers, the previously mentioned study by Green (2003), noted that 50% of the surveyed destination mountain bikers considered themselves as advanced intermediate riders. A similar trend was noted in a New Zealand study (Cessford, 1995), with 44% of riders considering themselves to "have much experience". Parallels can be drawn to the ski industry, where skill level can be distributed on a bell curve as shown in the table below, as 50% of skiers fall into the intermediate to high intermediate range of skill level. It follows then, that a good approximation of mountain bike trail difficulties within a network should follow the ski industry norms, as tabularized.

Table 4: Trail Difficulty Distribution

Skill Classification	Ski Industry Trail Distribution*	Single-Track Trail Distribution in Squamish**
Beginner to Low Intermediate	35%	38%
Intermediate to High Intermediate	50%	31%
Advanced	10%	24%
Expert	5%	7%

* Adapted from Ecosign, 1993

** Percent of single-track mountain bike trails in entire network

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The existing 141 km of single-track trails in the Squamish mountain bike network is comprised of 38% easier trails, 31% intermediate trails, 24% advanced trails, and 7% expert trails. When compared to the ski area norms for skill distribution, the network appears slightly skewed at each end, with a slight deficiency of intermediate trails. This has implications when considering addition to the mountain bike network. If for example 45 km of intermediate single-track was added to the existing network, the mountain bike trail distribution would change to 29% easier trails, 48% intermediate, 18% advanced, and 3% expert trails, which more closely matches the theoretical desired trail skill level mix.

3.3.1 MARKETING 101

The economic impact of recreation and recreation tourism on an annual basis is difficult to obtain without detailed surveys (NSMES, 2005). Some examples where surveys have been conducted are outlined below to give a broad indication of what economic development is occurring elsewhere. With the Welsh Mountain Bike Initiative, the Coed y Brenin Forest was underutilized, from a tourist perspective. Four years after establishing a mountain bike trail network, annual visitors increased from 14,000 to 150,000. Most visitors spent two days riding at the facility, spending approximately \$30,000,000 per year (NSMES, 2005). In Moab Utah, a study by Fix and Loomis (1996) found that the Slickrock Trail alone brought in an average of US\$8.5 million per year. Closer to home, Dr. Brian White (Capilano College, Presenter, NSMES, 2005) estimated that the economic impact of mountain biking to the Vancouver's North Shore is \$20,000,000 per year, which is accomplished with little support from hotel/tourism groups. Dr. White also pointed out the need to develop destination package for mountain biking in the North Shore, in conjunction with Whistler and Squamish

Marketing Squamish within a "Sea to Sky Corridor" mountain biking destination was a common theme at the recent World Mountain Bike Conference held in North Vancouver (NSMES, 2005). The Mountain Bike Tourism Partnership (MBTP) is one option that Squamish may want to explore further. The MBTP was formulated as part of the Canadian Tourism Commission's Tourism Innovation Partnership Program. The MBTP is seeking support from communities in British Columbia that recognize the emergence and significance of mountain bike tourism. The aim is to create a membership based organization to coordinate communities and industry partners and pool resources in order to help make mountain bike experiences more accessible to a variety of visitor markets. The basic requirements for a community to participate in the MBTP are:

- Sanctioned and maintained trail system, with a diversity of trails,
- Local Mountain bike shop/outfitter/club willing to work with the tourism industry,
- Qualified (and CNIC certified) mountain bike guides,
- Transportation services,
- Selection of bike friendly accommodation providers,
- Restaurants and entertainment, and

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- Other complementary tourism products and attractions.

According to Jimmy Young (MBTP in NSMES, 2005) tourism marketing is in many cases ahead of the product development. This would likely be the case for Squamish (although Squamish has developed components of the above criteria), if a comprehensive marketing scheme is launched prior the trail system being sanctioned and other initiatives being adopted (i.e. signage, staging areas, maintenance protocols, etc.) The essential items of successful mountain bike tourism, in chronological order are:

1. Stakeholder support and commitment at the grassroots level,
2. Product development, experience, and lastly,
3. Marketing.

It has also been MBTP's experience that there is a common misconception about the value of mountain bike tourists. The general perception is that they are young, unemployed, low income, only use the local gas station and fast food, and have little economic value to the community. Their analyses, however, have shown that the typical mountain bike tourists is mid aged, is well educated with a high income, uses guides, rentals, hotels and restaurants, and can have a significant economic impact on a community.

3.3.2 RISK MANAGEMENT, SIGNAGE AND SAFETY ISSUES

Risk management and liability is a common issue/concern for all government agencies, land owners and land managers. There is a perception of risk involved in mountain biking, which may have an impact on the real risk. To paraphrase the provincial *Occupier Liability Act*, a land manager/owner must make reasonable provisions to make facilities reasonably safe. The act also states that "an 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". It follows then that if there is a perception that mountain bike has risks associated with it, then they are "risks willingly assumed" by a mountain biker. The land owner manager, therefore, needs to ensure that their lands are reasonably safe, and they are not acting in "reckless disregard to the safety". (Note that the above should not be regarded as legal advice.)



The International Mountain Bicycling Association has developed a strategy for managing risk associated with freeriding. This strategy has been incorporated into the following steps to make the Squamish mountain bike network "reasonably safe":

- Follow best practices are used for trail construction and maintenance:

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- Ensure knowledge of trends in trail maintenance,
 - Determine shared use or single use,
 - Provide trails, features and facilities for skills development,
 - Place technical features appropriately,
 - Use trail filters as a gateway or qualifier,
 - Provide optional lines,
 - Provide adequate falls zones, and
 - Follow construction guidelines, and best environmental practices.
- Adopting a risk management strategy that includes:
- Designating a risk management coordinator,
 - Inspection of trails, structures and facilities,
 - Up to date, visible, effective and consistent signage system,
 - Adoption of education signage, including a code of conduct for trail users,
 - Adoption of trail standards, with a consistent trail rating system, with consistent trail conditions over time,
 - Documentation of inspection and trail maintenance activities,
 - Understanding local liability laws, and related case law, and
 - Build partnerships and communicate



3.3.3 FUTURE GROWTH OF SQUAMISH AND MOUNTAIN BIKING

Squamish is currently undergoing an unprecedented increase in growth that is presenting challenges to municipal planning staff and the community at large. How this development occurs will greatly affect how the trail network, and in particular to this report, how the mountain bike trail network will function. There are also ongoing pressures for resource extraction (i.e. logging) and competing recreational interests that must be considered. The community must also grapple with the decision of whether the mountain bike trail network is being developed/managed as a recreational resource for the community, or for combined usage for attracting destination tourist mountain bikers.

While the needs (infrastructure, parking and staging areas, marketing, etc.) to achieve both of these objectives can be quite different, the planning process required can be very similar. In both instances there needs to be a planning and decision making process in place that includes both the land managers/land owners, and the trail user

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groups. The use of a "Squamish Trail Coordinating Committee" as previously described is one way to achieve this goal. This committee would tend to be inclusive as opposed to exclusive, so that all concerns and issues are considered and potential conflicts are avoided or otherwise dealt with during planning stages. The coordinating committee would also help facilitate authorization of the trail network, and set objectives for such things as trail status and level of protection.

Each successful mountain bike destination reviewed for this report had a common element, and that was a sustainable, varied, extensive, well-signed trail system. While the Squamish mountain bike trail network provides a varied and extensive trail experience, some of the other essential items are currently underdeveloped. For example, a sustainable trail network must, by definition, consist of authorized trails that are constructed and maintained to consistent criteria. A destination mountain biker will likely be disappointed with an area where an intermediate trail that he/she road last year, has turned into an un-rideable eroded track, or where a large portion of the trail network doesn't exist anymore through development or logging activities. It is interesting to note that the Resort Municipality of Whistler has a no net loss of trails policy for development, and have established a budget of a minimum of \$6,500 for payment to relocate any trails lost to development (Ted Battison, RMOW, NSMES, 2005).

Given the nature of development in Squamish and the logging activities that has supported and continues to support the town, some trails within the network will likely be lost, need to be relocated, or will be temporarily closed. To this end, a process has been outlined in this report to deal with land development within the district, and a dialogue continues between SORCA and MOFR. However, it is the opinion of the author of this report that these discussions would be better suited under the umbrella of the Coordinating Committee, rather than individual user groups separately approaching land managers.

This report and accompanying maps also delineates several potential areas suitable for future trail expansion. These areas are generally located on crown lands in close proximity to the District boundaries. Areas closer to town are viewed as more suitable for non-motorized trail use, due to limitations imposed by distances that can be achieved by human powered locomotion. As motorized trail users are less impacted by this restriction, areas beyond the "initial near back country" may be more suitable for that use, so as to avoid potential non-motorized vs. motorized trail use conflicts. This is likely an issue that the Squamish Trail Coordinating Committee will want to discuss in some detail (if the committee is formed). The potential future trail relocation and expansion areas discussed earlier in this report include:

- Valleycliffe East Area – DL 2059,
- Mount Mulligan / Alpen Mountain Area,
- Ring Creek Area,
- Hop Ranch Creek Area,
- Alice Ridge, and
- Brohm Ridge.

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Potential future connections and/or additional connections include:

- ✿ A bridge over the Cheekye River to connect the Alice Lake trail polygon to the Brohm Lake trail polygon.
- ✿ A trail along/down Mashiter Creek Ridge.
- ✿ A trail link past Evans and Butterfly Lakes to connect to Lucille Lake.
- ✿ Connections to the future "Sea to Sky Trail", and
- ✿ A trail connection behind the Stawamus Chief to connect the Shannon Creek FSR (via the Stawamus FSR) to Britannia Beach via Petgill Lake.

The mountain bike trail network and potential future expansion will require significant resources for planning, construction, operation and maintenance. Unfortunately, SORCA does not possess the resources to create this trail network on its own, hence the desirability of forming partnerships through the umbrella coordinating committee. SORCA can work with the District of Squamish, Ministry of Forests and Range, other land managers/owners, and other user groups to identify funding sources for the initial trail construction and the ongoing maintenance. As discussed earlier new real estate developments may be one source of funding; however, funding by developers is likely to be limited both spatially (to their property) and temporally (i.e. on a one time basis). The mountain bike trail and its expansion will be of benefit to the residents of Squamish as well as to tourists (and the businesses that benefit from tourism). A variety of sources, therefore, should be explored to provide a secure funding source for the network, including those who benefit from mountain biking. Potential sources of funding and resources include:

- ✿ Federal Government (Tourism Canada, Sports Canada),
- ✿ Province of British Columbia (Tourism BC, Ministry of Forests and Range),
- ✿ District of Squamish,
- ✿ Mountain bike industry,
- ✿ Tourism industry,
- ✿ Local Squamish industry/businesses, and
- ✿ User groups.

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4. MOVING FORWARD

4.1 Recommendations

SORCA and the mountain bike community in Squamish have a vision of creating a world class mountain bike network. Significant pieces of the network are already in place; however, there are still several stumbling blocks to create a true mountain bike destination. These are:

- ✦ An authorized and maintained diverse trail system. While Squamish has a diverse extensive trail network, the majority of trails, and their maintenance, are not authorized.
- ✦ Partnerships with land managers and other use groups. The cooperation of land managers and other trail users is imperative for the sustainability of the trail network, and avoiding user conflicts.
- ✦ Limiting liability for land managers and owners. If liability to local land managers and owners is not minimized, there will be little opportunity to retain the existing network, let alone expand the trail system.
- ✦ Infrastructure and support for the destination mountain biker. This includes bike friendly accommodation, restaurants, transportation, complimentary tourism products and attractions, and community hospitality.

While the latter point is beyond the scope of this report, it is recommended that the first three points be addressed through a phased approach as outlined below. These steps consist of essential tasks, primary priorities and secondary priorities, although the items within the primary and secondary phases could be debated.

4.1.1 ESSENTIAL TASKS

If there is one essential task in creating and managing a sustainable mountain bike network in Squamish, it is the creation of Squamish Trail Coordinating Committee (STCC). The STCC would be an umbrella committee, under which the existing user group associations would still function. In addition, the STCC will also include representation for the District of Squamish and the Ministry of Forests and Range; the two largest land managers of the trail network. Membership in the STCC would likely include:

- ✦ District of Squamish – Planning Department (supported by council)
- ✦ Ministry of Forests and Range – Recreation Officer/Operations Manager
- ✦ Squamish Off Road Cycling Association
- ✦ Squamish Trail Society
- ✦ Squamish Valley Equestrian Association
- ✦ Squamish Dirt Bike Association
- ✦ Other Land Managers and Stakeholders as necessary

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During the formative stages of the STCC, the inventory of the trail systems (as reported in this report and other documents) would be discussed to determine trail use and users (i.e. single use, multi non-motorized use, motorized use, etc.). The trail mapping in this report will also be delivered to the MOFR so that the trails can be included on their inventory maps and the trails and maintenance thereof can be authorized. The mapping will also be delivered to the District of Squamish for inclusion in the Official Community Plan and development of other trail management strategies.

It is also recommended that a Squamish Trail Coordinator position be created. This person would facilitate creating the STCC, seek funding for the STCC (and their own position), and coordinate trail planning, construction and maintenance activities under the direction of the STCC.

The STCC would also set up sub-committees to explore the primary and secondary priorities outlined in the sections below. By categorizing a task as a secondary priority, it should not be construed that the priority is without merit or of lesser importance than a primary priority, but rather that there is a logical process through which the STCC must navigate. In some instances it may be feasible, if not desirable, to investigate some of the secondary priorities in tandem with the primary priorities; therefore the division of tasks into primary and secondary priorities is more of a sequence of steps as opposed to a rating system.

4.1.2 PRIMARY PRIORITIES

It is recommended that the following items be addressed as primary priorities by the Squamish Trail Coordinating Committee:

- **Governance and Securing Land Access** – A plan be developed and implemented to authorize and maintain existing trails and future trail expansion. This could include:
 - Exploring the use of Free Crown Grants and Nominal Rent Tenures, for land acquisition to protect trails, particularly those in close proximity to town (the “front country”),
 - Authorizations under Section 57 of the Forest and Range Practices Act, including prioritizing trails for inclusion in the Forest Service recreational inventory as map notations, Forest Service Trail, or possibly a “Resource Feature”. Again emphasis should be placed on securing riding areas that are in the “Front Country”, in closer proximity to town, and key trails within the mountain bike trail network, such as the Powerhouse Plunge, the Ring Creek Rip, etc.,
 - Secure lands for potential trail relocations and expansion of the mountain bike trail network, as laid out in Section 4.1.3, Secondary Proprieties (i.e. Valleycliffe East – DL 2059, Hop Ranch Creek area, etc.),
 - Develop criteria for prioritizing trails for preservation and/or relocation, and for trail network expansion objectives (e.g. intermediate, crosscountry trails in a natural setting, in close proximity to town),
 - Recreational joint use agreements with the Ministry of Forests and Range, and the District of Squamish,

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- The use of District of Squamish parks and greenways for trails,
 - Exploration of District of Squamish boundary expansion,
 - Adoption of the trail network as part of the Official Community Plan, and possible changes to subdivision bylaws,
 - The adoption of a "no net loss of trails" for privately developed lands, with the use of Development Costs Charges to pay for trail relocations if/as necessary.
 - Discussions with BC Parks for any changes proposed within Alice Lake and Garibaldi Provincial Parks. Note that any additions to the mountain bike trail network in these parks will require amendments to their respective Master Plans, and or Purpose Statements and Zoning.
 - Discussions with Squamish Nation.
- ✱ **Trail Standards** – Trail standards are currently being developed by the District of Squamish in cooperation with numerous user groups. It is recommended that the trail standards be adopted by the STCC for the mountain bike trail network. The trail standards should be reviewed to include:
- Trail consistency,
 - Trail features and structures,
 - Best environmental practices, and
 - Maintenance protocols.
- ✱ **Signage** – It is important to develop a comprehensive consistent signage system for the trail network. Signs should be placed at main trailheads, at trail intersections and at other key locations. Sign types would include:
- Trailhead kiosks,
 - Directional signs,
 - Warning signs,
 - Difficulty-level signs
 - Regulatory signs,
 - Educational signs (i.e. mountain bike skills, code of conduct), and
 - Way-marked routes
- ✱ **Liability** – Risk management is a common issue for land managers and owners. It is recommended that a risk management strategy be adopted that includes:
- Designating a risk management coordinator,
 - Inspection of trails, structures and facilities,
 - Up to date, visible, effective and consistent signage,
 - Education signage including a code of conduct,
 - Trail standards, with a consistent trail rating system,
 - Documentation of inspection and trail maintenance activities, and
 - Appropriate insurance.



🚲 **Funding** – Sources for funding need to be explored. Potential sources for funds and in kind services include:

- Federal Government (Tourism Canada, Sports Canada),
- Province of British Columbia (Ministry of Tourism, Sports and the Arts, Ministry of Forests and Range – could provide materials, engineering services, standard drawings, co-sign insurance, etc),
- District of Squamish,
- Mountain bike and tourism industry,
- Local Squamish industry/businesses, and
- User groups.

4.1.3 SECONDARY PRIORITIES

Secondary priorities would include potential trail relocations, upgrades and expansion to the existing mountain bike trail network, and marketing Squamish as a mountain bike destination. One of the features that make Squamish unique is the terrain suitable for crosscountry trails that are close to the town. The previously mentioned marketing surveys indicate the desirability of a diverse, scenic crosscountry trail system to the destination mountain biker. The existing and potential expanded crosscountry mountain bike trail network would compliment the downhill oriented riding on the North Shore, and the riding in Whistler, to make the entire "Sea to Sky Corridor" and enviable mountain bike destination.

In exploring areas for future expansion, trails that are closer to town and have an intermediate skill level are preferred (given the trail difficulty distribution of the existing trail network). Potential expansion and upgrades to the existing mountain bike network could include:

🚲 **Trail Connections** – To provide for unique trail experiences,

- A bridge over the Cheekye River to connect the Alice Lake trail polygon to the Brohm Lake trail polygon. This trail link would expand the trail experience to include several rides of medium to long duration (4 – 8 hour rides).
- A trail from Red Heather Hut, with Garibaldi Provincial Park, (or alternatively from just outside the park from the top end of Upper PowerSmart Trail) along/down Mashiter Creek Ridge.
- A trail link past Evans and Butterfly Lakes to connect to Lucille Lake. This link would provide for a backcountry experience, which could be done as a long day ride, or as a multi-day ride, with potential connections with the "Sea to Sky Trail", and
- A trail connection behind the Stawamus Chief to connect the Shannon Creek FSR (via the Stawamus FSR) to Britannia Beach via Petgill Lake. This link could be ridden as a long destination day ride.

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- 🚲 **Mountain Bike Trail Relocation Areas** – Areas that are close to existing development where displaced trails could be relocated include:
 - Valleycliffe East Area – DL 2059. While some trails already occur in this area, the trail network could be greatly expanded to provide great crosscountry riding experiences and unique vistas of Squamish's scenery, in close proximity to town.
 - Hop Ranch Creek Area (between Alice Lake Provincial Park and DL 510). This area could provide intermediate to advanced crosscountry riding that is in close proximity to the Garibaldi Highlands and Brackendale neighbourhoods for resident's recreation, as well as close to Alice Lake Provincial Park, an existing staging area for mountain biking tourists.
- 🚲 **Mountain Bike Trail Expansion Areas** – Areas that would provide unique riding experiences in close proximity to town include:
 - The Mount Mulligan / Alpen Mountain Area. This area could be developed with both crosscountry and free ride trails, with climbs into the sub alpine and descents of various lengths to the Mamquam FSR, the Stawamus FSR or the Rafuse Creek FSR.
 - Ring Creek Area. The Ring Creek polygon is presently used to some extent for downhill and free riding, with more technical descents. The Garibaldi Park Road is presently used to gain access to this area, with riders either climbing or shuttling to the top of the trails. This trail network could be expanded.
 - Alice Ridge. This area could provide crosscountry and free riding opportunities, with ascents up the existing decommissioned forest service roads, and moderately technical descents.
 - Brohm Ridge: The Brohm Ridge polygon lies within the Garibaldi Alpen Ski Resort Tenure Application area. This area could be developed as a lift access downhill park which would compliment the remainder of the Squamish mountain bike network.
- 🚲 **Parking and Staging** – Parking and staging areas need to be addressed to meet the needs of both the local community and that of the destination mountain biker. Items that need to be addressed include:
 - Provision for trailheads within existing neighbourhoods.
 - Parking and staging areas for visitors outside existing neighbourhoods.
 - Expansion of existing facilities at Brennan park Leisure Centre to better serve needs of mountain bike tourists.
 - Assessment of parking and staging requirements, size, number of parking lots (consolidation or more numerous), washrooms and change rooms, distance to, and signage from, Hwy 99, other services and amenities at staging areas.

Marketing Squamish as a mountain bike destination has to be conducted in a cohesive manner, which compliments the reputations of Vancouver's North Shore to the south, and Whistler to the north. Much as multiple golf courses can compliment each other, bring additional golfers to competing golf courses, and establish an area as a golf resort,

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a variety of mountain bike areas in close proximity can bring more tourists to an area, than the single area marketed by itself. Marketing the "Sea to Sky Corridor" as a mountain bike destination, with Squamish, the North Shore and Whistler, is therefore, desirable, with Squamish filling the crosscountry segment (and largest segment - the marketing surveys in Section 3.3 indicate that 89% of the mountain bike riders in the United States had been crosscountry riding). As stated previously, however, the essential items of successful mountain bike tourism are to have stakeholder support and commitment (i.e. the Squamish Trail Coordinating Committee, support from Council, etc.); to develop the product and experience (i.e. scenic, varied, authorized trail network, biker friendly accommodation, etc.) and lastly to market the product. Since the leading factor in choosing a destination to go maintaining biking is the reputation of an area (Green, 2003), it is essential to meet or exceed a visitors expectations. It is recommended that additional expert advice is required to properly market Squamish as a mountain bike destination, such as could be provided from the Mountain Bike Tourism Partnership (Jimmy Young, MBTP in NSEMS, 2005).

As a first step, potential ideas for marketing trails and a community as a great mountain biking destination include:

🚲 **IMBA's "Bringing Mountain Bikers to your Area" ideas include:**

- Ensure that local business and community leaders are aware of the positive economic impact that mountain bikers have on the area and their business and that business that set themselves up to be "biker friendly" will benefit from their presence,
- Ensure that local business and community leaders are aware of what mountain biking really is: healthy, low-impact, quiet, in harmony with other trail users,
- Develop and promote trails for all abilities,
- Develop sustainable single-track trails
- Develop and promote key rides that showcase Squamish' natural beauty
- Design, produce, and post accurate signage to ensure visitors do not get lost and have bad experiences (ideally this will be done in coordination with other trail user groups – i.e. Squamish Trail Coordinating Committee),
- Help local bike shops situate themselves to best handle visitor questions regarding where to ride, stay, eat etc... (perhaps a "Mountain Biking in Squamish for the First Time?" pamphlet)
- Lodging geared towards cyclists – secure bike storage and in close proximity to trailheads (no need for vehicles),
- Photograph local trails professionally for advertising in magazines and on the internet (pictures of people enjoying single-track with a beautiful natural backdrop will draw people to the destination),
- Promote the other local activities that would be attractive to visiting mountain bikers (Squamish offers numerous world class locations/activities: mountain climbing, wind surfing, hiking, Provincial Parks, whitewater kayaking, etc.; it is after all the Outdoor Recreation Capital of Canada),

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- o Local business should work on developing package deals catering to mountain bikers (lodging, rentals, restaurants, camping etc...), and
- o Woo the media – get the media involved (free visits and bike tours, national, international journalists, outdoor, travel, and bicycling magazine editors and writers – articles in magazines and newspapers and on websites with photographs of area will build profile of the town as mountain bike destination).

• **Internet Website** development

- o Mapping browser complete with photos of trails to attract and educate riders coming from far away,
- o Setup to be top 10 site when searching common key words for mountain biking in BC (mountain biking, BC, Squamish, trails, Test of Metal etc.),
- o Hyperlinks to other common mountain bike or associated web pages (NSMB, Test of Metal, District of Squamish, SORCA, Tantalus, Corsa etc.).

4.2 Conclusions

Mountain biking has become a large part of Squamish culture. The report "Squamish Mountain Bike Plan" produced by SORCA and presented to the Squamish municipal council, offered a long term strategy to ensure that the sport of mountain biking continues to flourish and enhance life in Squamish (SORCA, 2004). The plan showed how the sport of mountain biking has grown to play a prominent, positive role in Squamish and could play an even larger role in our town's future development.

Squamish is expected to experience an unparalleled level of real estate development in the next 10 years that will significantly impact the future of mountain biking in the area. There are also pressures on the trail network from proposed and future logging activities, and potential conflicts with other trail/resource users. In addition, the majority of existing trails are currently unauthorized.

The analyses in this report show that an authorized, varied, scenic, well maintained, consistent crosscountry trail network is a key component of establishing a mountain bike destination. Other areas, notably Moab Utah, Fruita Colorado, and the Mountain Bike Park System in Wales, have capitalized on the growth in adventure tourism, bringing significant economic benefits to those areas.

To develop the mountain bike recreation resource in Squamish for both the residents and as a mountain bike destination, it is essential to involve all stakeholder groups, government agencies and land managers to avoid conflicts. The key recommendation of this report is to create a Squamish Trail Coordinating Committee as an umbrella group within which land managers and user groups can address such issues as: governance (including trail authorization), trail standards, signage, liability, and funding; as well as expansion and upgrades to the existing mountain bike network, trail connection, trail relocation areas, trail expansion areas, and parking and staging.

Squamish is in a unique position to capitalize in the boom in adventure tourism, particularly as it relates to mountain biking. The location of Squamish between the noted

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downhill riding areas on Vancouver's North Shore, and the riding areas in Whistler, makes the corridor as a whole a desirable, marketable mountain bike region. The terrain in Squamish is also unique in providing crosscountry riding opportunities, in a 'wilderness like setting', in close proximity to the town.

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www.cascade-environmental.ca

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6. APPENDICES

6.1 FRPA Section 57 Information & Application Package

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PROPOSAL FORM FOR TRAILS AND RECREATION FACILITIES



An individual or group may use this form to apply to the Forest Service to construct, rehabilitate or maintain a trail or recreation facility. The numbers on this form correspond with the explanations found in the following section titled "Forest & Range Practices Act, S57 and the Application Process Information Package". If required, attach additional pages (Please print or type).

1. Name of individual or group: _____
Address: _____ Postal Code: _____
Contact Person: _____

2. Overall purpose of the proposed work:

3. Brief description of the proposed work:

4. Location of the proposed work:

This proposal is for (please check):
 a managed trail or recreation facility
 an un-managed trail or recreation facility
 a new trail or recreation facility.
Please check if:
 a map showing the project area is attached.

5. Expected dates on which the proposed work will begin and finish (month or season, and year):

6. Expected use:

7. Standards or other provisions to ensure that the trail or recreation facility doesn't conflict with other resource values or uses, is safe, environmentally sound, and durable, given the purpose and expected use:

The Forest & Range Practices Act, Section 57 and the Application Process Information Package

The purpose of this information package is to assist and provide direction to outdoor recreation groups and Forest Service staff in meeting the requirements of Section 57, *Unauthorized trail or recreation facility construction, in the Forest and Range Practices Act (FRPA) and Part 3 of the Forest Recreation Regulation.*

Section 57 of FRPA applies to all provincial Crown land outside of parks. It applies to all forested and non-forested provincial forest lands and other provincial Crown lands such as non-municipal and rural settlements. It does not apply to private lands, national parks and other federal Crown lands, provincial parks and other protected areas, regional parks and municipal lands. If you are in doubt as to the status of an area and whether or not this guidebook applies, please contact the nearest Forest Service office.

This information package:

- outlines and clarifies which activities do not or do require consent of the district manager,
- provides direction on how an applicant should prepare a proposal (for activities that do require consent),
- explains what the Forest Service does when it receives a proposal,
- identifies the criteria which a district manager must base a determination and how that determination should be communicated to the applicant,
- outlines Forest Service enforcement of unauthorized activities (i.e., non-compliance with Section 57)

Section 57 was established on the grounds of fairness and consistency in regulating forest practices and the need for this authority to ensure public safety, protect the environment and manage resource use conflicts. Section 57 was designed to encourage a more planned approach to trail and recreation facility construction, rehabilitation and maintenance on provincial Crown land. It assists Forest Service staff in carrying out this intent by providing them with enforcement authority.

Activities that DO NOT require consent of the district manager

Section 57 does not apply to basic public access or basic recreational use of Crown land. The following activities are not considered to be trail or recreation facility construction, rehabilitation or maintenance and do not require the consent of the district manager before the activity may begin:

- Basic access or travel through the forest or across the land, by individuals or groups, whether on a one-time basis or repetitive use of the same route.
For example: hiking on Crown land and the normal ground disturbance associated with this activity.

- Route finding or route marking using ribbons, cairns or other directional indicators.
For example: marking one's way with cairns in an alpine area or with ribbons in a forest.

Note: the standard practice of nailing route markers to trees is an allowable practice and is not considered tree spiking under Section 55 of the Act (Tree Spiking Prohibited).

- Minor, piecemeal or incidental clearing of brush or downed trees either on or off established trails.
For example: bushwhacking, or clearing branches or deadfall that have fallen across an established path or trail.
- Emergency repairs to a trail or recreation facility that is necessary to prevent imminent damage to the environment, the trail or the facility.
For example: repairing a water bar on a section of trail where flooding is occurring and immediate repair is needed.
- Emergency construction or maintenance of a trail when this is the only reasonable way of minimizing risk to personal safety.
For example: placing a log over a stream that is necessary to cross to get out of the woods by dark.
- Basic recreational use of a localized area, by individuals or groups.
For example: camping on Crown land and the normal ground disturbance associated with this activity.
- Construction of small, rustic structures of a temporary nature.
For example: construction of rock fire rings, latines, etc.

If you are uncertain whether or not your intended activity requires consent, please contact the nearest Forest Service office, or use the toll-free Enquiry BC line: (1-800-663-7867).



If your intended activity does not require consent, please proceed and enjoy yourself. Feel free to contact the nearest Forest Service office for information on public recreation opportunities, outdoor recreation etiquette or other assistance.

Activities that DO require consent of the district manager

Section 57 (g) apply to "trails" and "recreation facilities" as these terms would reasonably be interpreted and understood. The following activities are considered trail or recreation facility construction, rehabilitation or maintenance and do require the consent of the district manager before the activity may begin:

- ground disturbance
 - significant, continuous grubbing of the soil or rocks along a linear route to establish a visible, long-lasting leadway
 - significant ground excavation for the purpose of parking vehicles, launching boats, etc.
 - significant ground or root disturbance associated with corralling horses.
- clearing or cutting of vegetation
 - significant, continuous uprooting of shrubs or understory plants along a linear route or over an extended area
 - cutting of standing trees.
- construction of structures
 - water bars, stairs, bridges, signs, corrals, poles for hanging game, etc.
 - other significant structures of a long-term or permanent nature.

Some other related activities that may be restricted or prohibited, but not under FRPA, Section 57 are:

- uses within parks and other protected areas
- restricted or prohibited public recreation uses of Crown land, and recreation and non-recreation activities that threaten a protected recreation resource
- recreation activities authorized under other enactments, i.e. commercial backcountry recreation guiding under the *Land Act* or vehicle closures under the *Wildlife Act*
- construction or occupation of a building, including lodges, cabins and huts
- construction or modification of a road
- building of an excavated or bladed trail
- cutting of Crown timber

Preparing a proposal

Individuals or groups planning to construct, rehabilitate or maintain a trail or recreation facility must prepare a written proposal and submit it to the district manager of the appropriate forest district. If the proposed activity crosses forest district boundaries, the proposal should be submitted to the district manager of the forest district in which the largest portion of the proposed activity would take place, who will contact the adjacent districts on your behalf.

Before you begin a proposal please consider if the intended activity or facility is of a "commercial" or "exclusive" nature. A protocol agreement between the Forest Service and Land and Water BC defines these terms as:

- "commercial" means there is locally recognized business entities using the area for commercial purposes. The businesses are noted as those legal business entities, tenured by and in good standing with, Land and Water BC.
- "exclusive" means there is a membership requirement for use or a facility is locked with no key available to the public".

In these cases, please contact LWBC about their requirements under various authorities, including their commercial recreation policy.

The standard proposal form assists an applicant in preparing a proposal. The proposal should include:

1. The name and address of the individual or group making the proposal.
For example: ABC Nordic Ski Club, Box 555, Snow Valley, B.C., V1A 1A2 Contact person: Sally Skier, phone: 365-5555



2. The overall purpose of the proposed trail or recreation facility.
For example: The overall purpose of the proposal is to open up a new area for public recreation opportunities. The trails and/or facilities established will be of a non-commercial, non-exclusive nature.

3. A brief description of the proposed work.
For example: Work will consist of constructing 15 km of cross-country ski trails. Existing, abandoned roads will be used for about 10 km, and new trails will be constructed for the remaining 5-km.

4. The location of the proposed work.

The most efficient way of establishing the location of the proposed work may depend upon whether the work is on an existing trail or facility, and on how well known the trail or facility is to the Forest Service. Proposals can generally be broken into three categories as follows:

Managed trail or recreation facility

If a trail or recreation facility has undergone a status check (i.e., is on crown land, checked for conflicts and entered in Forest Service records) and established as a trail or recreation site under Section 58 of FRPA, then simply providing the name of the trail or facility may be sufficient to convey its location. The forest district office may be contacted to find out the extent to which the Forest Service knows about a trail or facility and has noted it in their records.

For example: The Alamo Recreation Trail as shown on the Arrow - Kootenay Lake Forest District Brochure.

Un-managed trail or recreation facility

If an existing trail or recreation facility is not formally managed and not in the Forest Service records, a map and brief description will be required to convey its location. The forest district office may be contacted for information and suggestions.

For example: The Ladybird Creek Trail, located on the west side of Ladybird Creek, commencing at the junction of Koch Creek and Ladybird Creek Forest Service roads at kilometer 16 on the Ladybird Creek Forest Service Road (map included).

New trail or recreation facility

If a trail or recreation facility does not exist, a detailed map and description will be required to convey an intended location. The forest district office may be contacted for information and suggestions.

5. Expected dates on which the proposed work will begin and finish.
For example: Work is expected to begin in September 2004 and be completed by November 2004.

6. Expected use, including:
- the kind of use (i.e., horse use, hiking, snowmobiling, cross-country skiing, motorized, non-motorized, beginner, advanced, general public, etc.)
 - the season(s) of use (i.e. summer, winter, year round, etc.)
 - the amount of use (i.e., estimated number of users per season or per year).

For example: The proposed ski trails will be developed at a level suitable for the beginner to intermediate cross-country skier. The trails will also be designed for hiking and horse use in the summer. It is estimated that the trails will receive about 3000 visitor days per year.



7. Standards or other provisions to ensure that the trail or recreation facility doesn't conflict with other resource values or uses, is safe, environmentally sound, and durable, given the purpose and expected use.

Note: The Forest Service has drawings and specifications for a number of structures that are available upon request and may help an applicant in preparing a proposal. Please contact the nearest Forest Service office.

For example: The proposed ski trails will be two laned to handle the expected traffic. They will be routed around the base of the avalanche run-out zone at km 6, and a footbridge will be built across the narrow V-shaped gully at km 10.

8. Demonstration of **capability and commitment** to provide maintenance over the long term. This information is important, as the Forest Service may have to close, or take over the management of, a trail or recreation facility, in the event that an applicant is unable to follow through. Information about any previous projects or experience may be attached.

For Example: The ABC Nordic Ski Club has worked on many cooperative trail projects with the XYZ forest district and has actively maintained these trails over the five years since they were developed (see information attached).

9. An identification of the actions being requested of the district manager. For example, a request for one or more of the following:

- consent to proceed with the proposal.
- inclusion of the trail or recreation facility in the Forest Service recreation inventory.
- creation of a map notation. This notes the trail or facility on the status maps and assists in identifying a trail or facility in a referral process for resource development.
- establishment of the trail or recreation facility as a Forest Service trail or site by the Minister under Section 56 of the Act. This requires a formal process of a status check, creation of a map notation, establishment by the Minister and possibly objectives to be set to enable the Recreation Regulations to apply. The trail or recreation facility would have to be constructed to Forest Service standards.
- co-operative management with the Forest Service of the trail or recreation facility. In this case, the trail or recreation facility would have to be constructed to Forest Service standards.
- inclusion of the trail or recreation facility on Forest Service maps and web sites. In this case, the trail or recreation facility would have to meet Forest Service standards and be intended and suitable for use by a number of recreation users.
- establishment of the trail or recreation facility as a "Resource Feature" by the minister (or delegate) under Section 2 of the Government Actions Regulation, ensures that forest practices do not damage or render ineffective the trails or recreation facilities.
- other Forest Service assistance (e.g., general information, technical advice, equipment, financial assistance, or staff time).

Forest Service processing of a proposal

Upon receiving a proposal to construct, rehabilitate, or maintain a trail or recreation facility, the Forest Service responds to a proposal as follows:

1. Review

the Forest Service will review the proposal with respect to the requirements in the Act and the Forest Recreation Regulation, consistent with this information package. The district manager will notify the applicant if the proposal is incomplete.

2. Statusing

the Forest Service will carry out a status check to look for any conflicts between the proposed work and resource tenure holders, private landowners, or other rights or interests. This will normally be limited to a preliminary status check carried out within the forest district office rather than a full status check carried out in consultation with the Forest Service's resource tenures branch. A full status check would be required, for example, before a trail or recreation facility could be established as a Forest Service trail or site.

3. Referral

the Forest Service may refer the proposal to all affected resource agencies and resource users, including other outdoor

recreation groups. In some cases, to expedite the process, the Forest Service may request the applicant carry out the referral process.

4. Evaluation

Based on comments received and other information, the Forest Service will evaluate the proposal with respect to the criteria set out in Section 4(3) of the Forest Recreation Regulation. The district manager may refuse consent if the proposal will result in one or more of the following:

- significant risk to public safety
- unacceptable damage to the environment
- Un-resolvable conflict with other resource values or uses.

The district manager's determination

The district manager will notify the applicant after making a determination.

The district manager will inform the applicant in writing regarding:

- whether or not the proposal has received consent
- the rationale for the determination

The district manager may also inform the applicant that any trail or recreation facility that is constructed, rehabilitated, or maintained under Section 57:

- is a public facility (no exclusivity of use)
- can not be used for commercial purposes (no mandatory fee for use)
- may be signed as a Forest Service site or trail (in accordance with Forest Service signing standards).

The district manager's determination will generally fall into one of four basic categories:

1. Consent

The proposal is given consent and there are no further conditions or requirements that need to be met.

2. Consent with conditions

The proposal is given consent, but there are conditions, warnings or requirements associated with the consent. For example, the applicant is informed that a more thorough status or referral could uncover conflicts that may prevent the project from continuing at that time.

3. Refusal as proposed

The proposal is refused at this time or as it stands, but the applicant is informed that the proposal might be given consent under different circumstances or if it were revised. For example, the proposal is for an area that is currently under a local planning study and should be dealt with by that study or postponed until that study is concluded. Or, for example, the proposal fails to address certain safety or environmental issues, but could be revised and resubmitted.

4. Refusal

The proposal is refused because it is considered to pose, inherently, one or more of the following, as set out in Section 4(3) of the Forest Recreation Regulation:

- significant risk to public safety
- unacceptable damage to the environment
- Un-resolvable conflict with other resource values or users.

Response time

The total "response time," or time between when an applicant mails a written proposal and receives a written response, will be determined by:

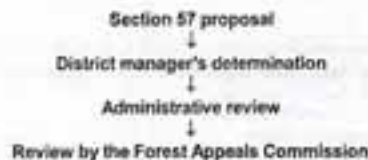
- the mailing time of the proposal to the Forest Services office, plus
- the time for the district manager to make a determination, plus
- the time for the district to prepare a written response, plus,
- the mailing time of the response to the applicant (one or more days).



Administrative Review and Appeal of a district manager's determination

Note: This section only summarizes and sketches, for reference purposes, the review and appeal provisions regarding Section 57 that are provided for under the Act. This section is neither a complete or official presentation of this broad and complex subject. For more information on review and appeal, please contact the nearest Forest Service office. Upon receipt of a district manager's determination, the applicant may accept the determination and any conditions that may apply. In this case, the applicant may still want to contact the district manager or district recreation staff to discuss the determination or the proposal in order to clarify the determination or gain information to prepare another proposal.

Alternatively, the applicant or any other person may not accept the determination. In this case, the Act and regulations provide for a review and appeal process as follows:



Briefly, this process involves:

Administrative review

The applicant must prepare a written request for an administrative review and submit it to the original determination maker within three weeks after the date the notice of determination was given to the applicant. The Act makes provision for the review official to consider only (a) evidence that was not available at the time of the original determination and (b) the record pertaining to the original determination.

Role of the review official

The review official conducting the review has the same discretion to make a decision that the original decision-maker had at the time of the determination under review.

Review by the Forest Appeals Commission (FAC)

The applicant may appeal an administrative review decision to the FAC.

Role of the FAC:

The FAC may consider the findings of the person who made the determination or decision, and either confirm, vary, or rescind the determination or decision, or refer the matter back to the person who made the determination or decision for reconsideration.

Investigation by the Forest Practices Board (FPB)

In addition, a person who does not accept a district manager's determination may make a complaint to the FPB.

The FPB will investigate a public complaint in accordance with the Act. The circumstances in which the board may refuse to investigate or stop investigating include:

- the complainant ought to have known about the matter more than a year before the complaint was received by the FPB
- there are other existing laws or administrative remedies which are adequate that complainant has not used
- the complaint is frivolous, vexatious or trivial
- further investigation is not necessary to consider the complaint
- investigation would not benefit the complainant.

Role of the FPB:

The independent Forest Practices Board investigates third-party complaints on aspects of the Act following a regulated process, and will carry out independent audits and special investigations of both licence holders and government agencies.

Enforcement of unauthorized activities



Note: This section only summarizes and sketches, for reference purposes, the enforcement provisions regarding Section 57 that are provided for under the Act. This section is neither a complete or official presentation of this broad and complex subject. For more information on enforcement, please contact the nearest Forest Service office.

Experience has shown that information, education, and voluntary compliance is the most effective means of managing recreation activities and enforcing recreation management rules and objectives. This can be expected to be the case with Section 57 and its intent to bring about a more planned approach to trail and recreation facility management in British Columbia.

This section deals with regulatory, as opposed to voluntary, enforcement of Section 57 as set out in the Act and regulations. It outlines the actions an official may take if he or she believes a person is illegally constructing, rehabilitating, or maintaining a trail or recreation facility on Crown land.

In summary, the actions that may be carried out, either individually or in various combinations, are as follows:

Written warning

If an official believes that a person(s) is contravening Section 57 he or she may inform them through a written notice of the apparent contravention. The notice should contain information pertaining to the alleged contravention, including the name and phone number of the official. Failure to heed the warning may lead to penalties.

Stop work order

If an official believes that a person(s) is contravening Section 57 he or she may order the contravention to stop, or to stop to the extent required for the person(s) to get the required consent. Such a stop work order may or may not name, or apply to, specified persons. The minister may apply to the courts for an order for compliance if the minister considers that a person(s) is not complying with a stop work order.

Violation ticket (specified penalty ticket)

If an official believes that a person(s) is contravening Section 57, a ticket may be issued under the authority of the Offence Act. A person may appeal a ticket issued under the Offence Act.

Remediation order

A senior official may order a person(s) to remedy a contravention of Section 57 by requiring them to repair any damage caused by the contravention.

Such a remediation order must set out all information required by the Act and regulations, including:

- the nature of the contravention
- the nature of the work to be done to remedy the contravention
- the date by which the work must be completed
- the person's right to a review or an appeal
- the right of the government to carry out the work and levy a penalty if the person fails to comply with the order

Prosecution

If an official believes that a person(s) is contravening Section 57, he or she may prosecute. A person(s) prosecuted by the Crown for contravening Section 57 is subject to a maximum penalty of \$5,000 in fines and six months in jail.

References

Forest and Range Practices Act
Forest Recreation Regulations



Glossary

"determination" means an act, decision, procedure, levy, order, or other determination made under the Act, or the regulations by an official or a senior official.

"establishment" means the legal declaration of an area covered by a recreation map notation as a recreation site or trail and the public notification of that declaration via a notice in the British Columbia Gazette.

"facility" means any area or portion of a recreation site, recreation trail, or interpretive forest site that serves as or provides for a day use area, boat launch area, trail head, or other similar functions.

"Forest Service map notation" means a Forest Service administrative label on Forest Service maps and records to indicate an interest in an area (in this case an interest in an area for its recreation values).

"minister" means the Minister of Forests. The Minister of Forests may delegate his authority under the Act and the Recreation Regulation.

"official" means a designated forest official.

"Forest Service recreation site" or "Forest Service recreation trail", means a recreation site or recreation trail:

- designated under the Forest Act, or
- established under Section 6 of the Forest Practices Code of BC Act or,
- established under Section 56 of the Forest and Range Practices Act.

"standards" are recommended design and construction specifications for recreation structures.

"status" check" means the process of determining rights, titles, or interests in a particular area or parcel of land by searching records, maps, and other documents for jurisdictions, tenures, or expressed interests by other agencies or parties in the area in question. Status checking means "checking the status of" an area with respect to existing reports, titles, or interests.

"structure" means any improvement of a long-term or permanent nature that is fixed to the ground or permanently secured in a fixed location and includes cabins, bridges, litter barrels, shelters, signs, corals, etc.

Client: Squamish Off Road Cycling Association
Project: Squamish Mountain Biking Management Plan

File #: 293-01-01

July 5, 2005



6.2 Squamish Trail Standards - Draft

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DISTRICT OF SQUAMISH TRAIL STANDARDS - DRAFT

The intent of this document is to provide consistent guidelines and standards for trail development and maintenance for the District of Squamish and other potential trail builders in the community. All new trail development will be built and maintained to these standards. Existing trails will be "grandfathered" and appended to these standards as time and financing permits.

Effective "Trail Standards" provide good trail design, construction, and maintenance and will provide a safe and enjoyable experience for users. A successful trail system is also dependent on cooperation, communication and ownership of the users. The underlying philosophy of this document is that all trails are a "shared resource and a shared use" and as such no trails are exclusive use and, depending on the primary use of the trail, different conventions and "rules of the road" may apply. Expectation set requires specific trail materials and safe widths and may be limited to specific neighbourhood trails.

As per District of Squamish policy no motorized vehicles are allowed on trails with the exception of maintenance service vehicles and history-preserved wheelchairs and golf carts (where it is safe to do so - Category 1 - & 2 Trails). Motorized vehicles may be operated in District "designated areas" only and warning signs to the area must be posted at all access points.

These guidelines and standards are applicable within municipal boundaries as authorized by the land-owner, the District and the trail builder. Outside of DCS boundaries the Squamish Lifetime Regional District will be the authorizing body.

As user volumes, physical environments, and trail usage may change with time a periodic review of these guidelines and standards will need to be done to keep them effective and relevant.

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TRAIL CLASSIFICATION	PRIMARY CORRIDOR #1	AREA/COLLECTOR #2	NEIGHBOURHOOD #3	SPECIFIED USE TRAIL/AREA #4	DESIGNATED ON-STREET CYCLING #5
FUNCTION	To provide a parallel corridor connector and linking on local communities within urban Squamish. To provide a linear connector route that is accessible to all trail users. To provide a north and south link to the proposed Sky To Sky Trail.	To provide a collector route that links the local neighbourhood trails to the arterial trail.	To provide connecting trails within a community area that address areas of movement for local residents, walkers, bikers, joggers, cyclists, and hikers.	To facilitate, or enable, specified use trails or areas for designated recreational activities (such as mountain biking, rock-climbing, ice-cave, trail riding, horseback riding, etc.). Refer to Mountain Bikes Trails Section in this report for details.	To provide designated cycling routes throughout the District that link street routes and "shared" trail routes to enable offer commuter cycling opportunities. To link the cycling routes to the Greater Trail Link connections in each local community.
DESCRIPTION	Wide, paved, 2 way trail, suitable and accessible for all users. Not recommended linear connectivity through the urban community.	A medium width, 2 way trail that connects local neighbourhood trails and links them to the arterial trail. This includes all public accessible urban trails. Horseback riding on designated trails only.	Same as medium width trails that enable pedestrian/cyclist links to various parts of a neighbourhood. Designated "Urban Trails" would also be included in this classification as a higher classification if considered a high usage trail.	Same paths, usually with natural ground materials, minimal maintenance and minimal clearing. Maintenance and development by an "authorized" user group. Examples: single or double track mountain bike trails, horseback riding only trails, with riding only area.	Designated paved bike lanes "on shoulder grade" with paved shoulders. Commuter routes are planned and developed by the District of Squamish and are designed to comply with Ministry of Transportation (MoT) Highway Standards.
REGISTRATION, MAPPING AND DIFFICULTY GRADING	Difficulty Grading - Green Circle (appropriate for all users). All "authorized" trails and routes will be numbered, named and GPS'd for mapping purposes and registered with the District of Squamish.	Same, except some gradients and surfaces may not be appropriate for wheelchair users.	Same.	Same, except difficulty grading will range from green circle coding (appropriate for all users) to double black diamond (expert bikers and skiers only). See the Mountain Bike System for Trail Grading System details.	Location for mapping will come from existing street mapping, unless the route is part of the arterial community trail.
RESTRICTIONS	No motorized use, except to accommodate physically challenged accessibility. Dogs must be on a leash. No horseback riding, BOCV service vehicles permitted.	Same, except horseback riding on designated trails only.	Same, except horseback riding on designated trails only.	Specified activities only, except "shared" use as allowed signal. Restrictions as appropriate for activity or circumstances.	No motorized vehicles, except for handicap accessibility. No dogs. No horseback riding.
TRAIL WIDTH	Minimum - 3.0 m Preferred - 4.0 m	Minimum - 2.0 m Preferred - 3.0 m	Minimum - 1.7 m Preferred - 2.0 m	Not Applicable	Minimum - Shared roadway with minimum 4.0 m width. Preferred - 1.2 m (10m x 7m)
SURFACE	Minimum - Highly compacted screenings from wet urban areas. Preferred - Asphalt (high use urban areas). Coloured and stamped concrete may be used at intersections or wet areas.	Same - Highly compacted screenings. Preferred - Asphalt (linear connections)	Same - Fine gravel or wood chips (transition area). Preferred - Compacted screenings.	As appropriate for activities, including natural surfaces.	Asphalt on shoulder of road, painted white line between roadway and cycling lane. White line - 10cm width

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Client: Squamish Off Road Cycling Association
Project: Squamish Mountain Biking Management Plan

File #: 293-01-01

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TRAIL CLASSIFICATION	#1 PRIMARY CORRIDOR	#2 AREA/COLLECTOR	#3 NEIGHBOURHOOD	#4 SPECIFIED USE TRAIL/AREA	#5 DESIGNATED ON-STREET CYCLING
SE-B-GRADES	Refer to attached drawings and specifications. Average - 0 - 3% Max. - 4% or 4" over 4m 2 - 3%	Same 0 - 10% 1% or 20% over 30 m 2 - 3%	Same 0 - 11% 20% over 150 m 2 - 3%	As appropriate for function.	As per road construction standards of TRC.
GRABENT					0 - 9% 10%
CROSS SLOPE					2 - 3%
CLEARANCE					Not applicable. As per road construction standards.
WIDTH - Branch					3.0 m clearance
WIDTH - Branches					
HEIGHT OF WAY					
WIDTH					
SIGHTLINES					
BUFFERS					
LANDSCAPING					
LIGHTING					
MAINTENANCE ACCESS					
WHEELCHAIR ACCESSIBILITY					

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TRAIL CLASSIFICATION	81 PRIMARY/CORRIDOR	82 AREA/COLLECTOR	83 NEIGHBORHOOD	84 SPECIFIED USE TRAIL/AREA	85 DESIGNATED ON-STREET CYCLING
SEGWAY/ MARKERS	All signage must comply with the DMS sign below guidelines. Signage includes trailhead and collector trail posts, including appropriate distance (1.5 - 1 km) markers. Information boards and posted trail maps may be constructed at key intersections. Interpretive and special program signs may be placed where appropriate.	Includes trailhead posts and appropriate signage markers. Interpretive signs where appropriate.	Trail indicator post where appropriate.	Appropriate area (including "no-dog" or "no-ATV" or "stand on edge" signs). May include "rule of thumb" notices. Trail head and trail directional signage, where appropriate. Trail Map Board, when required.	Minimum - 10 cm. painted white line for designated route. Preferred - show plan cycle route signage and painted symbol on route trail surface.
FURNISHINGS AMENITIES	May include: District approved benches. Strategic way and placement of racks for stoking and connecting access. Shaded rest areas. Landscaping and information boards. Dog stations where appropriate.	Same	As appropriate and site specific.	As appropriate and site specific.	Not applicable.
DESIGNATED TRAIL PARKING SITE AMENITIES	Minimum - First-priority garbage can, dog-waste station, signage and mapping (book). Preferred - Tables.	Same	Same	Same, plus site specific information.	Not applicable.
BRIDGES PLATFORMS	Requires "environmentally sensitive", treated wood construction. Design for bridges or elevated platforms must be site specific and approved by the District.	Same	Same	Designs must be approved by the District. Other "built structures" must be approved by the District.	Not applicable.
GARBAGE	Dust-proof garbage incineration or appropriate incineration or trail bins.	Dust-proof garbage incineration or trail bins only.	Same	User groups to maintain site in clean condition and remove garbage.	Not applicable.
MAINTENANCE RESPONSIBILITY + SERVING	District of Squamish - Parks, Recreation	District of Squamish - Parks, Recreation	District of Squamish - Parks, Recreation	Labourers Community Group(s)	District of Squamish

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TRAIL CLASSIFICATION	PRIMARY/CORRIDOR	AREA/COLLECTOR	NEIGHBOURHOOD	SPECIFIED USE TRAIL/AREA	DESIGNATED ON-STREET CYCLING
MAINTENANCE STANDARDS	<p>1. During routine servicing do regular service checks on all operational (motor, auxiliary, headlights, and trail conditions.</p> <p>2. Schedule quarterly safety and operational inspections and reports.</p> <p>3. Schedule annual repairs and clean-up of trail.</p> <p>4. Fix any even and unobstructed trail surface.</p> <p>5. Remove leaves and debris seasonally.</p> <p>6. Collect garbage regularly.</p> <p>7. Check service lighting.</p> <p>8. Check motor in winter.</p> <p>9. Annually call-back or remove individuals or areas that may create a hazard or safety issue for users.</p>	<p>4.3.4.5.9 This scheduled annual safety and operational inspections and reports.</p> <p>NOTE: ALL CLASSIFIED AIDENS Safety Hazards must be reported and repaired or mitigated as soon as possible.</p> <p>NOTE: ALL CLASSIFIED AIDENS: Some trail maintenance may be carried out through an "Adopt a Trail" Program or through a Partnership Agreement with a "Not For Profit" Service Group or Society.</p>	<p>4.3.4.5.9 Scheduled annual safety and operational inspection and report.</p>	<p>Maintenance needs to be carried out by authorized user group and is all included in 3.4.5.9 and scheduled joint (with DORS) annual safety and operational inspection and report. This process may include submissions for consideration of operational or capital budget items by the DORS.</p>	<p>As per DORS road maintenance standards. Franchising - Higher quality patch material than regular road patching as required. Items Replaced - As Discussed by DORS staff due to previous, conditions and usage.</p>
INSPECTIONS	<p>Quarterly (for inspection forms section)</p> <p>All existing and "authorized" planned trails to be inventoried and designated in OCP Trail Plan. New trails to be added and Plan updated as appropriate. Changes to existing trails may be allowable depending on site conditions.</p> <p>NOTE: New or existing trails that are not regulated, maintained, inspected, and/or monitored under the Trails Standards established by this document are not the responsibility of the District of Squamish or other governing Trails Groups.</p>	<p>Bi-annually</p> <p>Same</p>	<p>Annually</p> <p>Same</p>	<p>Annually</p> <p>Same</p>	<p>7</p> <p>Same</p>
OCP TRAIL PLAN ENTRENCHMENT	<p>All existing and "authorized" planned trails to be inventoried and designated in OCP Trail Plan. New trails to be added and Plan updated as appropriate. Changes to existing trails may be allowable depending on site conditions.</p> <p>NOTE: New or existing trails that are not regulated, maintained, inspected, and/or monitored under the Trails Standards established by this document are not the responsibility of the District of Squamish or other governing Trails Groups.</p>	<p>Same</p>	<p>Same</p>	<p>Same</p>	<p>Same</p>
UNAUTHORIZED TRAILS	<p>Unauthorized trails or features may be dismantled removed at the discretion of the DORS and at the expense of the trail builders.</p>	<p>Unauthorized trails or features may be dismantled removed at the discretion of the DORS and at the expense of the trail builders.</p>	<p>Same</p>	<p>Same</p>	<p>Not Applicable</p>

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GENERAL TRAIL CONSTRUCTION STANDARDS AND GUIDELINES

NEW TRAIL DEVELOPMENT APPLICATION PROCESS
All new trails must be approved through an application process. The process will be managed by the District of Squamish in cooperation with the local hiking and mountain bike clubs. The appropriate landowners must be contacted and provide written approval before making application for trail construction. An application form and a Trail Plan must be submitted for approval. The location and route must be flagged and respected prior to any approvals or development. All safety and security measures must be addressed in the Trail Plan, including any scheduled trail features (TTF's) to be added. Once approval has been given the trail will be re-inspected and any outstanding issues will be addressed. The trail will be classified, named, GPS'd, and added to the trail inventory.

TRAIL UPGRADES AND REPAIRS TO NEW STANDARDS
The Trail Standards apply to new trail construction and, where feasible, when existing trails, sections of trails, or trail features are upgraded or repaired. As it is not financially possible to upgrade all existing trails to the new standards the existing trails will be "grandfathered" and upgraded as opportunities become available.

"AUTHORIZED" TRAIL BUILDERS AND INSPECTORS
The District of Squamish will work with the local Trail Groups to develop a training and certification program for local groups and individuals on trail construction and maintenance and safety standards based on the criteria established in this document. DMR's Guidelines, common best practices, and health and safety standards (WCB).

TRAIL NUMBERING AND MAPPING SYSTEM
All "authorized" trails will be classified, numbered and named for mapping and signage purposes. The intent of this requirement is to have a consistent and accurate system that works for both hiking trails and mountain bike trails and enables trail maps to be created, indexed and graded.

- ENVIRONMENTAL GUIDELINES**
- TRAIL PLACEMENT/ALIGNMENT GUIDELINES**
- WATERWAY GUIDELINES, SETBACKS, MITIGATION**
- CONSTRUCTION MATERIALS AND TRAIL IN-FILL MATERIALS**
- TREES AND NATURAL HAZARD GUIDELINES**
- CLEARING AND BUSHING GUIDELINES**
- BRIDGE CONSTRUCTION STANDARDS**
- GRAPHIC CUT-AWAY OF TYPICAL TRAIL CLASSIFICATIONS Section**

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MOUNTAIN BIKE TRAILS SECTION

Introduction

Squamish is an international mountain biking destination. Countless volunteer hours have gone into creating an exceptional trails network that provides for the fitness-oriented cross-country rider, the all-day epic rider and hardcore downhill rider. Trails in such a diverse sport range from wide, flowing, and gentle that are very "obvious" to the untrained eye, to a 6 inch wide trail of moss scraped off a vertical rock face obscured by a narrow log with much tucked on the top. Because of this great variability the classification and description of trails is inherently difficult.

*"The trail is the thing—and the end of the trail—
travels too fast, and you miss all that you are
travelling for!"*

Mountain bike trails are by nature quite different from hiking, cross-country, walking and 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. Mountain bike trails are constructed to maximize the esthetic appeal of the terrain at hand, soil, logs, lumber, and rock are sometimes used to enhance and create new landscapes. Trails meander through a landscape from one feature to the next, the most successful and popular trails "flow" through the landscape in this endeavor. Mountain bike technology reflects this: suspension, brakes, geometry and derivatives of bicycles have evolved rapidly in the last few decades. Trails and non-trail technical features have evolved with these technological advances to encompass increasingly creative and sometimes extremely difficult trails and structures. For this document mountain bike trails are not grouped by function but rather by degree of challenge or difficulty.

Classification is accomplished according to the given criteria, blue square, black diamond, double black diamond systems used predominantly in the US) industry and adopted by the International Mountain Bike Association (IMBA), and is defined in the following sections. Trail widths and standards generally match the difficulty of the trail, i.e.: a narrower narrower trail will be rated as more difficult, a wider gentler trail as easier. This is reflected in the rating system.

* Excluded sign on the Peninsula trail in Dickson Hills, WI.

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ADJUSTABLE BIKE TRAIL CLASSIFICATION	GREEN CIRCLE	BELT SQUARE	BLACK DIAMOND	DOUBLE BLACK DIAMOND
APPROPRIATE USER	Beginner and Intermediate 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. High 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 take alone Recommended carrying a cell phone with you.
TRAIL DESCRIPTION	Quality slopes and easily avoidable obstacles such as rocks, roots and potholes.	Challenging riding with steep drops and/or obstacles, narrower trails with reduced traction. Requires riding experience.	Mixtures of long steep climbs and descents, loose trail surfaces, numerous difficult obstacles to avoid or jump over, drop-offs and steep corners. Some sections must be walked when riding.	Exceptional bike control skills and balance required to clear many challenging obstacles. Higher risk level. Only a handful of riders will enjoy these rides. Some sections appear to walk. Best risk.
FEATURES	Embedded trail obstructive up to 10 cm high.	Embedded trail obstructive up to 20 cm high.	Embedded trail obstructive over 20 cm.	Same
MINIMUM WIDTH	1 metre	1 metre	1 metre	1 metre
TRAIL SURFACE	Primarily soil and small loose rock, occasional watering.	Rough natural terrain and increased rock and root debris. TYP's (tree holes).	Rugged natural terrain. See TYP's below.	Same
AVERAGE GRADE	2%	10%	15%	May exceed 15%
MAXIMUM GRADE	15%, except rock faces at 25%	Climbing - 25%, Descending - 15% Rock Surfaces - 45%	Climbing - 30%	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 30 cm. Flat decking to maximum one-half the height above surface.	Various widths. Minimum 30 cm. The width of decking is one-quarter the height above surface. Elevated bridges less than 3 m high above surface.	Same
TECHNICAL TRAIL FEATURES (TYP'S)	Small roots and logs or cones, embedded rocks to avoid	TYP's width to height ratio of 1:1. Small bridges (flat, wide, low and suitable from section to section). Small walkable drops. Small ledges, roots, less than 10 cm high. Small jumps. Y-shaped steel legs.	Sharp descents with sharp transitions.	Same
ROCK FACE OR RAMP DESCENTS (MAXIMUM ANGLE)	Rock face descents not to exceed 25% grade.	Not to exceed 120%	Not to exceed 120%	May exceed 120%
DROPS (MAX HEIGHT)	None	Drop up to 30 cm., with exit cleared of all obstacles.	Drop greater than 30cm. Some mandatory at	Mandatory at.
JUMPS (MAX HEIGHT)	None	15 cm. No jumps with consequences for lack of speed. Table top jumps max. 40 cm high.	Table top, no maximum height. No pop jumps.	Same, except may include pop jumps.

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Construction Standards and Authorized Mountain Bike Trail Building

The *International Mountain Bicycling Association (IMBA) guide Trail Solutions, © 2004*⁷ provides an invaluable guide to trail construction techniques and drainage solutions for trail builders. Terrain, precipitation and riding styles in Squamish sometimes exceed the scope of this manual, especially when constructing black and double black diamond trails. The skill and know-how of an experienced trail builder is invaluable. Input from an "authorized" trail builder is mandatory for all new trail construction projects.

Squamish is located in a coastal rainforest and a major emphasis in water erosion is the largest detrimental force for trails in the Squamish area. 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. **Construction, design approvals and inspections with an authorized trail builder are mandatory.**

Fall Zone Standards and Inspections

Fall Zones are areas adjacent to TTY's (Trail Technical Features), steep corners, and steep descents which provide a reduced risk area for riders to evacuate into. Fall zones will be established on the outside of steep corners, at the bottom of steep descents, and adjacent to TTY's. 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 of injuries. This shall be reflected in annual trail maintenance: fall zones shall be inspected twice per year, and maintained as appropriate. Trail users will also be requested to report potential hazards or problems fall zone areas to the District of Squamish. All trail inspections and repairs must be documented, including TTY's and on-going reports of potential safety issues. Hazards may include rocks, stumps and roots, branches, trees, and parts of the TTY. Trails will be closed until safety or risk issues have been mitigated or addressed.

Size of Fall Zones

Fall zones shall be cleared of the following materials to a minimum of 1m, for TTY's lower than 30 cm, and 1.5m, for higher TTY's. Steep hills and steep corners shall have a 1.5 m fall zone on the downhill or outside area:

- 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 debited, 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 single black trails, where less experienced riders may be having their riding skills and the opportunity of falling is increased.

Construction Standards, Man-Made Structures

Man-made Technical Trail Features (TTY) must conform to an engineered standard of minimum strength, stability and construction. Properly built features are a potential source of injury and maintenance. Man-made structures must be authorized and inspected to ensure compliance to construction and safety standards. The IMBA Trail Solutions Manual has guidelines in their reference section pertaining to TTY design and construction.

TTY Design Considerations

Visibility

By making the most difficult section of the TTY 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 TTY, 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 200 kg and a horizontal load of an 80 kg adult leaning against the constructed feature with less than 2 cm of displacement.

⁷ Available from the IMBA Website, or contact IMBA, Inc 1100, Boulder, CO 80506

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Height and Width

Maximum height and width are dependent 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 should be supported with a railing for safety. Please note that handrails can be no wider as 75 cm. Minimum distance between railings should be at least 1 m.

Construction Standards

Where possible, native materials should be used. Logs should be cedar or treated wood. Douglas fir is the preferred material for weight-bearing members (straps, pulleys, beams), split cedar rails are the preferred material for surfacing. Weight bearing members should be notched and cross-laced where they join. Whole logs should be pecked to show the end of log, and increase joint strength and fastener penetration. Dimensional lumber may be used, it should be noted that standard SPT (pressure pine, SP) materials are not very durable where exposed to weather. Treated lumber is preferable.

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 Anchor Spikes and Nails (equal splines for their superior holding strength)

Lag screws and Nails should be of adequate length to allow for 2-3 penetration of the member being secured 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 overlap 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 anchor nails (see above). It is recommended that wood surfaces, particularly those with a grain, have an anti-slip surface. Expanded diamond lath or granular roofing materials are both acceptable. Chicker tire is not acceptable, as it wears quickly. The anti-slip surface should be fastened every 15 cm square.

Mountain Biking – General:

New M. B. Trail Development

All new mountain bike trails must be approved through an application process. The process will be managed by the District of Squamish in cooperation with the local mountain bike club, Squamish Off Road Cycling Association (SORCA). The appropriate land-owners must be contacted and provide written approval before making application for trail construction. An application form and a Trail Plan must be submitted for approval. The location and route must be flagged and inspected prior to any approvals or development. All safety and security issues must be addressed in the Trail Plan, including any technical trail features (TTF's) to be added. Once approval has been given and the trail has been constructed the trail will be re-inspected and outstanding issues will be addressed before it is open. The trail will be classified, named, GPS'd, and added to the trail inventory.

Courselets, Rules of the Road

All trails in Squamish are shared. When bikers are on potential biking trails then the person on foot has the right of way and caution should be exercised in passing or approaching trail users. Slow-down, be courteous, warn of your approach and thank them for giving you room. On "designated" mountain bike trails bikers should physically step aside and wait while a mountain biker rides through, again a wave and a thank you will earn respect from both users. While these "courselets" will be posted at appropriate trailheads it will take time to educate all users. The Squamish Off Road Cycling Club, the Squamish Trails Society, Squamish Access Society, Federation of Mountain Clubs, the District of Squamish and other local groups will assist in educating their membership and the general public about trail etiquette.

Restrictions – Dogs

On main biking trails dogs must be on a leash, even for cyclists. On "designated" backcountry mountain bike trails while it is not safe or practical to expect mountain bikers to have dogs on leash it is expected that dog owners will have their dogs under control. Complaints about dogs may result in the owner's dog being barred from mountain bike trail access.

Signage/Markers/Map/Trail Symbols

Naming, GPSing and Mapping

All "authorized" mountain bike trails and routes will be named and GPS'd for mapping purposes and registered with the District of Squamish.

All "unauthorized" mountain bike trails and routes will be named and GPS'd for mapping purposes and registered with the District of Squamish.

MOUNTAIN BIKE TRAIL PLAN (SORCA) – See Appendix A

MOUNTAIN BIKE TRAIL MASTER PLAN (SORCA, CASCADE ENVIRONMENTAL) – See Appendix B

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EQUESTRIAN USE OF TRAILS

- GENERAL COMMENTS/FUNCTION DESCRIPTION
- TRAIL WIDTH
- APPROPRIATE TRAIL SURFACE MATERIALS/SUBSTRATES
- GRADIENT/CROSS SLOPE
- TRAIL COURTESIES AND RULES OF THE ROAD
- SIGNAGE MARKERS
- CLEAN-UP OF HORSE DROPPINGS
- MAINTENANCE INSPECTIONS
- NEW CONSTRUCTION APPROVAL PROCESS

TRAILS BIKE DESIGNATED AREA

TRAIL SIGNAGE AND MARKERS STANDARDS

- DISTRICT OF SQUAMISH SIGNAGE GUIDELINES
- CURRENT STANDARDS (GRAPHIC OR PHOTO EXAMPLES) AND SYMBOLS
- APPROPRIATE APPLICATIONS/LOCATIONS
- INFORMATION WORDING - SAFETY, RULES OF THE ROAD, COURTESIES, RESTRICTIONS
- DIFFICULTY RATING/LENGTH TIME
- DIRECTIONAL AND DISTANCE MESSAGE

TRAIL MAINTENANCE AND INSPECTION STANDARDS

- INSPECTIONS, REPORTS, RECORDKEEPING
- PRIORITIES
- SCHEDULE SERVICING AND UNSCHEDULED TRIGGER
- PUBLIC INPUT/COMPLAINTS
- TRAIL DEACTIVATION/DEMOLITION REMOVAL
- FOCUS RECORDS - See Appendix 3 for standard forms

LIABILITY AND MITIGATION

- RISK MANAGEMENT AND RISK REDUCTION GUIDELINES
- FEDERAL AND PROVINCIAL ENABLING LEGISLATION
- ACCESS AUTHORIZATION AND PROCESS
- APPROPRIATE SIGNAGE AND WARNINGS
- INSPECTIONS RESPONSE TO SAFETY AND SECURITY ISSUES
- WCH STANDARDS
- INSURANCE AND COVERAGE

ADMINISTRATION AND MANAGEMENT

- RESPONSIBILITY
- PARTNERING SERVICE AGREEMENTS
- TRAIL ENTRETIENMENT - OCP

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6.3 Trails BC - Trail Maintenance, Accident & Volunteer Record Forms

Trails BC — Trail Maintenance and Condition Report

File with Trail Manager at least twice per year, Spring and Fall.
 Additional visits highly recommended.

SUGGESTIONS:

Carry the form in a plastic portfolio or Ziplock® bag and fill it out right on the Trail.
 Photocopy or carbon to keep your own record.
 Weed whacking best done at peak growth in June.
 Trail markers best checked in June or when leaves are out.

TRAIL SECTION NAME:

TRAIL INSPECTOR:

TRAIL INSPECTION AND MAINTENANCE	Spring	Summer	Fall
CORRIDOR AND TREADWAY			
Brush trimming done (minimum 2 m wide, 2.5 m high)			
Tree debris and trimmings cleared well off trail			
Grass and annuals whacked			
Fallen trees cleared			
Hazards cleared (dead limbs, leaning trees, etc.)			
Slope erosion controlled			
Stumps, stubs and loose rock cleared			
Abandoned trails very, very well blocked			
MARKERS AND SIGNS			
Markers bright, clean and in sufficient numbers			
Markers can be seen in all seasons, in both directions			
Markers posts standing and visible			
Trails BC and side trail markers every 1 km both ways			
All signs on wood backing, attached with screws			



TRAIL INSPECTION AND MAINTENANCE	Spring	Summer	Fall
All markers loose from tree (loosen as needed)			
Old and damaged markers removed			
LARGE SIGNS			
Side trails signed at both ends, and signs are accurate			
Trans Canada Trail / Trails BC signs at access points			
Other signs present and OK (parking, camping, etc.)			
STRUCTURES			
Steps, side logs and rails safe			
Boardwalks safe			
Stiles and bridges safe			
Washrooms and / or toilets safe & clean			
Gazebos / picnic tables / benches safe & clean			

Date completed: _____ Signature: _____
 Record outstanding issues below or on additional sheets.
 Report safety issues to Trails BC Office ASAP.

The Trails Society of British Columbia
 315 - 1367 West Broadway
 VANCOUVER BC V6H 4A9
 Email: trailsbc@trailsbc.ca
 Phone: (604) 737-3188 - Fax: (604) 738-7175



Trails BC Accident Report Form

ATTACH NOTES IF NECESSARY

YOUR NAME: _____
ADDRESS: _____
CITY: _____ PHONE NUMBER: _____ FAX NUMBER: _____
INJURED PERSON NAME: _____
ADDRESS: _____
CITY: _____ PROVINCE: _____ PHONE NUMBER: _____
DATE OF ACCIDENT: _____ TIME OF ACCIDENT: _____ (A.M./P.M.)
LOCATION OF ACCIDENT: _____
WEATHER CONDITIONS: _____
DESCRIBE WHAT HAPPENED: _____

WAS AN AMBULANCE CALLED: _____ (Yes/No) HOW LONG BEFORE IT ARRIVED: _____
WAS MEDICAL ASSISTANCE PROVIDED BEFORE THE AMBULANCE ARRIVED: _____ (Yes/No)
IF "YES", DESCRIBE WHAT ASSISTANCE WAS GIVEN AND BY WHOM: _____
WAS THE INJURED PERSON A MINOR: _____ (Yes/No)
IF "YES", WERE PARENTS/GUARDIANS PRESENT AT THE TIME OF THE ACCIDENT: _____ (Yes/No)
PARENT/GUARDIAN NAMES: _____
WERE ANY OTHER PEOPLE PRESENT WHO COULD DESCRIBE WHAT HAPPENED: _____ (Yes/No)
IF "YES", PROVIDE THE FOLLOWING FOR EACH:

<u>NAME</u>	<u>ADDRESS</u>	<u>PHONE NUMBERS</u>

IF THE ACCIDENT INVOLVED A HORSE, SNOWMOBILE, ATV OR OTHER VEHICLE PROVIDE:
NAME OF OWNER: _____
ADDRESS OF OWNER: _____
CITY: _____ PROVINCE: _____ PHONE NUMBER: _____
LIST/DESCRIBE ANY KNOWN PARTICULARS OF THE HORSE, SNOWMOBILE, ATV OR VEHICLE:

YOUR SIGNATURE: _____ DATE SIGNED: _____
CONTACT DOMINICA CHRISTIANSEN AT CAPRI INSURANCE (1-800-670-1877)
AND FORWARD A COPY OF THIS INFORMATION TO CAPRI INSURANCE (FAX# 250-860-1213)

CASCADE ENVIRONMENTAL RESOURCE GROUP LTD.



Trails BC Volunteer Record

Date:	Trails BC Supervisor:		
Time Span:	Team Supervisor:		
Project Location:	Region:		
Project Description:			
File	Local Group: []	Region: []	Prov. Office: []

	Name & Job	Address	Telephone
1.			
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6.4 Sample Land Use Agreement Form

Trails for Rosland Society - Sample Land Use Agreement

Background Information

Purpose	To protect landowners and establish responsibilities of trail steward while allowing public use of privately owned trails
Written for	Trails for Rosland Society, by attorney Jaak Ranniste of the Rosland Law Office 2004 Washington St., Rosland, BC V0G 1Y0; Phone: 250-362-5999
Designed for	Individual landowners (Corporate landowners use their own attorneys to write customized agreements.)
History	In use in Rosland since 1998
For more information	Contact Hanne Smith Heintz, Land Access Coordinator for the Trails for Rosland Society, Phone: 250-362-2218

Sample Agreement

Disclaimer: The following agreement is provided for information purposes only. An organization can draft its own land use agreement based on the template used by the Trails for Rosland Society; however, the Real Estate Foundation suggests that organizations obtain qualified legal advice before entering into contracts with landowners, and claims no responsibility for any difficulties arising from the use of the information provided here. Be sure to read [About the Land Use Agreement](#) document on this website.

Items in **red type** are not part of the agreement. They have been inserted for clarification.

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Date:

Property owner(s), address & phone:

Dear Mr. and/or Mrs/Ms.

Re: (Legal description and civic address) (the "Lands")

The Trails for Rossland Society (the "Society") was formed in 1996 as a response to a desire by the community to develop a system of trails for use by members of the community and by visitors to the area. The Society is a non-profit organization.

In order to fulfill its mandate of developing an integrated system of trails, the Society requires the right to develop trails on private lands and, specifically, we are requesting permission to develop a trail (the "Trail") on your property, which are the Lands described above, in the location outlined on the attached map.

We ask that you agree to allow for the development, maintenance and use of the Trail on the Lands on the following terms. If you consent, we ask you to sign the copy of this letter and return it to us. This will then form the agreement (the "License") between you as the owner(s) of the lands and the Society pertaining to the use of the Trail.

The Society's obligations:

1. The Society will pay you the sum of \$1 for entering into this License;
2. The Society will keep the Trail in a safe and clean condition;
3. The Society will improve and maintain the Trail at the Society's cost;
4. The Society will not remove any trees from the Lands without your written permission;
5. The Society will post signs at its cost for the proper and safe use of the Trail and will remove such signs upon the termination of this License;
6. The Society will not use chain saws and power equipment during periods of high fire risk;
7. The Society will obtain, pay for, and maintain in force, during the term of this agreement, a general liability insurance policy with respect to the Society's use and occupation of the Trail, and will name you as an additional insured. This insurance policy will insure against bodily injury, including death, and property damage arising out of such use and occupation of the Trail under this License;
8. The Society will indemnify and save you harmless against any and all claims (except those arising from your own fault or negligence) including all damages, liabilities, expenses and costs arising directly or indirectly from the granting of this License and the use and occupation of the Trail;
9. The Society will give you thirty (30) days written notice if the Society wishes to terminate this License early and the License will then terminate at the end of such thirty-day period. The Society may terminate this License for any reason.

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10. In the event that the insurance is allowed to lapse, this License will immediately come to an end.

You agree:

11. You agree to grant to the Society the right to the use and occupation of the Trail on the Lands for hiking, horse-back riding and mountain biking by the general public for a period of five years from the date of this letter;

12. You agree to allow the Society to maintain and make such improvements to the Trail as the Society considers necessary, subject to paragraphs 2 through 6 above. Such improvements and maintenance will be done at the Society's cost;

13. You agree to allow the Society to post signs on the Lands informing the public as to proper and safe use of the Trail;

14. You agree to give the Society thirty (30) days written notice if you wish to terminate this License early and the License will then terminate at the end of such thirty-day period. You may terminate this License for any reason;

15. You agree to inform the Society if you sell the Lands.

Trails for Rossland Society

_____, Director
Name:

The foregoing is hereby agreed to this ____ day of _____, 20__.

Name: [landowner]

Witness:

Name: [landowner]

Address: [of witness]

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Client: **Squamish Off Road Cycling Association**
Project: **Squamish Mountain Biking Management Plan**

File #: 293-01-01

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7. MAPS

Map 1: Location Map

Map 2: Existing Mountain Bike Trail Network

Map 3: Identified Potential Expansion Zones

Map 4: BC Timber Sales: Current Proposed and Approved Cutblocks

Map 5: Visual Resource Management

Map 6: Ungulate Winter Range and Community Watersheds

Map 7: LRMP – High Summer Capability / Proposed Zones

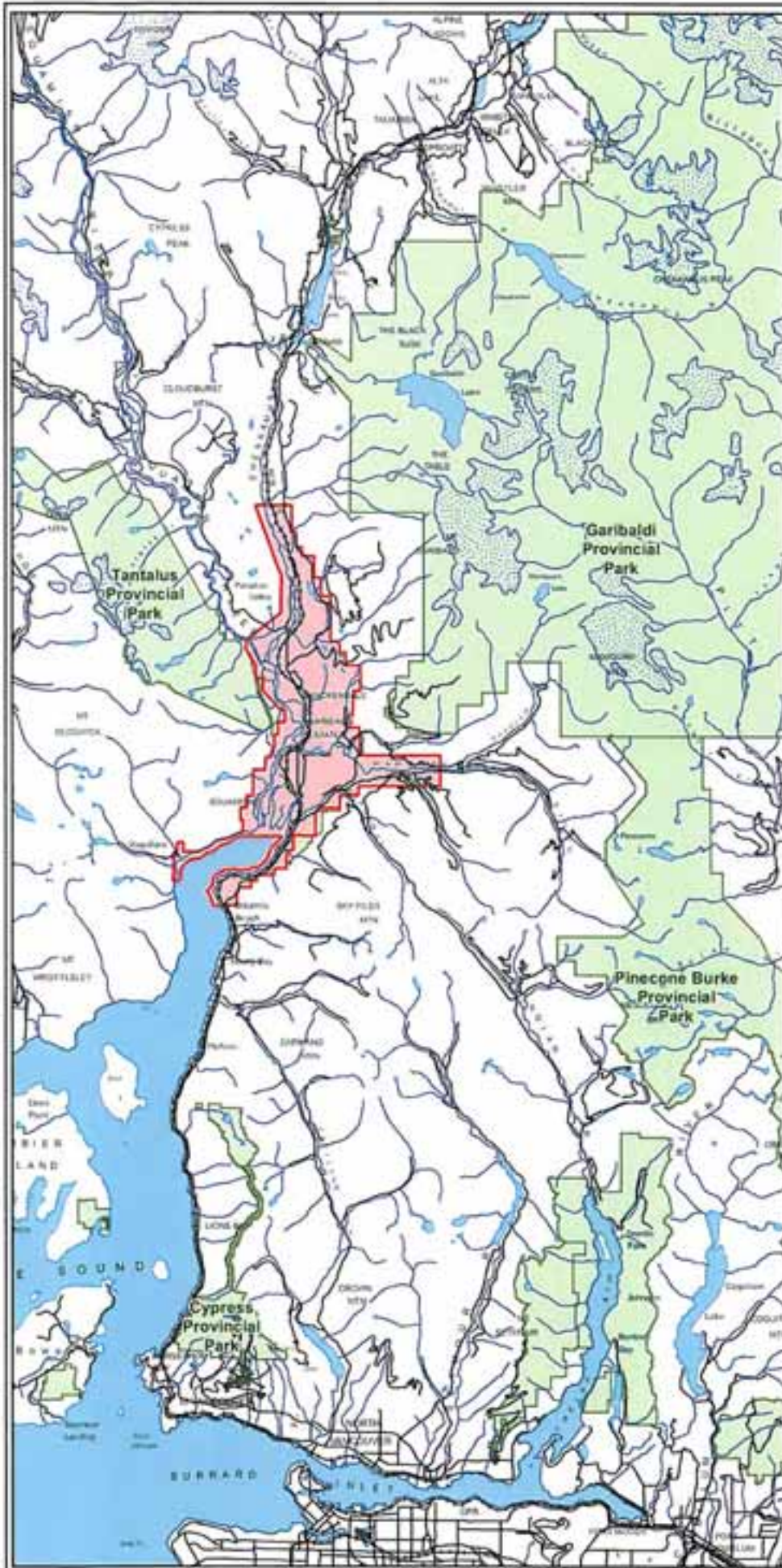
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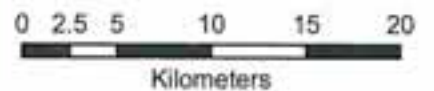
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Squamish Mountain Biking Management Plan - Map 1 - Location Map



 District of Squamish Boundary
 BC Provincial Parks



CERG File # : 293-01-01
Date : July 4, 2005

Projection : UTM Zone 10 N
Datum : NAD 83

GIS Mapping:



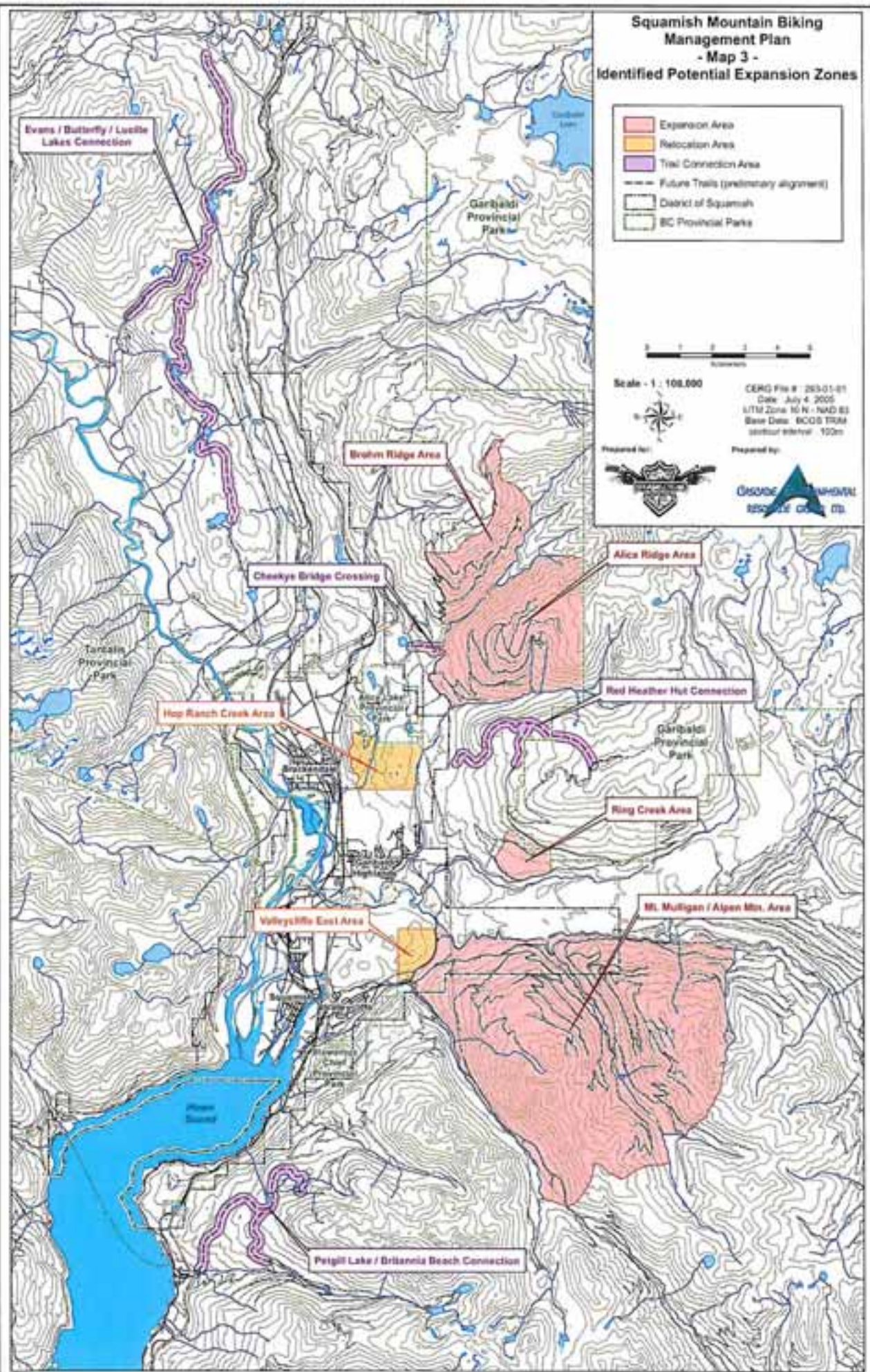
**Squamish Mountain Biking
Management Plan
- Map 3 -
Identified Potential Expansion Zones**

- Expansion Area
- Relocation Area
- Trail Connection Area
- Future Trails (preliminary alignment)
- District of Squamish
- BC Provincial Parks



Scale - 1 : 108,000

CERG File #: 265-01-01
Date: July 4, 2005
UTM Zone: 10 N - NAD 83
Base Data: BCOS TRM
contour interval: 100m



Squamish Mountain Biking Management Plan
- Map 4 -

BC Timber Sales: Current Proposed and Approved Cutblocks

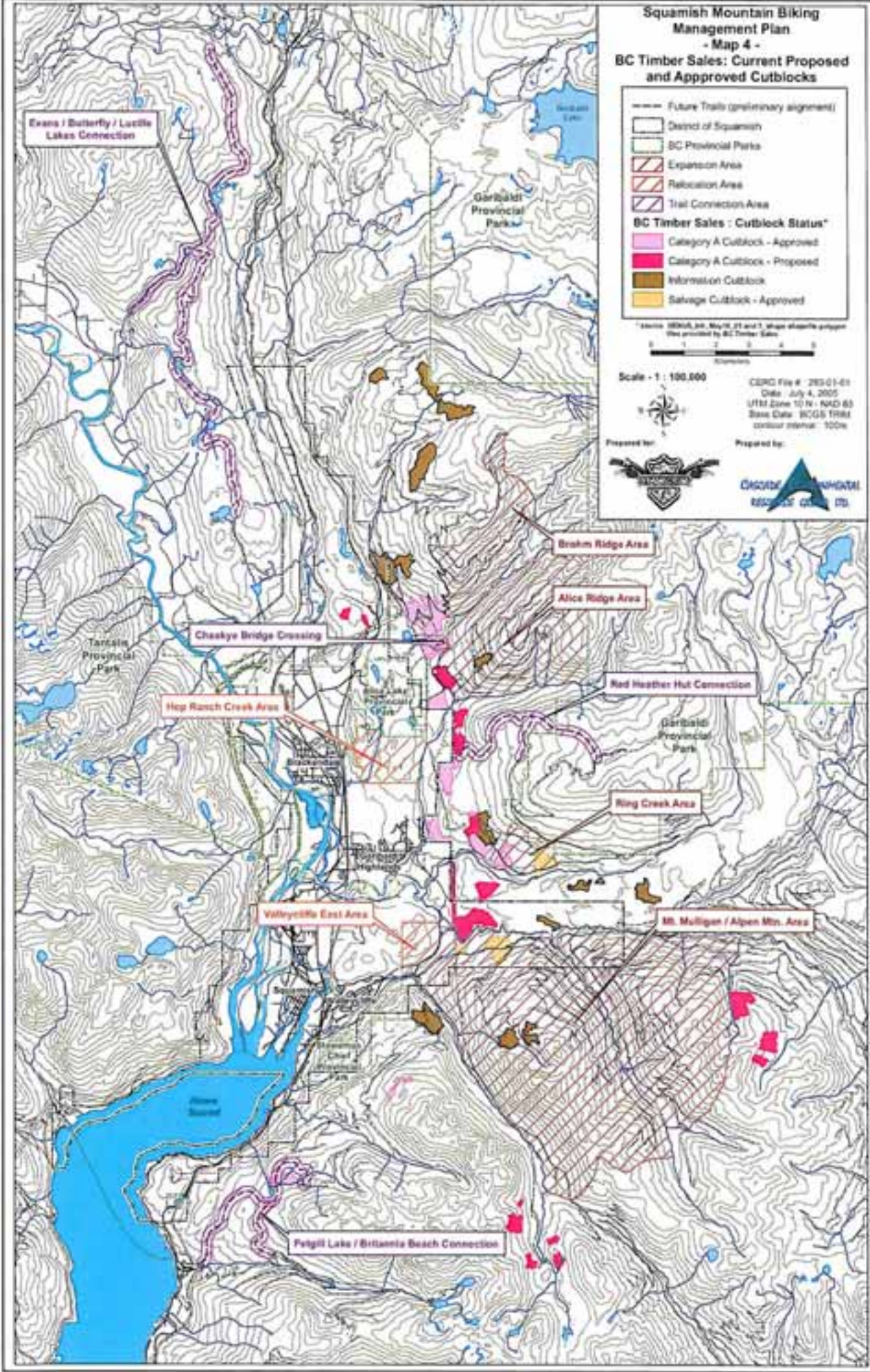
Future Trails (preliminary alignment)
 District of Squamish
 BC Provincial Parks
 Expansion Area
 Relocation Area
 Trail Connection Area
BC Timber Sales: Cutblock Status*
 Category A Cutblock - Approved
 Category A Cutblock - Proposed
 Information Cutblock
 Salvage Cutblock - Approved

*Source: BCCM, 3rd, May 10, 01 and 03, where applicable original files provided by BC Timber Sales

Scale - 1 : 100,000



CEDM File #: 283-01-01
 Date: July 4, 2005
 UTM Zone 10 N - NAD 83
 Base Date: BCOS TRM
 Contour Interval: 100m



**Squamish Mountain Biking Management Plan
- Map 5 -
Visual Resource Management**

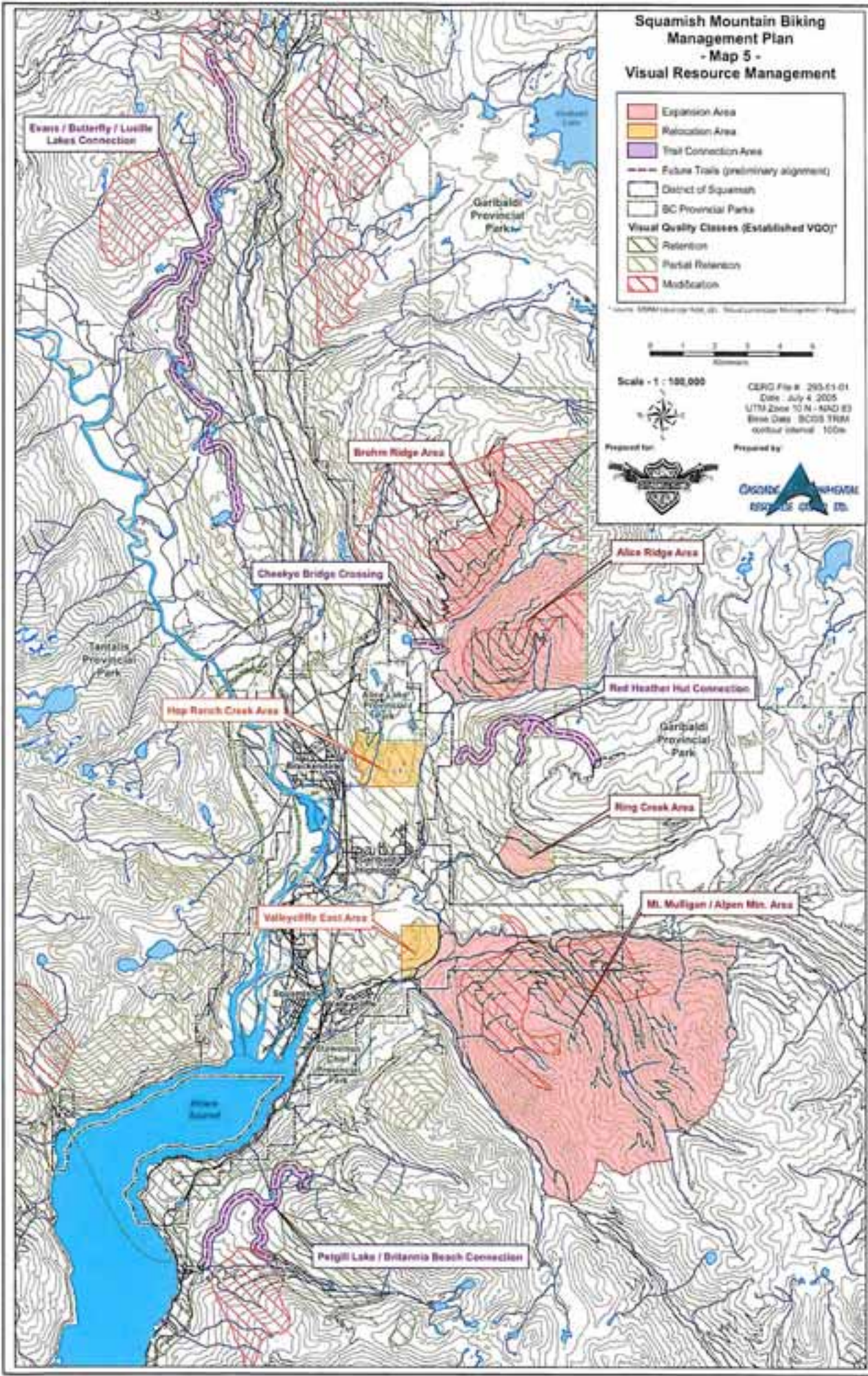
-  Expansion Area
-  Relocation Area
-  Trail Connection Area
-  Future Trails (preliminary alignment)
-  District of Squamish
-  BC Provincial Parks
- Visual Quality Classes (Established VQO)***
-  Retention
-  Partial Retention
-  Modification

*Source: BMAA (2004) and BC Parks (2004) "Visual Resource Management" Program



Scale - 1 : 100,000

CEPD File #: 205-01-01
Date: July 4, 2005
UTM Zone 10 N - NAD 83
Base Data: BCOS TRM
Contour Interval: 100m



**Squamish Mountain Biking Management Plan
- Map 6 -
Ungulate Winter Range and Community Watersheds**

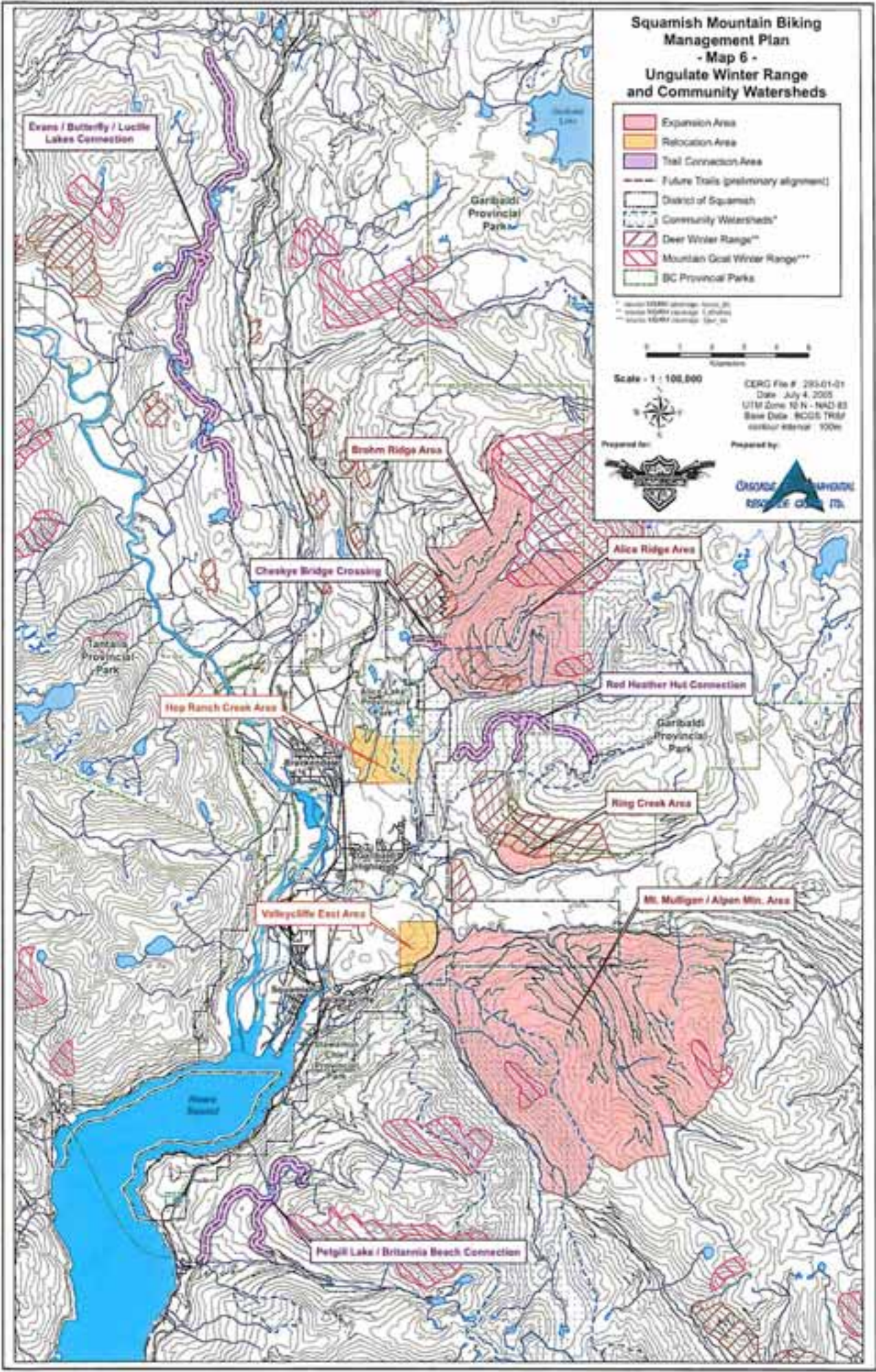
	Expansion Area
	Relocation Area
	Trail Connection Area
	Future Trails (preliminary alignment)
	District of Squamish
	Community Watersheds*
	Deer Winter Range**
	Mountain Goat Winter Range***
	BC Provincial Parks

* based on 1:50,000 scale
** based on 1:50,000 scale
*** based on 1:50,000 scale

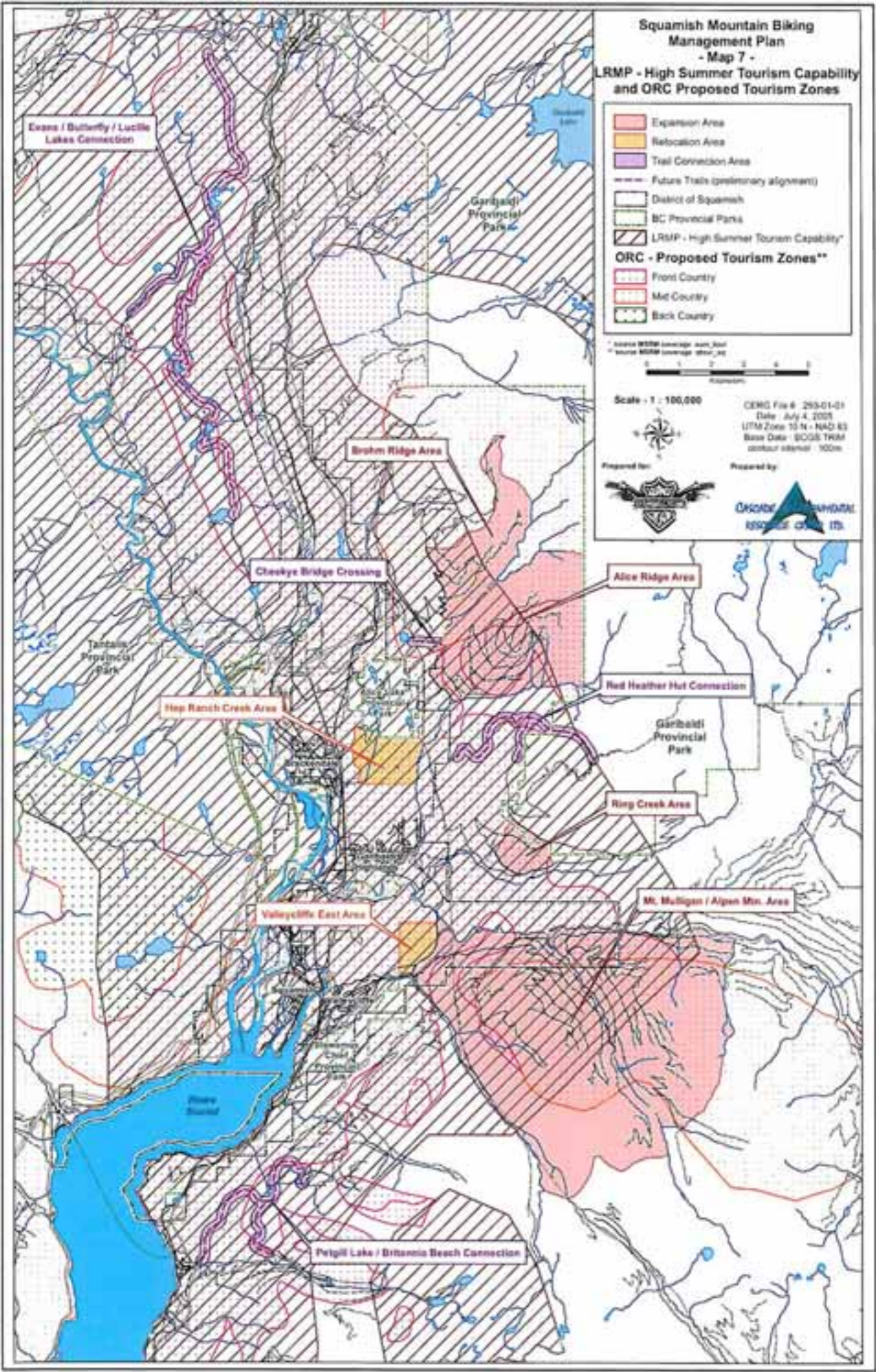


Scale - 1 : 100,000

CERG File # 293-01-01
Date July 4, 2005
UTM Zone 12 N - NAD 83
Base Date: BCDS TRM
contour interval: 100m



Squamish Mountain Biking Management Plan
- Map 7 -
LRMP - High Summer Tourism Capability and ORC Proposed Tourism Zones



Legend

- Expansion Area
- Relocation Area
- Trail Connection Area
- Future Trails (preliminary alignment)
- District of Squamish
- BC Provincial Parks
- LRMP - High Summer Tourism Capability*

ORC - Proposed Tourism Zones**

- Front Country
- Mid Country
- Back Country

* Source: BCCM coverage 2001, 2002
** Source: BCCM coverage 2001, 2002

Scale: 1 : 100,000

CERG File #: 293-01-01
 Date: July 4, 2005
 UTM Zone: 18 N - NAD 83
 Base Data: SCSG TRM
 contour interval: 100m

Prepared for: 

Prepared by: 

