

**WHISTLER BLACKCOMB
MASTER PLAN UPDATE 2013
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FOREWORD

Ecosign Mountain Resort Planners Ltd., has prepared ski area master plans in British Columbia since 1975. We prepared the first Ski Area Master Plan for Whistler Mountain in 1978 and we also prepared a conceptual Master Plan for Blackcomb Mountain in 1978 for the Blackcomb Skiing Corporation. Updates to the Master Plans for both mountains have been prepared periodically over the past 30 years. As the primary author of the Master Plans, it is important for the public, government officials and First Nations to understand that while we have worked diligently with the highly skilled and respected management team at Whistler Blackcomb, visions of the future are by their very nature imperfect. We have specifically found over the years that changes in the preferences of Whistler Blackcomb's clientele, population demographics and new types of winter sports mean that there will need to be flexibility in the Master Plan in the future. I give just two examples: The first two master plans for each of Whistler and Blackcomb had no mention whatsoever of snowboarding and yet snowboarders now comprise about one-third of all visitors on average throughout the winter season. The second example is new lift technology. There was no such thing as high speed, detachable grip chairlifts until our master plan for Blackcomb in 1986. Moreover, while we have long had dreams of connecting the alpine areas of Whistler and Blackcomb the technology was simply not available until around 2005. The new 3S (three ropes) technology allowed the true connection of the mountain top restaurants on each Whistler and Blackcomb with the revolutionary PEAK 2 PEAK Gondola which opened in December 2008. The tremendous success of the PEAK 2 PEAK Gondola as an iconic tourist attraction is an example of how changes in technology can allow for even greater visions to be realized.

In summary, when this document is reviewed in five, ten, twenty or thirty years we request that open mindedness and flexibility be utilized in examining future proposals in the ever changing requirements of visitors to Whistler and Blackcomb Mountains.

December 13, 2013



Paul E. Mathews, President
Ecosign Mountain Resort Planners Ltd.

TABLE OF CONTENTS - BLACKCOMB MOUNTAIN

I. INTRODUCTION

.1	Location and Regional Context	I – 2
.2	Historical Perspective	I – 3
.3	Planning Issues	I – 5
.4	Glossary	I – 7

II. INVENTORY

.1	Introduction	II – 1
.2	Physiography	II – 1
.3	Solar Shading & Radiation Analysis	II – 3
.4	Avalanche	II – 5
.5	Existing Mountain Facilities	II – 5
.6	Mountain Capacity Analysis	II – 18
.7	Blackcomb Mountain Skier Carrying Capacity (SCC) Analysis	II – 21
.8	Ski Trail Balance Statement	II – 22
.9	Mountain Staging and Circulation	II – 26
.10	Snowmaking	II – 26
.11	Olympic Facilities	II – 27
.12	Skier Service Building Inventory and Analysis	II – 27
.13	Parking and Accommodation	II – 37
.14	Resort Staging Analysis	II – 42
.15	Other On Mountain Recreational Activities	II – 48
.16	Area Facilities Balance	II – 52

III. MARKET

.1	Classification of Winter Sports Sites	III – 1
.2	North American Ski Industry Overview	III – 2
.3	Snowboarding	III – 7
.4	Snowtubing	III - 8
.5	Historic Winter and Summer Visitation for Whistler Blackcomb	III – 9
.6	Whistler Blackcomb – 20 Year Skier Visit Forecast	III – 14

IV. DEVELOPMENT ANALYSIS

.1	Mountain Design Analysis	IV – 1
.2	Terrain Capacity Analysis	IV – 1

.3	Future Whistler Valley Land Use	IV – 5
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V. MOUNTAIN FACILITIES

.1	Goals and Objectives	V – 1
.2	General Concept	V – 6
.3	Phase 8	V – 9
.4	Phase 9	V – 10
.5	Blackcomb Glacier Park	V - 12
.6	Snowmaking	V – 20
.7	On-Mountain Buildings	V – 22
.8	Controlled Recreation Boundary (CRA)	V – 28
.9	Other Winter/Summer On-Mountain Activities	V – 29
.10	Spearhead/Fitzsimons Hut System	V – 32

VI. BASE AREA FACILITIES

.1	Valley Staging Overview	VI – 1
.2	Valley Staging Lift Requirements	VI – 6
.3	Blackcomb Base Area Concept	VI – 8
.4	Bed Unit Allocations	VI – 9

VII. ENVIRONMENTAL

.1	Introduction	VII – 1
.2	Overview of Current Environmental Practices	VII – 1
.3	Sustainability Policy for Whistler Blackcomb	VII – 2
.4	Whistler Blackcomb Sustainability Report 2010	VII – 4
.5	Identification of Sensitive Areas Within CRA	VII – 6
.6	Whistler Blackcomb – RMOW Cheakamus Community Forest & Protected Areas Network Memorandum of Understanding	VII – 6
.7	Blackcomb Glacier Provincial Park – Special Use Permit	VII – 7
.8	Overview of Archaeological Studies	VII - 8

LIST OF TABLES

II.1	Blackcomb Mountain Historical Lift Development	II – 7
II.2	Lift Specifications – Existing Area 2013/14 Season	II – 9
II.3	International Trail Standards	II – 10
II.4	Skier Skill Classification	II – 11
II.5	Ski Trail Inventory – Existing Area 2013/14	II – 12

II.6	Skiing Demand by Skill Classification	II – 19
II.7	Planning Parameters	II – 21
II.8	Skier Carrying Capacity – Existing Area 2013/14	II – 22
II.9	Trail Balance by Lift System – Existing Area 2013/14	II – 23
II.10	Cumulative Ski Trail Balance System – Existing Area 2013/14	II – 25
II.11	Existing Skier Service Space Inventory	II – 29
II.12	Ecosign Design Standards Theoretical Floorspace per Skier	II – 31
II.13	Blackcomb Existing Skier Space Use Analysis Average Top 15 Days 2006/07 to 2012/13	II – 32
II.14	Whistler Blackcomb Existing Skier Space Use Analysis Average Top 15 Days 2006/07 to 2012/13	II - 34
II.15	Existing Restaurant Seat Inventory and Analysis	II – 36
II.16	Whistler Valley Dwelling & Bed Unit Inventory 2013	II – 37
II.17	Peak Period Occupancy Rates and Skier Yields Winter Season 2012/13	II – 39
II.18	Whistler Valley Accommodation Skier Yield Predicted Bed Unit Occupancy – Peak Day 2012/13 Season	II – 39
II.19	Whistler Valley Day Skier Parking 2013/14	II – 42
II.20	Total Whistler Valley Theoretical Maximum Staging Capacity 2013/14 Ski Season	II – 45
II.21	Whistler Blackcomb First Ride Analysis 2006/07, 2007/08, 2012/13 Ski Seasons	II – 46
III.1	Canadian Historic Skier Visitation	III - 4
III.2	Recorded Annual Skier Visits B.C. & Alberta 1984/85 to 2011/12	III – 5
III.3	Whistler Blackcomb Combined Visitation Season Ending 2003-2013	III – 11
III.4	Blackcomb Visitation Season Ending 2003-2013	III – 12
III.5	Whistler Mountain Visitation Seasons Ending 2003 - 2013	III – 12
III.6	Whistler Blackcomb 20 Year Skier Visit Forecast	III - 16
IV.1	Blackcomb Mountain Terrain Capacity Analysis	IV – 3
IV.2	Terrain Blackcomb Mountain Pod Balance Statement–	IV – 4
IV.3	Whistler Valley Dwelling Units and Bed Units – Buildout	IV – 6
IV.4	Peak Day Occupancy Rates and Skier Yields	IV – 7
IV.5	Skiers from Whistler Valley Accommodation at Buildout Peak Day Occupancies	IV – 7
V.1	Blackcomb Mountain Ski Area Development Summary	V – 8
V.2	Blackcomb Mountain Lift Specifications – Buildout	V – 13
V.3	Blackcomb Mountain Ski Trail Inventory – Buildout	V – 15
V.4	Cumulative Ski Trail Balance Statement – Buildout	V – 17
V.5	Blackcomb Mountain Trail Balance by Lift System	V – 19

V.6	Blackcomb Snowmaking Coverage at Buildout	V – 21
V.7	Blackcomb Snowmaking Water License Summary	V - 22
V.8	Blackcomb Mountain Floorspace Programming	V – 27
VI.1	Whistler Blackcomb Peak Day Skier Origins at Buildout	VI – 1
VI.2	Whistler Blackcomb Skiers from Parking at Buildout	VI – 4
VI.3	Whistler Blackcomb Base Area Staging Capacity at Buildout	VI – 6
VI.4	Whistler Blackcomb Existing Valley Staging Lift Capacities	VI – 7
VI.5	Whistler Blackcomb Future Valley Staging Lift Capacities	VI – 8
VI.6	Determination of Associated Percentage for Bed Unit Calculation	VI - 11
VI.7	Blackcomb Mountain Bed Unit Allocations	VI – 12

LIST OF PLATES

I.1	Critical Resort Elements	I – 6
II.1	Ski Pointer	II – 4
II.2	Skier Skill Class Distribution	II – 19
II.3	Skier Density Worldwide Comparison	II – 20
II.4	Lift vs. Trail Capacity – Existing Area 2009/2010	II – 24
II.5	Blackcomb Ski Trail Balance – Existing Area 2009/2010 All Trails	II – 25
II.6	Blackcomb Mountain Space Use Balance	II – 33
II.7	Area Facilities Balance	II – 53
III.1	Total Skier Visits – United States	III – 3
III.2	Recorded Annual Skier Visits B.C. & Alberta 1985 - 2012	III – 6
III.3	Snowboarders as a Percent of Total Winter Visits - U.S.	III – 7
III.4	Percentage of Resorts with Snow Tubing	III – 8
III.5	US Average Snow Tubing Visits per Area	III - 9
III.6	Whistler Blackcomb Historic Skier Visits	III – 10
III.7	Blackcomb Mountain Skier Visit Distribution Analysis	III – 13
III.8	Whistler Blackcomb Skier Visit Distribution Analysis	III – 14
III.9	Whistler Blackcomb – 20 Year Skier Visit Forecast	III – 16
IV.1	Terrain Pod Balance – Blackcomb Mountain	IV – 4
V.1	Ski Trail Balance - Buildout	V – 18
V.2	Blackcomb Mountain Lift vs. Trail Capacity	V – 20

LIST OF FIGURES

1. Area Location - Blackcomb
2. The Study Area – Blackcomb

3. Aspect Analysis - Blackcomb
4. Elevation Analysis - Blackcomb
5. Fall Line Analysis - Blackcomb
- 6a. Solar Analysis 09:00 hrs. - Blackcomb
- 6b. Solar Analysis 12:00 hrs. - Blackcomb
- 6c. Solar Analysis 15:00 hrs. - Blackcomb
7. Solar Radiation Analysis - Blackcomb
- 8a. Existing Mountain Facilities - Blackcomb
- 8b. Existing Mountain Facilities - with Orthographic Photo - Blackcomb
9. Existing Snowmaking Coverage - Blackcomb
10. Olympic Facilities - Blackcomb
11. Parking & Circulation Central Village - Blackcomb
- 12a. Existing Summer Recreation Plan - Blackcomb
- 12b. Existing Winter & Spring Recreation Plan - Blackcomb
- 12c. Existing Summer Recreation Plan - Village – Blackcomb

- 13a. Mountain Slope/Ski Area Terrain Capacity Analysis - Blackcomb
- 13b. 3D Mountain Slope/Ski Area Terrain Capacity Analysis - View 1 Blackcomb
- 13c. 3D Mountain Slope/Ski Area Terrain Capacity Analysis - View 2 Blackcomb

- 14a. Mountain Master Plan at Buildout - Blackcomb
15. Snowmaking Coverage – Buildout - Blackcomb
16. Summer Recreation Plan at Buildout – Blackcomb

17. Valley Staging Lifts and Parking at Buildout – Blackcomb
18. Overall Base Area Concept – Blackcomb

APPENDIX A

- A1. Existing Tenures (Overall)
- A2. Lift Tenures
- A3. Building Tenures
- A4. Utility Tenures
- A5. 3rd Party Tenures
- A6. Other Tenures

I. INTRODUCTION

Overview

The Whistler Blackcomb Ski Resort is located on Crown land in the Resort Municipality of Whistler. Whistler and Blackcomb Mountains are now under the ownership of Whistler Blackcomb Holdings Inc. and Nippon Cable Canada Ltd. and are marketed to the public as one resort. The two mountains were originally developed as separate but adjacent ski resorts by independent owners. Each mountain has its own Operating License and Master Development Agreement with the Province of British Columbia. The Operating License governs the ongoing operation of the ski area on Crown Land. The Master Development Agreement allows for the phased development of mountain improvements and base area facilities within a Controlled Recreation Area (CRA) in accordance with a Ski Area Master Plan that may be updated from time to time. The Blackcomb Mountain Master Plan was last updated in 1993 and an update of the Whistler Mountain Master Plan was prepared in 1998. In 2009, Whistler Blackcomb retained Ecosign Mountain Resort Planners, Ltd. to prepare updates of the Whistler Mountain Master Plan and the Blackcomb Mountain Master Plan. The first draft of this document was submitted to the Province in November 2010. This final report incorporates changes requested by the Province and input from other approval agencies. The report has also been updated to reflect construction that has occurred on the mountain and in the Whistler valley since 2010.

A separate ski area Master Plan has been prepared for each mountain; however, since the two mountains share the same resort village and are interconnected by the new PEAK 2 PEAK Gondola, there will be many elements of the reports that are common to both mountains.

The Blackcomb Mountain Master Plan Update 2013 contains an inventory of the existing recreation improvements, service facilities and infrastructure located within its CRA, including a description of all season recreational operations, third party tenures and facilities constructed for the 2010 Winter Olympic Games. The future recreational development potential of the terrain within the CRA and the RMOW's current plans for future development within Whistler are described in the Development Analysis section. The Mountain Facilities section of this report outlines Whistler Blackcomb's future plans for recreation improvements and adventure tourism activities on Blackcomb Mountain.



Blackcomb Mountain

.1 Location and Regional Context

Whistler Blackcomb Ski Resort is located in the Resort Municipality of Whistler (RMOW), in the Squamish-Lillooet Regional District. Blackcomb Mountain's Controlled Recreation area abuts Garibaldi Provincial Park on the north and east, private and municipal land in Whistler on the west and the Whistler Mountain CRA and Fitzsimmons Creek on the south. Whistler Village is approximately 120 kilometres north of Vancouver, B.C. Metro Vancouver is Canada's third largest city, with a population of approximately 2.3 million people. Vancouver International Airport is approximately 135 kilometres south of Whistler and services 17.9 million passengers annually with connections to all major Canadian & U.S cities, Europe, Asia and Australia. There is regular scheduled bus service between Whistler and Vancouver and Vancouver International Airport, with frequency of service varying by season.

Access to Whistler Blackcomb is via Highway 99 (Sea to Sky Highway) which runs from West Vancouver along the edge of Howe Sound to Squamish, and inland to Whistler. Highway 99 continues for 35 kilometres north to Pemberton and then heads north-east to connect with Highway 97 in the interior of the Province. The Sea to Sky Highway between West Vancouver and Whistler was recently upgraded for

the 2010 Olympic Winter Games. Interstate 5 connects Vancouver with Seattle, Washington, 220 kilometres to the south.

Figure 1 illustrates the Area Location of Blackcomb Mountain and Whistler Resort and Figure 2 outlines the Study Area on Blackcomb and Whistler Mountain. Blackcomb Mountain's Controlled Recreational Area (CRA) encompasses 2,094 hectares on the north and east side of Fitzsimmons Creek and is illustrated on all maps and figures. Blackcomb Mountain's ski terrain includes an additional 219 hectares within Blackcomb Glacier Provincial Park.

.2 Historical Perspective

In 1974, the Province of British Columbia called a halt to the rapid development that occurred in the community of Alta Lake, BC in the years following the opening of Whistler Mountain in February 1966. The purpose of the development freeze was to allow time for the Province, the Regional District and the local community to develop a plan to provide local government services and municipal infrastructure to the rapidly growing community. The result of the planning process was the concept of creating a destination ski resort with a pedestrian resort village anchoring two ski areas. The Resort Municipality of Whistler was created in 1975 and Alta Lake was renamed Whistler in 1976. The Province gave 53 acres of Crown Land to the RMOW to develop a new town centre at the base of the two mountains and construction on the village commenced in 1978.

In 1977, the province issued a proposal call for the development of a ski area on Blackcomb Mountain. Fortress Mountain Resorts, Ltd. and one of their parent companies, the Aspen Skiing Corporation, prepared a Mountain and Base Area Master Plan for Blackcomb that was selected in early 1978 as the successful response to this proposal. Construction on the mountain was initiated in the fall of 1978 and resumed during the summers of 1979 and 1980. On December 3, 1980, Blackcomb Mountain Ski Area opened to the public with five chairlifts, 146 hectares of ski trails, base and mountain top skier facilities and parking for 800 cars. The area was well received, but unfortunately the weather was not cooperative and much of the lower mountain was without adequate snow cover for the majority of the season. Blackcomb reported only 54,200 skier visits during their first year.

With the completion of a few hotels in the Whistler Village and better snow conditions, skier visits grew almost fourfold to 205,880 in 1981/82. Blackcomb moved quickly to add terrain in 1982 with the installation of Lift 6 in the Jersey Cream Bowl. In 1985, Blackcomb installed the 7th Heaven T-bar on the south side of Blackcomb Ridge opening up hundreds of hectares of open bowl, alpine ski terrain on both sides of the ridge.

Blackcomb Mountain was purchased by the Intrawest Corporation, a residential and urban real estate development firm from Vancouver, in 1986. Under the new ownership, a revised Master Plan was produced to accommodate new lift technologies and changing preferences in the skier market. In 1987, Blackcomb Mountain created a new base area above Whistler Village on lands known as the Blackcomb Benchlands. Facilities at the new base included a large parking lot, a modern daylodge and an administration building. Access up the mountain from the new base was achieved with two detachable quadruple chairlifts, considerably shortening the ride time to the alpine. The 7th Heaven T-bar was moved to the Horstman Glacier and replaced with a third detachable chairlift in 1987. The added lifts and facilities revolutionized the skiing on Blackcomb Mountain and resulted in a 73 percent increase in annual skier visits, with Blackcomb annual visits overtaking Whistler Mountain visits for the first time in 1987/88. As part of the Blackcomb Master Development Agreement, Blackcomb Skiing Enterprises was able to purchase Crown land on the Benchlands for the development of public and private accommodation. The construction of condominium hotels and townhouses on the Benchlands commenced in 1987 and continued for several years. During this period, Canadian Pacific Hotels built a signature hotel; the Chateau Whistler, at the base of Blackcomb which opened in 1989.

Development on both mountains and in the resort village continued rapidly during the late 1980's and early 1990's; resulting in significant increases in annual skier and summer visits. In 1992, Nippon Cable purchased a 23% ownership in Blackcomb Skiing Enterprises. Nippon Cable's investment was used to finance a major upgrade to Blackcomb Mountain. The Glacier Express Quad, installed in 1992, takes skiers from the bottom of Jersey Cream to the base of the Showcase T-bar, providing return cycle skiing on the popular advanced terrain below the Horstman Glacier. The 875 seat Glacier Creek restaurant was built at the base of the Glacier and Jersey Cream chairs. In 1994, the access chairlift from Whistler Village to Blackcomb Mountain was replaced with a detachable eight-passenger sit-down gondola. The Excalibur gondola is a two stage gondola with the first stage reaching from Whistler Village to Blackcomb Base II where there is a mid load/unload station. The second stage goes from Base II to the bottom terminal of the Excelsior Quad, also installed in 1994. The Excelsior takes skiers from the 1,130 metre elevation to a knoll located at 1,640 metres. After getting off the Excelsior, skiers can continue up the mountain by skiing down to the Jersey Cream, Glacier Express or Solar Coaster lifts. During the 1990's Blackcomb hosted a World Cup Freestyle Skiing competition every January.

In December 1996, Intrawest Corporation and Whistler Mountain Holdings announced their intention to combine the companies and their assets into one company under the Intrawest Resorts name. Over the following year, management

and marketing of the two mountains was consolidated and the combined ski area became known to the public as Whistler Blackcomb. Intrawest Corporation was acquired by the private equity fund Fortress Investments LLC in October 2006. In the fall of 2010 Fortress initiated an effort to sell off their share of Whistler Blackcomb and separate it from Intrawest. The IPO was successfully completed on November 9, 2010. Whistler Blackcomb Holdings Inc. was established as a public corporation on the Toronto Stock Exchange. Nippon Cable increased their ownership to 25% and the remaining 75% is held in the public company. Under Whistler Blackcomb Holdings Inc., the two partnerships of Whistler Mountain Resort Limited Partnership and Blackcomb Skiing Enterprises Limited partnership operate the business of Whistler Blackcomb.

The Whistler Sliding Centre, venue for the bobsleigh, luge and skeleton events at the Vancouver 2010 Olympic Games, was completed in 2007 on the south-east slopes of Blackcomb Mountain. With the opening of the PEAK 2 PEAK Gondola in December 2008, Whistler Mountain and Blackcomb Mountain became joined via the longest continuous lift system in the world. For the 2013/14 season Blackcomb Mountain will operate 16 lifts including the PEAK 2 PEAK Gondola, 1 two-section high speed gondola, 7 high speed quad chairs (one equipped with a protective Lexan bubble), 2 triple chairs, 2 alpine T-bars and 3 moving carpet surface beginner lifts. There are 6 mountain restaurants in five locations, offering guests a wide choice ranging from cafeteria style to fine dining.

Blackcomb Mountain has two large terrain parks, two super pipes, one of which has night lighting and also operates a tubing park. A water ramp and pool located near Base II provides a summer training venue for freestyle athletes in the aerial disciplines. The snowmaking system is capable of covering 101 hectares (250 acres). Today, Whistler Blackcomb combined have over 8,100 skiable acres with 38 lifts and more than 200 trails. The Blackcomb Mountain skier/snowboarder visits for the 2012/13 season were over 860,000. .

.3 Planning Issues

The successful design and operation of a mountain resort requires a solid footing on three separate pillars. The three critical resort elements, as illustrated in Plate I.1, are: physical, market and economic characteristics and factors.

The physical site characteristics include:

- environmental resources including water, air, soil, vegetation and wildlife
- terrain

- climate
- natural hazards
- visual resources
- recreational resources

CRITICAL RESORT ELEMENTS

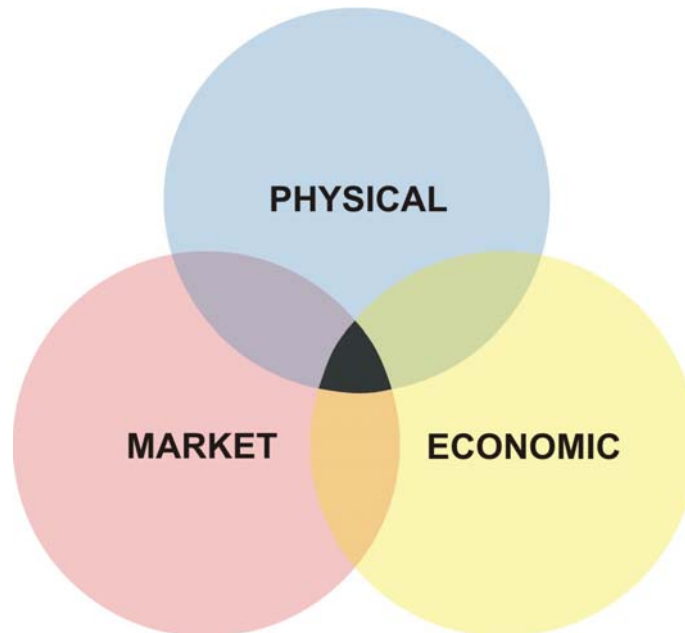


PLATE I.1

The master planning process incorporates research by scientists, ecologists and recreational planners to document the physical characteristics of each individual site with air photos, topographical maps, three-dimensional computer models, on-site field work and surveying, and analytical planning technologies.

The next critical element necessary for a feasible mountain resort deals with the market characteristics including:

- access to the site
- the size and proximity of local, regional and destination markets
- population demographics such as: age, income and education
- population dynamics such as: growth, aging, and social trends, for example, fitness

Finally, there are economic factors and characteristics to be considered such as:

- resort capacity

- length of operating season (winter and summer)
- infrastructure cost and availability
- capital costs of facilities
- operating efficiency
- revenue sources and pricing
- human resources

Every resort possesses a different blend of these characteristics. It is very important to understand and document the balance between the physical, market and economic characteristics of each individual project.

.4 Glossary

The ski industry has a number of terms and technical jargon specific to ski area development, hence, a glossary is provided:

1. **Skier Visit** - One person visiting a ski area for all or part of a day or night for the purpose of skiing or snowboarding. This is the total number of lift tickets issued. Skier visits include a person holding a full-day, half-day, night, complimentary, adult, child, season, or any other ticket type that gives a skier the use of an area's facilities.
2. **Rated Uphill Capacity** - The manufacturer's rated number of skiers per hour a lift can transport to the top of the lift. An area's hourly capacity is the sum of the individual lifts
3. **VTM/Hour (000) - (Vertical Transport Metres per Hour)** - The number of people lifted 1,000 vertical metres in one hour (vertical rise of a lift, times the lift capacity per hour, divided by 1,000). An area's total VTM, is the sum of VTM for all lifts.
4. **VTM Demand/Skier/Day** - The amount of vertical skied (demanded) each day by a skier.
5. **Skier (Comfortable) Carrying Capacity (SCC)** - The number of skiers that a given ski area can comfortably support on the slopes and lifts without overcrowding, or those that may be accommodated at one time and still preserve a congenial environment. A ski area's comfortable carrying capacity is a function of VTM demand per skier, VTM supplied per hour, difficulty of terrain and scope of support facilities. The Skier Carrying Capacity of an area is calculated assuming all the terrain is available for

skiers and that the skiers are evenly distributed over the available terrain. If weather and or snow conditions make parts of the area more attractive than others, the more attractive areas may feel overcrowded even though there are fewer skiers on the mountain than the area's theoretical SCC. For ski areas like Whistler Blackcomb that sometimes need to shut down sections of the mountain due to stormy weather (high winds, poor visibility or avalanche risk), there must still be sufficient ski terrain and lift capacity to provide holiday crowds with an enjoyable ski experience. Therefore Whistler Blackcomb has historically provided an SCC in excess of the anticipated peak day skier visit levels.

Skier Carrying Capacity assumes that there will be lift queues. A detachable chairlift would expect to have a lift queue equal to 2 times the ride time while the fixed grip chairlift would have a lift queue equal to its ride time under peak conditions. Sometimes it is desirable to provide sufficient lift capacity at certain lifts so that access to the lifts is relatively free flowing and no queues develop. Ecosign refers to the design capacity where no lift queues develop during the peak skier visitation as the Quality Carrying Capacity (QCC) of the lift system.

6. **Utilization** - Is measured, as a percent, of skier carrying capacity. Comfortable Seasonal Capacity is the product of a ski area's daily skier carrying capacity times its days of operation. Utilization compares actual skier visits to calculated comfortable seasonal capacity.
7. **Terrain Pod** - a contiguous area of land deemed suitable for ski lift and trail development due to its slope gradients, exposure and fall line characteristics.

II. INVENTORY

.1 Introduction

The inventory stage includes the identification, analysis and mapping of all on-site and off-site factors which may affect the development potential of the Blackcomb ski area. The inventory data includes: the land status, climatic, biophysical, and physiographic characteristics of the study area, as well as an analysis of the existing ski area. Blackcomb Mountain's Controlled Recreational Area (CRA) encompasses 2,094 hectares on the north and east side of Fitzsimmons Creek and is illustrated on all maps and figures. Blackcomb Mountain's ski terrain includes an additional 219 hectares within Blackcomb Glacier Provincial Park. Through an understanding of the site's existing conditions and natural process, environmentally sensitive areas can largely be avoided and natural development opportunities maximized.

As a prelude to discussing the mountain's characteristics, it is appropriate to familiarize the reader with the basic requirements of ski area development. Ski area development is generally considered to be a non-consumptive resource use of the land. The development of ski lifts and trails requires the use of approximately 35 to 50 percent of the area in small, heavily developed zones. Ski lift right of ways are characteristically 12 to 15 metres in width, while trails vary between 30 and 60 metres in width. Subsequent to rough grading by practices selected for each site, the trails require fine grooming and seeding to establish a grass cover which prevents erosion and helps to minimize hazards and damage to skier's equipment during low snowpack periods, and possible damage to the area's snow grooming fleet. Ski lifts are generally aerial cable systems used to transport skiers up the mountain, with steel towers and concrete foundations every 45 to 75 metres.

Ski base area development generally includes a paved access road, parking lots, buildings for accommodation, a day lodge and a maintenance centre. Additionally, appropriate electrical power, water supply and sewage disposal facilities are required to support any base area improvements.

The physical site characteristics discussed in this section all interact to aid the planning team when assessing the capability of the natural systems to support resort development.

.2 Physiography

The quality and feasibility of a winter sports site is highly dependent upon the topographic characteristics of each individual site. Physiographic features which

substantially affect ski development in particular include: aspect (exposure), slope gradients, fall-line patterns and elevation.

Land Form

The Blackcomb Mountain Study Area, as illustrated on Figure 2 encompasses approximately 4,900 hectares, and extends from Whistler Village, at elevation 673 metres, to the top of the Blackcomb Glacier, at elevation 2,360 metres, and from Fitzsimmons Creek to the south and Wedge Creek to the north. This is the second largest lift serviced vertical in North America with 1,685 metres. Water related erosion and glaciation have acted on rock and sedimentary surfaces to create the mountain landscape present today. The only significant mountain drainages within the study area are Horstman and Blackcomb Creeks, which emanate from their respective glaciers and descend to Fitzsimmons Creek at the base of the Blackcomb Mountain Benchlands. Fitzsimmons Creek separates the study area from both Whistler Mountain and Whistler Village.

On the Blackcomb Benchlands that lie within the study area, District Lots #3866, 3903, 4213, and 4214 were created to identify development areas. Blackcomb Skiing Enterprises Ltd. subdivided these District Lots into smaller parcels for development of accommodation and skier staging facilities.

A new base area was created during the summer of 1987, with the new day lodge, restaurant and bar facilities (Merlin's), a beginner area, the Administration/Kids Kamp building, parking Lot E, and the Wizard detachable quadruple chairlift.

The Blackcomb Controlled Recreation Area (CRA) comprises 2,094 hectares (5,174 acres) and is illustrated on most of the maps and figures. Blackcomb also has a permit from B.C. Parks to operate skiing facilities within the Blackcomb Glacier Park which covers an area of 219 hectares (541 acres).

Aspect Analysis

Exposures within the Study Area range from southwest on the Seventh Heaven side of the mountain to west on the “front face” of the mountain visible from the Whistler Village to northerly on the steep terrain that falls in to the Horstman creek drainage Figure 3 graphically illustrates the Aspect Analysis for Blackcomb Mountain.

Elevation

The potential vertical drop available for lift serviced skiing plays an important role in site suitability since it determines the length of the trails and also the vertical transport

metres (VTM) that can be supplied to the skiing public. Essentially, the more vertical the better, as many skiers use vertical rise as a basic yardstick of ski area desirability.

Elevations within the Study Area range from 675 metres in Whistler Village to the peak of Blackcomb Mountain which has an elevation of 2,435 metres. This provides a potential vertical drop of 1,760 metres (5,775 feet), while the existing ski area has a lift serviced vertical drop of 1,575 metres (5,167 feet) from the top of the 7th Heaven Express quad, (2,250 metres) to the bottom of the Excalibur Gondola (680 metres). The total skiable vertical drop is 1,598 metres (5,240 feet) from the “Mile High Cairn” to Whistler Village. Figure 4 graphically illustrates the Elevation Analysis for Blackcomb Mountain.

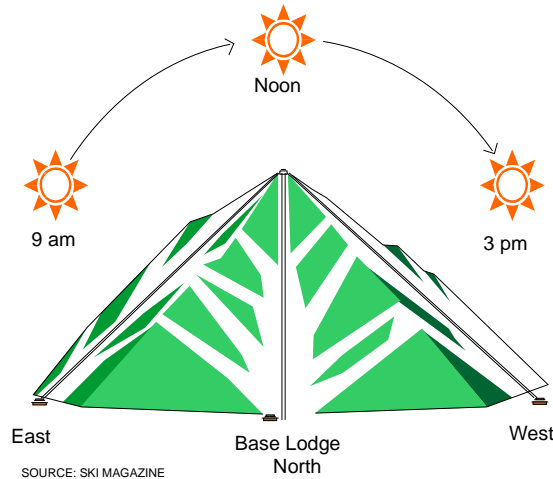
Fall Line Analysis

The Fall Line Analysis, as shown on Figure 5, analyzes the natural routes of descent to determine major drainages, fall line patterns, and primary and secondary fall line concentration areas. The concentration areas suggest potential lift terminals and hence, suitable base facility locations, as well as ski trail intertie points. The study area is bisected by the ridge that Blackcomb Mountain forms at the west terminus of the Spearhead Range. The terrain on the south side of the ridge has fall line patterns that flow down into the Fitzsimmons Creek drainage. Terrain on the west side of the mountain has fall line patterns that flow down towards Whistler Village and the Whistler Valley. In the alpine there is a large bowl with the Blackcomb Glacier. A prominent ridge forms the western boundary of the Horstman Glacier and fall line patterns on the northern side of this ridge flow into the Horstman and Blackcomb Glaciers and the Blackcomb Creek drainage.

.3 Solar Shading and Radiation Analysis

Most skiers are highly aware of the sun’s influence on snow quality. While skiers prefer to ski in the sun, they will not do so if the snow is sticky or mushy due to intense solar radiation. As illustrated in Plate II.1, skiers will follow the sun throughout the day, skiing eastern exposures in the morning, southern exposures at noon, and western exposures in the afternoon. As a general rule, south slopes are the warmest, eastern and western slopes the next warmest and northern slopes the coolest. Snowpack retention is a critical concern for any skiing operation and for this reason, slopes and ski courses should naturally be located where the snowpack remains for the longest period of time.

SKI POINTER



IN SPRING, STAY AHEAD OF THE SUN

*By John Fry
Contributing Editor*

The trick to enjoyable spring skiing is to catch the snow as it becomes granular corn before it gets slushy. A good strategy is to keep one eye on the slopes and the other on the sun.

In the morning, after a frosty night, look for east-facing and southeast-facing slopes that catch the early sun. They will be the first to soften up.

As the sun climbs higher and moves into the southern sky, move with it. Ski the north-facing slopes early before they become sloppy.

Finally, move to the west-facing slopes in the afternoon to search for good corn snow.

Smart scrutiny of the weather and terrain will improve your day of skiing.

PLATE II.1

The site's angular relationship with the sun is a critical design parameter since it determines the time of day and for how long the sun's rays will bathe parking lots, mountain restaurants, ski slopes and the village. For this reason, a detailed solar analysis has been prepared to determine areas of topographic shading at 09:00 hrs., 12:00 hrs. and 15:00 hrs. on three selected days of the season. Figures 6a through 6c illustrate the sun/shadow relationship throughout the Study Area on three selected days.

As illustrated on Figure 6a, the 09:00 hrs. shading encompasses almost the entire site, with only a few isolated pockets of sunlight on the western side of the 7th Heaven lift. Figure 6b shows that by 12:00 hrs., southern and western slopes are sunlit, while the steeper northerly slopes are in the shade. As shown on Figure 6c, at 15:00 hrs., the north-easterly slopes are heavily shaded, and some southerly slopes are shaded, due to shadows created by the prominent mountain ridges and Whistler Mountain.

In general, snow is first deposited at higher elevations and then down in the valleys throughout the winter months. As the temperature starts to increase later in the season, the snowpack begins to melt as the temperature varies with elevation and changes in available solar radiation. Predicting the potential amount of solar radiation is important in the planning of a ski resort. The amount of solar radiation impacting the surface varies strongly with elevation, slope, aspect and solar shading from surrounding topographic features. Topographic shading decreases the temperature near the ground which causes the snow to last longer. Even small changes in aspect can result in substantial differences in surface warming.

With this in mind, we have calculated the cumulative quantity of potential incoming solar radiation for each month during the winter ski season from December 1, 2009 to March 31, 2010. We have utilized software created and developed by Ivan Mészároš and Pavol Miklánek of the Institute of Hydrology of SAS in Bratislava, Slovakia called SOLEI¹. The time of year, sun position (azimuth and altitude), shadows cast by surrounding terrain, terrain slope, aspect and elevation are all analyzed to simulate and calculate direct, diffuse and reflected radiation. By combining these radiation values an accurate representation of potential energy coming in Kilowatt-hours per square metre over the entire study area is determined. The calculation is repeated every 15 minutes from sunrise to sunset for each day in a grid system. The resulting graphic on Figure 7 illustrates, with a warm to cool color spectrum, the warm and cool zones within the study area.

1. I. Mészároš, P. Miklánek (2006): Calculation of potential evapotranspiration based on solar radiation income modeling in mountainous areas. *Biologia*, ISSN-1335-6372, Vol. 61, Suppl. 19, pp. S284-S288.

.4 Avalanche

Due to the rugged and steep nature of the Blackcomb Mountain topography, there are many sites where avalanches occur naturally. Since its inception, Blackcomb Mountain staff needed to control some of these avalanche paths and as the ski area has expanded, avalanche control has become a very important part of the ski area operations. Control of the avalanche potential is accomplished by a wide range of methods including avalaunchers, bombs dropped from bomb trams and helicopters (during particularly extreme conditions), ski cutting and hand charges, etc. The Blackcomb Mountain ski patrol not only performs avalanche control but is the primary avalanche forecaster at the ski area.

.5 Existing Mountain Facilities

Ski Lifts

Significant lift, trail, maintenance and skier service facility improvements have occurred on Blackcomb Mountain since the area opened in December 1980. Over Blackcomb's 29 year history, major lifts have been installed in 7 distinctive phases of development. Historic lift development up to the 2009/2010 ski season is summarized in Table II.1 and illustrated on Figure 8a Existing Mountain Facilities. Figure 8b illustrates the Existing Blackcomb Mountain Facilities overlying an orthographic photo.

Construction of the mountain was initiated in the fall of 1978 and resumed during the summers of 1979 and 1980. On December 3, 1980 Blackcomb Mountain opened to the skiing public with 5 chairlifts, 146 hectares of trails, base and mountain top facilities and parking for approximately 800 vehicles. Initially, access to the mountain from

Whistler Village was via the Fitzsimmons triple chairlift which took skiers to the mountain's base area (now known as Base II). Facilities at Base II included a daylodge and a parking lot for day skiers who arrived via Glacier Drive. From the base area, a series of three triple chairlifts took skiers up the mountain to the Rendezvous mountain restaurant at elevation 1,865 metres. A short double chairlift (Skidder) was installed on gentle slopes near the base area. The new ski area was well received, however, the weather was uncooperative and much of the lower mountain was without snow cover for the majority of the season.

Recognizing the importance of upper mountain facilities, particularly during poor snow years, Blackcomb moved ahead quickly in 1982 with the addition of a triple chair to service the Jersey Cream Bowl. In 1985, Blackcomb installed the 7th Heaven T-Bar on the south side of the Blackcomb Ridge. This expansion opened up hundreds of acres of open bowl, alpine skiing terrain on the south side of Blackcomb Ridge and provided access to Horstman Glacier.

In 1987, Phase 4 of the Blackcomb Mountain development was completed with the installation of three detachable quadruple chairlifts, and North America's first glacier T-Bar. The Wizard Express and Solar Coaster lifts replaced the three triple chairlifts up the front side of the mountain and significantly shortened the time it took for skiers to stage up the mountain. The 7th Heaven T-Bar was replaced with a detachable lift and moved into Horstman Glacier. The Horstman Hut was built on Blackcomb Ridge at the 2,284 metre elevation to provide warming facilities for skiers in the high alpine. In the Valley, a new daylodge and Administration/Kids Camp building were constructed. Snowmaking was installed on the lower mountain to improve early and late season skiing conditions down to the valley. The Magic Chair provided a connection between the new Blackcomb Wizard base and Base II, as well as servicing the beginner terrain between the two bases.

In 1989, the Jersey Cream triple chair was moved to Crystal Ridge and replaced with a detachable quadruple chair, the Jersey Cream Express. The Crystal Chair opened up 21 hectares of new trails in the high intermediate skill class. The Showcase T-Bar was installed in the Horstman Glacier providing access to Blackcomb Glacier, a large alpine bowl within Blackcomb Provincial Park. The Glacier Express Quad was installed in 1992 to take skiers from the bottom of Jersey Cream to the base of the Showcase T-bar, providing return cycle skiing on the popular advanced terrain below the Horstman Glacier.

Phase 7, constructed in 1994, saw the replacement of the Fitzsimmons Chair from Whistler Village with the Excalibur Gondola, a two stage, eight passenger sit down gondola. The first stage reaches from Whistler Village to Base II where there is a load/unload mid station and the second stage goes to the base of the Excelsior Express, a detachable quad installed the same year. The Excelsior takes skiers from the 1,130

metre elevation to a knoll located at 1,640 metres. A beginner platter lift extending from the bottom of parking lot 7 to the top of parking lot 8 at Base II was also installed in 1994 and the Fitzsimmons Chair equipment was used to upgrade the Magic Chair from a double to a triple. The Base II Platter lift was removed in 2005 to make room for the Tubing Centre.

In 2013, the Crystal triple chair was replaced with the Crystal Express a detachable quadruple chairlift moved from the Harmony area on Whistler Mountain. The top terminal of the Crystal Express is located near the top terminal of the original lift but the bottom terminal has been moved lower on the mountain to provide return cycle skiing for the full length of the Ridge Runner and Rock n Roll trails as well as the glade skiing. The bottom elevation is at the 1285 metre elevation for a total vertical rise of 540 metres which is 166 metres more than the lift it replaced. The Crystal Express will also work as an egress lift from the Blackcomb Glacier ski out. Skiers can now ride up the Crystal and ski down to the main body of the ski area at Glacier Creek instead of skiing further down the mountain to the Excelerator.

**TABLE II.1
BLACKCOMB MOUNTAIN
HISTORICAL LIFT DEVELOPMENT**

Phase	Year Installed	Lift Number	Lift Name	Lift Type	Hourly Capacity	Year Removed
1	1980	1	Fitzsimmons	3C	1,800	1994
	1980	2	Cruiser	3C	1,800	1994
	1980	3	Choker	3C	1,800	1994
	1980	4	Catskiner	3C	2,000	
	1980	5	Skidder	2C	1,200	1987
2	1982	6	Jersey Cream	3C	1,800	1989
3	1985	7	7th Heaven T-bar	T-B	690	1987
4	1987	5R	Magic Chair	2C	1,200	1994
	1987	8	Wizard Express	D4C	2,650	
	1987	9	Solar Coaster Express	D4C	2,800	
	1987	10	7th Heaven Express	D4C	2,800	
	1987	11	Horstman Glacier T-Bar	T-B	1,200	
5	1989	7R	Showcase T-Bar	T-B	1,362	
	1989	6R	Jersey Cream Express	D4C	2,800	
	1989	12	Crystal Chair	3C	1,800	2013
6	1992	18	Glacier Express	D4C	2,500	
7	1994	15	Base II Platter	P	600	2005
	1994	1R	Excalibur Gondola	D8G	2,600	
	1994	2R	Excelerator Express	D4C	2,880	
	1994	5R	Magic Triple	3C	1,300	
8	2008		Peak to Peak	3S-G	2,000	
	2013	14	Crystal Express	D4C	2,360	



Top of Catskinner and Solar Coaster



Top Terminal PEAK 2 PEAK

As of the 2013/14 ski season, Blackcomb Mountain owns and operates a total of twelve major lifts including one high speed gondola, seven detachable quadruple chairlifts, two fixed grip triple chairlifts and two glacier T-bars. Blackcomb also operates

three magic carpets, as well as the PEAK 2 PEAK 3S gondola connecting with Whistler Mountain. These lifts have been installed in seven phases over the last 23 years. The layout of the present lift system is graphically illustrated in plan view on the Existing Area Map (Figures 8a and 8b). A detailed inventory with technical specifications for all lifts appears in Table II.2. The existing ski area has a lift serviced vertical drop of 1,570 metres (5,151 feet) from the top of the 7th Heaven Express quad (2,250 metres) to the bottom of the Excalibur Gondola (680 metres). The total skiable vertical drop is 1,598 metres (5,240 feet) from the “Mile High Cairn” to Whistler Village.

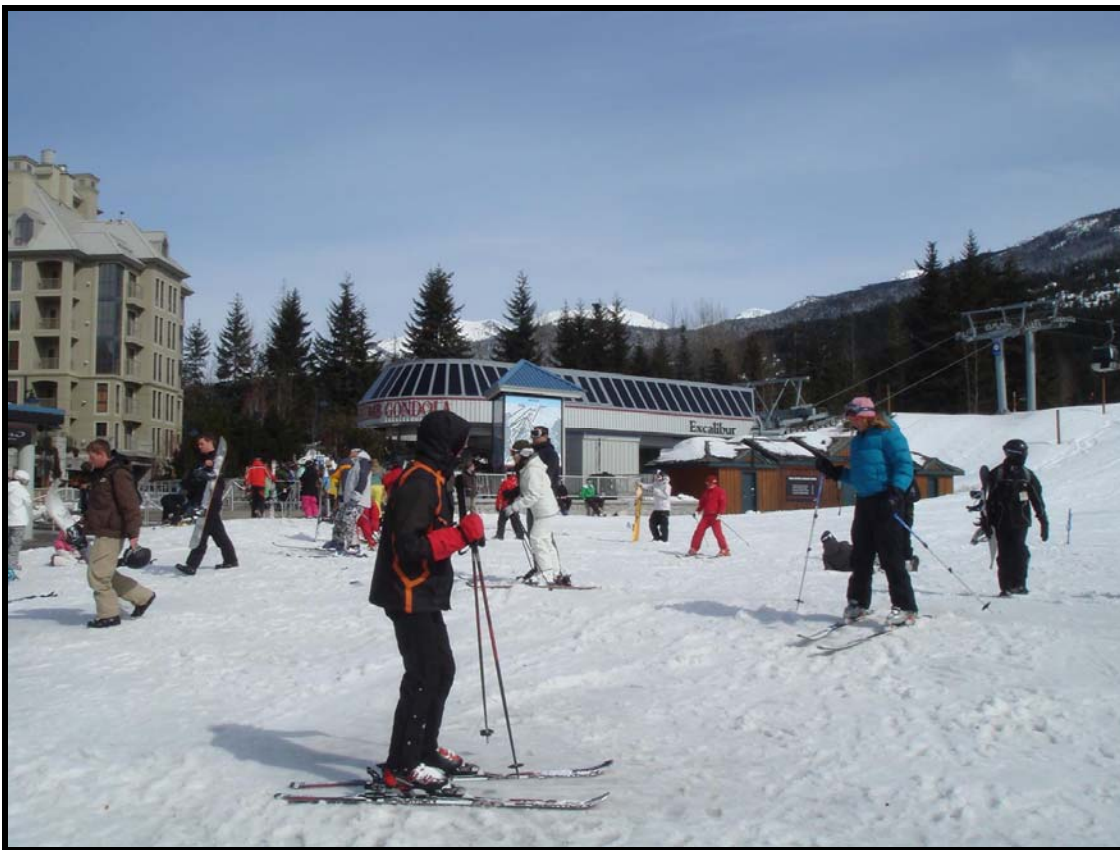
**TABLE II.2
BLACKCOMB MOUNTAIN
LIFT SPECIFICATIONS
EXISTING AREA – 2013/2014 SEASON**

Lift Number	1	2	3	4	5R	6	7	8	9
Lift Name	Lower Excalibur	Upper Excalibur	Excalibur	Cat-skinner	Magic Chair	Jersey Cream	Show-case	Wizard Express	Solar Coaster
Lift Type	D8G	D8G	D4C	3C	3C	D4C	T-B	D4C/B	D4C
Year Constructed	1994	1994	1994	1980	1994	1988	1989	1987	1987
Top Elevation m.	768	1,135	1,640	1,870	777	1,917	2,278	1,250	1,869
Bottom Elevation m.	680	768	1,131	1,536	682	1,542	2,130	684	1,247
Total Vertical m.	88	367	509	334	95	375	148	566	622
Horizontal Distance m.	719	1,434	1,575	1,090	610	1,350	500	2,160	1,790
Slope Distance m.	724	1,480	1,655	1,140	621	1,414	521	2,233	1,895
Average Slope %	12%	26%	32%	31%	16%	28%	30%	26%	35%
Operations Capacity	2,600	2,600	2,800	1,656	1,530	2,800	1,034	2,650	2,800
V.T.M./Hr.(000)	229	955	1,425	552	145	1,050	153	1,501	1,742
Operating Speed m/sec.	5.1	5.1	5.1	2.3	1.7	5.0	2.7	5.0	5.0
Trip Time min.	2.38	4.86	5.43	8.26	6.09	4.71	3.22	7.44	6.32
Drive Output (KW)	215	480	570	300	75	430	75	600	600

Lift Number	10	11	14	Whistler	Base II	Wizard	18	
Lift Name	7th Heaven	Horstman	Crystal Express	Kids	Carpet	Carpet	Glacier Express	
Lift Type	D4C	T-B	D4C	MC	MC	MC	D4C	TOTAL
Year Constructed	1987	1987	2013	1996	2005	2000	1992	
Top Elevation m.	2,250	2,249	1,827	690	770	689	2,140	
Bottom Elevation m.	1,661	2,043	1,287	685	764	684	1,541	
Total Vertical m.	589	206	540	5	6	5	599	5,054
Horizontal Distance m.	1,651	730	1,825	37	50	40	1,775	
Slope Distance m.	1,753	759	1,903	37	50	40	1,882	18,109
Average Slope %	36%	28%	30%	14%	12%	13%	34%	29%
Operations Capacity	2,800	1,161	2,360	1,200	1,800	1,500	2,500	33,791
V.T.M./Hr.(000)	1,649	239	1,274	6	11	8	1,498	12,436
Operating Speed m/sec.	5.0	2.9	5.0	0.8	0.8	0.8	5.0	
Trip Time min.	5.84	4.31	6.34	0.78	1.05	0.84	6.27	
Drive Output (KW)	680	75	0	8		4	625	

Ski Trail Inventory

In order to provide an accurate account of Blackcomb’s trail system, all trails have been classified in concert with the international trail standards (Table II.3), as well as the seven skier skill classification levels exhibited in Table II.4. Trails are classified via an evaluation of the following parameters: slope width, average gradient, and the steepest 30 metre vertical pitch. Since the average slope gradient of a trail is generally much lower than the steepest 30 metre vertical pitch, the trails are usually classified to ensure that the steepest 30 metre vertical pitch falls within the acceptable terrain gradients listed in Table II.4. Furthermore, a gentle, novice trail cannot suddenly turn into an advanced trail, for obvious reasons.



Blackcomb Excaltibur Gondola

**TABLE II.3
INTERNATIONAL TRAIL STANDARDS**

TRAIL DESIGNATION	SKIER ABILITY LEVELS
Easier	Beginner & Novice Skiers
More Difficult	Intermediate Skiers
Most Difficult	Advanced & Expert Skiers

**TABLE II.4
BLACKCOMB MOUNTAIN
SKIERS SKILL CLASSIFICATIONS**

Skill Classifications	Acceptable Terrain Gradients	Maximum Gradient
1 Beginner	8 - 15%	20%
2 Novice	15 - 25%	30%
3 Low Intermediate	25 - 35%	40%
4 Intermediate	30 - 40%	45%
5 High Intermediate	35 - 45%	50%
6 Advanced	45 - 60%	65%
7 Expert	60% +	

The 2013/14 Blackcomb trail system has been plotted at a scale of 1:15,000 with 5-metre contours, as shown on the Existing Mountain Facilities Maps, Figures 8a and 8b. The presently developed ski trail system, as listed in Table II.5, includes 146 numbered ski trails covering 589.7 hectares (1,457 acres). There are an additional 16 ski ways and connector trails which encompass 18.5 hectares of for a grand total of 161 trails and 608.2 hectares (1,503 acres). In addition to the trails identified on this map, there also are many treed areas where people ski in small numbers, both inside and outside the ski area boundary.

During the 1990's Blackcomb created a Children's Adventure Park in the forest accessible from the Easy Out trail, just above the base of the Catskiner Chair. The Adventure Park includes a Magic Castle play structure and 3 levels of trails leading to and from it. This facility is used by the ski school and is open to the general public when there is an attendant. Also starting in the 1990's and continuing through the past decade, Blackcomb has constructed additional terrain features on certain runs. The Blackcomb Terrain Park is located between the top of the Solar Coaster Express and the Catskiner Chair and includes many large features such as jumps, table tops and rails. The High Level Superpipe and a Skier Cross course are also in this area. A smaller terrain park with easier features, named the Big Easy Terrain Garden, is constructed on a run between Last Resort and Connector when snow conditions allow. An illuminated superpipe was constructed on Lower Cruiser to host the 2005 Snowboard World Championships. These features are separated from the neighbouring runs by snow fencing and skiers must path through gates which provide warning signage outlining the skill levels required to use the features.

Blackcomb has a total of 111.1 kilometres of developed ski trails and skiways.

The classification, carrying capacity and critical data for Blackcomb's existing ski trail system has been summarized in Table II.5.

**TABLE II.5
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY
EXISTING AREA – 2013/2014 SEASON**

Trail Name	Trail Skill No. Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area		Skiers At Area Total	
		Top Meters	Bottom Meters				Avg. Steep	Sloped			Ha.	Density	Total	
Lift 1 - Lower Excalibur														
Village Run	1A	2	767	680	87	690	695	13%	13%	12	0.84	0.85	50	45
Total Lift 1	1					695						0.85	45	
Lift 2 - Upper Excalibur														
Short Horn	8A	3	1,134	1,025	109	500	512	22%	32%	55	2.74	2.80	40	110
Mid Cruiser	8B	3	1,135	1,050	85	320	331	27%	35%	87	2.77	2.87	40	115
Green Line	8D	2	1,107	1,005	102	835	841	12%	13%	12	0.98	0.99	50	50
Schoolmarm	1/2 area 8H	3	1,023	785	238	790	825	30%	40%	57	4.51	2.36	40	95
Lower Mainline	1/2 area 8J	2	1,009	762	247	1,310	1,333	19%	29%	62	8.18	4.16	50	210
Upper Village Run	1/2 area 8K	2	815	768	47	415	418	11%	12%	35	1.45	0.73	50	35
Total Lift 2	3 (not including 8H,8J,8K)					1,684 (not including 8H,8J,8K)						13.91	615	
Lift 3 - Excelsior														
Zig Zag	3A	3	1,560	1,163	397	1,645	1,692	24%	36%	28	4.60	4.73	40	190
	3B	3	1,638	1,615	23	55	60	42%	42%	69	0.38	0.41	40	15
Buzz Cut	3C	4	1,638	1,460	178	660	684	27%	40%	35	2.34	2.42	40	95
Upper Honeycomb	3D	3	1,638	1,465	173	685	707	25%	33%	31	2.15	2.22	40	90
Mid Honeycomb	3E	3	1,460	1,380	80	300	310	27%	33%	43	1.28	1.32	40	55
Lower Honeycomb	3F	3	1,455	1,132	323	1,200	1,243	27%	37%	45	5.45	5.64	40	225
Mid Cruiser	3G	3	1,295	1,132	163	650	670	25%	34%	66	4.26	4.39	40	175
Upper Cruiser	3H	3	1,633	1,405	228	725	760	31%	39%	52	3.74	3.92	40	155
Upper Espresso	3I	5	1,555	1,470	85	210	227	40%	44%	50	1.04	1.12	30	35
Espresso	3J	3	1,252	1,160	92	280	295	33%	37%	54	1.50	1.58	40	65
Knobby Knots	3K	6	1,572	1,480	92	270	285	34%	41%	30	0.82	0.87	4	5 1/4 density
Mid Espresso	3L	6	1,375	1,327	48	120	129	40%	45%	41	0.49	0.53	15	10
In the Spirit	3M	7	1,456	1,215	241	670	712	36%	55%	35	2.36	2.51	5	15 1/4 density
Total Lift 3	13					7,773						31.66	1,130	
Lift 4 - Catskiller														
Terrain Park	4A	5	1,850	1,537	313	1,060	1,105	30%	45%	59	6.27	6.54	30	195
Catskiller	4B	6	1,840	1,635	205	640	672	32%	56%	74	4.72	4.96	15	75
Lower Terrain Park	4C	4	1,690	1,540	150	530	551	28%	33%	62	3.28	3.41	40	135
	4D	4	1,640	1,573	67	240	249	28%	29%	63	1.50	1.56	40	60
Easy Out	4E	2	1,868	1,537	331	1,820	1,850	18%	30%	32	5.80	5.90	50	295
Bark Sandwich	4F	6	1,833	1,670	163	460	488	35%	51%	49	2.26	2.40	4	10 1/4 density
Children's Adventure Pa	4G	3	1,660	1,540	120	530	543	23%	24%	142	7.50	7.69	4	30 1/10 density
Big Easy Terrain Park	4H	4	1,694	1,562	132	485	503	27%	39%	27	1.33	1.38	40	55
Countdown/Big Easy	4I	3	1,705	1,523	182	995	1,012	18%	36%	26	2.59	2.63	40	105
Racer Alley	4J	3	1,630	1,560	70	500	505	14%	33%	19	0.97	0.98	40	40
Little Cub	4K	4	1,680	1,600	80	260	272	31%	34%	54	1.41	1.48	40	60
Renegade	4L	4	1,694	1,617	77	260	271	30%	32%	52	1.34	1.40	10	15 1/4 density
Total Lift 4	12					8,021						40.33	1,075	
Lift 5R - Magic Chair														
Yellow Brick Road	5A	2	775	684	91	650	656	14%	18%	49	3.16	3.19	50	160
Total Lift 5R	1					656						3.19	160	

**TABLE II.5 CONT.
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY
EXISTING AREA – 2013/2014 SEASON**

Trail Name	Trail No.	Skill Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area	
			Top Meters	Bottom Meters				Avg.	Steep.				Density	Total
Lift 6 - Jersey Cream														
Wishbone	6A	3	1,855	1,542	313	1,310	1,347	24%	35%	51	6.67	6.86	40	275
	6B	4	1,746	1,727	19	50	53	38%	38%	52	0.26	0.28	40	10
	6C	6	1,768	1,732	36	90	97	40%	54%	51	0.46	0.50	15	10
Pontiac Race Center	6D	4	1,725	1,545	180	430	466	42%	47%	88	3.79	4.11	40	165
Cougar Milk	6E	4	1,705	1,542	163	600	622	27%	40%	66	3.94	4.08	40	165
Lower Jersey Cream	6F	5	1,745	1,543	202	670	700	30%	49%	50	3.36	3.51	30	105
Upper Jersey Cream	6G	4	1,915	1,720	195	920	940	21%	45%	50	4.59	4.69	40	190
Blowdown	6H	6	1,820	1,645	175	660	683	27%	60%	33	2.17	2.24	15	35
Staircase	6I	7	1,775	1,565	210	485	529	43%	68%	34	1.67	1.82	20	35
Upper Wishbone	6J	3	1,915	1,820	95	530	538	18%	28%	42	2.23	2.27	40	90
The Bite	6K	7	1,760	1,555	205	470	513	44%	81%	36	1.67	1.82	20	35
	6L	6	1,912	1,795	117	335	355	35%	44%	97	3.26	3.45	15	50
Jersey Cream Wall	6M	7	1,855	1,785	70	165	179	42%	73%	141	2.32	2.52	20	50
	6N	7	1,850	1,740	110	285	305	39%	100%	87	2.47	2.65	20	55
Total Lift 6	14						7,328					40.80		1,270
Lift 7 - Showcase														
Showcase	7A	4	2,260	2,133	127	520	535	24%	43%	120	6.22	6.40	40	255
Showcase Bumps	7B	6	2,260	2,155	105	310	327	34%	49%	46	1.44	1.52	15	25
Blackcomb Glacier	partial 7C	5	2,270	1,675	595	2,630	2,696	23%	49%	175	46.05	5.43	15	80 1/2 density
	partial 7D	7	2,170	2,000	170	410	444	41%	110%	95	3.91	0.49	10	5 1/2 density
Blowhole	partial 7E	7	2,260	2,190	70	145	161	48%	73%	26	0.38	0.05	20	1
	partial 7F	6	2,055	1,905	150	515	536	29%	51%	169	8.69	1.04	8	10 1/2 density
Total Lift 7	6						4,700					14.92		376
Lift 8 - Wizard														
Lower Cruiser	8C	4	1,040	685	355	1,520	1,561	23%	42%	72	10.90	11.19	40	450
Lower Stoker	8E	3	1,270	1,070	200	725	752	28%	38%	54	3.89	4.04	40	160
Grubstake	8F	4	1,250	1,045	205	690	720	30%	45%	50	3.43	3.58	40	145
Schoolmarm	1/2 area 8H	3	1,023	785	238	790	825	30%	40%	57	4.51	2.36	40	95
Upper Mainline	8I	4	1,248	1,005	243	820	855	30%	42%	85	6.98	7.28	40	290
Lower Mainline	1/2 area 8J	2	1,009	762	247	1,310	1,333	19%	29%	62	8.18	4.16	50	210
Upper Village Run	1/2 area 8K	2	815	768	47	415	418	11%	12%	35	1.45	0.73	50	35
Parking Access	8L	2	846	769	77	550	555	14%	14%	12	0.65	0.66	50	35
Lower Gearjammer	8M	5	1,295	868	427	1,330	1,397	32%	51%	53	7.00	7.35	30	220
Total Lift 8	9						8,416					41.35		1,640
Lift 9 - Solar Coaster														
Cruiser Bumps	9A	4	1,765	1,630	135	415	436	33%	36%	81	3.35	3.52	40	140
Lower Springboard	9B	6	1,640	1,485	155	475	500	33%	52%	61	2.88	3.03	15	45
Stoker Bumps	9C	3	1,442	1,248	194	700	726	28%	34%	56	3.93	4.08	40	165
Ross's Gold	9D	6	1,630	1,455	175	505	534	35%	55%	59	2.98	3.15	15	45
Sorcerer	9E	5	1,800	1,500	300	925	972	32%	43%	66	6.15	6.47	30	195
Superpipe	9F	6	1,405	1,252	153	360	391	43%	58%	56	2.01	2.18	15	35
Springboard	9G	5	1,557	1,502	55	225	232	24%	30%	44	1.00	1.03	30	30
Black Magic	9H	4	1,868	1,390	478	1,625	1,694	29%	45%	72	11.74	12.24	40	490
Upper Gearjammer	9I	6	1,435	1,330	105	200	226	53%	60%	37	0.73	0.82	15	10
Stoker	9J	7	1,470	1,315	155	305	342	51%	65%	82	2.49	2.79	20	55
Undercut	9K	5	1,396	1,266	130	300	327	43%	49%	60	1.79	1.95	30	60
Freefall	9L	6	1,400	1,280	120	265	291	45%	56%	50	1.32	1.45	15	20
Slingshot	9M	7	1,470	1,255	215	495	540	43%	63%	66	3.29	3.59	20	70
Greenline	9N	5	1,510	1,253	257	990	1,023	26%	47%	34	3.33	3.44	30	105
	9O	2	1,530	1,455	75	340	348	22%	24%	44	1.50	1.54	50	75
Total Lift 9	15						8,583					51.28		1,540

**TABLE II.5 CONT.
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY
EXISTING AREA – 2013/2014 SEASON**

Trail Name	Trail Skill No.	Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area	
			Top Meters	Bottom Meters				Avg.	Steep				Density	Total
Lift 10 - Seventh Heaven														
Seventh Avenue	10A	3	1,896	1,777	119	1,495	1,500	8%	8%	6	0.90	0.90	40	35
Upper Expressway	10B1	2	1,808	1,758	50	500	502	10%	10%	6	0.32	0.32	50	15
Lower Expressway	10B2	2	1,758	1,663	95	1,050	1,054	9%	9%	7	0.77	0.77	50	40
Last Resort	10B3	2	1,758	1,695	63	810	812	8%	8%	7	0.60	0.60	50	30
Upper Expressway	10B4	2	1,853	1,800	53	425	428	12%	12%	6	0.25	0.25	50	15
Everglades	10C	6	2,095	1,790	305	880	931	35%	60%	394	34.70	36.73	4	140 1/4 density
Green Line	10D	3	2,100	1,915	185	1,190	1,204	16%	16%	9	1.12	1.13	40	45
Sunburn	10E	5	1,900	1,662	238	765	801	31%	47%	51	3.87	4.05	30	120
Lower Panorama	10F	4	1,890	1,665	225	775	807	29%	38%	51	3.99	4.15	40	165
U. Panorama/L. Cloud Ni	10G	4	2,249	1,662	587	2,900	2,959	20%	35%	35	10.02	10.22	40	410
Angel Dust	10H	5	1,853	1,745	108	320	338	34%	42%	51	1.64	1.73	30	50
Lower Hugh's Heaven	10I	4	2,065	1,665	400	1,215	1,279	33%	43%	48	5.81	6.12	40	245
Upper Cloud Nine	10J	5	2,215	1,895	320	950	1,002	34%	48%	54	5.10	5.38	30	160
Xhiggy's Meadow	10K	6	2,205	1,870	335	960	1,017	35%	61%	168	16.11	17.06	4	65 1/4 density
Lakeside Bowl	10L	7	2,160	1,845	315	990	1,039	32%	95%	137	13.60	14.27	5	70 1/4 density
Sluiceway	10M	5	1,850	1,730	120	450	466	27%	44%	42	1.87	1.94	30	60
Upper Hugh's Heaven	10N	6	2,223	2,084	139	355	381	39%	55%	52	1.83	1.97	15	30
	10O	6	2,035	1,880	155	570	591	27%	46%	203	11.55	11.97	4	45 1/4 density
	10P	6	2,110	2,010	100	280	297	36%	47%	102	2.85	3.03	4	10 1/4 density
Green Line	10Q	3	2,295	2,107	188	590	619	32%	32%	7	0.43	0.45	40	20
	10R	5	2,000	1,905	95	370	382	26%	39%	91	3.35	3.46	8	25 1/4 density
	10S	6	2,225	1,880	345	1,010	1,067	34%	55%	34	3.48	3.68	15	55
	10T	7	2,160	2,065	95	140	169	68%	84%	20	0.28	0.34	20	5
	10U	7	2,075	1,965	110	180	211	61%	82%	65	1.17	1.37	20	25
	10V	7	1,975	1,885	90	225	242	40%	74%	118	2.65	2.85	20	55
Couloir Extreme	10W	7	2,200	1,875	325	770	836	42%	92%	62	4.81	5.22	20	105
Quasar	10X	7	2,070	1,895	175	410	446	43%	64%	73	2.98	3.24	20	65
Big Bang	10Y	7	2,180	2,110	70	110	130	64%	100%	30	0.33	0.39	20	10
Total Lift 10	28						21,513					143.59		2,115
Lift 11 - Horstman T-Bar														
Blue Line	11A	3	2,249	2,020	229	860	890	27%	40%	108	9.25	9.57	40	385
Horstman Glacier	11B	5	2,245	2,080	165	670	690	25%	50%	124	8.34	8.59	30	260
Secret Bowl	partial 11C	6	2,137	2,055	82	300	311	27%	43%	64	1.92	0.51	15	10
Secret Chute	partial 11D	6	2,061	1,910	151	280	318	54%	64%	74	2.08	0.60	15	10
Pakalolo	partial 11E	7	2,050	1,850	200	400	447	50%	81%	62	2.46	0.70	20	15
Cougar Chute	partial 11F	7	2,020	1,800	220	470	519	47%	86%	112	5.27	1.49	20	30
Total Lift 11	6						3,175					21.47		710
Lift 14 - Crystal Express														
Upper Lift Line	14A	6	1,792	1,573	219	535	578	41%	50%	29	1.57	1.70	15	25
White Light	14B	5	1,822	1,525	297	870	919	34%	50%	41	3.58	3.78	30	115
Trapline	14C	5	1,825	1,505	320	1,020	1,069	31%	47%	40	4.04	4.23	30	125
Lower Lift Line	14D	5	1,540	1,470	70	170	184	41%	41%	30	0.51	0.55	30	15
Rock n Roll	14E	5	1,690	1,288	402	1,630	1,679	25%	47%	37	5.98	6.16	30	185
Upper Ridge Runner	14F	4	1,825	1,710	115	420	435	27%	40%	30	1.28	1.33	40	55
Mid Ridge Runner	14G	3	1,825	1,643	182	970	987	19%	32%	26	2.56	2.60	40	105
Lower Ridge Runner	14H	4	1,643	1,288	355	1,400	1,444	25%	44%	44	6.22	6.42	40	255
Crystal Road	14I	3	1,642	1,572	70	695	699	10%	10%	7	0.49	0.49	40	20

**TABLE II.5 CONT.
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY
EXISTING AREA – 2013/2014 SEASON**

Trail Name	Trail Skill No.	Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area	
			Top Meters	Bottom Meters				Avg.	Steep.				Density	Total
Lift 14 continued														
	14J	7	1,775	1,665	110	235	259	47%	64%	20	0.46	0.51	5	5 1/4 density
Davies' Dervish	14K	6	1,650	1,542	108	230	254	47%	62%	50	1.14	1.26	15	20
Overbite	14L	7	1,810	1,595	215	370	428	58%	74%	45	1.67	1.93	20	40
Backstage Pass	14M	5	1,610	1,435	175	780	799	22%	45%	35	2.72	2.79	30	85
Log Jam	14N	5	1,620	1,570	50	180	187	28%	30%	58	1.05	1.09	8	10 1/4 density
Lower Glacier Road	14O	4	1,407	1,370	37	430	432	9%	14%	9	0.40	0.40	40	15
Arthur's Choice	14P	6	1,632	1,412	220	680	715	32%	45%	60	4.09	4.30	4	15 1/4 density
Rider's Revenge	14Q	6	1,585	1,475	110	270	292	41%	50%	46	1.24	1.34	4	5 1/4 density
	14R	4	1,535	1,434	101	720	727	14%	14%	14	1.00	1.01	40	40
Outer Limits	14S	7	1,650	1,435	215	525	567	41%	65%	147	7.70	8.32	2	15 1/10 density
Twist & Shout	14T	4	1,610	1,405	205	660	691	31%	41%	39	2.60	2.72	40	110
	14U	3	1,824	1,792	32	260	262	12%	13%	11	0.29	0.29	40	10
Blackcomb Glacier	partial 7C	5	2,270	1,675	595	2,630	2,696	23%	49%	175	46.05	19.81	15	295 1/2 density
	partial 7D	7	2,170	2,000	170	410	444	41%	110%	95	3.91	1.77	10	20 1/2 density
Blowhole	partial 7E	7	2,260	2,190	70	145	161	48%	73%	26	0.38	0.18	20	4
	partial 7F	6	2,055	1,905	150	515	536	29%	51%	169	8.69	3.80	8	30 1/2 density
Sapphire Bowl	partial 18L	7	2,085	1,845	240	390	458	62%	88%	113	4.39	2.44	20	50
Gamet Bowl	partial 18M	7	2,115	1,940	175	425	460	41%	70%	60	2.57	1.32	20	25
Diamond Bowl	partial 18N	7	2,010	1,710	300	580	653	52%	79%	96	5.57	2.97	20	60
Gamet/Ruby Bowl	partial 18O	7	2,120	1,673	447	1,130	1,215	40%	64%	63	7.07	3.60	20	70
Spanky's/Ruby Bowl	partial 18P	7	2,125	1,840	285	740	793	39%	107%	61	4.48	2.28	20	45
Blackcomb Glacier Road	partial 18Q	5	1,673	1,407	266	1,870	1,889	14%	14%	6	1.14	0.55	30	15
Total Lift 14	21	(not including partial trails)					13,607 (not including partial trails)					91.93	1,884	1,560
Lift 18 - Glacier Express														
Blue Line	18B	5	2,139	1,635	504	2,185	2,242	23%	49%	30	6.46	6.63	30	200
	18C	7	1,750	1,575	175	440	474	40%	81%	110	4.86	5.23	20	105
Glacier Drive	18D	5	1,710	1,542	168	540	566	31%	42%	43	2.33	2.44	30	75
Dakine	18E	6	1,892	1,750	142	310	341	46%	64%	90	2.80	3.08	15	45
	18F	5	2,075	1,935	140	620	636	23%	42%	192	11.91	12.21	3	35 1/10 density
	18G	7	1,958	1,875	83	170	189	49%	66%	61	1.03	1.15	20	25
Crystal Traverse	18H	3	2,139	1,825	314	1,775	1,803	18%	32%	13	2.27	2.31	40	90
	18J	4	1,995	1,935	60	165	176	36%	40%	112	1.84	1.96	40	80
Heavenly Basin	18K	6	1,930	1,730	200	415	461	48%	63%	116	4.81	5.34	15	80
Sapphire Bowl	partial 18L	7	2,085	1,845	240	390	458	62%	88%	113	4.39	2.71	20	55
Gamet Bowl	partial 18M	7	2,115	1,940	175	425	460	41%	70%	60	2.57	1.46	20	30
Diamond Bowl	partial 18N	7	2,010	1,710	300	580	653	52%	79%	96	5.57	3.30	20	65
Gamet/Ruby Bowl	partial 18O	7	2,120	1,673	447	1,130	1,215	40%	64%	63	7.07	4.00	20	80
Spanky's/Ruby Bowl	partial 18P	7	2,125	1,840	285	740	793	39%	107%	61	4.48	2.52	20	50
Blackcomb Glacier Road	partial 18Q	5	1,673	1,407	266	1,870	1,889	14%	14%	6	1.14	0.60	30	20
Blackcomb Glacier	partial 7C	5	2,270	1,675	595	2,630	2,696	23%	49%	175	46.05	21.97	15	330 1/2 density
	partial 7D	7	2,170	2,000	170	410	444	41%	110%	95	3.91	1.97	10	20 1/2 density
Blowhole	partial 7E	7	2,260	2,190	70	145	161	48%	73%	26	0.38	0.20	20	5
	partial 7F	6	2,055	1,905	150	515	536	29%	51%	169	8.69	4.21	8	30 1/2 density
Secret Bowl	partial 11C	6	2,137	2,055	82	300	311	27%	43%	64	1.92	1.48	15	20
Secret Chute	partial 11D	6	2,061	1,910	151	280	318	54%	64%	74	2.08	1.76	15	25
Pakalolo	partial 11E	7	2,050	1,850	200	400	447	50%	81%	62	2.46	2.05	20	40
Cougar Chute	partial 11F	7	2,020	1,800	220	470	519	47%	86%	112	5.27	4.33	20	85
Total Lift 18	15	(not including "7" & "11" trails)					12,354 (not including "7" & "11" trails)					92.91	1,590	

**TABLE II.5 CONT.
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY
EXISTING AREA – 2013/2014 SEASON**

Trail Name	Trail Skill No. Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area		
		Top Meters	Bottom Meters				Avg.	Steep.				Density	Total	
Beginner Areas														
Whistler Kids Learning C	1	694	683	11	95	96	12%	12%	47	0.45	0.45	75	35	
Wizard Carpet	1	689	684	5	40	40	13%	13%	25	0.10	0.10	75	10	
Base II Carpet	1	770	764	6	85	85	7%	7%	25	0.21	0.21	75	15	
Total Beginner Lifts	3					221					0.76		60	
Total All Lifts	147					98.7 km					588.9 Ha		14,210	
Skiways & Connectors														
Yard Sale	A	6	1,715	1,610	105	280	299	38%	56%	25	0.71	0.76	4	5 1/4 density
Watch Out	B	7	1,730	1,595	135	330	357	41%	63%	36	1.19	1.29	5	5 1/4 density
Where's Joe	C	6	1,755	1,580	175	420	455	42%	57%	36	1.50	1.63	4	5 1/4 density
Raptor's Ride	D	7	1,750	1,570	180	550	579	33%	61%	27	1.49	1.57	5	10 1/4 density
Mid Easy Out	E	3	1,537	1,433	104	710	718	15%	26%	8	0.59	0.60	40	25
Sunset Boulevard	F	2	1,655	1,300	355	3,510	3,528	10%	10%	5	1.66	1.67	50	85
Connector	G	5	1,523	1,460	63	280	287	23%	36%	17	0.47	0.48	30	15
So Sweet	H	6	1,535	1,468	67	195	206	34%	40%	117	2.28	2.41	4	10 1/4 density
Pruned Paradise	I	6	1,307	1,235	72	165	180	44%	48%	112	1.85	2.02	4	10 1/4 density
Green Line	J	2	1,445	1,362	83	850	854	10%	10%	8	0.68	0.68	50	35
Green Line	K	2	1,362	1,267	95	850	855	11%	11%	8	0.68	0.68	50	35
Green Line	L	2	1,165	1,137	28	390	391	7%	7%	8	0.31	0.31	50	15
Green Line	M	3	1,537	1,436	101	900	906	11%	17%	8	0.72	0.72	40	30
	N	3	1,568	1,540	28	200	202	14%	14%	60	1.19	1.20	40	50
	O	3	1,540	1,458	82	280	292	29%	37%	36	1.02	1.06	40	40
	P	3	1,910	1,865	45	250	254	18%	20%	44	1.11	1.13	40	45
L. Blackcomb Glacier Rd	Q	3	1,285	1,150	135	1,520	1,526	9%	17%	11	1.63	1.64	40	65
	R	4	1,520	1,457	63	180	191	35%	42%	40	0.72	0.76	40	30
	S	3	1,485	1,445	40	320	322	13%	17%	22	0.69	0.70	40	30
Total Skiways & Connectors	19					12,401					21.31		545	
Total All Trails	166					111.1 km					610.3 Ha.		14,755	



Blackcomb Terrain Park



Blackcomb Tube Park



Blackcomb Tube Park

.6 Mountain Capacity Analysis

Planning Parameters

The determination of an area’s Skier Carrying Capacity (SCC) is perhaps the most critical step in ski area planning. Often referred to as the “comfortable carrying capacity” or the “skiers at one time” (SAOT), this figure represents the number of skiers that can be safely supported by an area’s lift and trail system while providing a quality experience to each skier ability level. The skier carrying capacity is determined via an integration of lift capacity, acceptable slope densities, slope gradients, skier skill classifications and vertical metres of lift serviced terrain.

During the past several years, Ecosign has undertaken and reviewed substantial research dealing with skiing demand, skier skill distribution and skier densities. Each skier ability level places different demands upon an area’s lift and trail system. Empirical observations have determined that each skier ability level will ski a relatively constant number of vertical metres per day.

Skier Skill Class Distribution

These reviews have also continued to support the bell curve distribution of skier skill levels, as illustrated below in Plate II.2.

SKIER SKILL CLASS DISTRIBUTION

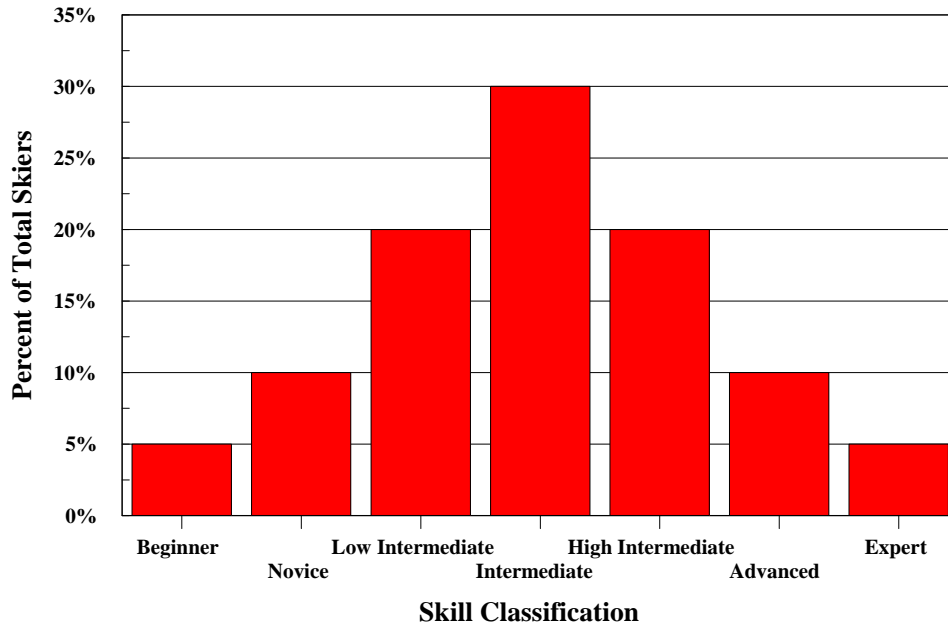


PLATE II.2

Vertical Transport Metres

As a general rule, as the proficiency of the skier increases, the demand for vertical metres increases. Table II.6 lists the low, average and high levels of VTM demand used by Ecosign for different regions of the world.

**TABLE II.6
SKIING DEMAND BY SKILL CLASSIFICATION**

Skill Classification	Planning Goals	Skier Demand VTM/Day		
		Low	Average	High
1 Beginner	5%	610	705	940
2 Novice	10%	1,370	1,595	2,120
3 Low Intermediate	20%	1,830	2,125	2,825
4 Intermediate	30%	2,440	2,830	3,770
5 High Intermediate	20%	3,290	3,840	5,085
6 Advanced	10%	3,840	4,460	5,935
7 Expert	5%	5,485	6,370	8,475
Weighted Average		2,582	3,001	3,989

In Europe, western Canada and the western United States, we use the industry high VTM demand to ensure a quality, uncrowded skiing experience for the better conditioned, more aggressive skiers. The average level of demand is commonly found in Japan, while the low level of demand occurs where ski areas tend to be quite crowded. To ensure a high quality experience, we will use the industry high level of VTM demand for evaluating and planning Blackcomb Mountain.

Skier Densities

Based on the above mentioned review of various studies, we estimated skier densities which provide skiers with a high quality, comfortable experience, resulting in good memories and the likelihood of return visits. Densities used for planning ski areas in different parts of the world vary widely, due to the facilities the local skier has been conditioned to accept and the local land base, as illustrated in Plate II.3. In areas such as Europe, western Canada and the western United States, skier densities are relatively low compared to the densities found in ski areas in Japan or Australia, where skiers have been historically conditioned to higher densities. Densities in Japan are generally three times higher than densities in western North American destination resorts.

As shown in Table II.7, acceptable skier slope densities tend to decrease as the proficiency of the skier increases. The lower density for better skiers occurs due to their increased speed, and therefore longer stopping distances, and the general increase in space needed to avoid obstacles and other skiers. As shown, the exception to this rule is that slope densities increase slightly on expert terrain since these steep, ungroomed slopes dictate controlled, short radius turns. Under these conditions, expert skiers have slower speeds and require less space for safe skiing.

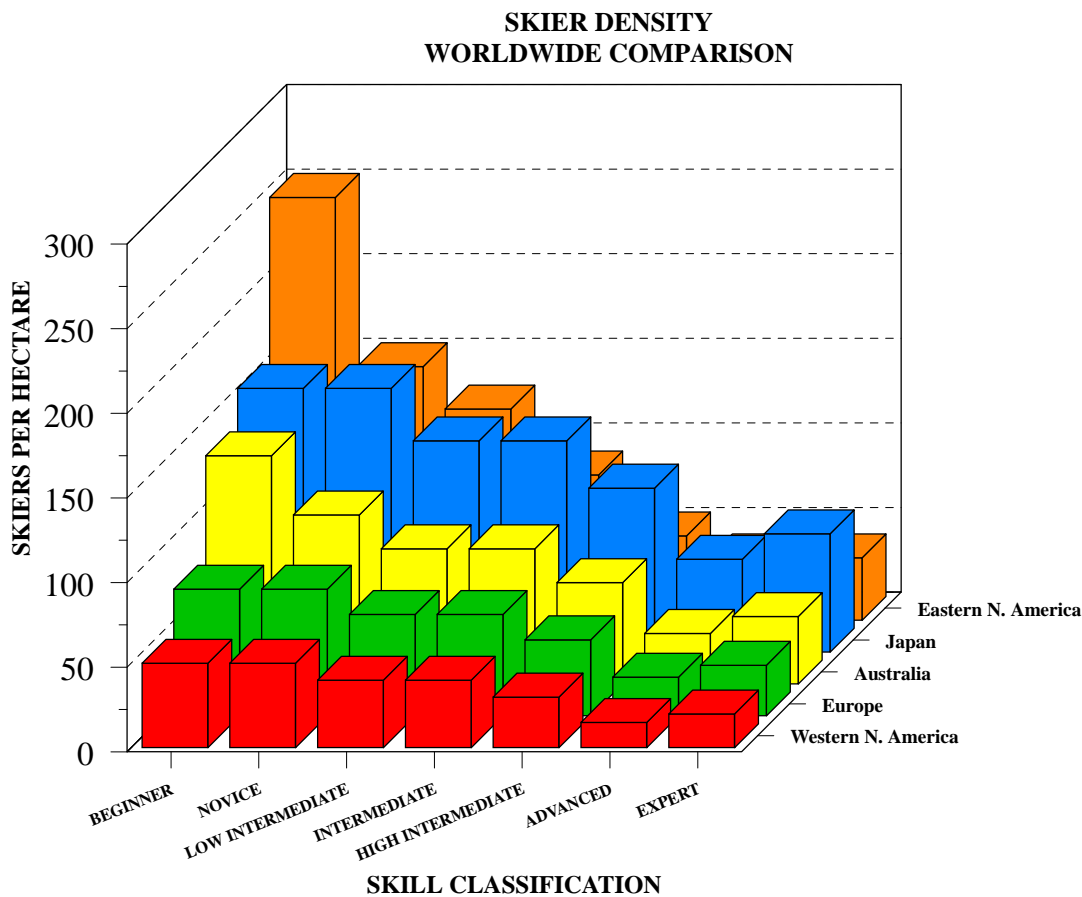


Plate II.3

Listed in Table II.7 are the “SAOT” (Skiers At One Time) or “At Area” densities, which are based on the total number of skiers at the ski area, including skiers in lift queues, riding lifts, in restaurants and on the ski trails. "On-Slope" densities are significantly lower and take into account only those skiers actually on the ski trails at any given time.

The densities shown will be used both in the evaluation of the existing and proposed trail capacities and the potential terrain carrying capacity of the additional slopes adjacent to the presently developed area. One important point to realize here is that even though all skiers pay the same rate, it is more costly for an operator to provide an expert with adequate lifts and terrain than for a novice or intermediate skier. The planning parameters used for Blackcomb Mountain are listed in Table II.7.

**TABLE II.7
BLACKCOMB MOUNTAIN
PLANNING PARAMETERS**

Skill Classification	Skill Mix	Acceptable Terrain Gradients	Skier Demand VTM/Day	Skier Densities Skiers per Ha.	
				At Area	On Slope
1 Beginner	5%	8 - 15%	940	50	20
2 Novice	10%	15 – 25%	2,120	50	20
3 Low Intermediate	20%	25 – 35%	2,825	40	15
4 Intermediate	30%	30 – 40%	3,770	40	15
5 High Intermediate	20%	35 – 45%	5,085	30	12
6 Advanced	10%	45 – 60%	5,935	15	7
7 Expert	5%	60% +	8,475	20	10

Ski Trails Capacity Analysis

In the analysis and planning for the Blackcomb Mountain ski trail system, we have used the skier densities listed in Table II.7. In order to determine the skier carrying capacity of each trail, we have multiplied the density of the skill level of skiers using a particular trail, with the slope area of the trail. In addition to the general specifications of the ski trails, Table II.5 lists the Blackcomb trail capacities. As listed, Blackcomb Mountain has a total trail capacity of approximately 14,755 skiers per day at the ideal densities chosen.

.7 Blackcomb Mountain Skier Carrying Capacity (SCC) Analysis

Lift Capacity Analysis

Utilizing the high industry skier vertical demand, we have calculated the skier carrying capacity (SCC) of Blackcomb Mountain’s existing lift facilities, as listed in Table II.8. Based upon this analysis, we estimate that the lift system can comfortably

accommodate approximately 15,500 skiers per day. The capacity analysis assumes that the waiting time for a lift is equal to the ride time for fixed grip lifts and the wait time is double the ride time for detachable grip lifts. Additionally, the VTM demand on each lift is determined by the terrain balance of the trails serviced by that lift. The lower mountain lifts, the Wizard Express and Excalibur Gondola, are used less frequently for return cycle skiing (except on busy days with good lower mountain snow conditions). In particular, the SCC of the Lower Excalibur Gondola is significantly impacted by the number of people needing to use this lifts for staging and the “over-capacity” required for morning staging and the calculated SCC’s is limited by using only a portion of the rated capacity out of the village for return skiing. The resulting calculated SCC’s then provide a reasonable balance with the return cycle skiing trails in that zone. The Mode 2 operation assumes that the top of the mountain including the 7th Heaven Express, Glacier Express and Horstman and Showcase T-bars are closed due to high speed winds, fog or avalanche danger. Mode 3 operation occurs in early winter and late spring when the bottom of the ski area does not have sufficient snow for skiing.

**TABLE II.8
BLACKCOMB MOUNTAIN
SKIER CARRYING CAPACITY
EXISTING AREA – 2013/2014 SEASON**

Lift No.	Lift Name	Lift Type	Hourly Capacity	Vertical Meters	VTM/Hr (000)	VTM Demand	Loading Effic.	Access Reduc.	SCC	Mode 2 SCC	Mode 3 SCC
1	Lower Excalibur Gondola	D8G	2,600	88	229	2,120	90%	85%	100	100	
2	Upper Excalibur Gondola	D8G	2,600	367	955	3,518	90%	47%	910	910	
3	Excelerator Express	D4C	2,800	509	1,425	3,091	95%	29%	2,180	2,180	2,180
4	Catskiner Chair	3C	1,656	334	552	3,573	85%	0%	890	890	890
5R	Magic Chair	3C	1,530	95	145	2,120	85%	0%	410	410	
6	Jersey Cream Express	D4C	2,800	375	1,050	4,417	95%	6%	1,430	1,430	1,430
7	Showcase T-bar	T-B	1,034	148	153	4,326	85%	0%	200		200
8	Wizard Express	D4C/B	2,650	566	1,501	3,518	95%	32%	1,930	1,930	1,930
9	Solar Coaster Express	D4C	2,800	622	1,742	4,521	95%	25%	1,910	1,910	1,910
10	7th Heaven Express	D4C	2,800	589	1,649	5,004	95%	2%	1,990		1,990
11	Horstman T-bar	T-B	1,161	206	239	4,098	85%	15%	270		270
12	Crystal Express	D4C	2,360	540	1,274	5,235	95%	0%	1,560	1,560	1,560
	Base II Carpet	MC	1,800	6	11				80	80	
	Wizard Carpet	MC	1,500	5	8				70	70	
	Whistler Kids	MC	1,200	5	6				70	70	
18	Glacier Express	D4C	2,500	599	1,498	6,192	95%	5%	1,500		1,500
Total			33,791		12,436				15,500	11,540	13,860

.8 Ski Trail Balance Statement

To accurately portray the terrain balance of the mountain trail system, we computed the terrain available to each of the seven skier skill classifications, then multiplied by the skier densities exhibited in Table II.7, to illustrate the distribution of Blackcomb's skiing terrain available to each skier skill level. This exercise is often referred to as area

balancing, and provides management and the planning team with the data necessary to compare the mountain trail development with the apparent proportions of the skier market.

The trail balance by lift system (Table II.9 and Plate II.4), portrays the relationship between each lift and trail system on a daily basis, as well as the proportionate amount of ski terrain available to each skier skill level on each lift. The total trail capacity of 14,210 for the named trails and a total of 14,755 skiers per day when all skiways and connector trails are included, as listed in Table II.5, is marginally lower than the total lift SCC of 15,280 skiers per day. Although the overall trail to lift capacity is well balanced, individual lift systems have imbalances, shown by the trail to lift capacity ratios, which range from 39% (Magic Chair) to 263% (Horstman T-bar). The Showcase and Horstman T-bars have a significant surplus of trail capacity. Lower and Upper Excalibur, Wizard, Solar Coaster, Jersey Cream and the Magic Chairlift, on the other hand, are over-lifted but their capacities are required for morning upstaging. The remaining lifts are quite well balanced when comparing lift capacities to trail capacities.

**TABLE II.9
TRAIL BALANCE BY LIFT SYSTEM
EXISTING AREA – 2013/2014**

Lift No.	1	2	3	4	5R	6	7	8	9	10	11	14	18
Lift Name	Lower Excalibur	Upper Excalibur	Excelsior	Cat-skinner	Magic Chair	Jersey Cream	Show-case	Wizard Express	Solar Coaster	7th Heaven	Horstman T-B	Crystal Express	Glacier Express
Lift Type	D8G	D8G	D4C	3C	3C	D4C	T-B	D4C/B	D4C	D4C	T-B	D4C	D4C
Lift Capacity	100	910	2,180	890	410	1,430	200	1,930	1,910	1,990	270	1,560	1,500
Trail Capacity	45	615	1,130	1,075	160	1,270	376	1,640	1,540	2,115	710	1,884	1,590
Trails:Lifts	45%	68%	52%	121%	39%	89%	188%	85%	81%	106%	263%	121%	106%
Average Density	117.6	65.4	68.9	22.1	128.5	35.0	13.4	46.7	37.2	13.9	12.6	17.0	16.1
Optimum Density	50.0	44.8	39.1	39.0	50.0	34.5	35.2	40.4	33.8	31.3	34.4	30.7	25.7
Demand VTM	2,120	3,518	3,091	3,573	2,120	4,417	4,326	3,518	4,521	5,004	4,098	5,235	6,192
Balance													
Beginner	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Novice	100%	48%	0%	27%	100%	0%	0%	17%	5%	5%	0%	0%	0%
Low Intermediate	0%	52%	86%	16%	0%	29%	0%	16%	11%	5%	54%	7%	6%
Intermediate	0%	0%	8%	30%	0%	42%	68%	54%	41%	39%	0%	25%	5%
High Intermediate	0%	0%	3%	18%	0%	8%	21%	13%	25%	20%	37%	45%	42%
Advanced	0%	0%	1%	8%	0%	7%	9%	0%	10%	16%	3%	5%	13%
Expert	0%	0%	1%	0%	0%	14%	2%	0%	8%	16%	6%	18%	35%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**BLACKCOMB MOUNTAIN
LIFT VS. TRAIL CAPACITY
EXISTING AREA – 2013/2014**

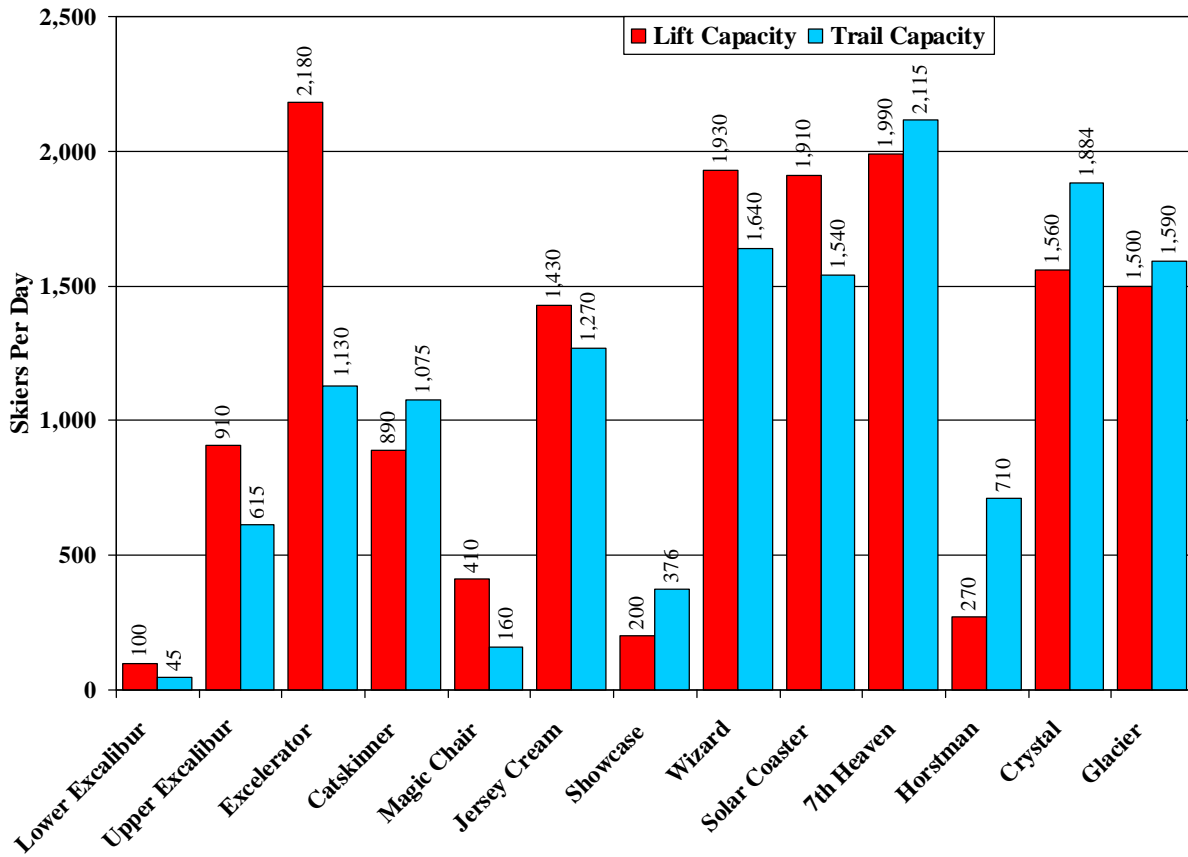


PLATE II.4

The Cumulative Ski Trail Balance Statement for the existing area is listed in Table II.10. Plate II.5 indicates that the presently developed ski terrain at Blackcomb Mountain is fairly well balanced with excesses in the expert skill class and significant shortages in the beginner skill class, when compared to the overall skier market.

**TABLE II.10
CUMULATIVE SKI TRAIL BALANCE
EXISTING AREA – 2013/2014 SEASON - ALL TRAILS**

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	0.8	60	0.4%	5%
2 Novice	24.9	1,250	8.8%	10%
3 Low Intermediate	80.9	2,960	20.8%	20%
4 Intermediate	103.4	4,095	28.8%	30%
5 High Intermediate	144.8	3,205	22.6%	20%
6 Advanced	132.0	1,045	7.4%	10%
7 Expert	102.3	1,595	11.2%	5%
TOTALS	588.9	14,210	100%	100%

Average Density =	26.3 Skiers/Hectare
Optimum Density =	34.6 Skiers/Hectare
Weighted Demand =	4,400 VTM/Skier/Day

**BLACKCOMB
SKI TRAIL BALANCE
EXISTING AREA – 2013/2014 SEASON - ALL TRAILS**

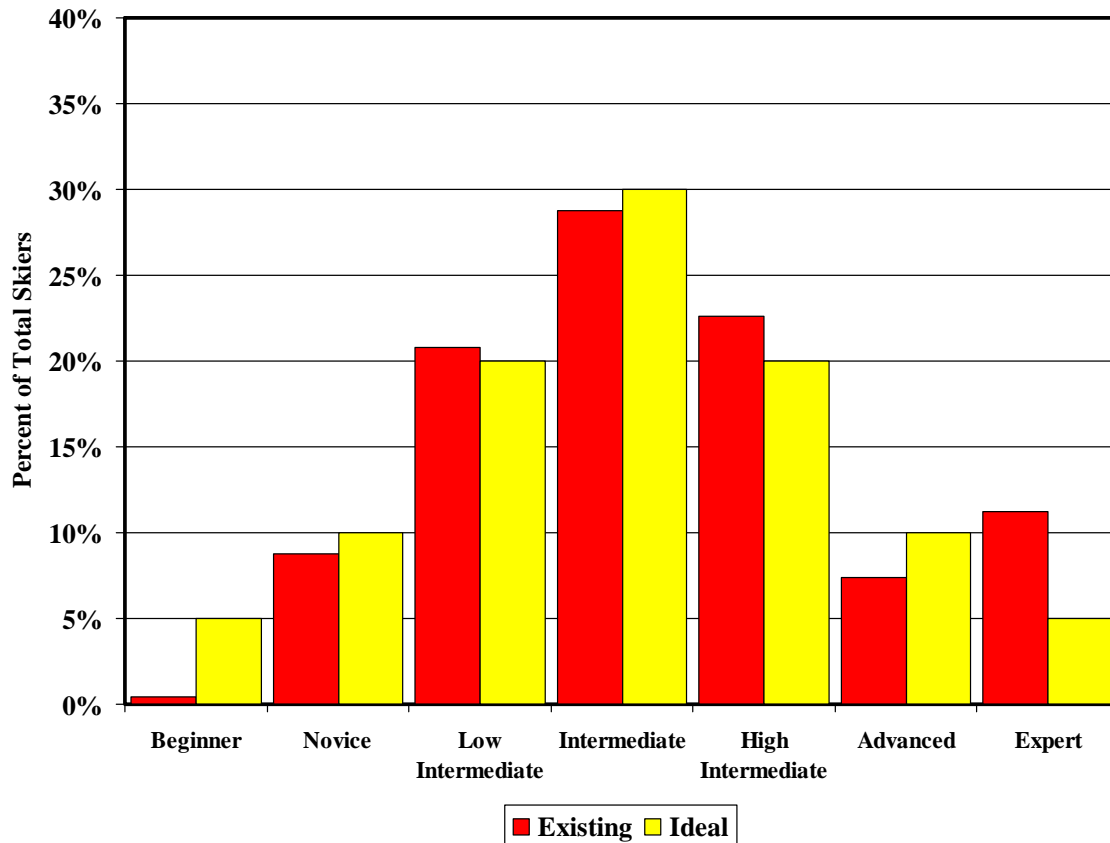


PLATE II.5

When analyzed using the three international skill classes, the Blackcomb distribution is 9.4%:72.1%:18.5% as compared to the skier market at 15%:70%:15%. As mentioned earlier, this excess of terrain in the expert skill classes is a major draw for destination visitors.

.9 Mountain Staging and Circulation

The efficient staging of skiers is a complex operation which requires sufficient facilities both on and off the mountain to allow visitors to park, dine, buy tickets, rent equipment and other necessities, and subsequently be distributed throughout the mountain's lift and trail systems. Large mountain complexes inevitably require several staging areas to handle peak traffic flows during the morning and afternoon staging periods. Skier staging to the ski area is somewhat analogous to pipelines (lifts) pumping (skiers) up the mountain to fill reservoirs (lift and trail systems). This is relevant for Blackcomb Mountain because the bulk of skiing is located at the mid and upper elevations, which requires lifts with large rated capacities to be installed on the lower mountain to handle the large numbers of skiers moving to the upper elevations (even though much of the capacity goes unused once the morning staging period has finished).

Blackcomb Mountain has three major staging portals with two main staging lifts, the Excalibur Gondola at 2,600 pph out of Whistler Village and Base II and the Wizard Express at 2,650 pph at the Upper Village area. Taking into account loading inefficiencies these two lift systems can effectively stage approximately 4,860 passengers per hour or 12,150 over the industry accepted 2.5 hour staging period. The upper mountain SCC at 12,840 skiers can be transported up the mountain by these two lifts onto the mountain in just over 2.5 hours, so the current access systems are well balanced.

.10 Snowmaking

Blackcomb installed the first stage of the snowmaking system during the Phase 4 development in 1987. This snowmaking system has undergone continual upgrading and expansion since that time and now covers approximately 110 to 120 hectares of terrain as illustrated on Figure 9. The location of pump houses and existing snowmaking lines are also shown on this figure. This system operates an average of 3 months per season.

Water required for the snowmaking system is currently drawn from Fitzsimmons Creek, to the southwest of the staff housing, and from Horstman Creek, near the base of the Jersey Cream chair. From the Fitzsimmons Creek intake, the water is pumped up to the Valley valve station, near the Valley maintenance area, from which point it is either fed to the snow guns on the lower mountain, or fed up the mountain for storage or for snowmaking. Two intermediate pump stations, one at 1,010 metres, and the other at 1,510 metres, provide the next stages of pumping, so the water can be stored in the alpine

reservoir (at 1,990 metres) or pumped to snow guns in their zones. The Horstman intake and pumping station also serves both to fill the alpine reservoir, and provide pressure to its surrounding snow guns. Blackcomb Mountain currently has water licenses for approximately 8.85 million cubic metres per year (2,338 million US gallons). With the shared snowmaking systems between the two mountains, approximately 2.99 million cubic metres per year can be diverted to Whistler Mountain. The reservoir in the high alpine stores approximately 75,700 m³ (20 million US gallons) of water for use in suitable snowmaking conditions, and allows higher flows in the snowmaking system by using gravity to provide the pressure needed to keep the snow guns making snow. The snowmaking system on Blackcomb Mountain uses between 265,000 m³ (70 million US gallons) and 379,000 m³ (100 million US gallons) of water annually, well below the limits of the current water licences.

.11 Olympic Facilities

In February 2010, the bobsleigh, luge and skeleton competitions for the Vancouver 2010 Olympic Winter Games were held at the Whistler Sliding Centre located on the lower northwester slopes of Blackcomb Mountain just above Base II. The sliding centre consists of a 1,450-metre long refrigerated track, support buildings and a small parking lot. Construction commenced in June 2005 and was completed in December 2007. The Whistler Sliding Centre property has been removed from Blackcomb Mountain's CRA and Whistler Blackcomb has a Memorandum of Understanding with WSC for use of the mountain access road and utilities that pass through the WSC property. The Olympic Facilities are illustrated in Figure 10.

.12 Skier Service Space Inventory and Analysis

Skier service facilities are those facilities which provide functions specifically related to the operation and management of the ski area. For planning purposes, these services can generally be broken down into three distinct categories:

Staging Facilities - those services that are required as skiers arrive at the area.

Commercial Facilities - those services required throughout the day as skiers are on the mountain and during après-ski hours.

Operational Facilities - those services not directly required by skiers but which are essential for the day-to-day operation of the ski area.

Staging facilities include ticket sales, public lockers, equipment rental and repair, ski school, and children's programs. These facilities are located in the base areas and should be sized in relation to the number of skiers staging through each base area. Equipment rental space can often be provided from leased premises within the resort village, reducing the capital investment costs for the mountain operator.

Commercial facilities are located both in the base area and on the mountain and include food and bar seating, kitchen and serving areas, restrooms and accessory retail space. Restaurant space in the base area does not always need to be owned by the mountain operator, if the restaurant space in the village and accommodation buildings at the base is located close enough to the lifts to be convenient for skiers to use during the day. Restaurants on the mountain are normally the responsibility of the mountain operator. Restaurant seats should be planned relative to the number of skiers circulating in the vicinity of the proposed restaurant sites. Kitchens and restrooms must be sized in proportion to the amount of seating proposed for each restaurant.

Operational facilities are generally “back of the house” services and include administration, employee lockers and ski patrol facilities. These facilities are located both on the mountain and in the base areas.

A detailed inventory of the buildings and structures currently providing skier services on Blackcomb Mountain was performed by Blackcomb staff. The space allocated to each of the twelve skier service functions for each of the buildings used for skier services on Blackcomb Mountain are listed in Table II.11. Approximately 9,300 square metres of functional skier service space is located in 15 buildings. In this table, the buildings have been grouped into those located in the base area including the Wizard Base and Base II and those located in the alpine. Fifty six percent of total skier service space is located in the base area, with most of this being provided in the Blackcomb Daylodge and the Administration/Whistler Kids building at the Wizard base and in the Base II day lodge. In the alpine, most of the skier services are provided in the Glacier Creek Lodge and the Rendezvous Lodge.

**TABLE II.11
BLACKCOMB MOUNTAIN
EXISTING SKIER SERVICE SPACE INVENTORY**

Service Area	Blackcomb Base (Wizard & Base II)							
	Blackcomb Daylodge m ²	Admin./ W. Kids m ²	Cabin Base II m ²	Base II Daylodge m ²	Excab. Tickets m ²	Tubing Centre m ²	Finance Trailers m ²	Base Sub-total m ²
Staging Facilities								
Ticket Sales	14.8				49.0	30.0		63.8
Public Lockers	136.3							136.3
Equipment Rental & Repair	280.2	54.4		180.4				515.0
Ski School/ Guest Relations	48.3	78.2		30.0				156.5
Children's Programs/Daycare		189.8		78.0				267.8
Sub-total Staging Facilities	479.6	322.4	-	288.4	49.0	30.0	-	1,139.4
Commercial Facilities								
Food & Beverage Seating	249.6	189.8		213.5				652.9
Kitchen & Scramble	160.6	23.5		218.0				402.1
Rest Rooms	45.5	74.3		60.0				179.8
Accessory Retail	177.2			6.5				183.7
Sub-total Commercial	632.9	287.6	-	498.0	0.0	-	-	1,418.5
Operations Services								
Administration	100.9	998.7	268.0	496.0			596.0	1,863.6
Employee Facilities	25.6	18.6		140.0				184.2
First Aid & Ski Patrol		13.0	208.0	18.0				239.0
Sub-total Operations	126.5	1,030.3	476.0	654.0	0.0	0.0	596.0	2,286.8
Total Functional Space	1,239.0	1,640.3	476.0	1,440.4	49.0	30.0	596.0	4,844.7
Storage	69.6	18.5	8.0	169.0		21.7		265.1
Mechanical/Circulation/Walls/Waste	334.3	115.2	24.0	170.8	2.0	4.0		644.3
Total Built Space	1,642.9	1,774.0	508.0	1,780.2	51.0	55.7	596.0	5,754.1
<i>Percent of Functional Space</i>	<i>13%</i>	<i>18%</i>	<i>5%</i>	<i>16%</i>	<i>1%</i>	<i>0%</i>	<i>6%</i>	<i>56%</i>
Restaurant Seating								
Restaurants	Merlin's	W. Kids		18 Below				
Indoor Seats	269	150		210				629
Outdoor Seats	246							246

**TABLE II.11 CONT'D
BLACKCOMB MOUNTAIN
EXISTING SKIER SERVICE SPACE INVENTORY**

Service Area	Blackcomb Alpine									Total Blackcomb Mountain m ²
	Glacier Creek m ²	Demo Hut m ²	Rendezvous m ²	Ski School Info Kiosk m ²	Alpine Maint. m ²	Horstman Hut m ²	Crystal Hut m ²	7th Heavn Patrol m ²	Alpine Sub-total m ²	
Staging Facilities										
Ticket Sales		-							0.0	63.8
Public Lockers		-							0.0	136.3
Equipment Rental & Repair		74.0		30.0					104.0	619.0
Ski School/ Guest Relations	7.9			65.0					72.9	229.4
Children's Programs/Daycare		-							0.0	267.8
Sub-total Staging Facilities	7.9	74.0	-	95.0	-	-	-	-	176.9	1,316.3
Commercial Facilities										
Food & Beverage Seating	988.0	-	905.0			43.0	70.0		2,006.0	2,658.9
Kitchen & Scramble	503.7	-	345.0			43.0	20.0		911.7	1,313.8
Rest Rooms	217.5	-	180.0			14.0	12.0		423.5	603.3
Accessory Retail	58.5	-	110.0						168.5	352.2
Sub-total Commerical	1,767.7	-	1,540.0	-	0.0	100.0	102.0	0.0	3,509.7	4,928.2
Operations Services										
Administration	26.0		15.0		14.4				55.4	1,919.0
Employee Facilities	85.2	-	162.0		59.3				306.5	490.7
First Aid & Ski Patrol	-	-			308.0			74.0	382.0	621.0
Sub-total Operations	111.2	-	177.0	-	381.7	0.0	0.0	74.0	743.9	3,030.7
Total Functional Space	1,886.8	74.0	1,717.0	95.0	381.7	100.0	102.0	74.0	4,430.5	9,275.2
Storage	79.0	-	351.0			60.0	12.0			265.1
Mechanical/Circulation/Walls/Waste	441.3	-	389.0			30.0	4.0			644.3
Total Built Space	2,407.1	74.0	2,457.0	95.0	381.7	190.0	118.0	74.0	4,430.5	10,184.6
<i>Percent of Functional Space</i>	<i>20%</i>	<i>1%</i>	<i>19%</i>	<i>1%</i>	<i>4%</i>	<i>1%</i>	<i>1%</i>	<i>1%</i>	<i>44%</i>	
Restaurant Seating			Rendezvous							
Restaurants			Christines							
Indoor Seats	874		883			50	56		1,863	2,492
Outdoor Seats	360		192			72	72		696	942



Rendezvous/Christine's Restaurants

Skier Service Space Analysis

Table II.12 lists Ecosign’s planning standards for the amount of skier service space recommended per skier for each of the 12 skier service functions at a day skier area and a destination resort and also shows the average of these two standards. These standards have been developed over several years and incorporate data from destination resorts in Europe, North America and Asia. The standards are used as a benchmark to evaluate the amount of existing skier services provided at a resort. It should be noted that these planning standards are average requirements and specific conditions at a resort may dictate space requirements substantially different from these guidelines. We are generally comfortable with a 50 percent variance above or below the recommended standards, depending on local market conditions.

**TABLE II.12
ECOSIGN DESIGN STANDARDS
THEORETICAL FLOORSPACE PER SKIER**

Skier Service Function	Square Meters		
	Ski Area	Average	Resort Area
Staging Facilities			
Ticket Sales	0.009	0.012	0.014
Public Lockers	0.065	0.088	0.111
Equipment & Repair	0.074	0.084	0.093
Guest Services/Ski School	0.023	0.035	0.046
Children's Programs	0.033	0.039	0.046
Subtotal Staging	0.204	0.258	0.311
Commercial Facilities			
Food Service Seating	0.300	0.350	0.400
Kitchen & Scramble	0.139	0.163	0.186
Restrooms	0.070	0.081	0.093
Accessory/Retail Sales	0.037	0.053	0.070
Subtotal Commercial	0.546	0.647	0.748
Operational Facilities			
Administration	0.056	0.074	0.093
Employee Facilities	0.028	0.037	0.046
First Aid & Ski Patrol	0.023	0.028	0.033
Subtotal Operational	0.107	0.139	0.172
Total Functional Space	0.857	1.044	1.231
Storage @ 10%	0.086	0.104	0.123
Circ./Walls/Waste/Mech. @ 15%	0.129	0.157	0.185
Total Built Space	1.071	1.305	1.539

The Existing Skier Service Space Use Analysis presented in Table II.13 compares the skier service space provided at Blackcomb Mountain with Ecosign’s planning standards for destination resorts. This analysis has been carried out assuming a design day of 10,040 skiers, which represents the average number of skier visits recorded on Blackcomb Mountain during the 15 busiest days over each of the last 6 ski seasons. A design day somewhat less than the peak day is selected since we believe it is not necessary to “build the church for Easter Sunday”. When the design day is set at the average of the top 15 days, skier visits will exceed the design day approximately 6 to 8 days per season. As shown in the table, the overall functional skier service space provided on Blackcomb is approximately 75% of the resort standards for the design day of 10,040 skiers, suggesting the skier services at Blackcomb Mountain could comfortably service approximately 7,500 skiers.

**TABLE II.13
BLACKCOMB MOUNTAIN
EXISTING SKIER SPACE USE ANALYSIS
AVERAGE TOP 15 DAYS 2006/07 TO 2012/13 = 10,040 SKIERS/DAY**

	Ecosign Floor Area Standards m²/skier	Existing Floor space m²	Existing Floor space per Skier m²/skier	Percent of Standard	Theoretical Skiers Served
Staging Facilities					
Ticket Sales	0.014	63.8	0.006	46%	4,578
Public Lockers	0.111	136.3	0.014	12%	1,223
Equipment Rental & Repair	0.093	619.0	0.062	66%	6,663
Guest Services / Ski School	0.046	229.4	0.023	49%	4,939
Children's Programs/Daycare	0.046	267.8	0.027	57%	5,765
Sub-total Staging	0.311	1,316.3	0.131	42%	4,229
Commercial Facilities					
Food & Beverage Seating	0.400	2,658.9	0.265	66%	6,647
Kitchen & Scramble	0.186	1,313.8	0.131	70%	7,071
Rest Rooms	0.093	603.3	0.060	65%	6,494
Accessory Retail	0.070	352.2	0.035	50%	5,055
Sub-total Commercial	0.748	4,928.2	0.491	66%	6,585
Operational Facilities					
Administration ¹	0.093	1,919.0	0.191	206%	20,656
Employee Facilities	0.046	490.7	0.049	105%	10,564
First Aid & Ski Patrol	0.033	621.0	0.062	190%	19,098
Sub Total Operational	0.172	3,030.7	0.302	176%	17,634
Total Functional Space	1.231	9,275.2	0.924	75%	7,532
Storage	0.123	265.1	0.026	21%	2,153
Mechanical/Circulation/Walls/Waste	0.185	644.3	0.064	35%	3,488
Total Skier Service Space	1.539	10,184.6	1.014	66%	6,616

When evaluating the individual categories, there appears to be a significant shortage of space for all of staging facilities, while there is a significant surplus of operational space in the areas of administration and ski patrol. The administration space, while located on Blackcomb serves both mountains. For the commercial facilities, Blackcomb Mountain has food and beverage space (seating, kitchen and washrooms) to service approximately 66 to 70 percent of the design day skiers.

**BLACKCOMB MOUNTAIN
SPACE USE BALANCE**

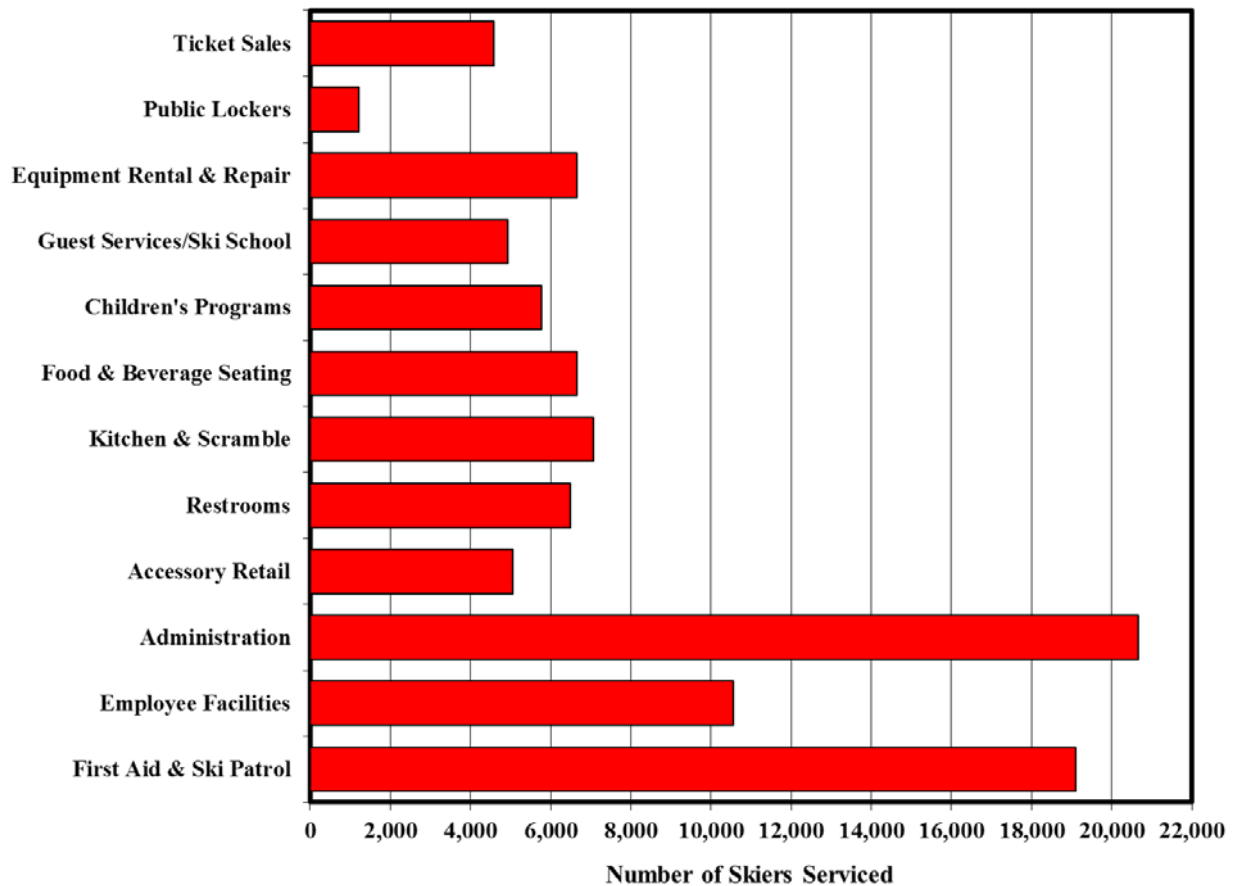


PLATE II.6

Since the merger of Whistler and Blackcomb in 1997, many of the skier service facilities are utilized by guests and employees of both mountains, such that it is difficult to precisely separate the two. A skier may stage from the base that is closest to his accommodation and then make their way to the other mountain at some point in the day. With the PEAK 2 PEAK Gondola connecting the alpine areas, this movement between the two mountains has increased significantly over the past two seasons. An analysis of the skier service space for the combined Whistler Blackcomb ski area is provided in Table II.14. This analysis was carried out using a Design Day of 22,640 skiers which is

equal to the average of the top 15 days occurring over each of the past 6 seasons excluding the Olympic season. The combined ski area exhibits a similar shortage in staging facilities such as public lockers and guest services/ski school space. Food and beverage facilities are adequate for about 66 to 69% of the design day while there appears to be more than enough accessory retail space. Although administration and employee space appears to be higher than the design standard, Whistler Blackcomb provides locker facilities at the mountain base areas for a high proportion of their employees, which allows the employees to use local transit to get to work.

**TABLE II.14
WHISTLER BLACKCOMB
EXISTING SKIER SPACE USE ANALYSIS
AVERAGE TOP 15 DAYS 2006/07 TO 2012/13 = 22,640 SKIERS/DAY**

	Ecosign Resort Area Standards m²/skier	Existing Floor space m²	Existing Space per Skier m²/skier	Percent of Standard	Theoretical Skiers Served
Staging Facilities					
Ticket Sales	0.014	186.2	0.008	59%	13,359
Public Lockers	0.111	688.5	0.030	27%	6,176
Equipment Rental & Repair	0.093	1,800.6	0.080	86%	19,382
Guest Services / Ski School	0.046	543.1	0.024	52%	11,692
Children's Programs/Daycare	0.046	893.1	0.039	85%	19,227
Sub-total Staging	0.311	4,111.5	0.182	58%	13,211
Commercial Facilities					
Food & Beverage Seating	0.400	6,277.5	0.277	69%	15,694
Kitchen & Scramble	0.186	2,765.3	0.122	66%	14,883
Rest Rooms	0.093	1,585.6	0.070	75%	17,068
Accessory Retail	0.070	1,757.1	0.078	111%	25,218
Sub-total Commercial	0.748	12,385.5	0.547	73%	16,550
Operational Facilities					
Administration	0.093	3,502.2	0.155	167%	37,697
Employee Facilities	0.046	1,929.5	0.085	183%	41,538
First Aid & Ski Patrol	0.033	850.3	0.038	116%	26,150
Sub Total Operational	0.172	6,282.0	0.277	161%	36,551
Total Functional Space	1.231	22,779.0	1.006	82%	18,497
Storage	0.123	1,183.8	0.052	42%	9,613
Mechanical/Circulation/Walls/Waste	0.185	2,226.5	0.098	53%	12,053
Total Skier Service Space	1.539	26,189.3	1.157	75%	17,013

Food Service Seating

Blackcomb Mountain is currently serviced by a variety of on-mountain food service facilities, ranging from cafeteria style offerings at the Wizard Grill, 18 Below, Glacier Creek, Rendezvous and the Crystal and Horstman Huts to table service provided at Christine's and Merlin's. In addition, skiers can come down to either the Upper Village or Whistler Village to eat at several restaurants in close proximity to the lifts. An inventory of the available seating in restaurants operated by Blackcomb Mountain was prepared by Whistler Blackcomb and is presented in Table II.15. Currently, Blackcomb Mountain has 629 indoor seats at the Wizard Base and Base II (including 150 seats in the Whistler Kids area at the Administration Building) and 1,863 indoor seats on the mountain. Additionally, there are 246 outdoor seats in the valley and 696 outdoor seats on the mountain that can be used on sunny days. The independently operated snow front businesses in Whistler Village (Longhorn, Black's and Dublin Gate) and in the Upper Village (Monk's Grill) are not included and would likely double the lunchtime food service capacity in the valley.

To estimate the theoretical comfortable capacity of these restaurants to provide lunch to skiers during the typical 2 hour lunch period, an average "turns per seat" has been assigned to each facility. These "turns per seat" estimates were provided by Blackcomb F&B management team and relate to the type of service provided at each facility. The results of this calculation are presented in Table II.15. Indoor seating in Blackcomb's valley restaurants can feed approximately 1,412 skiers during the two hour lunch break while the mountain restaurants can feed another 5,440 for a total of approximately 6,850 skiers. When the outdoor seats are included, an additional 2,060 skiers can be served during the lunch period. However, the busiest days on Blackcomb usually occur during the Christmas holidays and President's Week in mid-February, when weather conditions are typically not warm enough to eat outside. Therefore the practical total seating capacity during the peak days would be limited to the indoor seats (6,854). In the Upper Village there are other food outlets in close proximity to the Wizard Express that can be used by skiers skiing on the lower mountain. However, since the alpine SCC accounts for about 82 percent of the mountain's carrying capacity, we would anticipate that of the 12,100 skiers on the peak day, about 10,170 skiers would be on the upper mountain. Presently, the indoor on-mountain restaurant seats can service approximately 5,440 skiers; about 45 of the current peak day business levels. This shortage of upper mountain seating means that the on-mountain restaurants can be uncomfortably crowded on typical weekends during the peak season. Management has taken steps to alleviate the shortage by scheduling early lunches for children's ski school programs that use the lower floor of the Glacier Creek restaurant.



Glacier Creek Lodge

**TABLE II.15
BLACKCOMB MOUNTAIN
EXISTING RESTAURANT SEAT INVENTORY**

	Existing Counted Seats			Turns per Seat		Theoretical Capacity (Skiers)		
	Inside	Outside	Total	Peak Periods Inside	Peak Periods Outside	Peak Periods Inside	Peak Periods Outside	Peak Periods Total
BLACKCOMB								
Valley Seats								
Merlin's	135	230	380	1.7	1.2	230	276	506
Wizard Grill	134	16	190	3.0	2.5	402	40	442
Whistler Kids (Blackcomb)	150	-	150	1.0		150	-	150
18 Below	210	-	210	3.0	2.5	630	-	630
Valley Total	629	246	930	2.2	1.3	1,412	316	1,728
On-Mountain Seats								
Christine's (in Rendezvous)	113	42	155	1.7	2.5	192	105	297
Rendezvous	770	150	920	3.0	2.5	2,310	375	2,685
Glacier Creek	874	360	1,234	3.0	2.5	2,622	900	3,522
Crystal Hut	56	72	128	3.0	2.5	168	180	348
Horstman Hut	50	72	122	3.0	2.5	150	180	330
On-Mountain Total	1,863	696	2,559	2.9	2.5	5,442	1,740	7,182
TOTAL BLACKCOMB	2,492	942	3,489	2.8	2.2	6,854	2,056	8,910

.13 Parking and Accommodation

Base Area Accommodation Inventory

The Resort Municipality of Whistler (RMOW) measures its accommodation capacity in bed units, with one bed unit representing accommodation for one person. The developed bed unit inventory was updated in 2010 as part of the work done for the new Official Community Plan, adopted in 2013. At the end of 2010, the developed bed unit inventory was estimated at 53,098 of an approved capacity of 61,273. The OCP proposes a bed unit limit of 61,750 for lands within the RMOW.

Ecosign has prepared the following estimate of the current (2013) Dwelling and Bed Unit Inventory from information available from a range of sources. Most of the remaining undeveloped hotel units are located on the Holburn Tennis Centre site and are in the process of being rezoned for tourist accommodation in the form of townhouses. Table II.16 summarizes the 2013 Dwelling and Bed Unit Inventory. The Cheakamus Crossing, Baxter Creek and Rainbow neighbourhoods have undeveloped sites for market tourist accommodation in the form of townhouses and apartments. There are also several approved development sites for single family homes in the Rainbow, Baxter Creek, Kadenwood, Stonebridge, Lakecrest and Cypress Place developments as well a few lots scattered throughout the more mature neighbourhoods. There are undeveloped resident housing sites in Spring Creek, the Blackcomb Benchlands, Cheakamus Crossing and Alta Lake Road.

**TABLE II.16
WHISTLER VALLEY DWELLING & BED UNIT INVENTORY – 2013**

	Developed		Undeveloped		Totals	
	Units	Bed Units	Units	Bed Units	Units	Bed Units
Single Family	2,633	15,798	470	2,820	3,103	18,618
Duplex	461	2,766	16	96	477	2,862
Multi-Family	3,827	14,055	334	1,167	4,161	15,222
Tourist Accommodation	2,819	6,946	298	2,098	3,117	9,044
Pension	141	236	3	6	144	242
Hotel	3,345	6,933	400	1,037	3,745	7,970
Employee/Resident Restricted	1,796	6,080	224	664	2,020	6,744
RV/Campsites	156	228	-	10	156	238
Hostel	330	189	32	144	362	333
TOTAL	15,508	53,231	1,777	8,042	17,285	61,273

Skiers from Beds

By making assumptions of bed unit occupancy and skier participation rates, we can estimate the number of skiers generated by the accommodation during peak periods. Ecosign's experience at other resorts has provided the following observations which have been used to guide our estimates:

- Even though a hotel room or chalet is rented, not every bed in it may be occupied. For example a house capable of sleeping ten may be rented by a group of seven, or one couple may occupy a hotel room with four pillows.
- Not all of the guests staying at the resort may elect to ski or snowboard on any given day. Some of the guests may be non-skiers along with the family, some may be pursuing another of the many alternative winter activities around the resort and some may not ski because it is the day they are leaving the resort.

Tourism Whistler tracks the occupancy of commercial units offered for nightly rental through its central reservation system. This tracking system includes hotels, condotels, townhouses, chalets and pension style accommodation that are actively rented. Winter (November 1 to April 30) room nights sold and winter season occupancy rates peaked in the 2000/2001 ski season and have remained relatively flat since then, fluctuating with the snow conditions. The opening of the Four Seasons, Four Seasons Residences, Pan Pacific Two, the condotel projects at Creekside and the Nita Lake Lodge have increased the supply of commercial units, resulting in slightly lower winter season occupancy rates. These have improved over the last few seasons, however, still have not reached the historic highs.

During the period between Christmas and New Year and President's Week (mid February), peak daily unit occupancy rates have been up to 96 percent for the 8,000 rooms/units in Tourism Whistler's commercial accommodation inventory. This information was used as a guide in establishing the bed unit occupancy and skier participation rates for the various property categories, as outlined in Table II.17. With the exception of hotels and pensions, the other unit types can all be either a home for a permanent or seasonal resident, a second home or a vacation rental property. The assumed bed unit occupancy rates must reflect the blend of user categories during peak periods such as Christmas, Presidents' Week and March Break.

**TABLE II.17
PEAK PERIOD OCCUPANCY RATES AND SKIER YIELDS
WINTER 2012/13**

	Hotel Hostel Pension	TA Camp- ground	Multi Family	Single Family Duplex	Resident Restricted
Bed Unit Occupancy Rate	90%	75%	70%	50%	90%
Skier Participation Rate	80%	80%	60%	50%	25%
Skier Yield	72%	60%	42%	25%	23%

Using the skier yields listed above, the number of skiers that could be generated from accommodation within the Whistler Valley on a peak day is 21,520 skiers, as shown in Table II.18. Skiers from accommodation in the entire Whistler Valley have been grouped by location within the valley. For instance, the “south of Creekside” grouping includes Cheakamus Crossing, Spring Creek, Function Junction, Bayshores, Millar’s Pond, Twin Lakes and the southern properties accessed from Alta Lake Road, whereas “north of Village” includes Montebello, White Gold, Tapleys, Whistler Cay Heights, Barnfield, Nesters, Nicklaus North, Alpine, Emerald and the northern properties along Alta Lake Road.

**TABLE II.18
WHISTLER VALLEY ACCOMMODATION SKIER YIELD
PREDICTED BY BED UNIT OCCUPANCY - PEAK DAY - 2013/14 SKI SEASON**

	2013 Developed Beds					Skiers
	Hotel Hostel Pension	TA Camp- ground	Multi Family	Single Family Duplex	Resident Restricted	
South of Creekside	34	52	1,474	2,130	2,020	1,660
Creekside	-	1,746	858	1,518	322	1,860
Between Creekside & Village	142	1,062	3,431	3,786	543	3,250
Whistler Village	3,869	585	392	-	-	3,300
Upper Village	1,674	2,652	3,317	282	742	4,430
Village North	1,390	850	1,831	-	29	2,290
North of Village North	249	227	2,752	10,848	2,424	4,730
Totals	7,358	7,174	14,055	18,564	6,080	21,520

In addition to the skiers coming from accommodation within the resort, there are also day skiers who come from elsewhere in the region to ski for the day and destination visitors who ski on the day they arrive in Whistler. The number of day skiers arriving from outside of Whistler is difficult to estimate. In 1997, Ecosign conducted a lift base

survey as part of the RMOW Comprehensive Transportation Strategy (Whistler CTS) project. On a Saturday in mid-February (not the peak day), skiers entering the staging lift queues were asked whether they were day skiers, residents, overnight visitors or second home owners. Nineteen percent of those asked identified themselves as day skiers. The RMOW repeated this survey on 8 weekend days in 2002 and seventeen percent identified themselves as day skiers. This type of survey has not been carried out since then. The highway improvements completed for the 2010 Olympics have made it easier and safer for day skiers from the Lower Mainland to come to Whistler so it is possible that day skier numbers could be higher with the right conditions (fresh snow and sunshine). If we assume the combination of day skiers and destination skiers skiing on the day they arrive at the resort range from 20 to 30 percent of all skiers, the peak day visitation levels could be in the 27,250 to 31,450 level. Historically, a peak day of 27,372 skiers occurred during the 2001/2002 season and there have only been a handful of days with over 27,000 skiers since then.

Parking

Day skier parking in Whistler is currently provided in three general locations.

1. The Village Day Lots (P1 through P5) are located in the Fitzsimmons Creek floodplain between Blackcomb Way and the creek, as shown on Figure 11a. Lots 1, 2 and a portion of Lot 3 are within a comfortable walking distance of the Whistler Mountain Village staging lifts and the Blackcomb Excalibur and Wizard staging lifts. Lots 4 and 5 are beyond a comfortable skier walking distance to the lifts, however Whistler Blackcomb operate a free shuttle from these lots to the Village transit loop and the Blackcomb Wizard base. Historically these lots were owned by the Province and used by Whistler Blackcomb for the purpose of providing parking to support the ski operations. In 2008, the RMOW took over ownership of the Village lots from the Province with a commitment that the first use of the lots would remain as skier parking followed by parking for the community as a whole. Since Whistler Blackcomb has an obligation to the Province to continue to provide day skier parking, operation of the Village day lots is managed by the ski area and parking revenues are collected by the RMOW.
2. At Creekside, a three and a half level underground parking structure provides 1,268 stalls for skier parking, as shown on Figure 11b. The surface level, as well as a portion of the first underground level contains an additional 164 stalls for short duration commercial parking. The surface level is also used for ski school drop-off, over height vehicles, commercial loading, charter bus parking and a taxi stand. The Creekside parkade is owned and operated by

Whistler Blackcomb. With the PEAK 2 PEAK gondola connecting the two mountains, skiers from the south can park at Creekside and ski Blackcomb.

3. On Blackcomb, the ski area has a commitment with the Province and the RMOW to provide 1,500 skier parking stalls. These stalls are currently located on Crown land within Blackcomb Mountain's Controlled Recreational Area at Base II in Lots (P6 through P8), as well as approximately 190 stalls along the road that are used on peak days. Skiers who park at Base II can either stage up Blackcomb on the second stage of the Excalibur lift or ski down to the Village to access Whistler Mountain.

The existing skier parking lot inventory for the 2013/14 season is listed in Table II.19. At Base II and in Lot 5, the number of stalls shown reflects the use of parking lot attendants to achieve maximum parking densities. In the summer of 2009, the RMOW paved Lots 1 through 4 and instituted pay parking on Village Lots 1 through 3 in June 2010. The number of stalls shown for these lots reflects the stalls delineated on the pavement. Since the drive aisles are generous, on peak days, the parking attendants can achieve higher capacities by reducing the circulation space. The village lots are also used by village employees and shoppers. We have estimated the percent of cars that are skier cars for each of the lots based on previous studies. There have been no recent parking lot entrance or exit surveys. As shown in Table II.19, the existing day skier parking lots can supply approximately 11,000 skiers.



Blackcomb Wizard Base

**TABLE II.19
WHISTLER VALLEY DAY SKIER PARKING
2013/2014**

	Area (ha.)	Number Of Stalls	Average People per Car	Percent Skier Cars	Skiers from Parking
Creekside	n.a.	1,268	2.5	98%	3,107
Village Day Skier Lots					
Lot 1 - Paved	0.73	213	2.5	80%	426
Lot 2 - Paved	0.86	257	2.5	80%	514
Lot 3 - Paved	1.34	387	2.5	92%	890
Lot 4 - Paved	2.25	742	2.5	90%	1,670
Lot 5 - Gravel	1.06	350	2.5	90%	788
Sub-total Village	6.24	1,949			4,288
Blackcomb Base II					
Lot 6 - Gravel	1.48	488	2.5	95%	1,160
Lot 7 - Gravel	1.26	416	2.5	98%	1,019
Lot 8 - Gravel	1.22	403	2.5	95%	956
Miscellaneous Roadside		193	2.5	100%	483
Sub-total Blackcomb	3.96	1,500			3,618
Total Skier Parking	10.20	4,717			11,013

.14 Resort Staging Analysis

An analysis of the existing maximum potential base area skier staging capacity has been undertaken for the Central Village Zone and for the Creekside Zone. Figure 11 illustrates the two areas at current development levels with existing staging lifts and skier walking distance zones. The potential to accommodate overnight guests within skier walking distance or in ski-in/ski-out developments has been calculated for both base staging areas, using information from the 2013 Accommodation Land Use Inventory and the occupancy rate assumptions discussed in Section II.13.

Skier walking distance to valley base staging lifts is one of the most critical design parameters for successful mountain resorts. By locating all services and recreational opportunities within a comfortable walking distance of the accommodation for a majority of resort guests, the requirement for vehicular transportation within the resort is minimized. Similarly parking for recreational users from outside the resort must also be within walking distance to minimize the need for transit. Ecosign has defined “Skier Walking Distance” as the distance someone wearing ski boots and carrying ski equipment can comfortably walk in 10 minutes. Assuming a walking speed of 2.7 km/hr., translates into a distance of 450 metres over level ground. The 450 metre distance is adjusted to

account for grade changes by reducing the horizontal walking distance 4 metres for every one metre in vertical rise.

The base area staging analysis calculates the number of skiers the base area can supply to the mountain. For this process, skiers are divided into two groups: “Day Skiers”, who are skiers that originate from outside the area and are coming to ski for one day only, and “Overnight Skiers”, who are skiers generated from accommodation within the resort. Overnight Skiers are further divided into those staying in ski-in/ski-out accommodation close to the lift bases and those who must drive or take public transportation to get to the ski lifts. If overnight skiers use their car to get to the lifts, there will then be less parking available for day skiers from outside the Whistler Valley. The base area capacity is the sum of the number of skiers that can arrive at the lifts, coming from accommodation within walking distance of the lifts, plus the number of skiers coming from parking within walking distance of the lifts and from public transportation, shuttle or private vehicle drop-off.

Central Village

In the Central Village Zone (Whistler Village, Village North and Upper Village), there are three skier walking distance zones, as illustrated on Figure 11, centered around the following staging lifts.

- The Whistler Village Base, with the Whistler Village Gondola and Fitzsimmons Express Quad to Whistler Mountain and the Excalibur Gondola to Blackcomb Mountain and Base 2.
- The Blackcomb Mountain Wizard Base, with the Wizard Express bubble quad chair and the Magic Chair.
- The Excalibur Gondola Mid Station at Base II on the Blackcomb Benchlands.

All of the properties within Whistler Village and most of the properties within Village North are within walking distance of the Whistler Village lifts to Whistler and Blackcomb Mountains. On the Blackcomb Benchlands (Upper Village), several of the properties are either within walking distance of the Wizard Base or are ski-in/ski-out. A free village shuttle operated by the RMOW serves to provide those skiers from Village North and the Upper Village that are beyond walking distance easy access to the lifts by dropping them off at either the Whistler Village transit loop or the Wizard base. On peak days, approximately 9,350 skiers are generated from accommodation within SWD in the Central Village Zone. Although, approximately one-half of day skier Lot 3 and all of Lots 4 and 5 are beyond skier walking distance of the Central Village lift terminals, on busy days, skiers do park here and walk to the lifts or wait for the Whistler Blackcomb

shuttle. Data collected during the Whistler CTS in 1997 showed that about 20 percent of the skiers staging from the Central Village Zone arrive at the lifts via transit, taxi or private vehicle drop-off. Since both transit use and private vehicle drop-off have increased since then, we expect the actual percent would be higher, however, there have been no studies conducted to confirm this.

Creekside

Creekside has been entirely redeveloped in the last ten years, providing a substantial amount of new commercial accommodation right at the lift base in The Legends, First Tracks Lodge and Evolution. The original day skier parking lot was replaced with structured parking as part of this redevelopment. In addition to the properties at the lift base, Gondola Village, a portion of the south end of Nordic Estates and the Beaver Flats employee housing are all within skier walking distance or are ski-in/ski-out. The percentage of skiers arriving by transportation other than private car or walking, is assumed to be 10 percent, as per the results of the Whistler CTS survey. Again, we suspect that the actual proportion of skiers being dropped off could be much higher.

Base Area Staging Capacity

The theoretical base area staging capacity for the entire Whistler Valley using the assumptions for occupancy, skier participation and vehicle occupancy rates discussed previously, is approximately 27,100 skiers, as shown in Table II.20. The peak day experienced at Whistler Blackcomb over the past ten years was approximately 27,400 skiers. The average times to stage these peak day skiers at Whistler Village and Creekside, assuming the skiers at each location spread themselves evenly among the available lifts is also shown.

Over recent years since the installation of the Fitzsimmons Express, Blackcomb Mountain has typically captured approximately 45 percent of the skier volume on busy days. Using this assumption, the theoretical capacity of the base area to supply skiers to Blackcomb Mountain in 2013/14 assuming all beds and parking lots are filled to capacity would be 12,180 skiers. In fact, the busiest day experienced on Blackcomb Mountain in the past ten years was 12,859 skiers on December 29, 2005.

**TABLE II.20
TOTAL WHISTLER VALLEY
THEORETICAL MAXIMUM BASE AREA STAGING CAPACITY
2013/14 SKI SEASON**

	Skiers from Accomm. in Skier Walking Distance	Skiers From Parking	Skiers from Other Trans- portation	Total Staging Skiers	Effective Lift Staging Capacity Skiers/Hour	Staging Time Hour
Creekside	1,860	3,107	552	5,519	1,992	2.77
Central Village Zone	9,348	7,906	4,314	21,568	8,859	2.43
Total	11,208	11,013	4,865	27,086	10,851	2.50

Whistler Blackcomb provided Ecosign with daily records showing the first scans at each staging lift for the past six seasons, excluding the Olympic year. This data included staff and sightseers uploading, as well as skiers. An analysis of the busiest 20 days of each season is illustrated in Table II.21. This analysis shows that the distribution of skiers between the six valley staging lift access points has been very stable over the past six years with 44 to 45 percent of the total skiers on Blackcomb Mountain. Typically, 21 to 23 percent of the skiers on both mountains stage out of the Wizard base, 15 to 17 percent stage up the Excalibur from Whistler Village and an additional 6 to 9 percent get on the Excalibur at Base II.

**TABLE II.21
WHISTLER BLACKCOMB
FIRST RIDE ANALYSIS
2006/07 TO 2008/09 SKI SEASONS**

Staging Capacity (pph)	WHISTLER MOUNTAIN								BLACKCOMB MOUNTAIN								Total W-B Skier Scans *
	Village Gondola		Fitzsimmons Express		Creekside Gondola		Sub-total Whistler		Wizard Express		Excalibur Village		Excalibur Base II		Sub-total Blackcomb		
	2,244		1,758		1,992		5,994		2,518		2,340		2,340		4,858		
	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	
2006/07																	
Peak Day	7,405	26%	3,211	11%	5,474	19%	16,090	56%	6,113	21%	3,825	13%	2,521	9%	12,459	44%	28,549
Staging Time (hours)	3.3		1.8		2.7		2.7		2.4		2.7		2.7		2.6		2.6
Average Top 10	7,016	27%	2,576	10%	4,936	19%	14,527	56%	5,614.2	22%	4,268	16%	1,587	6%	11,468	44%	25,996
Average Top 15	6,704	27%	2,467	10%	4,725	19%	13,896	55%	5,485	22%	4,316	17%	1,500	6%	11,301	45%	25,197
Average Top 20	6,578	27%	2,387	10%	4,587	19%	13,552	55%	5,307	22%	4,224	17%	1,419	6%	10,950	45%	24,502
2007/08																	
Peak Day	7,935	28%	3,292	12%	5,551	19%	16,778	59%	6,225	22%	4,009	14%	1,594	6%	11,828	41%	28,606
Staging Time (hours)	3.5		1.9		2.8		2.8		3.1		2.4		2.4		2.4		2.6
Average Top 10	7,004	27%	2,469	10%	5,140	20%	14,614	56%	5,434	21%	4,391	17%	1,426	6%	11,252	44%	25,865
Average Top 15	6,770	27%	2,369	10%	4,852	19%	13,990	56%	5,314	21%	4,206	17%	1,389	6%	10,909	44%	24,899
Average Top 20	6,636	27%	2,228	9%	4,700	19%	13,565	56%	5,206	21%	4,141	17%	1,348	6%	10,696	44%	24,260
2008/09																	
Peak Day	4,594	18%	3,812	15%	5,017	20%	13,423	53%	6,214	25%	4,350	17%	1,331	5%	11,895	47%	25,318
Staging Time (hours)	2.0		2.2		2.5		2.2		3.1		2.4		2.4		2.4		2.3
Average Top 10	6,002	25%	2,308	10%	5,050	21%	13,360	56%	5,442	23%	3,555	15%	1,512	6%	10,509	44%	23,870
Average Top 15	5,784	25%	2,217	10%	4,763	21%	12,764	56%	5,217	23%	3,431	15%	1,376	6%	10,024	44%	22,788
Average Top 20	5,674	26%	2,058	9%	4,681	21%	12,413	56%	4,996	23%	3,328	15%	1,304	6%	9,628	44%	22,041

* Total Scans includes staff and sightseeing visits

Note in 2008/09 the alpine terrain on Whistler Mountain did not open until the end of January

**TABLE II.21 (CONT'D)
WHISTLER BLACKCOMB
FIRST RIDE ANALYSIS
2010/11 TO 2012/13 SKI SEASONS**

Staging Capacity (pph)	WHISTLER MOUNTAIN								BLACKCOMB MOUNTAIN								Total W-B Skier Scans *
	Village Gondola		Fitzsimmons Express		Creekside Gondola		Sub-total Whistler		Wizard Express		Excalibur Village		Excalibur Base II		Sub-total Blackcomb		
	2,244		1,758		1,992		5,994		2,518		2,340		2,340		4,858		
	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	Scans	% of Total	
2010/11																	
Peak Day	6,209	23%	4,697	17%	5,893	22%	16,799	62%	5,500	20%	2,391	9%	2,497	9%	10,388	38%	27,187
Staging Time (hours)	2.8		2.7		3.0		2.8		2.8		2.1		2.7		2.1		2.5
Average Top 10	5,264	22%	2,469	10%	5,264	22%	12,996	55%	5,297	22%	3,702	16%	1,813	8%	10,812	45%	23,807
Average Top 15	5,145	23%	2,024	9%	5,145	23%	12,315	55%	5,016	22%	3,582	16%	1,620	7%	10,218	45%	22,534
Average Top 20	5,030	23%	1,819	8%	5,030	23%	11,879	55%	4,793	22%	3,471	16%	1,644	8%	9,907	45%	21,786
2011/12																	
Peak Day	5,841	21%	3,397	12%	6,111	22%	15,349	56%	5,718	21%	4,281	16%	1,925	7%	11,924	44%	27,273
Staging Time (hours)	2.6		1.9		3.1		2.6		2.9		2.7		2.7		2.5		2.5
Average Top 10	5,945	24%	2,312	9%	5,504	22%	13,761	56%	5,388	22%	3,873	16%	1,744	7%	11,005	44%	24,765
Average Top 15	5,810	24%	2,178	9%	5,328	22%	13,316	56%	5,194	22%	3,541	15%	1,684	7%	10,419	44%	23,735
Average Top 20	5,641	25%	1,964	9%	5,232	23%	12,837	56%	4,992	22%	3,355	15%	1,662	7%	10,009	44%	22,846
2012/13																	
Peak Day	6,063	22%	3,220	12%	6,121	23%	15,404	57%	6,140	23%	3,954	15%	1,590	6%	11,684	43%	27,088
Staging Time (hours)	2.7		1.8		3.1		2.6		3.1		2.4		2.4		2.4		2.5
Average Top 10	5,705	23%	2,425	10%	5,467	22%	13,597	56%	5,554	23%	3,607	15%	1,586	7%	10,747	44%	24,345
Average Top 15	5,600	24%	2,211	9%	5,221	22%	13,032	56%	5,280	23%	3,505	15%	1,509	6%	10,294	44%	23,327
Average Top 20	5,392	24%	2,165	10%	5,033	22%	12,590	56%	5,102	23%	3,390	15%	1,516	7%	10,008	44%	22,598

.15 Other On Mountain Recreational Activities

In addition to downhill skiing, Whistler Blackcomb and other independent operators provide a variety of recreational activities within Blackcomb Mountain’s Controlled Recreational Area. Some of these activities are available year round and some are offered on a seasonal basis. Some of these activities have required the construction of permanent facilities such as trails, terrain features, sheds and huts, while many of the activities take place using the existing facilities constructed for the ski area operation. This section of the report provides a brief description of the additional recreational activities currently offered on Blackcomb Mountain. Figures 12a, 12b and 12c illustrate facilities that have been prepared to illustrate these recreational offerings on a map.

Summer Skiing

Summer skiing is offered on the Horstman Glacier which has terrain suitable for skiers in the Low Intermediate to Advanced skill classes and is serviced by two T-bars with a combined capacity of approximately 1,000 skiers per day. Although, summer skiing is available to the general public, most summer skiers and riders are enrolled in public or private summer camps offering race or freestyle training. Much of the snow surface on the glacier is divided into “lanes” assigned to the different camp operators who build race courses, mogul runs or terrain features in their assigned lanes. A bus service is provided at regular intervals between the Rendezvous restaurant and the bottom of the 7th Heaven Express lift to provide access to the glacier for skiers and sightseers. Freestyle camps also make use of the water ramp located at Base II above the Magic Chair for summer aerial training.



Summer skiing on Horstman Glacier



Blackcomb water ramp for summer aerial training

Sightseeing

Sightseers can access Blackcomb Mountain via the Whistler Village Gondola and the PEAK 2 PEAK Gondola, whenever these lifts are running, which is most of the year. During the peak summer seasons (June, July and August), the Wizard and Solar chairs provide direct access up Blackcomb Mountain. In the summer, sightseers have access to a walking and hiking trail system on both mountains. During the winter ski season, sightseers' access is limited to the two mountain restaurants (Rendezvous on Blackcomb and Roundhouse on Whistler). Annual sightseeing visits on Blackcomb Mountain have ranged from 25,000 to 50,000 over the past seven years. Combined summer sightseeing visits reached 318,000 visits in 2008/09, most of which are visiting both mountains using the PEAK 2 PEAK gondola.

Hiking

Blackcomb Mountain has developed an alpine trail network for hiking that extends out from the Rendezvous Lodge to Garibaldi Provincial Park. The hiking trails are illustrated in red on Figure 12a. The trail pathways are clearly marked and interpretative signage is provided to enhance the experience. Guests are advised to stay on the trails to protect the sensitive alpine environment. Virtually all hikers use the lifts to get to the mountain top.

Blackcomb Base Adventure Zone

During the peak summer season, a variety of recreational activities collectively marketed as the Blackcomb Base Adventure are offered at the Wizard base, as shown on Figure 12c. Permanent facilities consist of an alpine luge ride located just south of the Magic Chair and a mini putt golf course located behind the Chateau Whistler. Several other temporary recreational facilities are erected on the hard surface area at the base of the mountain each summer. The activities vary from year to year and may include trapezes, climbing walls, bungee trampolines, gyroscopes, spider net climbers, mazes, bouncy slides and castles and batting cages.

Downhill Mountain Biking

There is currently no lift serviced downhill mountain biking offered on Blackcomb Mountain. However; the Air Dome is part of the Mountain Bike Park and is located in Lot 8 on Blackcomb Mountain. The Air Dome is a 780 square metre indoor training facility with a huge foam pit and wooden ramps providing jump progression from 0.5 m high jumps to 8 m quarter pipes. Currently the Air Dome is operational from mid-May to mid-October.

Cross-Country Mountain Bike Trails

Several cross-country mountain bike trails pass through Blackcomb Mountain's CRA, as illustrated on Figure 12a the Existing Summer Recreation Plan. These trails are used freely by the general public. Some of the trails are maintained by the local mountain bike club, Whistler Off- Road Cycling Association (WORCA).

Mountain Ecology Bear and Wildlife Viewing Tours

During the summer season, wildlife viewing tours are offered on both Whistler and Blackcomb mountains. These tours are guided by local black bear researcher Michael Allen. Guests are transported around the mountain to bear viewing areas in four wheel drive vehicles traveling on the mountain access roads.

Mountaineering and Hiking

The Whistler Alpine Guides Bureau and Coast Mountain Guides offer summer alpine activities on Whistler Mountain including rock climbing tours, via ferrata, wilderness hikes, glacier walks, rock scrambling, mountaineering courses. The Whistler Alpine Guides Bureau offers guided winter backcountry skiing tours leaving from the top of the mountains into the backcountry beyond the CRA. There were 725, 981 and 879 guests taking part in these activities in 2009, 2008, and 2007 respectively (Whistler

Blackcomb combined). Coast Mountain Guides had 224, 362 and 527 participants for the same 3 year period.

Horse Riding Tours

During the summer season, horse riding is offered on the lower part of Blackcomb Mountain. Temporary stables are generally set up at the base of Blackcomb adjacent to the other activities taking place there, although the stables have been set up closer to Base II in the past. Tours start in the base area and go up the ski trails as high as Base II before turning north using a network of current and old access roads and single track through the forest on the lower mountain.

Ziptrek Ecotours

Ziptrek Ecotours operates several zip lines and a tree trek tour along the south side of Fitzsimmons Creek. Their facilities overlap the boundary between Whistler and Blackcomb Mountain's CRA, with facilities on both sides of the boundary, as shown on Figure 12a. Their facilities consist of bridges and platforms in the tree canopy up to 50 metres above the ground with 10 zip lines extending between some of the tree platforms. The longest zip line is over 600 metres. Ziptrek's tours are available all year long and operated approximately 70,000 tours during 2008/09.

Geocaching

Whistler Geocaching Adventures offers an outdoor treasure hunt using GPS. participants use a GPS receiver or other navigational techniques to hide and seek containers called geocaches. A typical cache is a small waterproof container containing a logbook and a "treasure". Whistler Geocaching Adventures had 37 guests in the summer of 2009.

Snowmobile and All-Terrain Vehicle (ATV) Tours

Canadian Snowmobile Adventures offers winter snowmobile tours and summer ATV and Jeep tours within Blackcomb Mountain's CRA. Their base of operations is located above Base II near the Administration buildings and includes some small buildings and storage areas. In the winter, daytime tours go up the Fitzsimmons Creek valley and are not on the ski runs. Evening tours utilize some of the ski area and include a fondue dinner at the Crystal Hut. CSA also operates a snow coach to take pedestrians up the Crystal Hut for the fondue dinners.

During the spring, once the mountain closes, CSA shifts its operations to the ski areas, using many of the skiways and ski area roads, as shown on Figure 12b, the Existing

Winter & Spring Recreation Plan. ATV tours use many of the mountain roads also, as shown on Figure 12c and use the Crystal Hut for Waffle breakfast and Fondue dinners. CSA had winter business levels of 5,205 and 8,753 in 2008/09 and 2007/08 respectively. Business levels were 7,174 and 8,931 in the summers of 2009 and 2008 respectively.

.16 Area Facilities Balance

Throughout the previous sections, we have inventoried all of Blackcomb Mountain's existing facilities and subsequently analyzed the daily capacity of the following operational elements: lifts, trails, skier service buildings, food service, accommodation and parking. We have prepared a graphic representation of the overall area facilities balance in Plate II.9, which portrays an area that may be somewhat unbalanced. As shown in the graph below, the highest peak day in the past seven years was 12,859 skiers and the average of the 15 busiest days over each of the past six seasons was approximately 10,530 skiers. Although Blackcomb Mountain has experienced some higher peak days historically, these occurred before the Fitzsimmons and Garbanzo Express lifts were constructed for improved access capacity up Whistler Mountain.

As shown in Plate II.7, both the lift capacity and trail capacity are slightly in excess of the peak day in 2005/06, meaning that skiers should have quite a good experience, as long as the entire mountain is open on those particular days.

As shown, overall functional space for skier services is just for 7,410 skiers, which is about 2,660 skiers short of the design day (10,070 skiers per day), although there are specific facilities that have adequate floorspace. As described in detail previously, restaurant seats are in significant shortage with overall indoor seats only able to serve 6,999 skiers comfortably.

Base area staging capacity is essentially sufficient for the peak days, with maximum staging for the entire valley at 27,100 (basically matching the peak days experienced at both mountains). Blackcomb's share is approximately 11,862 skiers, slightly under the peak day experienced in the last few years. However, the base staging capacity may be limiting Blackcomb's ability to exceed the historic peak day.

Blackcomb Mountain's staging lift capacity over a 2.5 hour staging period is 12,144 skiers, short of the theoretical lift and trail capacity and also less than the peak day visitation. Staging times have exceeded Whistler Blackcomb's service goal of 2 hours, 7 to 16 times per season over each of the past 6 seasons, however, staging times of 2.5 hours have only been exceeded 3 times during the same period.

**BLACKCOMB MOUNTAIN
AREA FACILITIES BALANCE**

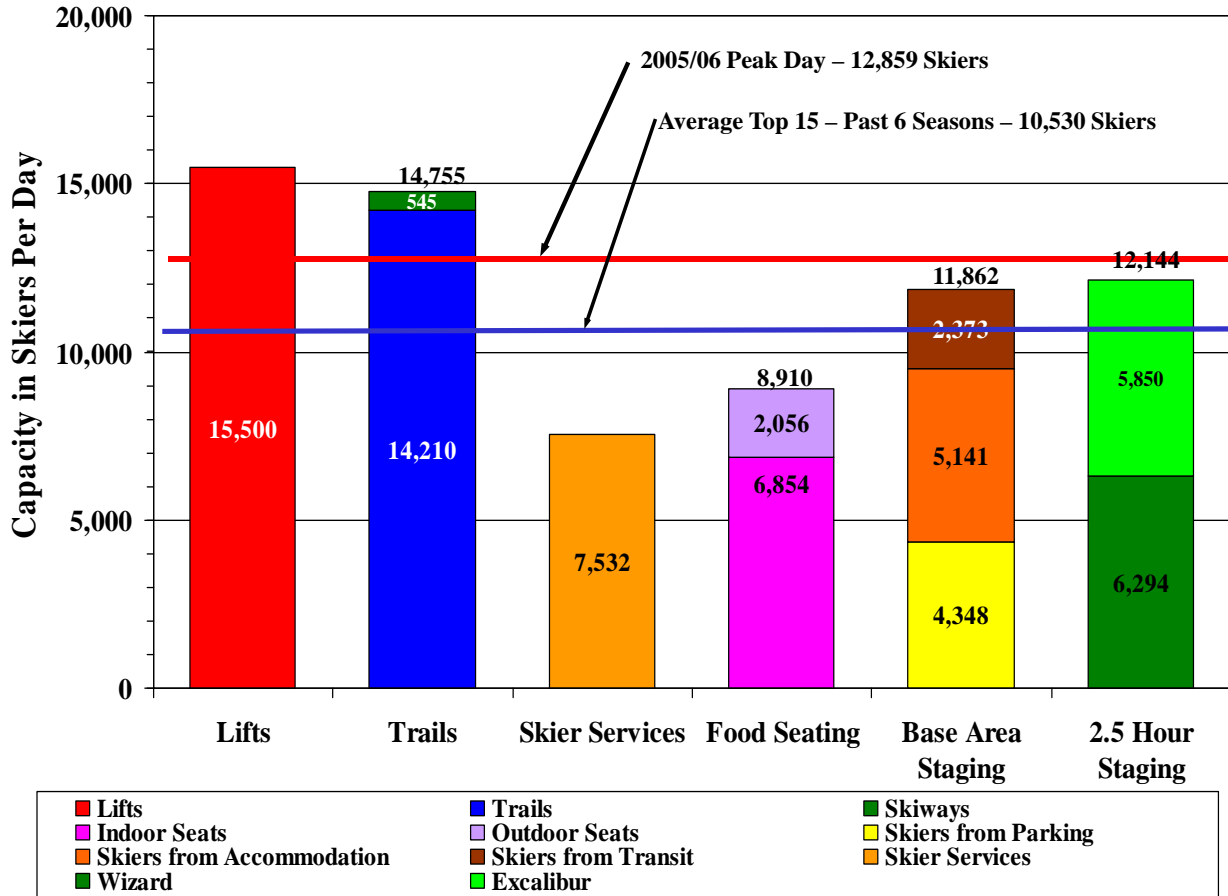


PLATE II.7

IV. DEVELOPMENT ANALYSIS

The purpose of the development analysis section is to blend the information and/or constraints identified in the Inventory section with acceptable ski industry planning and design parameters. Specifically, the constraints imposed by climate (natural snowpacks, wind, solar exposure), surficial geology (depth to bedrock, potential hazards, high water table) and visual quality objectives have “shrunk” the overall size of the potential development area.

.1 Mountain Design Analysis

Accurate topographic mapping is a prerequisite for good mountain planning. During the technical assessment phase, the planning team utilized topographic mapping at a scale of 1:5,000 with 5-meter contour intervals. The topography and planimetry is based on aerial photography taken in 2000, with some small edits made to the planimetry using 2006 aerial photography obtained from the RMOW. The 1:5,000 map encompasses approximately 3,016 hectares, covering the existing ski area and Controlled Recreation Area (CRA) north of Fitzsimmons Creek.

Utilizing the newly prepared 1:5,000 topographic mapping, the most critical analysis map for the ski area design and evaluation process was prepared: the Slope Analysis Map (Figures 13a, 13b and 13c). This map delineates the areas that can be negotiated by the various skier ability levels, as well as areas that are considered too flat or too steep for the skiing public. The natural slope gradients were carefully measured and colour coded into the following five classifications:

<u>Slope Gradients</u>	<u>Colour</u>	<u>Type of Skiing</u>
0 - 8%	white	flats, marginal skiing
8 - 25%	green	beginner and novice skiing
25 - 45%	yellow	intermediate skiing
45 - 70%	blue	advanced and expert skiing
70% +	red	extreme skiing, safety zones

These maps were then utilized in the evaluation of the terrain and play a critical role in developing conceptual alternatives.

.2 Terrain Capacity Analysis

We have analyzed the natural terrain within the Blackcomb Mountain Study Area which possesses good ski potential to accurately establish the area’s overall ski development potential.

The Terrain Capacity Analysis Map graphically illustrates major terrain “pods” within the Study Area which possess good potential for ski development. The pods were selected by consulting the Slope Analysis Map and observing the following criteria:

- continuous fall line skiing from top to bottom
- suitable upper and lower lift terminal locations (e.g., 0.2 hectares less than 25 percent slope)
- good slope continuity to allow interesting skiing from top to bottom for one or more skier ability levels
- natural slope gradients primarily greater than eight percent and less than 70 percent

Within each terrain pod, the upper and lower points are joined to establish the total vertical rise, horizontal distance, straight line slope and steepest 30-meter vertical pitch. The total pod area was measured and the terrain available for trail development was calculated. The above data comprises the inputs to our ski terrain capacity computer program. The final program input is a judgement which identifies the “primary” skier skill classification for each terrain pod. The program outputs are as follows:

SKI TERRAIN - net developable ski terrain within the pod; varies between 35 and 75 percent of the usable terrain within the pod depending on topography, vegetation and previous development in the pod.

TOTAL SKIERS - in pod at acceptable skier densities.

DEMAND VTM (000) - vertical transport meters required to service the total skiers.

LIFT CAPACITY/HR. - the net hourly lift capacity necessary to maximize the development of each pod.

The Terrain Capacity Analysis Map and program printout (Table IV.1) provide a reliable indication of the maximum development potential of each pod, the shelter and base terrain required to support the buildout of the mountain, and the lift capacity necessary to balance with the terrain.

The terrain in the Blackcomb Mountain Study Area includes 19 pods suitable for ski development covering 1,227 hectares. These pods have a potential of supporting approximately 16,200 skiers on 566.5 hectares of developed terrain, as shown in Table IV.1.

**TABLE IV.1
BLACKCOMB MOUNTAIN
TERRAIN CAPACITY ANALYSIS**

Terrain Pod	Top Elevation m.	Bottom Elevation m.	Total Vertical m.	Horizontal Distance m.	Slope Distance m.	Average Slope %	Skill Class	Ski Density/Ha.	VTM Demand/Day	Total Area Ha.	% Ski Terrain Available	Available Ski Terrain	Total Skiers	Demand VTM (000)	Lift Capacity.Hr.
A	770	683	87	625	631	14%	2	50	2,120	7.0	85%	5.9	300	101	1,160
B	1,250	775	475	1,570	1,640	30%	4	40	3,770	134.3	40%	53.7	2,150	1,287	2,709
C	1,130	743	387	1,370	1,424	28%	5	30	5,085	61.1	30%	18.3	550	444	1,147
D	1,635	1,097	538	1,595	1,683	34%	6	15	5,935	81.7	45%	36.7	550	518	963
E	1,915	1,465	450	1,730	1,788	26%	5	30	5,085	67.1	45%	30.2	910	735	1,632
F	1,920	1,248	672	2,130	2,233	32%	6	15	5,935	103.3	45%	46.5	700	659	981
G	1,870	1,525	345	1,205	1,253	29%	5	30	5,085	52.8	40%	21.1	630	509	1,474
H	2,005	1,870	135	535	552	25%	4	40	3,770	10.9	60%	6.5	260	156	1,152
I	2,020	1,575	445	1,110	1,196	40%	6	15	5,935	75.0	40%	30.0	450	424	953
J	2,245	1,660	585	1,660	1,760	35%	5	30	5,085	144.3	60%	86.6	2,600	2,099	3,587
K	1,910	1,680	230	1,170	1,192	20%	4	40	3,770	18.6	40%	7.4	300	180	781
L	2,070	1,453	617	1,600	1,715	39%	7	20	8,475	78.0	40%	31.2	620	834	1,352
M	1,775	1,225	550	1,615	1,706	34%	5	30	5,085	84.2	50%	42.1	1,260	1,017	1,849
N	1,600	935	665	1,790	1,910	37%	6	15	5,935	91.8	40%	36.7	550	518	779
O	1,260	760	500	1,555	1,633	32%	4	40	3,770	129.0	30%	38.7	1,550	928	1,855
G1	2,250	1,957	293	1,065	1,105	28%	3	40	2,825	29.5	85%	25.1	1,000	448	1,530
G2	2,262	2,128	134	480	498	28%	3	40	2,825	8.0	85%	6.8	270	121	904
G3	2,325	2,030	295	745	801	40%	5	30	5,085	19.9	85%	16.9	510	412	1,395
G4	2,290	1,900	390	1,295	1,352	30%	4	40	3,770	30.5	85%	26.0	1,040	622	1,596
TOTAL			7,793		26,073					1,227.0		566.5	16,200		27,800

The Terrain Capacity Analysis also provides an indication of the general balance of the developable terrain. The Terrain Pod Balance Statement (Table IV.2 and Plate IV.1) reveals that the natural terrain at Blackcomb Mountain is moderately well balanced with noticeable shortages of terrain in the beginner, novice and low intermediate skill classifications and a significant surplus of terrain in the high intermediate terrain. The detailed design of new trails will incorporate terrain at various skill classifications and attempt to ensure a ski area with trails well balanced with Blackcomb’s skier market.

**TABLE IV.2
BLACKCOMB MOUNTAIN
TERRAIN POD BALANCE STATEMENT**

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	0.0	0	0.0%	5%
2 Novice	5.9	300	1.9%	10%
3 Low Intermediate	31.9	1,270	7.8%	20%
4 Intermediate	132.3	5,300	32.7%	30%
5 High Intermediate	215.2	6,460	39.9%	20%
6 Advanced	150.0	2,250	13.9%	10%
7 Expert	31.2	620	3.8%	5%
Total	566.5	16,200	100%	100%

Optimum Density =	32.0 Skiers/Hectare
Weighted Demand =	4,671 VTM/Skier/Day

**BLACKCOMB MOUNTAIN
TERRAIN POD BALANCE**

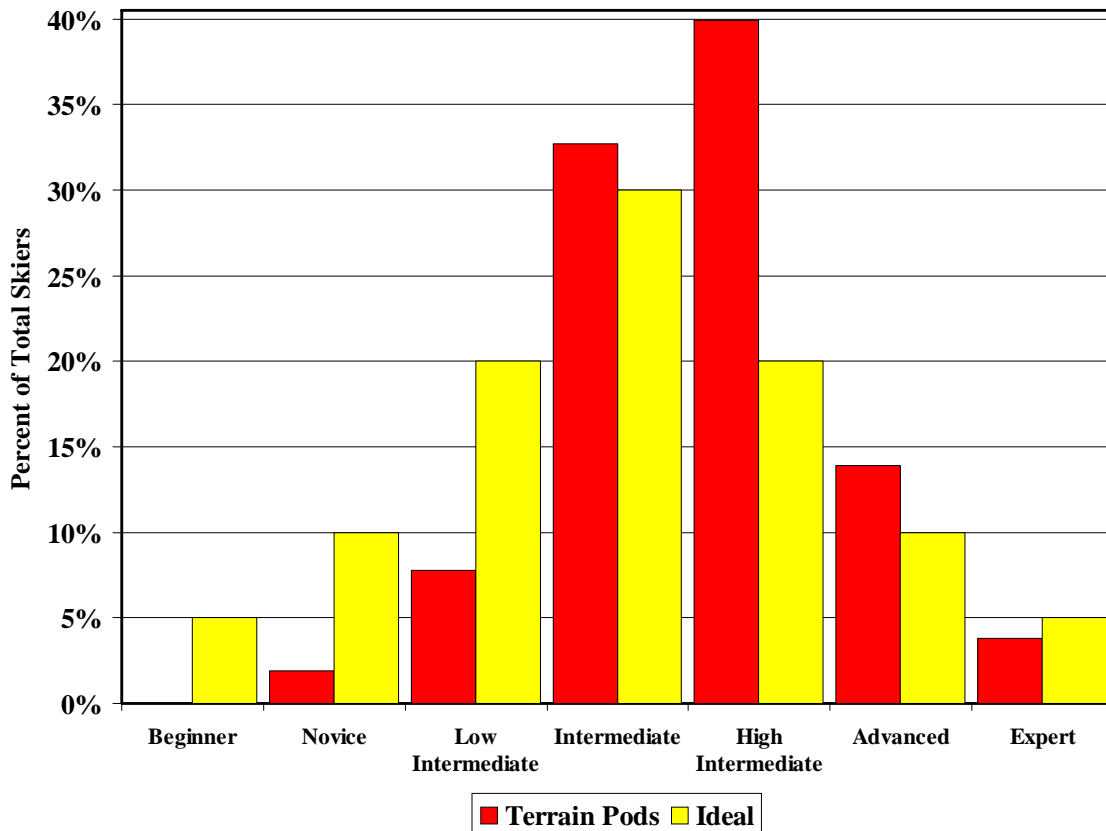


PLATE IV.1

.3 Future Whistler Valley Land Use

The growth in population, annual skier visits, visitor room nights and peak days predicted in studies carried out for the Resort Municipality of Whistler (RMOW) in the late 1990's, have for the most part not been realized. Although construction of the remaining undeveloped market beds in the Whistler village area and at Creekside has occurred, Tourism Whistler has not reported a corresponding increase in the number of sold room nights over the winter season. Paid winter season room nights peaked in 2000/2001 and have fluctuated with economic and snow conditions since then. The permanent resident population grew from 8,300 in 1997 to 9,900 in 2004 and has remained relatively constant ever since. Whistler's workforce grew from 12,500 full time equivalents (FTE) in 1998/99 to about 14,500 FTE in 2003/04 and has fluctuated up and down within a 500 FTE range since then.

Accommodation

The RMOW accommodation inventory that lists developed and undeveloped dwelling units and bed units by subdivision according to the Official Community Plan was updated for the Inventory section of this report. There are no significant undeveloped parcels within the Central Village Zone or at Creekside. All of the approved development within skier walking distance of the lifts has been completed. The only remaining large commercial accommodation to be developed is on the Holburn Lands (tennis centre) located between Village North and Montebello. The current owner is in the process of rezoning these lands from hotel to tourist accommodation with the intent of building market townhouses.

The Baxter Creek and Rainbow neighbourhoods have the largest inventory of undeveloped sites for both townhouses and single family homes. The Cheakamus Crossing area has serviced market lots and unserviced expansion potential. There are also serviced single family lots in Cypress Place, Stonebridge, Lakecrest, Nita Lake and Kadenwood. Kadenwood is the only one of these areas that is ski-in/ski-out. In addition there are a few undeveloped lots scattered through the more mature neighbourhoods. The estimated total number of dwelling units in Whistler at buildout is approximately 17,285, as shown in Table IV.3. The current number of bed units allocated to development sites is 61,273. Not included in these totals is the RMOW owned parcel between the existing Alpine subdivision and the First Nations land that could be developed for employee housing in the future, the First Nations land in the Callaghan Valley, and several RR1 zoned sites within Whistler that don't currently have bed units associated with them.

**TABLE IV.3
WHISTLER VALLEY DWELLING UNITS & BED UNITS
BUILDOUT**

	Totals	
	Units	Bed Units
Single Family	3,103	18,618
Duplex	477	2,862
Multi-Family	4,161	15,222
Tourist Accommodation	3,117	9,044
Pension	144	242
Hotel	3,745	7,970
Employee/Resident Restricted	2,020	6,744
RV/Campsites	156	238
Hostel	362	333
TOTAL	17,285	61,273

Assuming a return to historic peak period occupancy and skier participation rates as outlined below in Table IV.4, the number of skiers expected to be generated from accommodation within Whistler Valley on a peak day at buildout is approximately 26,620, as shown in Table IV.5. Adding in day skiers from outside of Whistler (Pemberton to the north and Squamish and the lower mainland to the south), at the rate of 20 to 25 percent of total skiers, as well as destination and weekend visitors who are on the first day of their trip (5 to 10 percent of all skiers), we anticipate peak day skier visit levels in the 35,400 to 39,300 level. For planning purposes we will assume a peak day at build out in the middle of this range at about 37,000 skiers on both mountains. Of these, only about 13,000 skiers (35 percent) will be coming from accommodation either within skier walking distance of one of the existing valley staging lifts or on the free village shuttle route (areas shown shaded in green on the table), leaving between 22,500 and 26,300 skiers needing transportation to reach the lifts.

**TABLE IV.4
PEAK DAY OCCUPANCY RATES AND SKIER YIELDS**

	Hotel Hostel Pension	TA Camp- ground	Multi Family	Single Family Duplex	Resident Restricted
Bed Unit Occupancy Rate	90%	80%	70%	60%	100%
Skier Participation Rate	80%	80%	60%	50%	25%
Skier Yield	72%	64%	42%	30%	25%

**TABLE IV.5
SKIERS FROM WHISTLER VALLEY ACCOMMODATION AT BUILDOUT
PEAK DAY OCCUPANCIES**

	Developed Bed Units at Buildout					Skiers
	Hotel Hostel Pension	TA Camp- ground	Multi Family	Single Family Duplex	Resident Restricted	
South of Creekside	344	946	2,286	3,360	2,312	3,400
Creekside	-	1,746	858	1,836	322	2,110
Between Creekside & Village	176	1,104	3,487	4,092	543	3,660
Whistler Village	3,869	585	392	-	-	3,320
Upper Village	1,674	3,491	3,317	288	946	5,160
Village North	1,390	889	1,831	-	29	2,350
North of Village North	1,092	521	3,051	11,904	2,592	6,620
Totals	8,545	9,282	15,222	21,480	6,744	26,620
<i>Day Skiers from Outside Whistler - 20 to 25% of all skiers</i>					7,099 to 9,933	
<i>Weekend & Destination Skiers on First Day of Trip - 5% to 7% of all skiers</i>					1,775 to 2,740	
Total Skiers					35,493 to 39,293	

V. MOUNTAIN FACILITIES

.1 Goals and Objectives

The Blackcomb Mountain Master Plan Update 2013 is an update of the 1993 Blackcomb Ski Area Master Plan. This update is required due to changes in the destination ski resort industry, the evolving needs of skiers coming to Whistler Blackcomb, the combined ownership of the two mountains, advances in lift technology and the requirement from the Province of British Columbia to provide an updated plan that both documents all the improvements to the ski area that have taken place since the last Master Plan was submitted and provides a revised vision for the ski area going forward.

Since the last Master Plan update in 1993, overall skier visits at Whistler Blackcomb have increased substantially, from 1.5 million during the 1992/93 season to almost 2.2 million during the 2001/02 and 2007/08 seasons, fluctuating somewhat during those years. Although skier visits for the 2008/09 season were slightly lower because of a below normal snowpack, high avalanche danger and the global economic crisis, Whistler Blackcomb still received around 1.9 million skier visits. From the inception of Blackcomb Mountain in 1980 until their big expansion in 1987, Whistler was the dominant player with over 60 percent of the combined visits. After Blackcomb expanded, they took over leadership in skier visits until after Intrawest purchased Whistler in 1997 and made a concerted effort to move skiers to the larger Whistler Mountain. Since the construction of the Fitzsimmons and Garbanzo Express lifts in 1999, which added a second route up Whistler from the Village, Whistler Mountain has attracted between 54 and 57 percent of the total skier visits on a daily basis.

Within Whistler, heavier traffic has also become a concern, with the Whistler Village Gondola occasionally exceeding comfortable staging capacity and the Village core and the resort approaching “buildout”. Common ownership of both Blackcomb and Whistler Mountains has provided an opportunity for the two mountains to work together more effectively and new facilities can be directed towards both mountains in a strategic manner to optimize the customer experience and attract more skiers to the resort. The opening of the PEAK 2 PEAK Gondola in December 2008 has allowed skiers to move easily between the alpine areas of the two mountains.

The Master Plan Update includes the retrofitting of existing equipment, integrated with the addition of new terrain and facilities. The objectives of the Blackcomb Mountain Master Plan are as follows:

- Optimize the use of and operational efficiency of the existing physical plant.
- Balance lift and trail capacities.
- Provide maximum capacity for minimum capital and operating costs.
- Balance mountain capacity with skier services.
- Replace or retrofit aging equipment.
- Provide base staging areas in balance with mountain facilities.
- Each phase of development must provide an optimally balanced facility, while at the same time move toward the ultimate goal.
- Retain plan flexibility to respond to changing market demands and technological improvements.
- Define the ultimate planning goals to guide management and inform public agencies during the ensuing five to ten-year period.

The following section presents descriptions of the proposed installation of new equipment and the upgrading of older facilities. We have utilized a number and letter code to indicate the type of lift installations proposed. The coding is illustrated below:

MC	Moving Carpet Conveyor Lift
T-Bar	T-bar Surface Lifts
3C	Triple Chairlift –
4C	Quadruple Chairlift – Fixed Grip
D4C	Detachable Quadruple Chairlift
D4C-B	Detachable Quadruple Chairlift with Bubble
D6C	Detachable Six-Passenger Chairlift
D8C	Detachable Eight-Passenger Chairlift
D6C/8G	Combi Lift; Six Chair and Eight-Passenger Gondola
D8G	Detachable Eight-Passenger Gondola
3S	3 Cable Gondola

In 2013 the Crystal Ridge triple chair was replaced with the Crystal Express, a detachable quadruple chairlift, relocated from Whistler Mountain. PEAK 2 PEAK Gondola which connects Blackcomb Mountain to Whistler Mountain was installed in 2008. Prior to that there had been no new lift construction on Blackcomb since the installation of the Excalibur Gondola and the Excelsior detachable quadruple chairlift in 1994. Blackcomb Mountain management has undertaken a detailed

review of events since the last major expansion phase, as well as the needs for the future. The general conclusions are discussed below.

a). Operations

Blackcomb Mountain was a brand new ski area opening in December of 1980. The initial Blackcomb Mountain development included four fixed grip triple chairs and one fixed grip double chairlift manufactured and installed by Lift Engineering. All of those lifts have been moved or removed except for Lift 4, the Catskiner chairlift. Ecosign worked with Blackcomb's new ownership, the Intrawest Group in 1987 to redesign the original Blackcomb and this resulted in the installation of the first high speed detachable grip lift chairlifts in British Columbia including Lift 8, Wizard Express, Lift 9, Solar Coaster Express and Lift 10 the Seventh Heaven Express. A new base area was established on the Blackcomb Benchlands (now known as Upper Village), with a new daylodge, administrative centre and Kids Camp. While those three mainline lifts still represent current technology, they are now 26 years old and Lift 6 the Jersey Cream Express is 24 years old. These lifts have undergone continual maintenance, inspection and renewals and should continue to play a vital role in the transportation facilities on Blackcomb Mountain into the future with normal operation and maintenance.

In 1992, Nippon Cable purchased 23 percent of the units of the Blackcomb Limited Partnership and invested \$25 million in new facilities on Blackcomb Mountain. These investments include Lift 18, the Glacier Express quad (1993) and Lifts 1 & 2, the two section Excalibur Eight Passenger Gondola and Lift 3 the Excelerator Express quad chairlift. Blackcomb Mountain is famously referred to as the "Mile High Mountain" and while this provides tremendously long and exhilarating runs it can create certain bottlenecks on the lift systems which have been logically placed in series up the mountain. During morning upstaging periods, guests departing from the Blackcomb base travel up the Wizard Express, offload to Lift 9 the Solar Coaster Express but, by 10:00 in the morning, the uploading skiers trying to access Blackcomb run into skiers who are already return cycle skiing on the Solar Coaster Express. Hence, line-ups can form during the morning upstaging period. A similar effect happens when people emanating from Whistler Village and Base II on Lifts 1 & 2 the Excalibur Gondola, offload at the top of section two and reload onto Lift 3 the Excelerator Express chair. Once again, these uploading skiers are often confronted by skiers already return cycle skiing on the Excelerator Express during the morning upstaging period. These bottlenecks were identified in the 1993 Master Plan with the understanding that the problem could be resolved by adding a third section to the Excalibur Gondola namely Lift 13, as illustrated on Figure 14a, Mountain Master Plan buildout.

An important component of the 1987 redesign and renovation of Blackcomb Mountain was the installation of a glacier lift on Horstman Glacier; Lift 11, the Horstman T-Bar. This lift was followed in 1989 by the installation of the Showcase T-Bar; Lift 7, which provided access to Blackcomb Glacier and the upper portion of the Horstman Glacier for summer glacier skiing and for use in winter. Glaciers in the northern latitudes have been ablating since the early 1970's and the Horstman and Blackcomb Glaciers are no exception. The melting of the glaciers has created significant annual expenses trying to maintain the glacier and the profiles for the Horstman and Showcase T-bar glacier lifts. In years of rapid melt, the T-bar glacier footings must be realigned several times in a single year, whereas in some years only one resetting of the glacier foundations was required. Still, the ablation of the Horstman Glacier seems inevitable and Blackcomb management looks towards a time when both the Horstman and Showcase T-Bars will no longer be maintained as glacier lifts. A solution to this problem has been recommended by Ecosign in this Master Plan.

Finally, we deal with visitor preferences and lift technology. Blackcomb was the first ski area in British Columbia with the installation of three high speed detachable grip quad chair lifts in 1987 and has installed four more high speed chairlifts and a two section eight passenger gondola since that time. One of the original fixed grip triple chairlifts that was moved to the Crystal Ridge location has now been replaced with a detachable quadruple chair. As mentioned previously, the Catskiner chairlift which services the Blackcomb Terrain Park is also an original triple chairlift manufactured and installed by Lift Engineering. Ultimately, the plan is to replace all slow moving, fixed grip chairlifts with high speed detachable grip chairlifts.

b). Market

Skier visitation at Blackcomb increased substantially, from 722,100 during the 1990/91 season, to 1,071,600 in 1998/99, the year before the Fitzsimmons/Garbanzo staging route to Whistler Mountain from Whistler Village was installed. Since then skier visits at Blackcomb have exceeded the 1 million mark in 3 of the past 10 seasons. Combined skier visits at Whistler Blackcomb exceeded the 2 million mark for the first time in 1998/1999 with the highest number of visits occurring in 2007/2008 at just under 2.2 million. With the increased accommodation capacity constructed since 1998 and the remaining outstanding approved development potential within the RMOW, skier visits could reach the 2.8 million mark with a return to historic accommodation occupancy levels. An increase to 2.8 million skiers would be almost a 36 percent increase over the average visit level of the last 4 years and a 27 percent increase over the 2007/2008 season. To maintain and improve the

skier experience at Blackcomb, the skier capacity must increase at an equal or faster pace than the anticipated increase in skier visits.

Since Blackcomb Mountain is very close to buildout in terms of available terrain capacity, much of the needed increase in overall resort capacity will likely occur at Whistler Mountain. The resort as a whole and Blackcomb Mountain in particular, must maintain and improve its attractiveness for all market segments to meet guest's increasing expectations. It is considered that all skiers, in particular local and regional skiers, desire more terrain and terrain variety, as well as improved skier service facilities and easier access to the mountain. Competition for destination skiers is fierce with new and improved products coming on line in Colorado, Utah, California, Oregon and British Columbia. Whistler Blackcomb must compete with these regions in value, quality, service and amenities. New access capacity is required on Blackcomb Mountain and the upstaging bottlenecks need to be eliminated. A solution for the T-bars on Horstman Glacier is required and the old Lift Engineering triple chairs must be retired and replaced.

c). Ski Terrain

Blackcomb Mountain presently requires more beginner, novice and low intermediate terrain to improve the overall ski terrain balance. Blackcomb Mountain (and Whistler Mountain) is well known for the quality and extent of expert and "double black diamond" terrain, which should also be maintained. Improved access to these areas should also be undertaken, wherever possible. At the same time, a good balance between the lift and trail systems must be maintained. To improve the overall skiing experience, small renovations to trails may be necessary in many different areas over the years, ranging from regrading to widening, etc.

A reorganization of skier service spaces and operations facilities will also be needed as operational changes are made to respond to the need for a high quality guest experience. Figure 14a graphically illustrates the Blackcomb Mountain Master Plan at buildout.

Blackcomb Mountain still has expansion and re-development potential in the following areas: Crystal zone, Catskinner zone, Blackcomb Glacier/Ruby Bowl area. In addition to the new trails, Blackcomb may choose to add an additional "snow play" structure similar to the existing Magic Castle. These ski to play structures nestled in the trees can add a sense of adventure and discovery for children in ski school and for families skiing with small children.

.2 General Concept

Since the 1993 Master Plan was filed, Blackcomb has completed the lift and skier service work proposed for Phase 7, including building a platter at Base II which has subsequently been replaced by the snow tubing zone. Lifts installed since the last Master Plan was completed in 1993 include both sections of the Excalibur Gondola, the Excelsior detachable quadruple chairlift and the PEAK 2 PEAK Gondola linking the two mountains, as well as the replacement of the Magic double chair with triple chair equipment and the replacement of the Crystal Chair with the Crystal Express in a new alignment. Trails constructed since 1993 include several trails in the Crystal zone, Easy Out and trails to service the future Catskiner alignment Countdown, Racer Alley & Renegade. In addition, several gladed skiing runs were created.

Future plans for Blackcomb include upgrading existing lifts to detachable lift technology, installing a new lift to replace the glacier T-bars (on a receding glacier), installing new lifts in areas which currently have skiing but do not have direct lift service, increasing the staging capacity and convenience, as well as adding several trails to increase trail capacity.

In addition to the new or replacement lifts outlined in this Master Plan, existing lifts will need to be replaced as they reach the end of their service life. All lift installations or replacements will be with state of the art lift technology that will best integrate with the overall mountain operation. In the following section, the Master Plan is described and divided into an anticipated two major phases of development, as illustrated on Figure 14a. However, the phasing of new lifts or lift upgrades may differ from that outlined in this report as Whistler Blackcomb reacts to changing market needs for additional terrain or additional lift capacity or quality in specific areas.

Phase 8

The next phase of development is slated to include replacing the glacier T-bars with a gondola spanning the ice (plus a tunnel for access to Blackcomb and Horstman glaciers) and installing the third section of the Excalibur Gondola stretching up to the Glacier Creek lodge. An access/egress lift to service some of the development at the north edge of the Benchlands is also under consideration to bring more of these properties within skier walking distance. This access lift was in the 1993 Master Plan and a Statutory Right of Way has been protected.

Some new trail development will take place in this phase, including several new trails in the Crystal zone, a new route from the top of the proposed Horstman Glacier

gondola and minor trail renovations and widening throughout the ski area. These developments will result in an increase in capacity for both the lifts and trails, as well as an improved staging experience (directly from Whistler Village to Glacier Creek in one ride), as well as the new staging lift freeing up Excelerator for purely return cycle skiing. Upgrading and expansion of several mountain restaurants will also take place in this phase.

Phase 9

The final phase of development at Blackcomb Mountain is proposed to increase the amount of beginner skiing in the form of a new Learning Centre at Base II, installing a new detachable lift in the Catskinner pod, increasing staging capacity out of the base area by installing a lift from Base II to the bottom of Catskinner and installing a tram from the Rendezvous to the top of 7th Heaven for skiers and sightseers. Upgrading and expansion of mountain restaurants will also take place in Phase 9.

Blackcomb Glacier Lifts

The Blackcomb Mountain Master Plan includes two potential lifts in Blackcomb Glacier Provincial Park (BGP). These lifts will provide return cycle skiing on high alpine terrain that is currently accessed via a short hike from either the Glacier Express Quad via Spanky's Ladder or the Showcase T-Bar and are part of Whistler Blackcomb's strategy to adapt to climate change. While lifts in BGP have been included in previous versions of the Blackcomb Mountain Master Plan since the 1980's, placement of lifts within the park may require additional consultation and approvals from the Province. For that reason, these lifts have been identified separately in Figure 14a although their installation could occur in either Phase 8 or Phase 9.

The Master Plan Summary as shown in Table V.1 and graphically illustrated on Figure 14a, lists the facilities anticipated in each phase of development including lift development, trail development and skier service buildings (operational buildings and infrastructure not included). It should be noted that market forces, equipment technology, availability of capital, company strategies, etc., may alter the order that facilities are constructed, similar to the situation following the previous Master Plans for Blackcomb Mountain.

**TABLE V.1
BLACKCOMB MOUNTAIN
SKI AREA DEVELOPMENT SUMMARY**

Phase	Lifts Installed	Trails	Restaurants/Lodges
8	Replaced and Re-aligned Lifts: Lift 16 - Showcase Gondola - D8G - 2000pph (Showcase and Horstman T-bars removed) New Lifts: Lift 13 - Excalibur Gondola III - D8G - 2600pph	New Trails in Crystal Zone 150m long Tunnel for glacier access Glacier/Rock interface Mountain-wide Minor Trail Re-grading & Widening	Increase Seating in Glacier Creek Add Showcase Hut Increase Seating in Rendezvous Expand Crystal Hut Add several Patrol Huts
9	Replaced and Re-aligned Lifts: Lift 4R - Catskiner Express - D4C - 2800pph (Catskiner Chair / 3C removed) Lift 5R - Magic Combi Lift - D8G/4C - 2000pph (Magic Chair / 3C removed) New Lifts: Lift 19 - Base II-Catskiner Access - D4C-B - 2650pph Base II Learning Center - Moving Carpets & Platters Lift 21 - Tram - 1400pph	Trail reconfiguration and regrading at base of Catskiner More trail construction possible in Catskiner zone Mountain-wide Minor Trail Re-grading & Widening	New Catskiner Restaurant Patrol Huts
BG Park	New Lifts: Lift 17 - Blackcomb Glacier Chair - 4C - 2400pph Lift 20 - Ruby Bowl Chair - 4C - 1600pph	Trail construction at Lift 20	

Ski Lifts

Over time, the last of the older lifts on Blackcomb Mountain will be replaced with detachable grip lifts and even the detachable lifts may need replacing by more modern technology as they age. Lifts installed on the lower mountain will be gondolas or chairs equipped with bubbles or covers to protect skiers from inclement weather experienced from time to time at the lower elevations. Since the plan will take effect over a long period of time, lift technology will surely evolve and market trends and demand will shift, therefore, the plan must remain flexible. As a consequence, the detailed phasing of ski lifts and lift technology may well change to reflect changes in technology or market conditions.

Ski Trails

Throughout the final phases of development of Blackcomb Mountain, minor trail renovations and improvements will be required in addition to the new ski trail construction associated with new lift systems. These minor trail renovations may include addressing areas where accidents start to occur due to changes in ski/snowboarding technologies, widening of pistes or skiways to increase traffic flows or reducing the steepness of some ski slopes to improve customer enjoyment. As discussed in a later section, there will also be expansion of the snowmaking system and replacement of some of the older existing snowmaking lines.

.3 Phase 8

Lifts

As discussed at the start of this section, the melting and ablation of the Horstman Glacier has created increasing technical problems and expense for maintaining the Horstman and Showcase T-bar glacier lifts. Ecosign and Whistler Blackcomb management have worked with Doppelmayr to find a long-term technical solution and we have recommended the removal of both the Horstman and Showcase T-bars and replacement with an eight-passenger gondola. Lift #16 the Showcase Gondola starts at the 2,075-metre elevation which lies below the existing top terminal of Lift #18 Glacier Express and rises 225 metres to a shoulder on the sub-peak which lies between the Horstman and Blackcomb Glaciers. This solution proposes installation of three towers; on the bottom section and then a free span of 600 metres across the Horstman Glacier to the shoulder on the Summit Ridge where three more towers would be placed together with the top terminal at the 2,300-metre elevation. Lift #16 would have a vertical rise of 225 metres over a slope length of 889 metres. With a rope speed of 5.08 metres per second, the lift can deliver a maximum capacity of 2,200 persons per hour.

The 1993 Blackcomb Mountain Master Plan envisioned that the Excalibur eight-passenger gondola would actually have three sections departing from Skiers Plaza in Whistler Village with a mid angle station at Base II up to the 1,133-metre elevation to the bottom of the Excelsior Express chairlift. The third and final section as planned many years ago rises 407 vertical metres up to the 1,540-metre elevation at Glacier Creek Lodge. This three-section system allows direct transportation from Whistler Village to Glacier Creek in the same cabin in just 15 minutes including one minute to pass through each of the two angle sections. This will allow transport of foot passengers in winter and summer up to the Glacier Creek restaurant. From there, summer visitors could ride Lift #18 Glacier Express chair up to the Horstman Glacier for summer skiing and snowboarding camps (the Jersey Cream lift could also provide a lift connection to the Rendezvous area and the P2P). This lift system would provide a faster and more comfortable summer skiing access route than the current lift rides up Wizard and Solar Coaster, followed by a shuttle bus ride to the bottom of Seventh Heaven Express to get access to the top of the Horstman Glacier. Long term, we believe that the third section of the Excalibur Gondola has many interesting and exciting business opportunities in support of the tremendous success of the PEAK 2 PEAK 3S gondola system.

There will also need to be ski trail improvements from the top of the Showcase Gondola back along the ridge top to the Horstman Hut and entrance onto the Horstman Glacier. The construction of a 150-metre long tunnel which can be drilled

through the Blackcomb Mountain sub-peak will provide direct access to the top of the Blackcomb Glacier. Skiers and snowboarders can ride up the Showcase Gondola, disembark, strap on their equipment and ski at a gentle slope of 7 or 8 percent 150 metres through the tunnel reaching the top of the glacier. Alternatively, skiers can turn left at the tunnel exit and come back down onto the Showcase run on the Horstman Glacier.

Mountain Restaurants and Skier Services

The Phase 8 development is focused in the Glacier Creek, Crystal and Blackcomb and Horstman Glacier areas. Accordingly, it is recommended to expand and improve the food service seating capacity in these regions. The Glacier Creek restaurant may be able to accommodate an additional 120 seats in a mezzanine level or in an enclosed deck. We also recommend that the Rendezvous Lodge may come due for a major renovation with a minor expansion of 100 to 200 seats due to the popularity of this lodge given the new PEAK 2 PEAK Gondola.

Installation of the Crystal Express chair with a new top terminal location will allow renovation and expansion of the Crystal Hut by approximately 50-100 seats. Finally, the Showcase Gondola will be one of the most dramatic lifts on either Whistler or Blackcomb Mountain and we think it would be appropriate to have a small restaurant with 50 to 150 indoor seats at the top of the Showcase Gondola. This would also accommodate the required safety features of a ski patrol location.

.4 Phase 9

Lifts

Lift #4, the Catskinner triple chair, will be replaced by a detachable quadruple chairlift in a new alignment farther to the south of the existing chair. The upper terminal will be located at the current elevation and the bottom terminal will be located at the 1,525-metre elevation, increasing the total vertical served by this new lift by 11 metres. The new bottom location and an egress trail will allow skiers to take the easy way to the base of the Solar Coaster Express via the Connector and Slingshot trails. Capacity will increase from 1,656 persons per hour to 2,800 pph, a 70% increase. This new quad, like the existing triple, will service terrain in many skill classes, ranging from novice to advanced.

Due to increased utilization, Blackcomb Mountain requires an upgrade and expansion of the children's, beginner and ski school learning areas. The slopes at the Blackcomb base are very well designed and utilized by ski school but a first and second step learning area is required. Therefore, the last fixed grip triple chairlift;

the Magic chair which connects the Blackcomb Base at Merlin's with the Base II Lodge is proposed to be replaced. For years, the ski school has had difficulty transporting groups of small children up this lift, as only 2 can go up with the instructor. The group ends up waiting at the bottom until the instructor can find adults from the general skiing public to accompany the other children. On days when there are good conditions elsewhere on the mountain, there are often a shortage of willing adults using this lift. By replacing the Magic Chair with a Combi lift which is a mixture of gondola cabins and chairs, it will be much easier to transfer beginner skiers and children up to the proposed Base II Learning Centre. This new lift will provide the ultimate in safety, comfort and convenience for all ski school and children's programs on Blackcomb Mountain. At the top of the Magic Combi lift, a new beginner area with several moving carpets and a platter lift for ski school steps one and two is planned. Step three will be on slopes served by the Magic Combi lift.

Lift 21 is an aerial tram connecting the Rendezvous Lodge area with the 7th Heaven area. This lift would likely have between zero and two towers and a large span, making a spectacular ride over the upper part of Jersey Cream Bowl. This lift will be an extremely fast and direct route for skiers wanting to access the glaciers and the top of the mountain from the Rendezvous area, particularly for skiers coming up Wizard/Solar or coming from the P2P. This lift will also be a great asset in summer, both for sightseers wanting to access Blackcomb's alpine area and for skier access to the glacier skiing operation.

The final lift in Phase 9 will depend on the demand requirements for access. There is a possibility that the daylodge facilities at the Blackcomb base will be torn down and transferred into more hot beds to accommodate destination guests and a new daylodge facility may be built at Base II in association with the new beginner area. When and if this occurs, a new lift could depart from Base II at the 768-metre elevation and rise 757 metres to the bottom of the new Catskinner Express Lift at the 1,525-metre elevation. This lift would require a protective bubble covering and have a capacity of 2,650 persons per hour. In total, the capacity of the Wizard Express, the new Base II to Catskinner and the Excalibur Gondola could have a theoretical capacity of 7,900 persons per hour which means that Blackcomb can comfortably stage the total mountain capacity of just over 19,000 skiers within the industry standard of 2.5 hours.

Ski Trails

Phase 9 will include some additional ski trails on the new Catskiner Express. The most important trail improvements will be at the Base II Learning Center where the area must be recontoured and shaped to meet the demands of the ski school and children's programs. The Lift #19 Base II to Catskiner Express will not require any new trail development since this is primarily an access lift, although return cycle skiing is possible on Connector, Slingshot and Lower Gearjammer.

Mountain Restaurants

In Phase 9, a new daylodge facility is proposed at Base II, adjacent to parking Lots P7 and P8. Given the new access on Lift #19 and the replacement of the Catskiner triple chair with the Lift 4(R) Catskiner Express, we propose a new Catskiner Restaurant which lies on a prominent, level bench at the 1,625-metre elevation. This restaurant has wonderful exposures from the southeast to southwest with dramatic views of the PEAK 2 PEAK Gondola, Whistler Mountain and the Spearhead Range in Garibaldi Park. This location is in a forested area, well protected from synoptic winds and stormy weather conditions. We recommend approximately 500-1,000 indoor seats and an additional 500 outdoor seats for this location.

.5 Blackcomb Glacier Park

Lifts

There are two lifts proposed for Blackcomb Glacier Provincial Park in this Master Plan which will require a separate approval process involving BC Parks. The Blackcomb Glacier Chair (Lift #17) is a fixed grip quad chairlift to be installed in the Blackcomb Glacier area to service return cycle skiing on this vast area of year-round skiing. The installation of this lift would more than double the amount of summer skiing terrain available on Blackcomb Mountain. A lift on this portion of the glacier was first proposed in the 1983 Blackcomb Mountain Master Plan. This lift has a vertical rise of 362 metres and a daily capacity of approximately 800 skiers. Both this lift and Lift #16, the Showcase Gondola will require careful site planning to determine the exact terminal and tower locations due to the presence of cliffs and glacial ice on their alignments.

The Blackcomb Glacier ski-out and the black diamond trails in Sapphire, Garnet, Diamond and Ruby Bowls are accessible by Spanky's Ladder. Skiing these steep bowls are part of the fame and attraction of Whistler Blackcomb. In the long term, we think it appropriate to install a fixed grip quad chair or possibility some type

of aerial tramway from the bottom of the start of the Blackcomb Glacier ski-out adjacent to Blackcomb Creek at the 1,670-metre elevation to the top of Ruby Bowl at the 2,068-metre elevation. This lift would pull people out of the Blackcomb Glacier drainage and provide return cycle skiing for experts into Ruby Bowl. This lift would also provide direct access for better skiers along the ridge above and down to Crystal Hut and into the main Blackcomb ski area.

Summary of Master Plan

The conclusion of Phase 9 constitutes the buildout of Blackcomb Mountain under the 2013 Master Plan Update. At buildout, Blackcomb Mountain will have a total capacity of approximately 19,420 skiers per day, based on all lifts being open and available and experiencing lift lines on every lift on the mountain in the 10-20 minute range. Without the two lifts in Blackcomb Glacier Park, the SCC at build-out is 18, 520. Also listed is the calculated SCC under two differing operational conditions: Mode 2, when the upper mountain (alpine and glacier area) is closed due to poor weather conditions, and Mode 3, when the lower mountain has insufficient snow or undesirable snow conditions for skiing. Both modes can easily occur during the peak visitation periods in late December. The lift development schedule for the Phase 8 & 9 lifts is listed in Table V.2 and the alignments of the lifts and trails are graphically illustrated on the Blackcomb Mountain Master Plan, Figure 14a.

**TABLE V.2
BLACKCOMB MOUNTAIN
LIFT SPECIFICATIONS – BUILDOUT**

Lift Number	1	2	3	4R	5R	6	8	9	10	13	14		15a
Lift Name	Excalibur I	Excalibur II	Excelsior	Cat-skinner	Magic	Jersey Cream	Wizard	Solar Coaster	7th Heaven	Excalibur III	Crystal Express	Whistler Kids	Base II
Lift Type	D8G	D8G	D4C	D4C	Combi	D4C	D4C/B	D4C	D4C	D8G	D4C	MC	MC
Top Elevation m.	768	1,135	1,640	1,870	785	1,917	1,250	1,869	2,250	1,540	1,827	690	785
Bottom Elevation m.	680	768	1,131	1,525	685	1,542	684	1,247	1,661	1,133	1,287	685	768
Total Vertical m.	88	367	509	345	100	375	566	622	589	407	540	5	17
Horizontal Distance m.	719	1,434	1,575	1,165	680	1,350	2,160	1,790	1,651	1,700	1,645	37	123
Slope Distance m.	724	1,480	1,655	1,215	687	1,414	2,233	1,895	1,753	1,748	1,731	37	124
Average Slope %	12%	26%	32%	30%	15%	28%	26%	35%	36%	24%	33%	14%	14%
Rated Capacity	2,600	2,600	2,800	2,800	2,000	2,800	2,650	2,800	2,800	2,600	2,360	1,200	1,500
V.T.M./Hr.(000)	229	955	1,425	965	200	1,050	1,501	1,742	1,649	1,058	1,274	6	26
Rope Speed m/sec.	5.1	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.8	0.8
Trip Time min.	2.37	4.84	5.41	4.05	2.29	4.71	7.44	6.32	5.84	5.83	5.77	0.78	2.59
Operating Hr./Day	7.0	7.0	7.0	6.7	7.0	6.8	7.0	7.0	6.5	6.8	6.8	7.0	7.0
V.T.M. Demand/Day	2,120	3,408	3,091	3,569	2,120	4,420	3,408	4,396	4,999	3,091	5,158		
Loading Eff. %	90%	90%	95%	90%	90%	95%	95%	95%	95%	90%	90%		
Access Reduction	85%	50%	0%	15%	1%	4%	36%	21%	11%	75%	0%		
SCC Skiers/Day	100	880	3,070	1,390	590	1,470	1,890	2,090	1,820	520	1,500	80	130
Mode 2 SCC	100	880	3,070	1,390	590	1,470	1,890	2,090		520	1,500	80	130
Mode 3 SCC			3,070	1,390	590	1,470		2,090	1,820	520	1,500		

**TABLE V.2 CONT'D
BLACKCOMB MOUNTAIN
LIFT SPECIFICATIONS – BUILDOUT**

Lift Number Lift Name Lift Type	15b Base II Carpet II MC	15c Base II Carpet III MC	16 Showcase Gondola D8G	18 Glacier Express D4C	19 Base II- Catskinner D4C-B	21 Couloir Tram JB100	TOTAL without BG Park Lifts	17 Blackcomb Glacier 4C	20 Ruby Bowl 4C	TOTAL with BG Park Lifts	Potential Access/ Egress Lift
Top Elevation m.	800	793	2,300	2,140	1,525	2,247		2,272	2,068		1,133
Bottom Elevation m.	784	784	2,075	1,541	768	1,865		1,910	1,670		675
Total Vertical m.	16	9	225	599	757	382	6,518	362	398	7,278	458
Horizontal Distance m.	160	85	860	1,780	2,310	1,220		850	690		1,625
Slope Distance m.	161	85	889	1,878	2,431	1,278	23,420	924	797	25,141	1,688
Average Slope %	10%	11%	26%	34%	33%	31%	28%	43%	58%	30%	28%
Rated Capacity	1,500	1,500	2,200	2,500	2,650	1,300	43,160	2,400	1,600	47,160	
V.T.M./Hr.(000)	24	14	495	1,498	2,006	497	16,612	869	637	18,117	
Rope Speed m/sec.	0.8	0.8	5.1	5.0	6.0	10.0		2.3	2.3		
Trip Time min.	3.35	1.78	2.92	6.26	6.75	4.27		6.69	5.77		
Operating Hr./Day	7.0	7.0	6.5	6.8	6.8	6.5	6.8	6.3	6.0	6.8	
V.T.M. Demand/Day			4,315	6,587	5,307	5,500		5,440	8,475		
Loading Eff. %			95%	95%	90%	95%		80%	80%		
Access Reduction			9%	17%	80%	25%		0%	0%		
SCC Skiers/Day	130	100	650	1,220	460	430	18,520	800	360	19,680	
Mode 2 SCC	130	100			460		14,400			14,400	
Mode 3 SCC			650	1,220		430	14,750	800	360	15,910	

As shown in Table V.2, the Blackcomb Mountain Master Plan has a calculated SCC of approximately 18,520 at buildout without the Blackcomb Glacier Park lifts. If the BGP lifts are included the SCC is 19,680, an increase of about 4,400 (or 29%) over the existing 15,280 skiers per day. As listed, there are also much wider variations in the SCC available in the different modes, particularly on the days when the alpine mountain lifts are closed. To accommodate these operating modes and improve the skier experience (shorter lines on busy days as one of the main goals) it is necessary to build more lift capacity than the expected proportional increase in skier visits. To accomplish this goal, Blackcomb Mountain will aim to decrease the ratio of peak day business/calculated SCC from the existing 82-85% down to about 75%. This should make the skiing experience much more comfortable, especially on days when part of the mountain is closed or snow conditions are less than desirable in one or more areas. With the concurrent expansion of Whistler and the potential increase in peak skier days on both mountains to about 37,000 skiers (an increase of about 35% over the current peak day of 27,400), Blackcomb's share should be approximately 14,800 skiers on a peak day.

Table V.3 lists the ski trails developed at buildout of Blackcomb Mountain Master Plan. A total of 166 trails cover approximately 606 hectares and have a total daily capacity of approximately 14,535 skiers. There are also a total of 20 skiways and connector trails with a total area of 37 hectares which can accommodate 680

skiers. The total proposed trail system extends over 127.2 km. and has a combined daily capacity of approximately 15,215 skiers on 643.7hectares, an average of 23.6 skiers per hectare (9.6 per acre).

Whistler and Blackcomb combined will ultimately have over 300 kilometres of ski trails, making it one of the largest ski areas in the world.

**TABLE V.3
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY – BUILDOUT**

Trail Name	Trail No.	Skill Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area	
			Top Meters	Bottom Meters				Avg.	Steep				Ha.	Density
Lift 14 - Crystal Express														
Upper Lift Line	14A	6	1,792	1,573	219	535	578	41%	50%	29	1.57	1.70	15	25
White Light	14B	5	1,822	1,525	297	870	919	34%	50%	41	3.58	3.78	30	115
Trapline	14C	5	1,825	1,505	320	1,020	1,069	31%	47%	40	4.04	4.23	30	125
Lower Lift Line	14D	5	1,540	1,491	49	120	130	41%	41%	29	0.35	0.38	30	10
Rock n Roll	14E	5	1,690	1,288	402	1,630	1,679	25%	47%	37	5.98	6.16	30	185
Upper Ridge Runner	14F	4	1,825	1,710	115	420	435	27%	40%	30	1.28	1.33	40	55
Mid Ridge Runner	14G	3	1,825	1,643	182	970	987	19%	32%	26	2.56	2.60	40	105
Lower Ridge Runner	14H	4	1,643	1,288	355	1,400	1,444	25%	44%	44	6.22	6.42	40	255
Crystal Road	14I	3	1,642	1,572	70	695	699	10%	10%	7	0.49	0.49	40	20
	14J	7	1,775	1,665	110	235	259	47%	64%	20	0.46	0.51	5	5 1/4 density
Davies' Dervish	14K	6	1,650	1,542	108	230	254	47%	62%	50	1.14	1.26	15	20
Overbite	14L	7	1,810	1,595	215	370	428	58%	74%	45	1.67	1.93	20	40
Backstage Pass	14M	5	1,610	1,435	175	780	799	22%	45%	35	2.72	2.79	30	85
Log Jam	14N	5	1,620	1,570	50	180	187	28%	30%	58	1.05	1.09	8	10 1/4 density
Mid Blackcomb Glacier Rd	14O	4	1,407	1,370	37	430	432	9%	14%	9	0.40	0.40	40	15
Arthur's Choice	14P	6	1,632	1,412	220	680	715	32%	45%	60	4.09	4.30	4	15 1/4 density
Rider's Revenge	14Q	6	1,585	1,475	110	270	292	41%	50%	46	1.24	1.34	4	5 1/4 density
	14R	4	1,535	1,434	101	720	727	14%	14%	14	1.00	1.01	40	40
Outer Limits	14S	7	1,650	1,435	215	525	567	41%	65%	147	7.70	8.32	2	15 1/10 density
Twist & Shout	14T	4	1,610	1,405	205	660	691	31%	41%	39	2.60	2.72	40	110
	14U	3	1,824	1,792	32	260	262	12%	13%	11	0.29	0.29	40	10
	14V	6	1,706	1,469	237	680	720	35%	61%	34	2.34	2.48	15	35
Total Lift 14	30						20,893					72.52		1,670
Lift 16														
Showcase	7A	4	2,270	2,114	156	630	649	25%	43%	113	7.09	7.30	40	290
Showcase Bumps	7B	6	2,268	2,155	113	380	396	30%	49%	66	2.49	2.60	15	40
Blue Line	11A	3	2,249	2,020	229	855	885	27%	40%	107	9.13	9.45	40	380
Horstman Glacier	11B	6	2,298	2,080	218	1,050	1,072	21%	58%	80	8.35	8.53	15	130
Secret Bowl	partial 11C	6	2,137	2,055	82	300	311	27%	43%	64	1.92	0.54	15	10
Secret Chute	partial 11D	6	2,061	1,910	151	280	318	54%	64%	74	2.08	0.64	15	10
Pakalolo	partial 11E	7	2,050	1,850	200	400	447	50%	81%	62	2.46	0.75	20	15
Cougar Chute	partial 11F	7	2,020	1,800	220	470	519	47%	86%	112	5.27	1.59	20	30
	partial 20A	7	2,066	1,830	236	580	626	41%	41%	241	13.95	2.77	20	55
Total Lift 16	8	(not including 20A)					4,598		(not including 20A)			34.18		960
Lift 17														
Blackcomb Glacier	7C	5	2,270	1,910	360	1,280	1,330	28%	49%	264	33.74	35.05	15	525 1/2 density
	7D	7	2,170	2,000	170	410	444	41%	110%	95	3.91	4.23	10	40 1/2 density
Blowhole	7E	7	2,260	2,190	70	145	161	48%	73%	26	0.38	0.42	20	10
	7F	6	2,055	1,905	150	515	536	29%	51%	169	8.69	9.05	8	70 1/2 density
Total Lift 17	4						2,471					48.75		645

**TABLE V.3 CONT'D
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY – BUILDOUT**

Trail Name	Trail Skill		Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area		
	No.	Class	Top Meters	Bottom Meters				Avg.	Steep.				Density	Total	
Lift 18 - Glacier Express															
Blue Line	18B	5	2,139	1,635	504	2,185	2,242	23%	49%	30	6.46	6.63	30	200	
	18C	7	1,750	1,575	175	440	474	40%	81%	110	4.86	5.23	20	105	
Glacier Drive	18D	5	1,710	1,542	168	540	566	31%	42%	43	2.33	2.44	30	75	
Dakine	18E	6	1,892	1,750	142	310	341	46%	64%	90	2.80	3.08	15	45	
	18F	5	2,075	1,935	140	620	636	23%	42%	192	11.91	12.21	3	35 1/10 density	
	18G	7	1,958	1,875	83	170	189	49%	66%	61	1.03	1.15	20	25	
Crystal Traverse	18H	3	2,138	1,825	313	1,775	1,802	18%	32%	13	2.27	2.31	40	90	
	18J	4	1,995	1,935	60	165	176	36%	40%	112	1.84	1.96	40	80	
Heavenly Basin	18K	6	1,930	1,730	200	415	461	48%	63%	116	4.81	5.34	15	80	
Sapphire Bowl partial	18L	7	2,085	1,845	240	390	458	62%	88%	113	4.39	2.71	20	55	
Garnet Bowl partial	18M	7	2,115	1,940	175	425	460	41%	70%	60	2.57	1.46	20	30	
Diamond Bowl partial	18N	7	2,010	1,710	300	580	653	52%	79%	96	5.57	3.30	20	65	
Garnet/Ruby Bowl partial & 1/2	18O	7	2,120	1,673	447	1,130	1,215	40%	64%	63	7.07	2.00	20	40	
Spanky's/Ruby Bowl partial & 1/2	18P	7	2,125	1,840	285	740	793	39%	107%	61	4.48	1.26	20	25	
Blackcomb Glacier Rd partial	18Q	5	1,673	1,407	266	1,870	1,889	14%	14%	6	1.14	0.60	30	20	
Secret Bowl partial	11C	6	2,137	2,055	82	300	311	27%	43%	64	1.92	1.45	15	20	
Secret Chute partial	11D	6	2,061	1,910	151	280	318	54%	64%	74	2.08	1.72	15	25	
Pakalolo partial	11E	7	2,050	1,850	200	400	447	50%	81%	62	2.46	2.00	20	40	
Cougar Chute partial	11F	7	2,020	1,800	220	470	519	47%	86%	112	5.27	4.23	20	85	
	20A	7	2,066	1,830	236	580	626	41%	41%	241	13.95	7.38	20	150	
Total Lift 18	15	(not including "11" trails or 20A)					12,353 (not including "11" trails or 20A)				68.46	1,290			
Lift 19															
Upper Mainline 1/3 area	8I	5	1,248	1,005	243	820	855	30%	42%	85	6.98	2.43	30	75	
Lower Mainline 1/6 area	8J	5	1,009	762	247	1,310	1,333	19%	29%	71	9.28	1.57	30	45	
Upper Village Run 1/6 area	8K	5	815	768	47	415	418	11%	12%	35	1.45	0.24	30	5	
Lower Gearjammer 1/2 area	8M	5	1,295	868	427	1,330	1,397	32%	51%	53	7.00	3.68	30	110	
Upper Gearjammer 1/3 area	9J	7	1,470	1,315	155	305	342	51%	65%	82	2.49	0.93	20	20	
Slingshot 1/3 area	9N	5	1,510	1,253	257	990	1,023	26%	47%	34	3.33	1.15	30	35	
Connector	G	5	1,523	1,460	63	280	287	23%	36%	17	0.47	0.48	30	15	
Total Lift 19	6	(not including partial trails)					5,368 (not including partial trails)				10.48	305			
Lift 20															
	partial	20A	7	2,066	1,830	236	580	626	41%	41%	241	14.00	4.92	20	100
		20B	7	2,066	2,030	36	360	362	10%	10%	5	0.18	0.18	20	5
Garnet/Ruby Bowl half		18O	7	2,120	1,673	447	1,130	1,215	40%	64%	63	7.07	3.80	20	75
Spanky's/Ruby Bowl half		18P	7	2,125	1,840	285	740	793	39%	107%	61	4.48	2.40	20	50
Total Lift 20	4	(not including "18" trails)					2,996 (not including "18" trails)				11.30	230			
Lift 21															
Total Lift 21	0						0				0.00	0			
Beginner Areas															
Whistler Kids Learning Ctr		1	694	683	11	95	96	12%	12%	47	0.45	0.45	75	35	
Base II Carpet I		1	689	684	5	40	40	13%	13%	25	0.10	0.10	75	10	
Base II Carpet III		1	770	764	6	85	85	7%	7%	25	0.21	0.21	75	15	
Total Beginner Lifts	3						221				0.76	60			
Total All Lifts	166						113.7 km				606.3 Ha	14,535			

**TABLE V.3 CONT'D
BLACKCOMB MOUNTAIN
SKI TRAIL INVENTORY - BUILDOUT**

Trail Name	Trail No.	Skill Class	Elevation		Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope		Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area	
			Top Meters	Bottom Meters				Avg.	Steep				Density	Total
Skiways & Connectors														
Yard Sale	A	6	1,715	1,610	105	280	299	38%	56%	25	0.71	0.76	4	5 1/4 density
Watch Out	B	7	1,730	1,595	135	330	357	41%	63%	36	1.19	1.29	5	5 1/4 density
Where's Joe	C	6	1,755	1,580	175	420	455	42%	57%	36	1.50	1.63	4	5 1/4 density
Raptor's Ride	D	7	1,750	1,570	180	550	579	33%	61%	27	1.49	1.57	5	10 1/4 density
Mid Easy Out	E	2	1,523	1,433	90	530	538	17%	22%	7	0.39	0.40	50	20
Sunset Boulevard	F	2	1,655	1,300	355	3,510	3,528	10%	10%	5	1.66	1.67	50	85
So Sweet	H	6	1,535	1,468	67	195	206	34%	40%	117	2.28	2.41	4	10 1/4 density
Pruned Paradise	I	6	1,307	1,235	72	165	180	44%	48%	112	1.85	2.02	4	10 1/4 density
Green Line	J	2	1,445	1,362	83	850	854	10%	10%	8	0.68	0.68	50	35
Green Line	K	2	1,362	1,267	95	850	855	11%	11%	8	0.68	0.68	50	35
Green Line	L	2	1,165	1,137	28	390	391	7%	7%	8	0.31	0.31	50	15
Green Line	M	3	1,537	1,436	101	900	906	11%	17%	8	0.72	0.72	40	30
	N	3	1,568	1,540	28	200	202	14%	14%	60	1.19	1.20	40	50
	O	3	1,540	1,458	82	280	292	29%	37%	36	1.02	1.06	40	40
	P	3	1,910	1,865	45	250	254	18%	20%	44	1.11	1.13	40	45
L. Blackcomb Glacier Rd	Q	3	1,285	1,150	135	1,520	1,526	9%	17%	11	1.63	1.64	40	65
	R	4	1,520	1,457	63	180	191	35%	42%	40	0.72	0.76	40	30 1/4 density
	S	3	1,485	1,445	40	320	322	13%	17%	22	0.69	0.70	40	30
	T	6	2,290	2,229	61	125	139	49%	54%	299	3.74	4.16	15	60
U. Blackcomb Glacier l	U	5	1,903	1,673	230	1,340	1,360	17%	42%	92	12.39	12.57	8	95 1/4 density
Total Skiways & Connectors	20							13,433					37.36	680
Total All Trails	186							127.2 km					643.7 Ha	15,215

The Master Plan ski trail balance, as listed in Table V.4 and illustrated in Plate V.1 indicates that Blackcomb Mountain will be reasonably well balanced with the exception of a shortage of beginner ski terrain and a surplus of expert terrain.

**TABLE V.4
CUMULATIVE SKI TRAIL BALANCE STATEMENT
BUILDOUT**

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	0.8	60	0.4%	5%
2 Novice	24.9	1,245	8.6%	10%
3 Low Intermediate	80.6	2,960	20.4%	20%
4 Intermediate	104.1	4,130	28.4%	30%
5 High Intermediate	129.5	2,925	20.1%	20%
6 Advanced	145.9	1,255	8.6%	10%
7 Expert	120.5	1,960	13.5%	5%
TOTALS	606.3	14,535	100%	100%

Average Density =	32.5 Skiers/Hectare
Optimum Density =	34.0 Skiers/Hectare
Weighted Demand =	4,511 VTM/Skier/Day

SKI TRAIL BALANCE - BUILDOUT

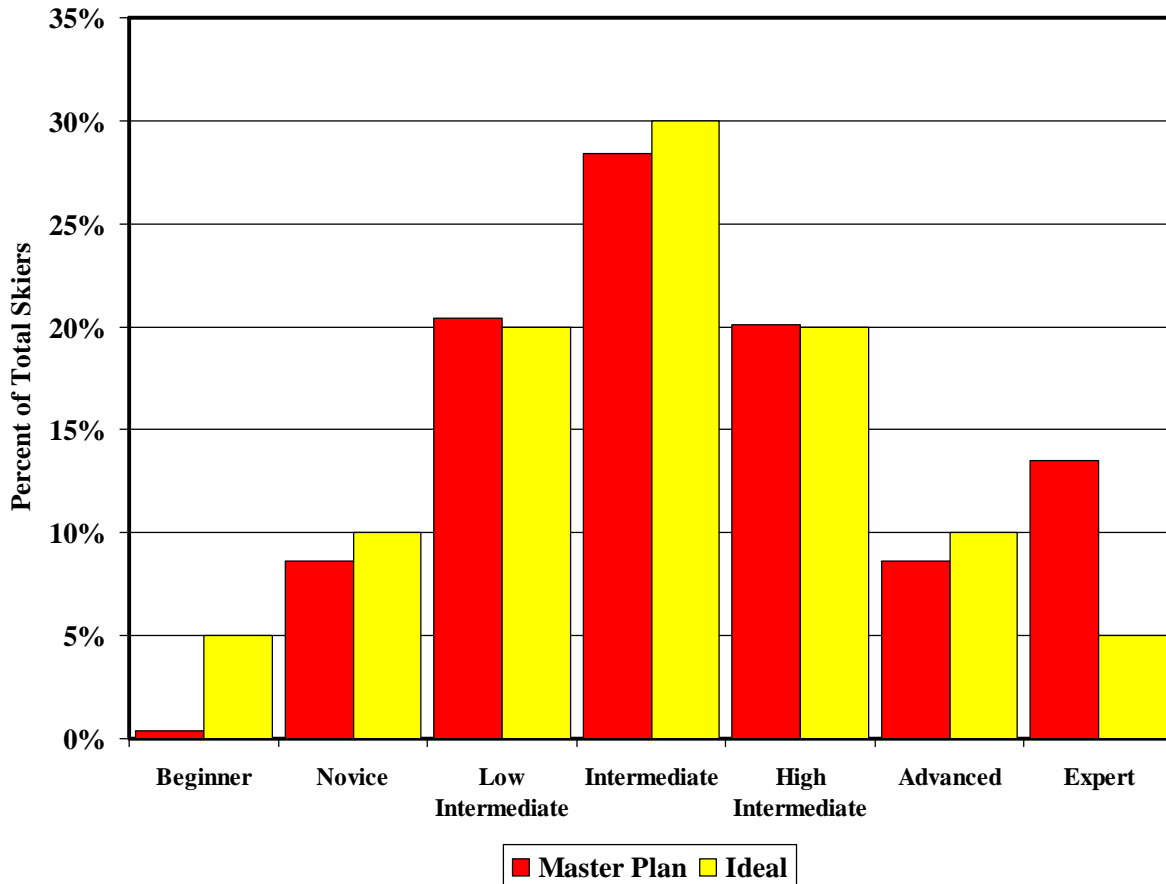


PLATE V.1

Table V.5 summarizes the Blackcomb Mountain Trail Balance by Lift System and Plate V.2 graphically illustrates the Lift vs. Trail Capacity. The Excelerator ski pod is over-lifted because the access reduction for this existing lift is removed when the third section of the Excalibur gondola is installed. The majority of the remaining ski pods are slightly over-lifted with the exception of ski pods serviced by the 7th Heaven chairlift, the Showcase 8-passenger gondola, and the Glacier detachable quad chairlift. The slight over-lifting should help to reduce line-ups on peak days.

**TABLE V.5
BLACKCOMB MOUNTAIN
TRAIL BALANCE BY LIFT SYSTEM**

Lift No.	1	2	3	4R	5R	6	8	9	10	
Lift Name	Excalibur I	Excalibur II	Excelsior	Cat-skinner	Magic Combi	Jersey Cream	Wizard	Solar Coaster	7th Heaven	
Lift Type	D8G	D8G	D4C	D4C	Combi	D4C	D4C/B	D4C	D4C	
Lift Capacity	100	880	3,070	1,390	590	1,470	1,890	2,090	1,820	Skiers/Day
Trail Capacity	45	560	1,130	1,075	160	1,265	1,485	1,535	2,120	Skiers/Day
Trails:Lifts	45%	64%	37%	77%	27%	86%	79%	73%	116%	
Average Density	117.6	68.3	97.2	34.7	185.0	36.1	51.4	41.7	12.7	Skiers/Hectare
Optimum Density	50.0	44.3	39.1	39.0	50.0	34.5	41.0	34.5	31.3	Skiers/Hectare
Demand VTM	2,120	3,408	3,091	3,569	2,120	4,420	3,408	4,396	4,999	VTM/Skier/Day
Balance										
Beginner	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Novice	100%	43%	0%	27%	100%	0%	20%	7%	5%	
Low Intermediate	0%	57%	86%	16%	0%	29%	17%	11%	5%	
Intermediate	0%	0%	8%	32%	0%	42%	53%	41%	39%	
High Intermediate	0%	0%	3%	17%	0%	8%	10%	23%	20%	
Advanced	0%	0%	1%	8%	0%	8%	0%	10%	16%	
Expert	0%	0%	1%	0%	0%	14%	0%	7%	16%	
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	

Lift No.	13	14	16	17	18	19	20	
Lift Name	Excalibur III	Crystal Express	Showcase Gondola	Blackcomb Glacier	Glacier Express	Base II-Catskinner	Ruby Bowl	
Lift Type	D8G	D4C	D8G	4C	D4C	D4C-B	4C	
Lift Capacity	520	1,500	650	800	1,220	460	360	Skiers/Day
Trail Capacity	0	1,670	960	645	1,290	305	230	Skiers/Day
Trails:Lifts	0%	111%	148%	81%	106%	66%	64%	
Average Density		20.7	19.0	16.4	17.8	43.9	31.9	Skiers/Hectare
Optimum Density		31.2	33.0	27.6	24.5	29.3	20.0	Skiers/Hectare
Demand VTM	3,091	5,158	4,315	5,440	6,587	5,307	8,475	VTM/Skier/Day
Balance								
Beginner		0%	0%	0%	0%	0%	0%	
Novice		0%	0%	0%	0%	0%	0%	
Low Intermediate		8%	40%	0%	7%	0%	0%	
Intermediate		33%	30%	0%	6%	0%	0%	
High Intermediate		33%	0%	81%	26%	93%	0%	
Advanced		7%	20%	11%	13%	0%	0%	
Expert		19%	10%	8%	48%	7%	100%	
Total		100%	100%	100%	100%	100%	100%	

**BLACKCOMB MOUNTAIN
LIFT VS TRAIL CAPACITY**

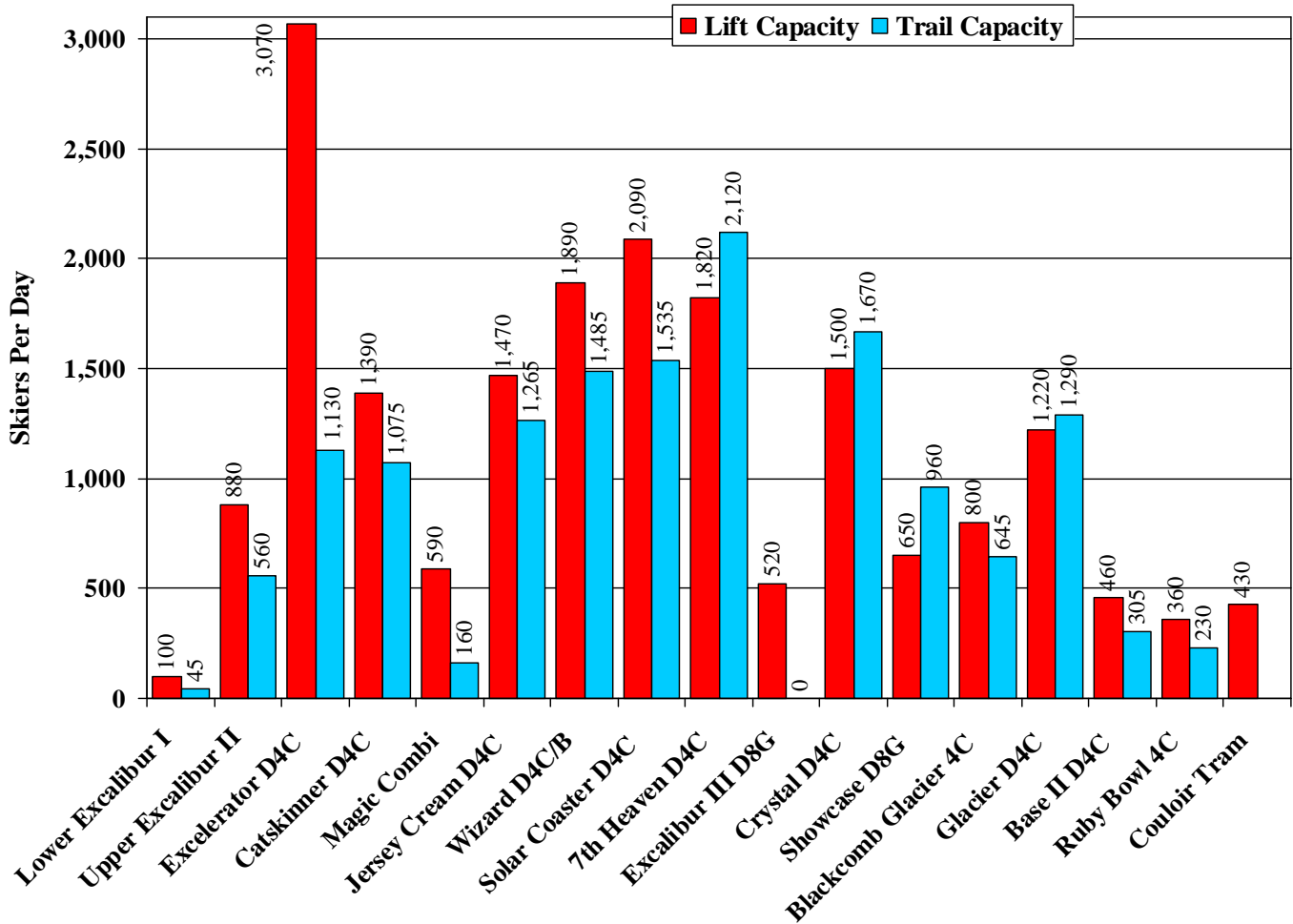


PLATE V.2

.6 Snowmaking

Ski areas are generally considered to be feasible if there is at least a 90 percent probability of a 60 to 75 cm snowpack by December 15. It is important that a ski area as large as Blackcomb Mountain, with its associated destination tourist facilities, have a reliable, guaranteed snowpack early in December.

Snowmaking on the upper mountain ensures that there is a skiable snowpack present during low snow periods like those experienced up to Christmas (& beyond) in 2008/09 and during several of the last few years. The inventory section details the existing snowmaking system, including the 110 hectares currently covered by snowmaking. In the future, Blackcomb proposes to expand the snowmaking system to increase coverage at all elevations, to cover expanded terrain, as well as provide a

better guest experience in those times of low snowpack. It is the general goal to provide snowmaking on at least two to three trails for each lift system on the mid mountain and on most trails on the lower mountain so that the ski area can accommodate a significant number of skiers even when snowpack is low or only adequate on the upper mountain. Routes currently anticipated to require snowmaking coverage in the future are shown in more detail in the Proposed Snowmaking Plan, Figure 15. The proposed snowmaking system, as illustrated, would cover approximately 195 hectares; an increase of about 85 hectares (77%) over the existing system as outlined in Table V.6 below.

**TABLE V.6
BLACKCOMB MOUNTAIN
SNOWMAKING COVERAGE AT BUILDOUT**

	Snowmaking Coverage	
	Hectares	Acres
Current	110	272
Proposed	195	482
Increase	85	210
Percent Increase	77%	

Blackcomb Mountain currently holds water licenses totalling approximately 8.85 million cubic metres per year (2,338 million US gallons). The Fitzsimmons Creek licence for 5,989,779 million m³/year can be used for both Whistler and Blackcomb Mountains because of the interconnectivity of the snowmaking systems. If we assume this license is shared 50/50 between the two mountains, Blackcomb’s effective licensed capacity is reduced to approximately 5.86 million m³/year . The current annual usage in recent years has ranged from 265,000 m³ (70 million US gallons) to 379,000 m³ (100 million US gallons) depending on the season. Therefore, there is more than enough capacity within the existing water licenses to handle the proposed 77% increase in snowmaking coverage. This information is summarized in Table V.7.

As the system expands, more pump stations, compressor buildings, valve stations, water intakes, etc., will be needed. The exact size and location of these facilities will be determined during detailed design of the snowmaking system. As part of this expansion, the existing snowmaking reservoirs may need to be expanded to accommodate larger water storage capacities. In addition, management are investigating the feasibility of constructing a second snowmaking reservoir on a bench below the existing reservoir. As unforeseen circumstances arise, such as market changes, operational changes and climate change, it may be also be necessary to install snowmaking on trails not detailed on the included map to ensure optimal operations and guest satisfaction.

**TABLE V.7
BLACKCOMB MOUNTAIN
SNOWMAKING WATER LICENSE SUMMARY**

	Water Licenses	
	Thousand m ³ /year	Million USG/year
Approved Annual Amount	8,851	2,338
Diverted to Whistler	2,995	791
Total Remaining for Blackcomb	5,856	1,547
Current Use	265 to 379	70 to 100
Percent of License Used	13%	13%
Excess Capacity Available	5,477	1,447

.7 On-Mountain Buildings

Design Day

To assist in the planning of skier service facilities, the number of skiers/boarders (the Skier Carrying Capacity/SCC) that would be skiing on the mountain on a “Design Day” needs to be determined. The design day is chosen to represent the average business levels expected during the high season. This is not the “Peak Day” experienced during the season since if facilities were designed for the peak day, they would be under-utilized for the balance of the season. For Whistler Blackcomb, “Design Day” has been selected as the average of the top fifteen skier visit days of the ski season, which means that level of visits can be expected to be exceeded just 8 to 10 times per year. On days when the skier visits exceed the Design Day, the facilities will feel somewhat crowded or stressed. If this only happens during the busiest holiday periods such as Christmas or President’s Week when skiers and guests expect facilities to be full, it will be tolerated. If however, the crowding occurs on “typical” weekends during the peak winter seasons, then people become annoyed and may not return.

With current patterns of visitation, the average of the top fifteen busiest days is approximately equal to 80% of the skier visits on the peak day. If annual visit levels increase from 2.1 million skier visits to 2.8 million skier visits and peak day visits increase accordingly, then the two mountains combined could see peak days in the range of 37,000 skiers per day at buildout. Based on the available lift and terrain capacity at each mountain at build out and the future staging lifts proposed, we project that about 14,800 (40%) of these skiers would be skiing on Blackcomb Mountain and 22,200 skiers would be on Whistler. Assuming the same relationship of 80% of expected peak day, the “Design Day” for Blackcomb Mountain would be

approximately 11,840 skiers at build out. For food service seating, Whistler Blackcomb's goal is to provide food service seats for 70-75% of the anticipated peak day skiers. This target is at the upper end of the 65 to 75% range generally recommended for most ski areas and should provide skiers at Whistler Blackcomb with a high level of service.

Skier Service Buildings/Restaurants

A significant element in ensuring a positive skier experience is the placement and sizing of restaurants in convenient and logical locations throughout the mountain. As previously discussed, with the addition of new lifts there will be an associated requirement for new restaurant facilities and/or the upgrading of existing facilities to provide adequate service for skiers. Anticipated sizes and locations of the mountain restaurants by phase were described in the general description of each development phase and are summarized below.

As mentioned in the Inventory section, Blackcomb Mountain currently operates 2,547 indoor seats and 1,057 outdoor seats for food service. Of these, there are 1,863 indoor seats and 696 outdoor seats located in on-mountain restaurants, with the remainder of the seats provided at Base II or the Wizard base. With the exception of the proposed new Base II Learning Centre, there will be no additional ski terrain developed on the lower mountain. Therefore, the vast majority of the additional skiers anticipated at build-out will be skiing on the upper mountain.

In both planning and implementation, it is a general goal to provide food service seats in close proximity to the area that skiers are skiing so that they do not have to use the lifts to travel back and forth to the warming and lunch facilities. Careful restaurant site location can result in less traffic on selected lifts and trails during the pre-lunch and post-lunch periods, as well as better utilization of the more remote skiing zones, since skiers are less likely to return to these areas after lunch if it is a long distance from their lunch spot. After examining potential mountain restaurant locations, it seems that the existing restaurants are located in the most convenient sites for skiers; therefore much of the required increase in on-mountain food service seating should be accomplished by adding capacity to the existing mountain restaurants. As Blackcomb Mountain expands to buildout, expansions and/or renovations to all of the existing on-mountain restaurants will be required to service the anticipated increase in skiers during the busy periods. Of course, along with expansion of the seating and kitchen facilities in these larger on-mountain facilities, there will be a comparable increase in space required for restrooms and there may be the desire to provide additional space for other skier services such as guest services, ski school, ski rental (for exchanging gear) and accessory retail. New potential restaurant sites are proposed at the bottom of the Excelerator Chair (largely for

mountain biking in the future) and the top of the Glacier Gondola (Lift 20). These restaurants could be smaller facilities (50 to 100 seats), similar to the existing Crystal and Horstman Huts or slightly larger if appropriate. The restaurant sites are shown graphically in Figure 14a. A brief description of the proposed new restaurants follows.

The Glacier Creek mountain restaurant may be able to accommodate a further 120 seats, bringing the total number of indoor seats at this facility up to about 1,000. The Rendezvous restaurant was originally built in 1980 expanded in 1987 and could benefit from a renovation to bring it up to modern standards. In conjunction with the future renovation, it is anticipated that an expansion will accommodate a further 100 to 200 indoor seats, bringing the total number of indoor seats to between 980 and 1,080.

A new mountain restaurant with 500 to 1,000 indoor seats is proposed for the Catskinner bench. This location at the 1,625-metre elevation was originally identified as a potential mountain restaurant site in the original 1978 Blackcomb Mountain Master Plan. Once the Catskinner chair is replaced, this area of the mountain will attract significantly more skiers. The new restaurant will have a southwest facing deck with views of Whistler Village, Whistler Mountain, the P2P Gondola and the entire Fitzsimmons Valley.

Once the Crystal detachable chairlift is installed, the Crystal skiing zone will become much more popular due to its new lift, good snow, protection from the weather and its winding, “roller coaster” trails. The existing location of the Crystal Hut with its expansive views and convenient location at the top of the lift is an ideal site for an expanded facility to service the large number of skiers anticipated to be skiing this terrain. An expanded or new facility in this location could provide 100 to 150 indoor seats, as well as a large number of outdoor seats on the deck that has southern exposures.

The Horstman Hut could be replaced with a larger facility, ensuring that skiers in the 7th Heaven and Horstman glacier zones will not have to travel too far to get food warm up or use the restrooms. It is anticipated that this facility could be expanded up to about 75 to 100 indoor seats with the appropriate kitchen space and restrooms.

Once the Glacier gondola is constructed, the area around the top terminal will become a unique destination for skiers and sightseers alike. If developed as a sightseeing destination, it would be appealing to have a smaller destination restaurant in this location, similar to the existing Horstman Hut or Crystal Hut with approximately 50 to 150 indoor seats.

The Blackcomb daylodge and the existing Whistler Kids/Administration at the Wizard base are attractive sites for redevelopment to provide additional accommodation at the Blackcomb base. The daylodge building could potentially be relocated to Base II to make room for new development. If development were to go ahead, the new accommodation buildings would need to provide skier service space for staging and commercial facilities required for skiers staging from the Wizard base or skiing on the lower mountain. However, the administration space and Whistler Kids facilities would not necessarily need to remain in this expensive valley location and could be relocated to Base II. Skier staging services for the Blackcomb base would be provided on the lower floors (ground and underground) of any potential accommodation built in this location.

At Base II, there is sufficient terrain to either construct a new day lodge or relocate the Blackcomb daylodge to provide additional staging and commercial facilities for the additional skiers staging from Base II and using the proposed Blackcomb Learning Centre on the new terrain at the top of the Magic Chair replacement. The Magic Combi gondola/chairlift will provide convenient access for foot traffic and skiers between the two bases. Administration space removed from the Wizard base can be provided in a separate building that could be constructed near the existing finance buildings.

In summary, many sites have been identified for food service and other skier service facilities, both on the mountain and in the base area. To ensure a high level of service even during peak holiday periods, it is the goal of Whistler Blackcomb to provide food service seats for 70-75% of the anticipated peak day skiers. Assuming a peak day of about 14,800 skiers and assuming an average of 3 turns per seat during the lunch time rush, as many as 3,700 seats may be required (almost double the existing 1,863 indoor seats). The exact size and location of each food service facility (whether new or expanded) will be determined to meet guest requirements and to create new and unique dining experiences on the mountain.

Overall Skier Service Floorspace

As described in the Inventory Section of this report, the skier service facilities needed at a ski resort can be separated into twelve separate functions. These twelve functions are grouped into three categories; Staging Facilities which skiers need as they arrive at the ski area prior to starting skiing, Commercial Facilities which are needed throughout the day and Operational Facilities which support the operation. To estimate the overall skier service floorspace recommended for Blackcomb Mountain at buildout, Ecosign has adjusted our resort standards to capture Whistler Blackcomb's service goals and applied them to Design Day of 11,840 skiers. As

shown in Table V.8, the total recommended functional space at buildout for Blackcomb Mountain is approximately 14,080 square metres. Given the existing skier floorspace and its allocations, approximately 5,860 square metres of new skier service floorspace is required, which when making an allowance for space for circulation, mechanical and electrical equipment and storage, translates into a need for approximately 7,320 m² of new built space. In a resort with significant commercial space surrounding the valley staging lifts, other businesses could provide some of the staging requirements such as equipment rentals, or the resort operator could lease commercial space for skier services instead of constructing new buildings.

At buildout of the Master Plan, the total required food service seating floorspace is estimated at 4,440 square metres, which will accommodate approximately 3,700 indoor restaurant seats, assuming 1.2 square metres per seat.



Tubing Centre at Base II on Blackcomb

**TABLE V.8
BLACKCOMB MOUNTAIN
SKIER SERVICE FLOORSACE PROGRAMMING
DESIGN DAY = 11,840 SKIERS**

	Ecosign Resort Area Standards m²/skier	Recommended Total Floor Space m²	Existing Floor space m²	New Floor Space Needed m²
Staging Facilities				
Ticket Sales	0.014	165.0	63.8	101.2
Public Lockers	0.111	1,320.0	136.3	1,183.7
Equipment Rental & Repair	0.093	1,100.0	619.0	481.0
Guest Services / Ski School	0.046	550.0	229.4	320.6
Children's Daycare	0.046	550.0	267.8	282.2
Sub-total Staging	0.311	3,684.9	1,316.3	2,368.6
Commercial Facilities				
Food & Beverage Seating	0.375	4,440.0	2,658.9	1,781.1
Kitchen & Scramble	0.174	2,062.4	1,313.8	748.6
Rest Rooms	0.087	1,031.2	603.3	427.9
Accessory Retail	0.070	825.0	352.2	472.8
Sub-total Commercial	0.706	8,358.6	4,928.2	3,430.4
Operational Facilities				
Administration	0.093	1,100.0	1,919.0	n.a.
Employee Facilities	0.046	550.0	490.7	59.3
First Aid & Ski Patrol	0.033	385.0	621.0	n.a.
Sub Total Operational	0.172	2,034.9	3,030.7	59.3
Total Functional Space	1.189	14,078.4	9,275.2	5,858.3
Storage	0.119	1,407.8	265.1	585.8
Mechanical/Circulation/Walls/Waste	0.178	2,111.8	644.3	878.7
Total Skier Service Space	1.486	17,598.0	10,184.6	7,322.8

Operations and Other Buildings

In addition to skier service buildings and buildings associated with lifts, a ski area needs many other buildings for operations. These include, but are not limited to maintenance shop, lift maintenance, snowmaking operations (pump house, compressors, valve houses, hose drying space, etc.), storage, race course support (start shacks, timing, etc), patrol huts, outdoor adventure tourism centres, etc.

As mentioned previously, buildings associated with snowmaking expansion will be designed and located when detailed design of additions to the snowmaking systems are performed. These will likely be located adjacent to the existing or proposed snowmaking coverage, as shown on the Proposed Snowmaking Map, Figure 15. Small buildings for grip maintenance are proposed adjacent to either the top or bottom terminal of the detachable lifts. These on-site grip maintenance sheds allow the mandatory grip maintenance to be carried out on an ongoing basis throughout the ski season, as opposed to having to take the chairs off-site for grip maintenance in the summer.

The smaller buildings are both permanent and temporary in nature and are typically located, designed and built as the need arises (and the need is not always foreseen). Ticket sales, storage, employee facilities, etc., for adventure tourism activities will also be needed as Blackcomb accepts proposals for those types of activities to be located within their CRA.

Mountain Lodges

In the backcountry surrounding Whistler Blackcomb, there are several small alpine cabins with sleeping spaces allowing hikers and backcountry skiers to spend one or several nights while enjoying the outdoors. Blackcomb would like to create a small mountain lodge for their guests within their CRA. This type of facility would enable Whistler Blackcomb to offer skiers who don't have backcountry skills the unique experience of staying in a secluded high alpine back country lodge. It is anticipated that this facility will contain a small restaurant kitchen for morning breakfast, lunch during the day and evening dining, as well as 35 to 50 indoor seats for day use to compliment the accommodation facilities. The food service facilities could be used by ski area guests, backcountry skiers beginning or finishing the Spearhead Traverse or by sight seeing guests who would be brought to the facility by snowcat. Two sites on Blackcomb serviced by the 7th Heaven Express have been identified. The first site is on a plateau located southeast of the existing snowmaking reservoir. This site is somewhat secluded and provides dramatic panoramic views in almost every direction, as well as great southern sun exposure. The second site is below Lakeside Bowl, just into the trees and to the south of Sluiceway. These sites are identified in Figure 14a, Mountain Master Plan at Build Out, Blackcomb.

.8 Controlled Recreation Boundary (CRA)

The existing Controlled Recreation Boundary (CRA) is shown graphically on most of the Master Plan maps including the Existing Area Map and the Mountain Master Plan Map. The current CRA boundary is based on several amendments and

clarifications to the CRA made over a number of years and comprises 2,094 hectares (5,174 acres) of terrain. A portion of Blackcomb's CRA was removed to accommodate the Whistler Sliding Centre; Bosleigh/Luge/Skeleton Venue for the Vancouver 2010 Olympic Winter Games. This property is operated by the Whistler 2010 Sports Legacies Society (WSL). Whistler Blackcomb have a Memorandum of Agreement and a Road Use Agreement with the WSL as Blackcomb Mountain's main mountain access road and a number of utilities pass through the Sliding Centre property. Under these agreements, Blackcomb Mountain did retain the right to use their access road during all seasons for rubber tire vehicles, construction machinery and over snow access (snowcats, snowmobiles, etc.).

Blackcomb Mountain also operates over 219 hectares (520 acres) within Blackcomb Glacier Provincial Park. Blackcomb Mountain has a Special Use Permit for operation within the park that has been in effect for more than 20 years. There are no anticipated adjustments needed to the CRA to allow Blackcomb Mountain to accomplish its recreational and business goals, as outlined in the 2013 Blackcomb Master Plan Update.

.9 Other Winter/Summer On-Mountain Activities

Although alpine skiing/snowboarding is the chief form of recreation offered on Blackcomb Mountain, many other on-mountain activities are now offered to Whistler's visitors during both the summer and winter seasons. One factor which has contributed to Whistler's success as a four season destination resort is the variety of activities that are available for resort visitors and local residents. Supplemental activities in winter have increased the attractiveness of Whistler to visitors who are not necessarily "hard-core" skiers and snowboarders.

Winter Recreation

Non-skiing guests and those who wish to spend only a portion of their winter vacation skiing or snowboarding, have many other activity options during the day and evening. Many of these activities occur in the village and on the valley floor; however, several activities take place on the mountain to allow non-skiing visitors to enjoy the alpine experience. The success of Vail's Adventure Ridge, mountain-top dining in the evening, and snow tubing now provided at many areas across North America help illustrate the desire of guests for more varied activities. Expansion of the existing alternative recreational activities and the addition of new activities will help to provide guests with a well rounded winter recreation experience.

Alternative on-mountain winter activities at Blackcomb Mountain currently include tubing, after hours snowmobile tours, on mountain dining, horse drawn sleigh rides, dog sledding tours and, in the past, have included night skiing and overnight accommodation in yurts. Blackcomb may choose to offer these activities in the future if demand warrants. During the day sightseers can access Blackcomb Mountain via the PEAK 2 PEAK Gondola to the Rendezvous lodge in the winter.

Summer Recreation

Summer activities are extremely important to the success of the overall recreational facility. These activities make use of the infrastructure and accommodation facilities in place for winter recreation. Summer activities are more concentrated in the Village and the valley floor however; many visitors currently make at least one trip to the top of the mountain via the existing ski lifts, primarily for sightseeing and hiking. Whistler Blackcomb has developed an alpine trail network with various levels of difficulty that extends into Garibaldi Provincial Park and connects with the trails system in the park. The number and types of activities have increased in the last few years. In addition to sightseeing and dining, on-mountain activities now include hiking and interpretative trails, snowshoeing, snowcat rides, horseback riding, mountain biking, ATV tours, skiing on the Horstman glacier, zip lines, aerial freestyle training at the water ramp, paragliding, concerts at Base II, etc. The Airdome bike practice facility offers an indoor facility for practicing mountain bike stunts in a safe environment. Many of these activities use the unique environment and scenic backdrop of the mountain to provide a special experience for resort visitors.

As these activities have emerged over the past years, we anticipate that new on-mountain activities will be in more demand in the future. In the future, Blackcomb Mountain intends to expand the existing activities and to offer further on-mountain activities in response to market demand. There are plans to expand the Whistler Mountain Bike Park onto Blackcomb, as the demand for downhill mountain biking continues to grow and additional terrain is required to safely accommodate the increased number of users. The small mountain alpine slide ride on the lower slopes adjacent to the Blackcomb base is very popular. This facility is aging, therefore it will be replaced with a newer and larger alpine coaster ride which will stretch farther up the mountain and may be open year round.

With the three section gondola providing a direct connection between the Village and the Glacier Creek facility, it is envisioned that the Glacier Creek area could become a popular summer destination. As shown on the Figure 16, Blackcomb Mountain Summer Recreation Plan, the bike park may expand as far up as Glacier Creek and other summer activities could take place in the area surrounding the lodge.

The following list provides suggestions of some of the activities that Blackcomb may propose to stage on the mountain in the future. Additional activities may be added, based on changing market demand and emerging or popular activities which have yet to be developed or become popular. Figure 16 graphically illustrates the Blackcomb Mountain Summer Recreation Plan at Buildout.

Possible Future On-Mountain Activities

- Festivals and Events (using on mountain facilities during off peak hours or off peak seasons)
- Small Accommodation facilities for retreats, etc.
- Snowshoeing
- Night Skiing
- Concert Bowl
- Additional Food Facilities
- Downhill Mountain Biking
- Alpine Coaster
- Skating Rink
- Disc Golf
- Rock Climbing
- Outdoors School/Camps
- Ziplines/Rope Courses/Tree Canopy Adventures

Lift Serviced Mountain Biking

In the past twelve years, it has been lift serviced mountain biking that has caused exponential growth in Whistler Mountain's summer visitation. With over 200 kilometres of trails, the Whistler Mountain Bike Park is the one of the largest parks in North America has plans to keep expanding to meet the growing number of riders. Whistler Blackcomb's vision of mountain biking in the long term anticipates expanding lift serviced mountain biking onto Blackcomb Mountain within the areas outlined in Figure 16 Blackcomb Mountain Summer Recreation Plan. Trails will be developed with the intent of managing bike traffic and minimizing bottlenecks in access and egress. Care will be taken to locate trails to avoid environmentally sensitive areas or wildlife habitats. The options for mountain biking need to continue to be developed for all skill levels – more trails for experts while also focusing on more interesting/new trails for intermediate riders that will encourage skill progression. The areas of new trail development include on Blackcomb Mountain include:

- Development of a trail system balanced between intermediate to expert trails within the zone currently accessible via the Excalibur and Excelsior lifts and in the future by the extension of the Excalibur lift to the Glacier Creek restaurant.
- Redevelopment of the existing beginner trails in the Magic Zone area.

.10 Spearhead/Fitzsimmons Hut System

Both Whistler and Blackcomb Mountains are highly supportive of the proposed Spearhead/Fitzsimmons Hut System. The Hut System is being proposed by non government organizations (NGO's) led by the Alpine Club of Canada. A system of three huts was proposed by the BC Mountaineering Club (BCMC) in 1965 and one hut was built at Russet Lake near Singing Pass. The Singing Pass area has magnificent views of the Fitzsimmons and Spearhead Mountain ranges and the Cheakamus Glacier. Some of the area is accessible by the alpine route crossing Piccolo, Flute and Oboe summits on a route known as the Musical Bumps.

The Russet Lake Hut is also referred to as the Himmelsbach Hut named after Werner Himmelsbach who did much of the work in constructing the hut. The Himmelsbach Hut at Russet Lake can accommodate twelve people, although a busy Saturday night often experiences twenty with some having to sleep outside in tents.

The main object of the Spearhead/Fitzsimmons Hut system is to provide access to a wide variety of outdoor enthusiasts while providing shelter and overnight accommodation in appropriate locations that allows people to ski or hike the Spearhead Traverse in all seasons. The Spearhead Traverse is about 42 kilometres from the top of the Showcase T-bar on Blackcomb to the bottom of Whistler Village via the Singing Pass Trail. This is one of THE classic ski tour routes in North America with most skiers taking 2 to 3 days to complete the tour from Blackcomb to Whistler Village via the Spearhead and Fitzsimmons ranges. It is a high elevation traverse that stays above 1,825 metres (6,000 ft.) for almost the whole route, crossing 13 glaciers en-route.

The Alpine Club of Canada is identifying a number of potential sites for the locations of the huts. On the Blackcomb side, one leading site is a hut at Circle Lake, which is a spectacular site about 3-4 hours hike in the summer from the Rendezvous Restaurant. The Circle Lake Hut is in the planning phase. On the SW side (Whistler side), the likely location for the first hut is a replacement of the existing Himmelsbach Hut at Russet Lake since this hut is ideally situated as a summer and winter destination. One or two more huts are planned and their locations are

currently in discussion between the ACC, BCMC and other NGO's and Garibaldi Provincial Park authorities.

Whistler Blackcomb's role is a pragmatic ongoing one. Since the early 1990's, they have worked closely with BC Parks on developing a seamless trail system between the CRA and Park. High Note, Decker and Overlord trails are some of the results of this working relationship; a relationship that is recognized in the Province as a model of cooperation for improving park access for British Columbians. Whistler Blackcomb have been in discussion with Parks for some time on the next steps to continue the trail development to include the connection of the Musical Bumps into Cheakamus Lake and the Upper Spearhead connector. Whistler Blackcomb's primary interest is continuing the trail development with public support and the right financial mechanisms.

Whistler and Blackcomb Mountains are supportive of this NGO endeavour with consultation and respect of BC Parks master planning and referral process, as they are in a position to play a role providing transport of recreationists to reduce the long approach time through the coastal forest up to the sub-alpine and alpine zones. The Whistler Blackcomb lift systems provide access in winter and summer. In the winter season, access from the Blackcomb side is from the top of the Showcase T-Bar and from the Whistler side from the top of the Symphony Express Chair on the top of Piccolo summit. In the summer, lift assisted access is to the Roundhouse Lodge on Whistler Mountain or from the Rendezvous Lodge on Blackcomb.

VI. BASE AREA FACILITIES

The purpose of this section of the report is to outline the base facilities that are required to support the planned expansion of Blackcomb Mountain, as described in the Mountain Facilities section. Since the two mountains are connected via the PEAK 2 PEAK Gondola, many of the base facilities including accommodation, parking and skier services such as ticketing, rental and lockers will service skiers using either mountain.

.1 Valley Staging Overview

In the Development Analysis section, we outlined the potential for peak days with skier visits in the order of 35,500 to 39,300 skiers. As outlined in Table VI.1, only about 12,830 skiers will be coming from accommodation within walking distance of the Creekside or Whistler Village bases. The remaining skiers will need to either drive or take public transit to reach the lifts.

**TABLE VI.1
WHISTLER BLACKCOMB
PEAK DAY SKIER ORIGINS AT BUILDOUT**

	Developed Bed Units at Buildout					Skiers
	Hotel Hostel Pension	TA Camp- ground	Multi Family	Single Family Duplex	Resident Restricted	
South of Creekside	344	946	2,286	3,360	2,312	3,400
Creekside	-	1,746	858	1,836	322	2,110
Between Creekside & Village	176	1,104	3,487	4,092	543	3,660
Whistler Village	3,869	585	392	-	-	3,320
Upper Village	1,674	3,491	3,317	288	946	5,160
Village North	1,390	889	1,831	-	29	2,350
North of Village North	1,092	521	3,051	11,904	2,592	6,620
Totals	8,545	9,282	15,222	21,480	6,744	26,620
<i>Day Skiers from Outside Whistler - 20 to 25% of all skiers</i>					<i>7,099 to 9,933</i>	
<i>Weekend & Destination Skiers on First Day of Trip - 5% to 7% of all skiers</i>					<i>1,775 to 2,740</i>	
Total Skiers					35,493 to 39,293	

Skier Parking

Due to the large number of day skiers and skiers originating from accommodation beyond skier walking distance of a valley staging lift, skier parking

will continue to play an important role in ensuring an adequate supply of skiers to Whistler and Blackcomb Mountains. The location of the parking lots at buildout are illustrated in Figure 17 Valley Staging Lifts and Parking at Buildout and summarized in Table VI.2. Whistler Blackcomb currently controls and operates skier parking facilities at Creekside and on the Blackcomb Benchlands in Lots 6, 7 and 8. The Village Day Lots are owned by the RMOW and managed by Whistler Blackcomb on a year round basis. The plan also indicates new parking areas at Cheakamus, the South Base, Nordic and a reconfiguration of parking on the Blackcomb Benchlands.

The Creekside parkade contains 1,268 stalls for skiers, 6 charter bus stalls, drop-off areas for Whistler Kids and 164 stalls allocated as parking for the commercial businesses. The PEAK 2 PEAK gondola makes the Creekside parkade an attractive choice for day skiers arriving from south of Whistler. By uploading here, day skiers and skiers from accommodation south of Creekside avoid the most congested section of Highway #99 between Creekside and the Village. After the Olympics, a 125 stall parking lot (P11) was created by converting the land used for the finish and spectator area of the Alpine Skiing Venue on the timing flats above Whistler Creekside to parking. This lot is accessible from Nordic Drive and would be most convenient for skiers that originate from accommodation in the Nordic neighbourhood since they would not need to use the highway to get to parking. Skiers parking in this lot would need to have their own equipment and would ski down to Creekside to access the mountain. Use of the lot will be restricted to skiers originating within Nordic to avoid attracting external traffic to the neighbourhood.

There are approximately 1,500 existing parking stalls in the 3 existing lots (P6, P7 and P8) and along the road in the Blackcomb Benchlands near Base II. Whistler Blackcomb has a requirement to continue to provide 1,500 parking stalls for skiers on Blackcomb as part of the Blackcomb Land Use Contract between the Province of British Columbia, the ski area and the RMOW. The lots at Base II will need to be reconfigured to allow construction of a new daylodge to support the Base II Learning Centre proposed in Phase 9 and a new administration building. A proposed reconfiguration of the Base II parking lots is illustrated in Figure 18 and described in more detail in Section VI.3. The estimated parking capacity for Lot 6 assumes that the area designated as a cul-de-sac in front of the existing Base II daylodge will continue to be utilized for parking. The exact location of these parking stalls will be determined during detailed design of the proposed recreational facilities and administration space planned for Base II. Provision of the 1,500 stalls will require the new Lot 9 and may require a parking structure on Lot 7.

The RMOW acquired the Village Day Skier Lots 1 to 5 from the Province of British Columbia, prior to the 2010 Winter Olympics. The purchase agreement with the Province requires that the primary use of these lots is day skier parking for the

Whistler Blackcomb ski area. Whistler Blackcomb has the responsibility for management of the lots, including snow clearing and directing how the vehicles are parked. Lots 1 to 4 were landscaped and paved in 2009 for use as the Transportation Centre during the 2010 Olympic Winter Games. Lot 5 may also be paved in the future. In 2010, the RMOW introduced pay parking in Lots 1 to 3 as part of its overall Comprehensive Transportation Strategy. Lots 4 and 5 are intended to remain as free parking for the foreseeable future. With all 5 lots paved, the Village lots would have a stated capacity of 2,079 stalls. On peak days when parking attendants are used to direct where people park and some of the circulation space is reduced, the total capacity can be increased to about 2,200 stalls.

Whistler Blackcomb has requested permission to use Crown Land on the south side of Cheakamus Road near the intersection with Highway #99 to construct a satellite park and ride lot for day skiers at the entrance to the resort, as shown on Figure 18. Most of this lot was cleared and graded for parking during the 2010 Olympic Games. This lot has an approximate capacity of 450 cars. Skiers parking in this lot will have to be transported by bus to Whistler Creekside until the Cheakamus-South Base Gondola (Lift X) and the South Base Gondola (Lift Y) are installed in Phase 17. Also proposed in Phase 17 is a new South Base for Whistler Mountain. This base is located at the 1,010 metre elevation on a bench above the new Cheakamus Crossing neighbourhood. There is sufficient land at the South Base to provide accommodation, parking and skier services. For the purposes of this report, we have assumed parking for 2,000 cars will be constructed at the South Base, providing a total of 2,450 new day skier stalls at the south end of Whistler.

The capacity of the skier parking lots described above to provide skiers is estimated in Table VI.2. We have assumed that the average auto occupancy of cars in the pay parking lots will be higher than the free lots since instituting pay parking tends to increase the average vehicle occupancy rates. Pay parking may also have the effect of reducing the number of non-skiers using the skier parking lots since there is a large supply of underutilized commercial pay parking under many of the village buildings that is more conveniently located for shopping than the skier lots. For the purpose of this report, we have not assumed any changes in the proportion of skiers to other users of these lots. Given these assumptions, the designated skier parking lots can supply approximately 18,760 skiers on peak days. Therefore the proposed day skier parking supply is adequate to meet the peak day parking demands at buildout.

**TABLE VI.2
WHISTLER BLACKCOMB
SKIERS FROM PARKING
BUILDOUT**

	Area (ha.)	Number of Stalls	Average People per Car	Percent Skier Cars	Skiers from Parking
<i>P12 Cheakamus Park n' Ride</i>	<i>1.37</i>	<i>450</i>	<i>2.5</i>	<i>100%</i>	<i>1,125</i>
<i>P13 - Whistler South Base</i>	<i>6.06</i>	<i>2,000</i>	<i>2.5</i>	<i>100%</i>	<i>5,000</i>
Creekside					
P10 - Creekside Parkade		1,268	2.5	98%	3,107
P10 - Creekside Charter Bus		6	40.0	100%	240
<i>P11 - Timing Flats Lot</i>	<i>0.57</i>	<i>125</i>	<i>2.5</i>	<i>100%</i>	<i>313</i>
Sub-total Creekside		1,399			3,660
Village Day Skier Lots					
P1 - Lot 1	0.73	213	3.2	80%	545
P2 - Lot 2	0.86	257	3.2	80%	658
P3 - Lot 3	1.34	387	3.2	92%	1,139
P4 - Lot 4	2.25	742	2.5	90%	1,670
P5 - Lot 5	1.06	480	2.5	90%	1,080
Infill during peak periods		121	2.5	90%	272
Sub-total Village	6.24	2,200			5,364
Blackcomb Base II					
P6 - Lot 6	1.53	504	2.5	95%	1,198
P7 - Lot 7	1.44	475	2.5	98%	1,164
P8 - Lot 8	1.45	439	2.5	95%	1,043
<i>P9 - Lot 9</i>	<i>0.25</i>	<i>82</i>	<i>2.5</i>	<i>100%</i>	<i>205</i>
Sub-total Blackcomb	4.668	1,500			3,610
Total Skiers from Parking		7,549			18,759

NOTES:

1. *New parking lots are shown in italics.*
2. *Occupancy rate of 3.2 people per car assumes pay parking.*
3. *Occupancy rate of 2.5 people per car assumes free parking.*

Timing of Parking Lot Improvements

Whistler Blackcomb will continue to monitor the existing day skier parking supply and keep track of the number of occasions when the parking capacity is exceeded. There are opportunities to obtain higher skier yields from the existing parking supply by fine tuning pay parking strategies to achieve higher vehicle occupancy and skier participation rates. The future paving of Village Lot 5 may be part of this strategy. The satellite lots at the south end of Whistler would not be

constructed before these measures were explored. The provision of additional parking will be considered in relation to the installation of new out of valley staging lift capacity to ensure that the lift staging capacity at each location balances with the supply of skiers from accommodation, parking and transit and private vehicle drop-off during periods of peak visitation.

Whistler Blackcomb expects to start using the Timing Flats lot for overflow parking once the Creekside parkade is filling to capacity 16 days per season. Currently the Creekside parkade fills 3 to 5 days per season. Since skiers from the Cheakamus lot will initially be bused to Creekside, this lot would likely be brought on stream either when a second lift is built at Creekside or annual skier visits exceed 2.4 million skiers. Due to the requirement for busing, it would be prudent to only allow parking at the Cheakamus lot on weekends and holidays when large crowds are anticipated. The South Base parking areas will only be constructed when the South Base staging area, access chairlift (Lift Y) and beginner facilities are required.

Skiers dropped off by Transit and Other Vehicles

In addition to the skiers from parking lots and skiers from accommodation within walking distance of the lifts, skiers also arrive at the valley staging lifts by public transit, hotel shuttle and private vehicle drop-off. Data collected during the Lift Base Surveys carried out during the 1997 Whistler CTS suggested that between 5 and 20 percent of the people arriving at the lifts were dropped off. This component was highest at the Whistler Village lifts where there is a convenient bus and private vehicle drop-off, and lowest at Base II which requires a 10 minute drive up a winding road to reach. Since 1997, transit ridership in Whistler has increased. New hotels like the Four Seasons provide shuttle drop-off as part of their guest service. The redevelopment of Creekside included dedicated bus routes and bays for Whistler Transit and intercity buses, as well as areas for private vehicle drop-off. For the purpose of estimating the base area staging capacity, we have assumed 10 percent of all skiers arriving at the Cheakamus-South Base gondola and the Creekside base and 20 percent of the skiers staging from the village are from transit or private vehicle drop-off.

Base Area Staging Capacity

Given the assumptions outlined above, the Whistler Blackcomb base area staging capacity on a peak day at buildout is approximately 37,500 skiers which is just above the middle of the range of forecasted peak day skier visits at build out. Additional parking, a higher average auto occupancy or a greater use of public transit could all increase the theoretical base area staging capacity. Table VI.3 summarizes the base area staging capacity at buildout. We have assumed that all the skiers from

the Cheakamus Park n Ride lot would take the access gondola to South Base and stage from the South Base. This lift would also appeal to people living in the new Cheakamus Crossing neighbourhood. Skiers from the Central Village Zone include those skiers staging from Base II, the Blackcomb Base and Whistler Village. As mentioned previously, skiers may park at Base II and ski down to stage up Whistler Mountain via the Village Gondola or the Fitzsimmons Express. Conversely, skiers headed to Blackcomb might decide to park at Creekside and cross to Blackcomb via the PEAK 2 PEAK Gondola, therefore this table is showing the overall staging capacity of Whistler and Blackcomb Mountains combined.

**TABLE VI.3
WHISTLER BLACKCOMB
BASE AREA STAGING CAPACITY
BUILDOUT**

	Skiers from Accomm. in Skier Walking Distance	Skiers From Parking	Skiers from Cheakamus Gondola	Skiers from Other Trans- portation	Total Base Area Staging Capacity
Cheakamus Crossing	67	1,125		119	1,311
South Base		5,000	1,311		6,311
Creekside	2,110	3,660		641	6,411
Central Village Zone	10,830	8,972		4,951	24,753
Total	13,007	18,757	1,311	5,711	37,474

.2 Valley Staging Lift Requirements

The purpose of this section is to provide an understanding of the existing and proposed base area staging lifts which are envisioned to support the Blackcomb Mountain ski operation. Throughout the Whistler valley, there are currently four skier staging areas; Whistler Creekside taking skiers to the south side of Whistler Mountain, the Village with lifts to Whistler and Blackcomb Mountains, the Blackcomb Benchlands/Upper Village with the Wizard Express taking skiers up Blackcomb and Base II on Blackcomb where skiers can take the second section of the Excalibur Gondola up Blackcomb or ski down to Whistler Village to go up Whistler Mountain.

The existing capacity of the valley staging lifts (2013/14 season) over a two hour staging period is 21,700 skiers, as outlined in Table V1.4. This is adequate to meet the average of the top 15 busiest days over the past ten seasons. On the existing peak days in the 27,000 skier range, the staging period extends to 2.5 hours. To stage

the additional skiers anticipated at buildout of the resort, additional staging capacity will be required. Since Blackcomb Mountain has almost reached its limits for ski trail expansion, most of the future expansion of skier terrain at Whistler Blackcomb will take place on Whistler Mountain. Therefore, most of the increase in valley staging lifts should take skiers to Whistler Mountain, requiring additional staging lifts on Whistler Mountain.

**TABLE VI.4
WHISTLER BLACKCOMB
EXISTING VALLEY STAGING LIFT CAPACITIES**

	Effective Lift Capacity (pph)	Effective Staging Capacity	
		2 Hours	2.5 Hours
Creekside Gondola	1,992	3,984	4,980
Whistler Village Gondola	2,244	4,488	5,610
Fitzsimmons Express	1,758	3,515	4,394
Sub-total Whistler Mtn.	5,994	11,987	14,984
Excalibur Gondola	2,340	4,680	5,850
Wizard Express	2,518	5,035	6,294
Sub-total Blackcomb Mtn.	4,858	9,715	12,144
Total Whistler Valley	10,851	21,702	27,128

Increased staging capacity for Whistler Mountain is planned with the Lift L (Orange) and Lift W (Big Timber) gondolas. The Cheakamus to South Base gondola (Lift X) and the South Base detachable chairlift (Lift Y) will provide a new staging route up Whistler Mountain from the new parking lot on Cheakamus Road. This staging route could be very attractive for day skiers arriving from south of Whistler and for residents of Cheakamus Crossing. Additional staging capacity up Whistler Mountain from the village, if needed, can be met by capacity increases to the Village Gondola and Fitzsimmons Express.

For Blackcomb Mountain, Lift 19, a detachable quadruple chair will provide additional staging from Base II to the bottom of the new Catskiner Express. This lift will be equipped with bubbles similar to the Wizard and Fitzsimmons lifts to provide protection from rain at the lower elevations. The proposed upgrade to the Magic Chair will provide additional capacity between the Blackcomb Base and Base II, so that some skiers may choose to stage via the upgraded Magic lift to the proposed Lift 19 if there are long lines at the Wizard Express. A potential access/egress lift from the north end of the Benchlands behind the Four Seasons is also proposed. This lift would be a low capacity fixed grip lift intended for use by people staying in the properties in its immediate vicinity.

Future staging lift capacities if all of the new staging lifts are installed are summarized in Table VI.5. While it will not be necessary to build all of these lifts to their maximum capacities, the option to add any of these staging routes should be preserved so that any increases in out of the valley staging capacity can be located where it best ties in with the valley transportation systems.

**TABLE VI.5
WHISTLER BLACKCOMB
FUTURE VALLEY STAGING LIFT CAPACITIES**

	Effective Lift Capacity (pph)	Effective Staging Capacity	
		2 Hours	2.5 Hours
South Base Gondola	2,720	5,440	6,800
Big Timber Gondola	2,280	4,560	5,700
Orange Gondola	1,980	3,960	4,950
Creekside Gondola	1,992	3,984	4,980
Whistler Village Gondola	2,660	5,320	6,650
Fitzsimmons Express	2,518	5,035	6,294
Sub-total Whistler Mtn.	14,150	28,299	35,374
Excalibur Gondola	2,340	4,680	5,850
Base II - Catskiner Express	2,385	4,770	5,963
Wizard Express	2,518	5,035	6,294
Sub-total Blackcomb Mtn.	7,243	14,485	18,106
Total Whistler Valley	21,392	42,784	53,480

.3 Blackcomb Base Area Concept

The Blackcomb Mountain Master Plan accommodates an ultimate mountain carrying capacity of 19,420 skiers per day. The base area facilities needed to support this are illustrated in Figure 18, Blackcomb Overall Base Concept. At the Blackcomb base, the Blackcomb daylodge and the existing Whistler Kids/Administration are attractive sites for redevelopment to provide additional ski-in/ski-out tourist accommodation. If development were to go ahead, the new accommodation buildings would need to provide the skier service space for those skiers staging out of the Blackcomb base and the commercial facilities (food service and retail) for skiers skiing on the lower mountain. These services would be provided on the lower floors (ground and underground) of the new buildings. However, the existing administration space and Whistler Kids' food services would not necessarily need to remain in this expensive valley location. The Whistler Kids' food service could be relocated to the new daylodge planned for the Base II Learning

Centre and the administration facility could be provided in a building located near the existing finance trailers. The combi lift (gondola + chairs) scheduled to replace the Magic Chair would provide easy access between the two bases for skiers and staff.

At Base II, the new daylodge to support the Learning Centre is proposed to be located at the edge of Lot 7 as shown in Figure 18. From this location skiers can ski down to the Excalibur mid station, skate across to the base of the new Base II-Catskinner Quad or skate across to ski down to the Blackcomb base and the Wizard Express. A footbridge over the ski run will allow pedestrians to travel between the Excalibur mid station and the new daylodge without interrupting skiers headed down the ski-out to Whistler Village. Since the daylodge will encroach on the existing parking area in Lot 7, slight expansions to all three parking lots at Base II and a new Lot 9 are planned in order to provide the required 1,500 stalls within the lots leaving roadside parking for overflow situations.

There are 3 potential locations shown for a new administration building. The administration does not need to be directly on the ski run and can be squeezed into the area between the parking lots and the Whistler Sliding Centre. An additional employee housing building is proposed as an infill to the existing employee housing site. This building could house between 150 and 175 employees and there are bed units allocated for it in the RMOW bed unit inventory.

Parking Lot 6 has been identified as a potential development site for ski-in/ski-out townhouses similar to those found elsewhere on Glacier Drive. If this lot were to be developed, the skier parking would be replaced by building a parking structure on Lot 7.

.4 Bed Unit Allocations

Blackcomb Mountain Ski Area was developed under the B.C. Ski Area Policy. Blackcomb Mountain Skiing Enterprises had a Development Agreement with the Province of British Columbia for the right to purchase Crown Land to build accommodation to support the ski area in exchange for the provision of additional recreational development in the form of upgrading and expansion of the ski area. Development rights were to be provided in the form of bed units (overnight accommodation for one person). The number of bed units to be allocated for expansion was 0.85 bed units per unit of SAOT (Skiers At One Time) as determined by the formula below:

$$\text{SAOT} = \frac{\text{Lift Supplied VTM} / \text{Day} \times \text{Loading Efficiency}}{\text{VTM Demand} / \text{Skier} / \text{Day}}$$

$$\begin{aligned} \text{Lift Supplied VTM/Day} &= \text{Total VTM/hr.} \times 7.0 \text{ hrs/day} \\ &= \text{Sum (Vert. Drop} \times \text{Hourly Capacity)} \times 7.0 \text{ hrs/day} \\ \text{Loading Efficiency} &= 0.9 \\ \text{VTM Demand/Skier/Day} &= 3,048 \text{ Vertical Metres (10,000 vertical feet)} \end{aligned}$$

The 2009 revision to Chapter II: Mountain Resorts of the Province's All Season Resort Guidelines provided a revised Bed Unit Calculation Model for Regional and Destination Mountain Resorts.

$$\text{Bed Unit Eligibility} = \text{Associated Percentage} \times \text{Balanced Resort Capacity (BRC)}$$

For most mountain resorts where alpine skiing is the primary draw the BRC will be the Skier Carrying Capacity of the alpine ski operation. The calculation of SCC takes into account that some lifts are used as staging lifts, some lifts don't operate for the full day and the VTM Demand at each lift is a reflection of the skill class of the trails serviced by that lift.

The Associated Percentage is calculated by assigning point values based on the specific existing and proposed attributes of the Mountain Resort under consideration. The total points determine the appropriate ratio of bed units to BRC. Using the new points allocation system, the appropriate ratio of bed units to BRC for Blackcomb Mountain is 120% under existing conditions and 110% at buildout as determined in Table VI.6. The reason for the reduction is the overall increase in theoretical skier density resulting from the additional lifts in the Master Plan at buildout. These new lifts are required to provide the operator with some redundancy when weather conditions cause closure of portions of the mountain during the peak Christmas holiday period.

**TABLE VI.6
BLACKCOMB MOUNTAIN
DETERMINATION OF ASSOCIATED PERCENTAGE FOR BED UNIT CALCULATION MODEL**

	Existing	Buildout
II.7.1.1 SKI TERRAIN (Terrain Balance)	3	3
1 - Over 35% of area either advanced or novice		
2 - 25 to 35% of area either advanced or novice		
3 - Close to Ideal	X	X
4 - Ideal slope ratio		
II.7.1.2 AVERAGE SKIER DENSITY (SKI TRAIL AREA/SCC in Skiers per Hectare)	3	1
0 - > 40		
1 - 30 to 40		X
2 - 25 to 30		
3 - 20 to 25	X	
4 - 15 to 20		
II.7.1.3 ACCESSIBILITY (Travel time to skier marketplace)	3	3
0 - less than 1/2 hour		
1 - 1/2 to 1 hours		
2 - 1 to 1 1/2 hours		
3 - 1 1/2 to 2 hours	X	X
4 - 2 to 2 1/2 hours		
5 - 2 1/2 to 3 hours		
6 - greater than 3 hours		
II.7.1.4 ACCESS RELIABILITY	1	1
1 - Highly reliable (main highway with short mountain road)		
2 - Somewhat unreliable (snow and avalanche closures)		
II.7.1.5 POPULATION WITHIN 250 KILOMETERS	5	5
1 - 0 to 30,000		
2 - 30,000 to 100,000		
3 - 100,000 to 250,000		
4 - 250,000 to 500,000		
5 - 500,000+	X	X
II.7.1.6 UNIQUE QUALITIES OTHER THAN SKIING	3	3
1 - Nothing unusual.		
2 - Regional attraction		
3 - National attraction	X	X
II.7.1.7 ALL SEASON FACILITIES AT THE MOUNTAIN RESORT	4	4
0 - Limited (undeveloped with little potential)		
1 - Fair (some potential for recreation facilities)		
2 - Good (tennis courts, swimming pool, some mountain biking etc.)		
3 - Very Good (18 hole golf course, formalized mountain biking, tennis, swimming pool)		
4 - Excellent (several 18 hole golf courses, 6 or more tennis courts, swimming pool, arena, hiking, lift serviced mountain biking, spa, beaches, water park, etc.)	X	X
II.7.1.8 POTENTIAL LENGTH OF SEASON (based on natural & manmade snow)	4	4
0 - less than 100 days		
1 - 100 to 115 days		
2 - 115 to 130 days		
3 - 130 to 150 days		
4 - 150 days +	X	X
II.7.1.9 TYPE OF SNOW (Snow Conditions)	2	2
0 - Dry less than 25% of season		
1 - Dry 25 to 50% of season		
2 - Dry 50 to 75% of season	X	X
3 - Dry 75 to 90% of season		
4 - Dry over 90% of season		
II.7.1.10 WEATHER CONDITIONS (Hours of Bright Sunshine per Year) *	3	3
1 - Less than 1,000 hours		
2 - 1,000 to 1,500 hours		
3 - 1,500 to 2,000 hours * Based on data from Vancouver airport	X	X
4 - Greater than 2,000 hours		
II.7.1.11 EXPRESS LIFTS	2	2
0 - None		
1 - Less Than 50% of aerial lifts		
2 - Greater Than 50% of aerial lifts	X	X
II.7.1.12 NEED FOR EMPLOYEE/RESIDENT RESTRICTED HOUSING	3	3
0 - 0% of employee/resident restricted bed base provided for at resort		
1 - 25% of employee/resident restricted bed base provided for at resort		
2 - 50% of employee/resident restricted bed base provided for at resort		
3 - 75% of employee/resident restricted bed base provided for at resort	X	X
4 - 100% of employee/resident restricted bed base provided for at resort		
II.7.1.13 FIRST NATIONS ECONOMIC PARTICIPATION IN RESORT DEVELOPMENT	2	2
1 - Resort provides non-economic benefits to the First Nations - providing ski passes for First Nation band members - promotion of First Nation cultural activities - promotion of First Nation economic activities		
2 - First Nation businesses are given opportunity to bid on resort related contracts - Proponent provides First Nation employment opportunities - Proponent provides First Nation training opportunities	X	X
3 - Proponent provides joint venture economic opportunities with the First Nations - Aboriginal ecotourism is an integral part of the resort tourism activities - Proponent provides First Nations employment opportunities - Proponent provides First Nation training opportunities		
4 - First Nations equity partnership - Aboriginal ecotourism is an integral part of the resort tourism activities - Proponent provides First Nations employment opportunities - Proponent provides First Nation training opportunities		
TOTAL POINTS	38	36
ASSOCIATED PERCENTAGE OF BED UNITS TO BALANCED RESORT CAPACITY	120%	110%

The bed unit allocations for Blackcomb Mountain up to and including buildout, based on these two methods are summarized in Table VI.7. Under the formula contained in 1980 Guidelines and Background Information for the Interpretation of the B.C. Ski Area Policy, Blackcomb Mountain will have earned 34,334 Bed Units at buildout. If the formula in the 2009 revision to the All Season Resort Guidelines is applied, Blackcomb Mountain’s bed unit entitlement at buildout would be 20,372 Bed Units.

**TABLE VI.7
BLACKCOMB MOUNTAIN BED UNIT ALLOCATIONS
BASED ON BC PROVINCIAL GOVERNMENT POLICIES**

	1980 CASP Policy				2009 All Season Resort Guidelines	
	SAOT	SAOT Added	Bed Units Earned	Cumulative Bed Units	SCC	Bed Unit Eligibility
Existing	25,704	25,704	23,134	23,134	15,500	18,600
Buildout	34,334 *	8,629	7,766	30,900	18,520 *	20,372

* Excludes lifts in Blackcomb Glacier Park

Notwithstanding the above, the Resort Municipality of Whistler allocated Blackcomb Mountain a maximum of 7,500 Bed Units through the Blackcomb Land Use Contract. The 7,500 bed units assigned to Blackcomb Mountain by the RMOW, have subsequently been developed, sold or transferred to other developers.

VII. ENVIRONMENTAL

.1 Introduction

During the 1990's the management teams of Whistler and Blackcomb Mountains began to take a more active role in the environmental stewardship of the terrain within their Controlled Recreational Areas (CRAs). In the last ten years, they have received numerous awards for their environmental and energy conservation practices. Moving forward with the implementation of this Master Plan, WhistlerBlackcomb will continue to meet or exceed all Provincial Environmental Policies and work closely with the Ministry of the Environment and other agencies to conduct all environmental studies that may be required.

.2 Overview of Current Environmental Practices

Whistler Blackcomb has a sustainability policy and produces an annual sustainability report. One of five key result areas in the policy is Mountain ecosystems. Whistler Blackcomb is striving for continuous improvement in land stewardship through the following efforts:

- Adherence with the Forest Act administered by the Ministry of Tourism, Culture and the Arts.
- Developing and following Guidelines of Best Practices established by the Canada West Ski Area Association (CWSAA) and the National Ski Area Association (NSAA). Whistler Blackcomb is a member of both of these associations.
- Developing and following the Guidelines of Best Practices of the BC Tourism Sustainability Collective. The Collective represents the six leading BC tourism companies of which Whistler Blackcomb is a member.
- Early adopter and partner of the Resort Municipality of Whistler 2020 Sustainability Plan which includes guidelines for Natural Areas.
- Whistler Blackcomb also has its own internal land use planning and standard operating procedures for mountain construction that may exceed the standards of care in the guidelines referred to above.

.3 Sustainability Policy for Whistler Blackcomb

Whistler Blackcomb has developed its own Sustainability Policy which is provided in this section of the report. Whistler Blackcomb carries out its operations in accordance with this policy.

Who We Are

To be the #1 mountain resort in the world, we must be the most sustainable. We are passionate mountain enthusiasts who feel a deep connection with nature. Our purpose is to create the best mountain memories in the world. We provide the link between recreation and the natural mountain environment.

Our Commitment to Sustainability

We began our journey towards sustainability in 1993, before environmental planning was on the radar for most companies. We have moved far beyond compliance to become an industry leader, receiving 19 Provincial, North American and International awards. Just as we evolved from compliance to leadership, the time has come to evolve once more by incorporating sustainability planning into all aspects of our business. Our goal is to reduce our ecological impacts while increasing the positive impact we have on people and communities.

Key Result Areas

Climate change is the single largest threat to the environmental, social and economic health of our planet. The impacts of climate change affect the health of our mountain ecosystems. By reducing our contribution to climate change and protecting our ecosystems, we will be a model for action toward sustainability. We see Whistler Blackcomb as a small community within the larger community and will work to build positive and supportive relationships both locally and globally. We will focus our sustainability efforts through the following 5 Key Result Areas.

Energy

1. We will minimize our consumption of fuel and electricity through behavioral changes, retrofits, and the use of new technologies in our purchasing and construction activities.
2. We will seek out clean technologies, fuels and renewable energy sources to meet our energy demands.
3. We will reduce our carbon footprint and assist in guest and resort community reductions.

Mountain Ecosystems

4. We will continue to move beyond mitigation to take a restorative role with our mountain ecosystems.
5. By following a restorative model and improving our operating procedures and design, we will improve ecosystem vitality.
6. We will identify and protect special places.
7. We will respect and encourage the relationship between the experiences of our guests and the health of our mountain ecosystems.

Waste

8. Through responsible purchasing, reuse and recycling, we will strive for zero waste.
9. We will integrate new opportunities and innovative waste solutions into our current systems.
10. We will model nature as a waste-free system.

Awareness and Education

11. We will expand nature-based tourism experiences.
12. We will improve awareness and education on sustainability issues through internal and external communication.
13. We will inspire others to be more sustainable in their activities and lifestyles.
14. We will communicate our successes and failures and promote our programs for the purpose of learning.

Social

15. We will actively contribute to the health and welfare of our employees.
16. We will foster positive and supportive relationships with community stakeholders.
17. We will work to provide for those in need both locally and globally.

By structuring a strategic plan for improving our sustainability performance and involving members at all levels of our organization and our community, we will strive for continuous improvement in our operations. Never has there been a greater sense of urgency to act.

.4 Whistler Blackcomb Sustainability Report 2010

In 2010, Whistler Blackcomb prepared a report outlining their sustainability practices and the steps they have taken to develop an environmentally responsible operation. This report entitled “Whistler Blackcomb Sustainability Report 2010 – Our Olympic Year” also highlighted a few recent projects that will have a significant impact on the resorts ongoing operations. Whistler Blackcomb intends to prepare this type of report on an annual basis as they implement more energy saving measures and monitoring tools.

Fitzsimmons Creek Renewable Energy Project

The Fitzsimmons project is an Independent Power Project located in Fitzsimmons Creek within Blackcomb Mountain’s CRA. The Fitzsimmons IPP is a run of the river project with a 7.9 MW power generating station. The power station has an estimated yearly energy output of 33 Gigawatt Hours, enough energy to operate Whistler-Blackcomb or to power 3,000 homes on an annual basis. Originally envisioned by Whistler Blackcomb over eight years ago as an opportunity to offset its power consumption, the project was developed by a joint venture between Innergex Renewable Energy Inc. and Ledcor Construction. Although Whistler Blackcomb is not financially involved in the project, they were heavily involved in the planning process and it was their continued support that enabled the project to proceed despite the complication of it being located in close proximity to the bobsleigh/luge track that needed to be constructed for the Whistler Sliding Centre Venue.

The environmental impacts of the installation were minimal as over 70% of the project was built under the existing footprints of a mountain access road and a snowmaking intake pond. No new powerlines were required because the powerhouse was located within 300 m of the existing electrical grid. Water will flow from the power generating station into the Fitzsimmons snowmaking intake pond. Construction commenced in 2008 and the power plant began producing power in January 2010.



Fitzsimmons Creek IPP Powerhouse and Snowmaking Intake Pond

Energy Management

In 2009, Whistler Blackcomb installed 19 new power consumption meters to improve the management of power used by the ski area. They partnered with BC Hydro to carry out an Energy Management Assessment. Information gathered from the assessment was used to draft a Sustainable Energy Management Plan that identified 5 main priorities to reduce energy consumption in the following year. An Energy Manager facilitates these actions and reports progress to BC Hydro and the senior management team on a quarterly basis. To date as part of the Power Smart

Partner Program, Whistler Blackcomb has carried out retrofits that save more than 4,575,000 kwh of electricity per year, representing about 15% of their annual consumption.

Food Waste Composting

Whistler Blackcomb implemented food waste composting in all of its mountain restaurants for the 2008/2009 ski season. By partnering with Coca Cola and Seattle's Best Coffee, they replaced paper cups with reusable cups in all the facilities. They have ramped up the existing recycling program and increased the use of reusable dishes and cutlery. These changes have led to a diversion of over 800 tonnes of waste from the landfill and have resulted in cost savings of \$57,000 in waste disposal fees.

.5 Identification of Sensitive Areas Within the Controlled Recreation Area

Whistler Blackcomb is comprised of six defined watersheds with no special management designations. In 1997, in consultation with the Ministry of Forests and the Ministry of Environment, a comprehensive watershed assessment was completed of the Whistler Mountain and Blackcomb Mountain CRAs. This watershed assessment examined natural processes and evaluated the cumulative effects of forest practices on the stream systems draining the area. The results of this investigation indicate the sensitivity of the watersheds to development, provide guidance for any further development and as necessary, watershed restoration activities.

With respect to restoration, a program called Operation Green-up was initiated in 1999. One and a half million dollars was allocated to improving the ecological conditions of the watersheds within the Whistler and Blackcomb Mountain CRAs. The comprehensive watershed assessment was used to identify and prioritize the projects.

.6 Whistler Blackcomb – RMOW Cheakamus Community Forest & Protected Areas Network Memorandum of Understanding

In April 2009 the Resort Municipality of Whistler (RMOW) and the Squamish Nation and Lil'wat Nations signed a 25-year tenure license with the Province of British Columbia for the 30,260 hectares of forestland surrounding Whistler. Representatives from each of the partners sit on the Cheakamus Community Forest (CCF) Society Board, who oversee planning, public consultation and management of forest operations. The opportunity to participate in the community forest program

arose when the Ministry of Forests and Range announced that the timber harvest volume for the area around Whistler would become available for a new tenure, or license, holder. The CCF partners felt strongly that it would be more beneficial to the communities for the tenure to be held here rather than by a private timber harvesting company from elsewhere. The natural beauty of the area is a strong draw for tourism, and the CCF Society has those values at the top of mind when planning community forest operations.

The Cheakamus Community Forest overlaps land within the Controlled Recreational Areas (CRAs) of Whistler and Blackcomb Mountains. In a spirit of cooperation based on shared sustainability and ecological values, Whistler Blackcomb supports the CCF. In turn, the RMOW as a partner in the CCF supports Whistler Blackcomb's right to manage the land base within its CRA according to the Whistler Mountain Master Plan and the Blackcomb Mountain Master Plan under the jurisdiction of the Province of British Columbia. Accordingly Whistler Blackcomb and the RMOW have prepared a Memorandum of Understanding (MOU) to define the relationship between Whistler Blackcomb and the RMOW with respect to the CCF lands that are within the CRA's of the two mountains. The parties will cooperate in wildfire management across the land base, adaptively manage the land base for climate change impacts and will cooperate in ecosystem based management and planning for the land base. However, the RMOW agrees that the CRA planning and approval process remains under the jurisdiction of the Province of British Columbia.

The Protected Areas Network (“**PAN**”) Strategy is a land use policy of the RMOW designed to protect critical natural areas within the RMOW and their ecological connectivity to ensure that future development and land use are located on the most suitable lands and subject to ecologically responsible planning, design, construction and management. Whistler Blackcomb and the RMOW are preparing a Memorandum of Understand with respect to the applicability of the PAN strategy to land within the CRA's of Whistler and Blackcomb Mountains. In a spirit of cooperation based on shared sustainability and ecological values, Whistler Blackcomb supports the RMOW's PAN Strategy. The RMOW acknowledges that the PAN is non-binding with respect to land use development within the CRA because the CRA is provincial Crown land. However, Whistler Blackcomb will endeavour to incorporate PAN whenever possible in future projects within the CRA.

.7 Blackcomb Glacier Provincial Park – Special Use Permit

The Blackcomb Mountain CRA abuts Blackcomb Glacier Provincial Park. Blackcomb Mountain has a Special Use Permit to allow them to operate within a portion of the park. The terms of tenure for the Special Use Permit are aligned with the tenure for the Blackcomb Mountain Ski area.

.8 Overview of Archaeological Studies

In 1997, the Ministry of Forests (Squamish District) completed an archaeological overview assessment of the Whistler and Blackcomb Mountain Controlled Recreation Areas. Within the CRA, two areas were identified as having the potential of containing culturally modified trees and two other areas were identified as having the potential for evidence of previous habitation. These areas were assessed in greater detail and no evidence of either culturally modified trees or previous habitation was found. In 2000, the Xay Temixw - Squamish Nation Traditional Territory Forest and Wilderness Land use Study (2001) was completed and no indication of sensitive areas was found within either mountain's CRA. No artifacts or culturally modified trees have been found by Whistler Blackcomb personnel in over forty years of working within the Whistler and Blackcomb Mountain CRA's.