Sea to Sky Mountain Biking Economic Impact Study

North Shore Report

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Executive Summary

With its abundance of freeride trails, the North Shore has one of the most well-known reputations of any mountain bike destination in Canada. As a result of visitor spending, merchants on the North Shore receive considerable business, generating considerable economic activity over the year, thus quantifiable data is needed to demonstrate the value of the trails to further encourage investment in infrastructure, and establish appropriate trail management policies. To meet these objectives, the Western Canada Mountain Bike Tourism Association (MBTA) has conducted a pilot study to measure the economic impact of mountain biking in the Sea to Sky Corridor which, in addition to Whistler, includes the communities of Squamish and the North Shore (North Vancouver and West Vancouver).

> Total visitor spending on the North Shore attributable to mountain biking was just over $2 million over the study period June 10 to September 10, supporting an estimated $444,858[1] in new economic activity (GDP).

The North Shore is one of the most popular riding locations in the Sea to Sky area and benefits significantly by its close proximity to the GVRD mountain biking population. The study found that GVRD residents that did not live on the North Shore contributed over $1.5 million in spending on the North Shore over the duration of the study. Furthermore, riders from outside of the GVRD contributed an additional $475,763 in spending.

The North Shore trails have received much attention from mountain bike publications, websites, videos and other media which has increased awareness for the trails and the style of riding that they represent. With a dedicated group of well organized mountain bikers and trail builders there appears to be great potential for mountain biking on the North Shore and to increase its contribution to the local economy. However, the current lack of authorized trails[2] on the North Shore makes formal management of the resource difficult and planning for its future challenging. Although, there is hope that the recommendations contained within the District of North Vancouver Alpine Recreational Strategic Study could help alleviate these concerns.

With an authorized trail system, land owner support and formal management systems in place the North Shore will be better prepared to manage recreational trail use, visitors and well positioned to develop further industry and services around mountain biking, thus becoming a true mountain biking destination.

[1] Only the expenditures of non-GVRD residents, representing only 12% of the overall rider volume, was used to generate the economic impact estimate,
[2] With the exception of some trails on GVRD land in North Vancouver

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Cover Image: Northshore, BC. Photo by Lee Lau.

Acknowledgements

The Mountain Bike Tourism Association gratefully acknowledges the financial support of the following partners in this study:

Ministry of Tourism, Sport, and the Arts	District of Squamish
North Shore Mountain Bike Events Society	Resort Municipality of Whistler
Test of Metal	Tourism Whistler
Corsa Cycles & Tantalus Bike Shop	Whistler Bike Park

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1.0 Introduction

The Sea to Sky Corridor, situated on BC's southwest coast, running from North and West Vancouver through Squamish, to Whistler, features some of North America's most challenging and diverse terrain for all types of mountain biking. Trails on 'the Shore' are challenging for even the most experienced freeriders, Squamish has a multitude of trails for epic cross-country rides as well as freeride trails. Whistler features both cross-country trails throughout the Whistler Valley and the Whistler Bike Park features 44 lift accessed downhill trails for all skill levels. A number of mountain bike oriented events also take place in the Sea to Sky corridor, including the participant-based Test of Metal cross-country race in Squamish (June) and the spectator-based Crankworx Freeride Mountain Bike Festival in Whistler (July).

Mountain biking on the Sea to Sky trail system provides a considerable benefit to host communities. For local residents, the trails provide a venue to participate in an active, healthy lifestyle, and increase the desirability of living in the area. Moreover, the trails are an attraction for residents of both neighbouring and out of town areas to visit the host communities, thereby providing support for local businesses and increasing the economic activity for the region.

The Sea to Sky Mountain Biking Economic Impact Study aims to quantify the economic impact of mountain biking in the Sea to Sky Corridor, and thus has several components. The largest of these involves collecting spending data directly from mountain bikers while they are on the trails in the three communities of the North Shore (made up of West and North Vancouver), Squamish and Whistler. An additional component of the survey program saw data being collected from spectators and participants at the Test of Metal race in Squamish and spectators at Crankworx in Whistler. Finally, in order to further corroborate the findings of the surveys, supplemental data from bike stores on the North Shore and Squamish was collected in order to understand intra-regional mountain biking related spending.

This document focuses exclusively on providing in-depth detail as to the findings of the study in the Districts of North and West Vancouver. The methodology used to collect expenditure data from respondents, as well as a brief description of the economic impact model contained within the next section, with section 3 providing an in depth description of the survey results from the North Shore trails, differentiating between riders visiting the North Shore from other GVRD communities and those traveling from outside of the GVRD to ride on the North Shore. Subsequently, section 4 presents the aggregate results of the GVRD expenditure survey and the economic impact results. An overview of the MBTA, the survey stint schedule, a more detailed description of the STEAM Pro economic impact model and a glossary of the terms used are found in appendices 1-4.

Although residents were not the focus of this economic impact study they were frequently incepted by surveyors on the trails. Summary tables (appendix 5) have been created to profile local users and these will be of use to local municipal planners as they develop methods to better cater for and manage mountain biking on the Northshore.

2.0 Methodology

The mountain biking survey was launched on June 10 on the North Shore, with all surveys being finished by September 10. A total of 4-6 surveyors were hired the community to conduct interviews with mountain bikers, and the surveys took place at 4 popular trail access points. The surveyors used hand held computers (Palm PDAs equipped with Techneos Entryware survey software) to record the data which was then uploaded over the Internet to a central server for compilation and assessment.

The survey methodology and schedule was designed using the *Guidelines for Measuring Tourism Economic Impact at Ungated or Open Access Events and Festivals*[3] as a general set of guiding principles. In particular, the guidelines were closely followed in developing a stratified random sampling plan. A list was prepared that included all possible survey shifts including morning and afternoon shifts for each day at all of the location for both weekdays and weekends. Shifts were then selected at random from the weekday and weekend list to reach a total of 51 stints. The stints were then balanced to ensure an appropriate balance between the different locations on the North Shore, as well as the month, day of the week, and time of day of surveying.

Table 2.1 North Shore Survey Locations

	North Shore
Survey Locations	Mountain Highway
	Old Buck
	Riverside Drive
	Cypress Mtn. Public Works Parking
	Other

2.1 Survey Sample

A total of 657 riding parties[4] were intercepted on the North Shore trails, of which 57 (8.6%) declined to participate and a further 78 (11.9%) riding parties were composed of riders where all members had all been previously intercepted leaving a total of 521 riding parties surveyed over the 12 week period. Note that minimal information was gathered from residents as their spending does not represent "new" money into the community. These riding parties were then categorized as to whether they were residents of the area (note that minimal information was gathered from North Shore residents as spending did not represent "new" money into the community), non residents, or a mixed party comprised of resident and non resident riders. For the purposes of this study, the definition of non-resident for same day riders was those whose primary residence was outside of

[3] Available on-line at: http://www.tourism.gov.on.ca/english/tourdiv/research/resources.htm

[4] A riding party was defined as the group of riders that agreed to ride together prior to the start of the day's ride (i.e. they did not meet up on the trail)

the North Shore communities of North and West Vancouver. For overnight visitors, there was no minimum distance threshold other than staying overnight away from the respondent's primary residence, and the overall length of stay in the community was less than 30 days (Table 2.2). Non-resident riders were asked to specify the location of their primary residence, with North Shore riders being asked for additional information if they were residents of the GVRD. As riders from GVRD municipalities other than North and West Vancouver were considered as 'non-residents' for the North Shore study in order to prepare an estimate as to the amount of spending done by non-North Shore GVRD residents in the North Shore Consequently, all riders who identified themselves as being from a GVRD municipality were asked to specify which area of the region they were from, with the full results detailed in Table 3.3. The results show that just one-third of mountain bikers using North Shore trails actually reside in North or West Vancouver, with half originating from other GVRD municipalities. However, it is important to note that GVRD riders cannot be included in the visitor economic impact calculation numbers, as they did not travel from outside of their usual economic area; just 12% of mountain bikers on the North Shore are true tourists (other BC, other Canada, US and Overseas combined).

Table 2.2: Number of Responses & Rider Origin

	North Shore
Total Intercepts	657
Refused to participate	57
All previously surveyed	78
Total Valid Surveys	522
Rider Origin	
North Shore resident	33%
Other GVRD resident	55%
Outside of GVRD	12%

2.2 Rider Volumes

A key component of the study was determining the number of riders who used the trail systems on the North Shore. In addition to the use of trail counters, estimates were made as to the average weekly use of the trails through analyzing the average number of riders that passed the surveyors. Because of the randomization of the survey stint schedule, shifts were spread throughout the week, occurring during the mornings, afternoons and early evenings at each of the locations. As a result, we were able to estimate the average number of riders who used the trails on a typical weekday and typical weekend by counting the number of riders who participated in the survey and the number of riders who passed the surveyors when they were engaged with survey respondents. Essentially, the surveyors counted the number of riders who went past them during their shift, and these numbers were then used to provide the estimated number of riders per week.

Table 2.3: Estimated Rider Volume – North Shore

Location	Estimated Riders (June 1 – September 15)	Estimated Riders Per Week
Cypress Mtn. Pub. Wks	5,145	343
Mountain Highway	5,985	399
Old Buck	7,200	480
Riverside	7,500	500
Total	18,660	1722

*Number of intercepts (riding parties) per location multiplied by number of riders per party

3.0 Trail Users Surveys

3.1 Party Characteristics

The average party size on the North Shore was 2.5 riders per group (Table 3.1). Overnight parties on the North Shore were slightly larger than same day parties. Of the three communities involved in the study, the North Shore had the lowest proportion of riders staying overnight, a clear indication that the number overnights in a community increases markedly with the distance traveled from Vancouver. This may also indicate a greater range of accommodation choices in other GVRD communities that are still in close proximity to the North Shore.

The most common age group of riders was the 30-39 category; however it is interesting to note that almost two thirds (65%) of riders were 30 years of age or older and only 35% were under 30. A large majority of the riders intercepted were male.

Table 3.1: Non-Resident Riding Party Characteristics

	North Shore
Avg. Party Size	2.5
% on a day trip	94%
% staying overnight	6%
Avg. Nights of Overnight Parties	6.3
Age Profile	
18 and Under	5%
19-29	29%
30-39	47%
40-49	15%
50-59	3%
60-69	0%
70 and over	0%
Gender	
Male	85%
Female	15%

As mentioned, non-resident riders were asked to specify the location of their primary residence, with GVRD residents being asked further information as to their specific place of residence, with the results detailed in Table 3.3. The results illustrate that just one-third of mountain bikers using North Shore trails actually reside in North or West Vancouver, with half originating from other GVRD municipalities. Just 12% of mountain bikers on the North Shore are true tourists (other BC, other Canada, US and Overseas combined).

Table 3.2: Riding Party Origin

	North Shore
North Shore	33%
Vancouver	29%
Burnaby/New Westminster/Port Moody	10%
Coquitlam/Port Coquitlam/Pitt Meadows/Maple Ridge	4%
Surrey/Langley/White Rock	4%
Richmond/Delta/Tsawwassen/Ladner	3%
Outside GVRD (eg Abbotsford)	5%
Sea to Sky Corridor	2%
Other BC	2%
Other Canada	3%
U.S.	5%
Overseas	2%

*Note that multiple responses were allowed to accommodate parties of mixed origins, thus the totals sum to more than 100%

Outside of BC, Ontario and Alberta accounted for 53% and 26% of other Canadian provinces, while top U.S. markets included Washington (50% of U.S. riders), California (15%) and other short-haul U.S. markets (15%, includes Colorado, Idaho, Montana, Oregon). The top international markets on the North Shore trails were Australia and Germany, with other countries mentioned including the U.K., Mexico, New Zealand, Finland, and the Bahamas.

Length of Stay / Frequency of riding

Overnight riders to the North Shore who were in the community less than 30 nights had an average length of stay of 6.4 nights. Staying with friends and relatives was the most common type of accommodation (53%) followed by hotels or motels accounting for another 38% of overnight riders.

Sameday and overnight visitors on the North Shore trails were also asked how often they rode on the North Shore and other locations over the previous 12 months. Only 4% of respondents indicated that this was their first ride on the North Shore, while many indicated they consistently rode every week or two (49%). Other Sea to Sky destinations were also popular as many riders reported visiting both Squamish and the Whistler Bike Park.

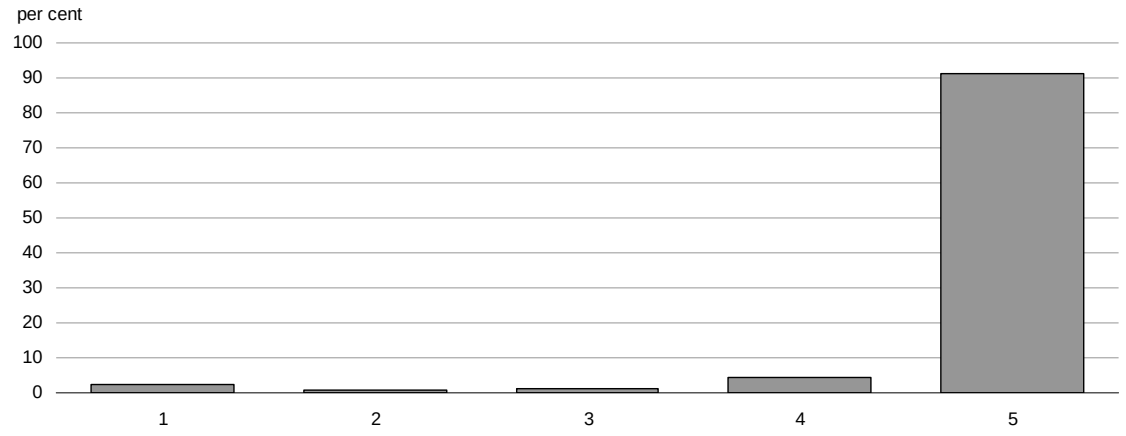
Table 3.3: Reported Ride Frequency on North Shore and other Sea to Sky Destinations over the previous 12 months

	North Shore	Squamish	Whistler	Whistler Bike Park	Elsewhere in BC	Elsewhere in Canada	Elsewhere in U.S.
Never	4%	53%	64%	31%	32%	88%	79%
1-5 Times	14%	31%	24%	41%	30%	6%	11%
5-10 Times	11%	11%	6%	16%	17%	2%	4%
10-29 Times	26%	3%	4%	11%	12%	1%	2%
30-52 Times	23%	0%	1%	1%	4%	2%	1%
53-99 Times	9%	0%	0%	1%	2%	0%	1%
100 or more Times	15%	1%	0%	0%	3%	1%	2%

Trip motivation

Over 90% of non-resident riders surveyed on the North Shore came to the community purely due to mountain biking.

Figure 3.4 Importance of Mountain Biking in Decision to Come to the North Shore



Information Sources

When asked what influenced their decision to ride on the North Shore, most riders indicated it was due in part to having ridden there before. Word of mouth was identified by 35% of all riders and 54% of non-GVRD residents indicated the North Shore's solid reputation in the mountain biking community. Non-GVRD residents also indicated that magazine articles, videos, and websites were important influences in their decision to ride on the North Shore.

Table 3.5: Influences on Decision to come to North Shore

	All North Shore	Non GVRD riders only
Have ridden here previously	59%	22%
Word of mouth prior to arrival	35%	54%
Other	9%	17%
Magazines article(s)	7%	35%
Mountain bike movie/video(s)	7%	33%
Mountain bike specific website	4%	15%
Magazine advertisements	2%	9%
Decided upon arrival in destination	1%	4%
Whistler-specific website	1%	2%
Newspaper article(s)	0%	0%
Newspaper advertisements	0%	0%
Preparation/Participation in race	0%	0%

3.2 Riding Preferences

The vast majority of riders visiting the Northshore not surprisingly preferred downhill (including Freeride) riding on advanced trails, with 37% of riders preferring expert trails. The Northshore is well know for its highly technical trails and as a result attracts a higher level of rider.

Table 3.6: Preferred Type of Riding

	All North Shore
Downhill	88%
Cross-country	41%
Dirt jumping	10%
Trials	4%
Dirt road or rail-trail mountain biking	4%
Other	1%

Table 3.7: Preferred Trail Difficulty

	All North Shore
Easiest - Flat and wide - no special skills required	7%
More Difficult - Moderate single track - small structures / drops - good hiking	38%
Advanced - Steeper & tougher - some mandatory air / drops, strenuous hiking	70%
Expert - Large drops, very high, very skinny structures, steep slopes, exposed situations – difficult to walk	37%

Rider Satisfaction

Riders were also asked to rate the importance of specific features when considering a mountain bike destination for a multi day trip. Later in the questionnaire the same riders were asked how they would rate the North Shore on the same set of features. Number of trails and variety of trails were the most important factors for choosing a destination. The North Shore clearly has what riders are looking for since its average rating for all the specified features exceeded the perceived importance of those features when choosing a destination. Furthermore, 78% of non-resident riders surveyed said they were very likely to return.

Table 3.8: Importance & Rating

	Perceived Importance	Rating of North Shore
Number of trails	4.3	4.7
Variety of trails	4.4	4.6
Reputation of destination	3.4	4.7
Availability of other activities	2.0	3.9
Quality of amenities	3.7	4.2
Ease of access	3.5	4.1
Weather	2.8	4.3
Cost	3.2	3.9

Table 3.9: Likelihood of Return

	Total
Not likely at all	4%
Very unlikely	7%
Somewhat unlikely	0%
Neutral	0%
Somewhat likely	11%
Very likely	78%

3.3 Expenditures

Non-resident spending

Table 3.10 illustrates the spending data collected from non resident riders on the North Shore, broken down for same day and overnight riders on a 'per riding party' basis. One key finding from the study is that non-resident riders generate considerable spending at the destination bike shops, with a number of non-resident riding parties reporting bike shop spending greater than $1,000. These findings have been corroborated through discussions with several bike shops on the North Shore.

Average spending per person on a daily basis was somewhat higher for overnight riders at $48.32 compared to same day riders who spent $32.12 on average on the North Shore. Table 3.10 also illustrates the low number of overnight versus day trips to the Northshore, this is likely a reflection of the lack of accommodation and infrastructure on the Northshore for mountain bikers and the large number of GVRD riders surveyed.

Table 3.10: Expenditures per Party on the North Shore

North Shore	Type of trip (number of responses)	
	Sameday (325)	Overnight (32)*
Accommodation	$0.00	$292.81
Restaurant / Pub / Night Club	$26.02	$206.47
Groceries / Other F&B	$7.05	$56.09
Bike Park	$0.00	$0.00
Rec & Ent	$1.45	$8.59
Bike Shop	$39.77	$245.38
Other Shopping	$3.67	$40.63
Own Vehicle expenses	$17.06	$23.13
Rental Vehicle	$1.23	$56.25
Local Transport	$0.47	$21.88
Other Spending	$0.69	$12.19
Total per party	$97.41	$963.41
Avg. Party Size	*2.5*	*3.2*
Avg. Nights		*6.3*
Avg. Spend per person per day	*$39.12*	*$48.32*

**Caution: small sample size*

3.4 North Shore Bike Shops Data

Key North Shore bike shops were also interviewed to provide supplementary sales and consumer origin data to help substantiate the expenditure information gathered through the trail surveys. Responses collected at the bike stores are consistent with the expenditure results. North Shore bike shops indicated that they sell a number of bikes and other major components (forks, wheels, etc.) to residents from outside of the North Shore. Sales to other GVRD residents are high as the shops on the Shore are very competitive and carry arguably the best selection of bicycles, parts, and accessories in the GVRD, thus intra-regional sales are an important proportion of their business. Occasional sales to overseas residents were also reported; however sales to U.S. residents are generally low due to the strength of the Canadian dollar and the strong U.S. brand loyalty among American riders.

Northshore Bike Shops also indicated that the study period (June-September), while busy does not equate to a quiet winter and early spring. Many of the shops are year round destinations and GVRD residents tend to ride for 10 or even 12 months a year on the Northshore.

4.0 Economic Impact

As previously noted, the economic benefit of the trail system needs to be broken down into two components, the first which shows the level of spending by non-North Shore GVRD residents on the shore while the second details the economic benefits arising from non-GVRD expenditures on the North Shore.

Non-North Shore GVRD residents make up the bulk of riders interviewed on the trail system, accounting for approximately half of the riders interviewed, whereas North Shore residents made up one-third of the riders surveyed. However, as the spending of non-North Shore GVRD residents is best considered as an intra-regional transfer, the study aims to quantify their expenditures as opposed to the economic impact arising from the tourism expenditures made by out of town residents. This being said, non-North Shore GVRD resident expenditures gave considerable support to North Shore business such as restaurants, grocery stores, and bike stores. Table 4.1 below details the estimated cumulative expenditure of more than 14,200 non-North Shore GVRD residents over the course of the study (June 1 to September 15).

The study found that any spending was reported by approximately 50% of other GVRD residents, meaning that while half of riders made some spending in the North Shore either immediately before or immediately after their ride, many went straight home. Consequently, a goal of North Shore businesses could be to increase the proportion of riders participating in the North Shore community.

Table 4.1 Non-North Shore GVRD Expenditures

	North Shore GVRD rider results
Accommodation	$0.00
Restaurant / Pub / Night Club	$418,981.09
Groceries / Other F&B	$113,535.01
Other Spending	$11,146.64
Bike Park	$0.00
Rec & Ent	$23,333.63
Bike Shop	$640,261.67
Other Shopping	$59,101.95
Own Vehicle expenses	$274,693.11
Rental Vehicle	$19,816.25
Local Transport	$7,579.71
Total	$1,568,449.07

As previously noted, the expenditures of non-GVRD residents was calculated separately and passed though the economic impact model, with the results detailed in Table 4.2. These expenditures and economic impacts were made by only 12% of the overall rider volume, thus they under-value the employment and tax base supported by riding on the North Shore.

Table 4.2 Non-GVRD Economic Impact Estimates

	North Shore
Initial Expenditure	$475,763
Total GDP	$444,858
Wages & Salaries	$301,530
Employment	9.6
Industry Output	$1,049,191
Taxes	
Federal	$106,762
Provincial	$100,301
Municipal	$17,970
Total Taxes	$225,033

Appendices

Appendix 1 – Western Canada Mountain Bike Tourism Association (MBTA)

About Us

The Western Canada Mountain Bike Tourism Association (MBTA) was initially developed by three mountain biking individuals from different tourism backgrounds that have a common vision of enhancing Western Canada's mountain biking tourism product in a sustainable and market focused manner that is supported by community stakeholders and resort operators.

> *Our goal is to have Western Canada recognized for its world class sustainable trails and abundant mountain bike experiences that are supported by enthusiastic communities and operators offering high quality services.*

The concept gained momentum following the inaugural Northshore World Mountain Bike Conference held in North Vancouver in August 2004, which highlighted the potential for mountain bike tourism in British Columbia and demonstrated the high level of interest from communities and resorts throughout BC.

The MBTA believes that by working together British Columbia can exemplify standards of sustainability in mountain bike tourism that will not only care for natural areas, but also create local opportunities and support community pride.

Directors

Jimmy Young, Martin Littlejohn, Donna Green, Francis Argouin and Cliff Miller

Current initiatives underway for the MBTA include:

- Sea to Sky Mountain Biking Economic Study – summer 2006
- Bike Parks of BC - Marketing and Development Initiatives in partnership with Tourism BC 2006/07
- Participation in the Recreational Mountain Biking on Provincial Crown Land Working Group through the BC Ministry of Tourism, Sport and the Arts
- Participation on the Whistler Cycling Committee for Whistler 2020 Strategy
- Assisting with the Vancouver Coast and Mountains Tourism Region – Outdoor Adventure Directory 2007
- Presentations at the Canada West Ski Areas Association Conference May 2006 and Gravity Logic Bike Park Management Seminar in September 2006.

Appendix 2: Stint Schedule - Northshore

Date	Weekday	Location	Hours	Surveys	Completes	Riders	Riders / hr	T.o.D*
Jun 10	Sat	Mtn Hwy	4.25	18	18	47	11.06	morn
Jun 10	Sat	Old Buck	4	15	14	38	9.50	noon
Jun 11	Sun	Cypress Works	2.75	8	8	28	10.18	noon
Jun 11	Sun	Riverside	3.5	9	8	25	7.14	noon
Jun 16	Friday	Old Buck	1	2	2	8	8.00	noon
Jun 17	Sat	Cypress Works	4	9	7	21	5.25	noon
Jun 18	Sun	Mtn Hwy	4	21	16	49	12.25	noon
Jun 25	Sun	Mtn Hwy	4	9	8	18	4.50	aft
Jun 27	Tues	Cypress Works	3	8	5	24	8.00	aft
Jun 27	Tues	Riverside	3.5	7	6	25	7.14	aft
July 1	Sat	Mtn Hwy	4	10	8	18	4.50	aft
July 6	Thursday	Riverside	3	8	8	27	9.00	aft
July 8	Sat	Cypress Works	3.5	10	8	27	7.71	aft
July 8	Sat	Old Buck	4	15	13	33	8.25	aft
July 8	Sat	Riverside	4	11	9	23	5.75	noon
July 9	Sun	Cypress Works	2	2	2	7	3.50	noon
July 11	Tues	Old Buck	4	25	20	41	10.25	aft
July 15	Sat	Cypress Works	4	4	3	9	2.25	aft
July 15	Sat	Mtn Hwy	4	26	25	46	11.50	noon
July 15	Sat	Old Buck	3.5	14	10	22	6.29	aft
July 22	Sat	Mtn Hwy	3	10	8	19	6.33	noon
July 22	Sat	Riverside	2	9	7	17	8.50	noon
July 23	Sun	Old Buck	4	26	21	59	14.75	morn
July 28	Friday	Cypress Works	3	2	2	2	0.67	aft
July 29	Sat	Mtn Hwy	4	25	21	38	9.50	noon
July 30	Sun	Cypress Works	1	5	4	9	9.00	noon
July 30	Sun	Old Buck	4	10	8	20	5.00	aft
July 31	Mon	Mtn Hwy	2	4	3	5	2.50	noon
Aug 1	Tues	Riverside	1	2	2	3	3.00	morn
Aug 5	Sat	Cypress Works	4	6	4	14	3.50	aft
Aug 5	Sat	Old Buck	3.5	28	19	40	11.43	morn
Aug 6	Sun	Old Buck	7	19	14	26	3.71	morn
Aug 7	Mon	Mtn Hwy	3	11	8	13	4.33	aft
Aug 7	Mon (Stat)	Old Buck	3.5	19	15	43	12.29	aft
Aug 11	Friday	Cypress Works	2.5	9	8	20	8.00	aft
Aug 13	Sun	Old Buck	2.5	7	6	20	8.00	aft
Aug 15	Tues	Mtn Hwy	3.5	12	10	21	6.00	aft
Aug 19	Sat	Cypress Works	3.5	11	8	21	6.00	morn
Aug 19	Sat	Old Buck	4	17	13	29	7.25	morn
Aug 20	Sun	Cypress Works	2	4	4	11	5.50	aft
Aug 20	Sun	Mtn Hwy	4	21	18	46	11.50	noon
Aug 26	Sat	Mtn Hwy	4	18	14	39	9.75	morn

Aug 26	Sat	Old Buck	3	19	17	45	15.00	aft
Aug 27	Sun	Cypress Works	2	4	2	5	2.50	morn
Aug 27	Sun	Old Buck	4	21	15	32	8.00	aft
Sep 10	Sun	Old Buck	4	15	13	34	8.50	morn
Sep 10	Sun	Riverside	4	10	9	24	6.00	morn
Sep 2	Sat	Mtn Hwy	4	17	14	25	6.25	aft
Sep 3	Sun	Cypress Works	1	1	1	1	1.00	aft
Sep 6	Wed	Old Buck	4	6	5	7	1.75	morn
Sep 7	Thursday	Old Buck	4	13	10	29	7.25	aft

* T.o.D. refers to “Time of Day” when majority of shift took place: Morn 9-11; Noon 11-2; Aft 2-7

Appendix 3 – STEAM Pro Information

Background

Briefly, the purpose of STEAM Pro is to calculate both the provincial and regional economic impacts of sport tourism. The economic impacts are calculated on the basis of capital and operating expenditures on goods, services and employee salaries, and on the basis of tourist spending within a designated tourism sector. The elements used to measure the economic impacts are Gross Domestic Product (GDP), Employment, Taxes, Industry Output and Imports. STEAM Pro measures the direct, indirect & induced effects for each of these elements.

Technical Description of the Impact Methodology used by STEAM-Pro

STEAM Pro and many other impact studies are based on input-output techniques. Input-Output models involve the use of coefficients that are based on economic or business linkages. These linkages trace how tourist expenditures or business operations filter through the economy. In turn, the coefficients applied are then used to quantify how tourism related activity in a particular region generates employment, taxes, income, etc. The input-output approach indicates not only the direct and indirect impact of tourism but can also indicate the induced effect resulting from the re-spending of wages and salaries generated.

All impacts generated by the model are given at the direct impact stage (i.e. the "front line" businesses impacted by tourism expenditures), indirect impact stage (i.e. those industries which supply commodities and/or services to the "front line" businesses) and the induced impact stage (induced consumption attributable to the wages and salaries generated from both the direct and indirect impact). In this sense, the model is closed with respect to wages. Imports are also determined within the model, so the model is closed with respect to imports. Exports are not endogenized (i.e. additional exports are not assumed with the induced impact) which consequently generates more conservative impacts. Another assumption of the model, which leads to more conservative impacts, is that not all commodities and/or services purchased are assumed to have at least one stage of production within the province. This assumption is crucial for souvenirs, gasoline and other commodities.

Taxes and employment are key economic impacts and as such must involve the use of both input-output and econometric techniques. The data embodied in the provincial input-output tables are from 1996, while taxes and employment incorporate current coefficients and/or rates. These coefficients and/or rates are then applied to measures determined within the input-output framework of the model. Determining the level of taxes and employment outside the input-output framework of the model allows rates and/or coefficients to be selectively changed for updating or in order to conduct a scenario analysis.

Regional (Sub-Provincial) Impact Methodology

The method used to simulate intraprovincial commodity flows and ultimately regional impacts follows directly from regional economics principles. The principle is referred to as the "gravity model". Basically the "gravity model" states that the required commodity (& service) inputs will be

"recruited" in a manner that takes into consideration economies of scale (i.e. production costs), transportation costs and the availability of specific industries. Economies of scale (i.e. lower production costs) are positively correlated with input demand while greater transportation costs are negatively correlated with input demand. Fulfilling that demand from other provincial regions is contingent on the fact that the specific industry does actually exist. An advantage of using the "gravity model" to simulate intraprovincial commodity flows is that as the industrial composition of the labour force changes, or as new industries appear for the first time in specific regions, the share of production between the various sub-provincial regions also changes.

By following this principle of the gravity model, all sub-provincial regions of a province are assigned a coefficient for their relative economies of scale in each industry (using the latest industry labour force measures) as well as a coefficient to represent the transportation cost involved to get each industry's output to the designated market. One variation on the "gravity model" principle involves the estimation of "relative trade distances" by incorporating different "weights" for different modes of transport. Once these coefficients are generated for all regions and over all industries, a measure of sensitivity (mostly relative to price, but in the case of service industries also to a "local preference criteria") is then applied to all commodities. Another variation on the strict "gravity model" approach is that the measure of sensitivity is adjusted by varying the distance exponent (which in the basic "gravity model" is 2) based on the commodity or service required. The variation in distance exponents revolve, principally, around two research hypotheses: (1) the greater the proportion of total shipments from the largest producer (or shipper), the lower the exponent, and (2) the greater the proportion of total flow which is local (intraregional), the higher the exponent.

Appendix 4 – Glossary

Initial Expenditure - This figure indicates the amount of initial expenditures or revenue used in the analysis. This heading indicates not only the total magnitude of the spending but also the region in which it was spent (thus establishing the "impact" region).

Direct Impact - Relates ONLY to the impact on "front-line" businesses. These are businesses that initially receive the operating revenue or tourist expenditures for the project under analysis. From a business perspective, this impact is limited only to that particular business or group of businesses involved. From a tourist spending perspective, this can include all businesses such as hotels, restaurants, retail stores, transportation carriers, attraction facilities and so forth.

Indirect Impact - Refers to the impacts resulting from all intermediate rounds of production in the supply of goods and services to industry sectors identified in the direct impact phase. An example of this would be the supply and production of bed sheets to a hotel.

Induced Impact - These impacts are generated as a result of spending by employees (in the form of consumer spending) and businesses (in the form of investment) who benefited either directly or indirectly from the initial expenditures under analysis. An example of induced consumer spending would be the impacts generated by hotel employees on typical consumer items such as groceries, shoes, cameras, etc. An example of induced business investment would be the impacts generated by the spending of retained earnings, attributable to the expenditures under analysis, on machinery and equipment.

Gross Domestic Product (GDP)- This figure represents the total value of production of goods and services in the economy resulting from the initial expenditure under analysis (valued at market prices).

NOTE: *The multiplier (A), Total/Initial, represents the total (direct, indirect and induced) impact on GDP for every dollar of direct GDP. This is a measure of the level of spin-off activity generated as a result of a particular project. For instance if this multiplier is 1.5 then this implies that for every dollar of GDP directly generated by "front-line" tourism businesses an additional $0.50 of GDP is generated in spin-off activity (e.g. suppliers).*

The multiplier (B), Total/$ Expenditure, represent the total (direct, indirect and induced) impact on GDP for every dollar of expenditure (or revenue from a business perspective). This is a measure of how effective project related expenditures translate into GDP for the province (or region). Depending upon the level of expenditures, this multiplier ultimately determines the overall level of net economic activity associated with the project. To take an example, if this multiplier is 1.0, this means that for every dollar of expenditure, one dollar of total GDP is generated. The magnitude of this multiplier is influenced by the level of withdrawals, or imports, necessary to sustain both production and final demand requirements. The less capable a region or province is at fulfilling all necessary production and final demand requirements, all things being equal, the lower the eventual economic impact will be.

GDP (at factor cost) - This figure represents the total value of production of goods and services produced by industries resulting from the factors of production. The distinction to GDP (at market prices) is that GDP (at factor cost) removes indirect taxes and adds subsidies.

Wages & Salaries - This figure represents the amount of wages and salaries generated by the initial expenditure. This information is broken down by the direct, indirect and induced impacts.

Employment - Depending upon the selection of employment units (person-years or equivalent full-year jobs) these figures represent the employment generated by the initial expenditure. These figures distinguish between the direct, indirect and induced impact. "Equivalent Full-Year Jobs", if selected, include both part-time and full-time work in ratios consistent with the specific industries.

NOTE: *The multiplier (B) is analogous to Multiplier (B) described earlier with the exception being that employment values are represented per $1,000,000 of spending rather than per dollar of spending. This is done to alleviate the problem of comparing very small numbers that would be generated using the traditional notion of a multiplier (i.e. employment per dollar of initial expenditure).*

Industry Output - These figures represent the direct & indirect and total impact (including induced impacts) on industry output generated by the initial tourism expenditure. It should be noted that the industry output measure represents the sum total of all economic activity that has taken place and consequently involve double counting on the part of the intermediate production phase. Since the Gross Domestic Product (GDP) figure includes only the net total of all economic activity (i.e. considers only the value added), the industry output measure will always exceed or at least equal the value of GDP.

Taxes - These figures represent the amount of taxes contributed to municipal, provincial and federal levels of government relating to the project under analysis. This information is broken down by the direct, indirect and induced impacts.

Imports - These figures indicate the direct, indirect and induced final demand and intermediate production requirements for imports both outside the province and internationally.

Appendix 5 – Northshore Residents Data Tables

Sample size 163

Mean Party Size

	N	Minimum	Maximum	Mean
Party Size	163	1	19	2.28

Party Size Frequency

Party Size	Frequency	
1	53	33%
2	62	38%
3	25	15%
4	13	8%
5	7	4%
7	1	1%
8	1	1%
19	1	1%

Age Profile

18 and Under	15%
19-29	23%
30-39	37%
40-49	18%
50-59	6%
60-69	0%

Gender

Male	83%
Female	17%

Reported Income

Under $25,000	9%
$25,000-$49,000	17%
$50,000-$74,999	23%
$75,000-$99,999	20%
$100,000-$124,999	14%
$125,000-$149,999	10%
$150,000+	7%

Ride Frequency by Location

	North Shore	Squamish	Whistler	Whistler Bike Park	elsewhere in BC	elsewhere in Canada	elsewhere in U.S.
Never	0%	48%	58%	33%	35%	88%	84%
1-5 Times	6%	34%	28%	33%	34%	6%	10%
5-10 Times	6%	14%	9%	17%	19%	4%	4%
10-29 Times	25%	3%	5%	16%	9%	1%	1%
30-52 Times	27%	0%	1%	1%	2%	0%	1%
53-99 Times	13%	0%	0%	1%	0%	0%	0%
100 or more Times	23%	1%	0%	0%	1%	1%	0%

Riding Style

Downhill	82%
Cross-country	42%
Dirt jumping	15%
Dirt road or rail-trail mountain biking	10%
Trials	2%
Other	2%

Preferred Difficulty

Easiest - Flat and wide - no special skills required	10%
More Difficult - Moderate single track - small structures / drops - good hiking	43%
Advanced - Steeper & tougher - some mandatory air / drops, strenuous hiking	64%
Expert - Large drops, very high, very skinny structures, steep slopes, exposed situations – difficult to walk	35%