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I. INTRODUCTION

.1 Location and Regional Context

The proposed Eidfjord Resort is located in Sysendalen near the City of Eidfjord, Norway. Eidfjord is one of Norway's most frequently visited cruise ship harbours with 54 port calls between mid-April to mid-September with a total of about 82,000 passengers disembarking.

Eidfjord Cruise Ship Harbour– Photo from Eidfjordguide 2010

The proposed ski and summer resort site lies on the northern slopes of Hyloksa (1,174 m.), VetleAllgarden (1,160 m.) and Kistenuten (1,135 m.) and the southern slopes of Grytehorga (1,223 m.) mountains. The potential resort base lands are just 20 minutes drive from the Eidfjord harbour. The road passes one of Norway's most visited attractions, the Vøringsfossen Waterfalls which has 750,000 tourist visits per year.

Figure 1 illustrates the Area Location of the proposed resort lands. Figure 2 illustrates the Regional Context and Figure 3 illustrates the 2,850-hectare study area.

.2 Historical Perspective

Mr. Ivan Løvheim is the leader of a group of land owners, investors and lodge/cabin owners who have bold visions to build one of Norway's best "alpine and mountain activity parks". Mr. Løvheim's group is also supported by the Eidfjord Utvikling (a municipally owned organization in charge of the municipal industrial and measures works) and the Kommune of Eidfjord who have in fact requested a significant expansion of the study area from the original 350 hectares up to a very large area covering 2,850 hectares of terrain to assist in preparing a long range regional plan and to be sure that all potential sites have been studied with the same technical standards.

.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 1.1, 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

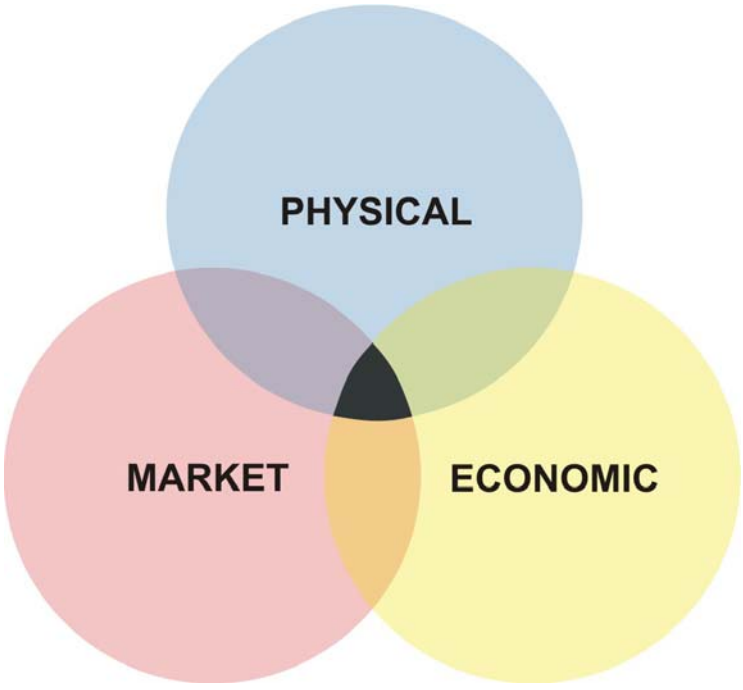


PLATE 1.1

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 primary and secondary 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 Goals and Objectives

The Technical Assessment report was the first step in the long term master planning for the design of a four-season, year round mountain resort with facilities on the mountains and in the valley areas. A Master Plan is critical in order to have a clear view of the complete project at build-out, so that facilities can be balanced in capacity, and capital can be effectively invested over the life of the project.

The objectives of the Eidfjord Resort Conceptual Master Plan are listed below:

- Create a high quality ski facility that will be an amenity to a nationally renowned “Four Season Tourist Resort”, offering a wide variety of unparalleled recreational activities and amenities in a natural environment.
- Evaluate opportunities to provide a diverse and well rounded set of recreational amenities on the mountain to attract a broad range of clientele, including the local and regional population, as well as possible destination visitors.

- Provide a pollution free sanctuary where people can enjoy the beauty of the mountain environment.
- Balance the supply of accommodation with the natural carrying capacity of the recreational amenities, considering the anticipated number of visitors to the resort. Provide a variety of accommodation types to avoid over reliance on one market segment.
- Create a resort development model which contributes to the local economy and provides local and regional employment opportunities.
- Create a unique, recreational resort environment which minimizes pedestrian and vehicular conflicts.
- Optimize the use and operational efficiency of the proposed ski facilities plant and area layout. Balance mountain capacity with guest services and parking and optimize the use of the mountain infrastructure in all seasons.
- Provide base staging areas in balance with mountain access requirements.
- The development will respect the natural cultural and ecological value of the site.
- Provide a balance of skiable terrain which caters to all skier skill levels.
- Develop a dedicated children's beginner area with terrain suitable for teaching, and other winter activities such as snow play and snow tubing for all family members to enjoy.

.5 Glossary

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

1. **Skier** – Refers to all snow sliders, including skiers, snowboarders, snow bladers, etc.

2. **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.

3. **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.

4. **VTM/Hour (000) - (Vertical Transport Meters Per Hour) -** The number of people lifted 1,000 vertical meters 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 the VTM for all lifts.

5. **VTM Demand/Skier/Day –** The amount of vertical skied (demanded) each day by a skier.

6. **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.

7. **Loading Efficiency** – The ratio between the manufacturer's rated hourly capacity and the actual delivered hourly capacity expressed as a percentage. The ability of a lift to reach the manufacturer's rated hourly capacity is reduced due to mis-loads and mis-unloads which result in lift stoppages or slow downs and, therefore, a reduced actual capacity.

8. **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.

9. **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. TECHNICAL ASSESSMENT

.1 Introduction

The Technical Assessment stage includes the identification, analysis, and mapping of all on-site and off-site factors which may affect the development potential of the ski resort area. The inventory data includes: the land status, climatic, biophysical, and physiographic characteristics of the study area. The mapped study area encompasses a total of 2,874 hectares, as illustrated on Figure 3. 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 characteristics, it is appropriate to familiarize the reader with the basic requirements of ski area and recreational development. Ski area development is generally considered to be a non-consumptive resource use of the land. The development of ski lifts and pistes requires the use of approximately 25-50 percent of the land area in small, heavily developed ski areas, but well under 15% of larger ski areas. Ski lift right-of-ways are generally 12 to 15 meters in width, while ski pistes vary between 30 and 60 meters wide. Subsequent to rough grading practices selected for each site, the pistes require fine grooming and seeding to establish a vegetative ground cover. This ground cover prevents erosion and helps to minimize hazards and damage to the skiers' and snowboarders' equipment during low snowpack periods and possible damage to the area's snow grooming fleet. Ski lifts are generally aerial cable systems with steel towers and concrete foundations every 45 to 75 meters. The foundation footprint is generally less than 4 square meters.

Ski base area development generally includes a paved access road, parking lots, buildings for accommodation and skier services, a day lodge and a maintenance center. Additionally, appropriate power and water supply, and sewage treatment and disposal facilities are required to support the base area development.

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. The purpose of the Technical Assessment is to blend the information and/or constraints that are identified with acceptable ski industry planning and design parameters.

Topographic Map Setup

The first step in the technical analysis of the terrain within the study area is to obtain mapping suitable for computer analysis. The Kommune of Eidfjord provided Ecosign with mapping in AutoCAD format with 1-meter contours for the elevations below about 800 meters and 5-meter contours above 800 meters for full coverage of the entire study area, encompassing approximately 2,874 hectares. Due to this large study area, Ecosign has assigned 4 distinct zones to help delineate the specific characteristics of each zone. These 4 zones are the North, Southeast, Southwest and West zones.

.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 ranges.

Aspect

The slope gradient and aspect of terrain in combination are extremely important in the intensity of solar radiation which it receives. We have analyzed and documented the aspect of all terrain into one of eight regimes, as illustrated on Figure 4. It is generally best for ski pistes to be located on slopes with northerly and easterly aspects. In Norway, however, southern facing slopes may retain snow reasonably well due to the northern latitude (greater than 60 degrees) of the study area. The very large study area provides terrain which faces all different aspects. The North zone has predominantly south and southeast facing slopes. The Southeast zone has slopes mainly facing north, northeast and east. The Southwest zone faces predominantly northwest and north, while the West zone has aspects ranging from southeast to pure north.

Elevation

Elevation is an important factor in the success of a ski resort. The potential vertical drop available for lift serviced skiing also plays an important role in site suitability, since it determines the length of the ski pistes and also the vertical transport meters (VTM) that can be supplied to the skiing and snowboarding public. Essentially, the more vertical the better, as many skiers use vertical rise as a basic measure of ski area desirability. Additionally, the elevation ranges within the study area are important for snow retention and length of the ski season.

Elevations in the study area range from 1,222 meters at the Grytehorga peak in the North zone of the study area, down to 700 meters at the valley floor in Høl. We have prepared an analysis of elevations within the Eidfjord study area which shows elevations in 50-meter increments ranging from 600 meters to over 1,000 meters, as illustrated on Figure 5.

.3 Climate/Solar Analysis

Climate, including temperature, humidity, precipitation, wind, and solar radiation all play an extremely important part in the feasibility of a ski resort. Adequate snowpack is essential for successful ski area operations. In areas where the natural snowpack is not adequate, machine-made snow can be produced to compensate for the shortfall, given favorable cold temperatures.

The climate for the Eidfjord region is classified as a temperate oceanic climate which is characterized by mild winters and cool summers.

Solar Analysis

Most skiers and snowboarders are highly aware of the sun's influence on snow quality. While skiers/snowboarders 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, northern exposures at noon and western exposures in the afternoon.

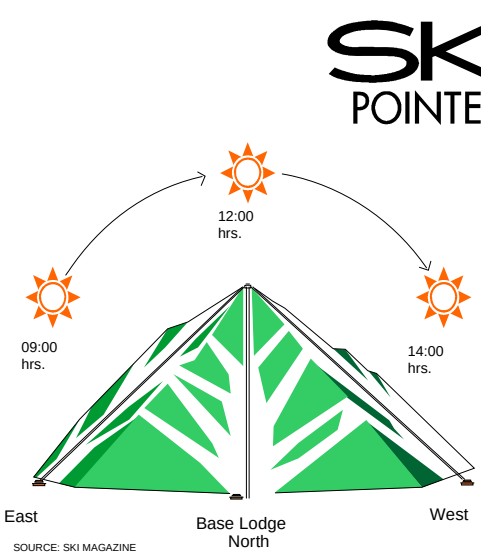


PLATE II.1

As a general rule, southern 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 pistes should naturally be located where the snowpack remains for the longest period of time.

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, slopes and the base area skier service facilities. Eidfjord's relatively far northern latitude of 60º means that during the winter months little solar energy penetrates the site. A detailed solar analysis has been prepared to determine areas of topographic shading during a period of December 1st 2013 to March 31st 2013 between 03:00 hours and 22:00 hours.

Solar Radiation Analysis

The amount of solar radiation impacting the surface varies strongly with elevation, slope, aspect and solar shading from surrounding topographic features. As mentioned previously, topographic shading decreases the temperature near the ground which causes the snow to last longer, and the angle of which the sun strikes the ground also affects the rate of snow melt. Even small changes in aspect can result in substantial differences in surface warming.

With this in mind, we have calculated the cumulative quantity of the potential incoming solar radiation on a monthly basis for the winter ski season from December 1, to March 31. Time of year, sun position (azimuth and altitude), shadows cast by surrounding terrain, terrain slope and terrain aspect are all analyzed to simulate and calculate direct, diffuse, and reflected radiation[1]. The result is an accurate representation of potential energy income in kilowatt-hours per square meter. The calculation has been repeated every 15 minutes from sunrise to sunset for each day in a grid system over the entire study area. Figure 6 illustrates, with a warm to cool color spectrum, the warm and cool zones within the study area for the December, January, February and March, as well as a composite of the four months to illustrate the warm and cool zones within the study area.

The Potential Incoming Solar Radiation figure clearly shows how the proposed Eidfjord Resort (located at 60°23' North Latitude) absorbs a low amount of energy on most aspects during the winter season, and a moderate level on the south facing slopes located in the North Zone.

.4 Ski Area Planning Parameters

Ski terrain and pistes are classified in concert with the International Ski Piste Standards (Table II.1), as well as the seven skier skill classification levels exhibited in Table II.2.

TABLE II.1
INTERNATIONAL SKI PISTE STANDARDS

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

TABLE II.2
SKIER SKILL CLASSIFICATION OF SLOPE GRADIENTS

	Skill Classification	Acceptable Terrain Gradients
1	Beginner	8 - 15%
2	Novice	15 - 25%
3	Low Intermediate	25 - 35%
4	Intermediate	35 - 40%
5	High Intermediate	40 - 45%
6	Advanced	45 - 60%
7	Expert	60% +

[1]SOLEI, 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.

Ski pistes are classified via an evaluation of the following parameters: slope width, average gradient and the steepest 30-meter vertical pitch. Since the average slope gradient of a ski piste is generally much lower than the steepest 30-meter vertical pitch, pistes are usually classified to ensure that the steepest 30-meter vertical pitch falls within five percent of the acceptable terrain gradients listed in Table II.2. Furthermore, a gentle novice ski piste cannot suddenly turn into an advanced ski piste for obvious reasons. We have used the skill level classification system shown in Table II.2 to rate the terrain within the Eidfjord study area.

Skier/Snowboarder Densities

Ecosign has performed on-site research to determine comfortable and safe skier densities at ski areas in many parts of the world. The research consisted of performing on-site guest surveys while simultaneously taking aerial photos of the pistes by helicopter. One of the questions on the survey asks skiers for their subjective opinion of the crowding on the particular piste they just skied. Their opinions were then compared with the actual densities recorded in the photos. From these comparisons, 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 in planning ski areas in different parts of the world are listed in Table II.3 and shown graphically in Plate II.2. In areas such as Europe, Canada and the United States, skier densities are relatively low compared to the densities at ski areas in Japan or Australia, where skiers have been historically conditioned to higher densities. For example, in the 1990s, skier densities in Japan were generally three times the densities in North American destination resorts based on the rapid growth the popularity of skiing. More recently, since the growth in skiing in Japan has stabilized, the skier densities are more in line with the European densities.

Listed in Table II.3 are the “SAOT” (Skiers At One Time) densities and the “On-Slope” densities. The SAOT is based on the total number of skiers/snowboarders at the area, including those in lift queues, riding lifts, in restaurants and on the pistes. The “On-Slope” densities take into account only those skiers and snowboarders actually on the pistes at any given time.

As shown in Table II.3, acceptable skier/snowboarder 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 listed, 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.

TABLE II.3
WORLDWIDE COMPARISON OF SKI PISTE DENSITIES

Skill Classification	1 Beginner	2 Novice	3 Low Intermediate	4 Intermediate	5 High Intermediate	6 Advanced	7 Expert
Western N. America - Destination							
SAOT	50	50	40	40	30	15	20
On-Slope	20	20	15	15	12	7	10
Eastern N. America/European Destination							
SAOT	75	75	60	60	45	23	30
On-Slope	30	30	23	23	18	10	15
Australia, China & Japan							
SAOT	100	100	80	80	60	30	40
On-Slope	40	40	30	30	24	14	20
Japan pre- 1995							
SAOT	156	156	125	125	97	55	70
On-Slope	62	62	47	47	39	26	35
Farwell High Standard for Eastern N. America							
SAOT	250	150	125	86	50	37	37
On-Slope	110	66	55	37	22	16	16

Note; All of the above densities are in skiers per hectare.
SAOT is Skiers At One Time and densities include all skiers at the ski area including skiers in lift queues, on the lifts, in restaurants and skiers on the ski pistes.
On slope densities are approximate and include only those skiers on a piste at any given time.

WORLDWIDE SKIER DENSITIES

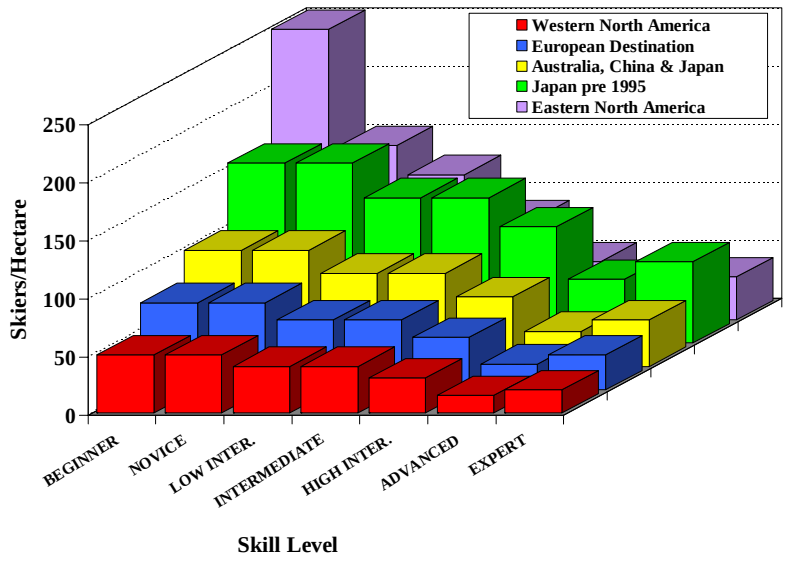


PLATE II.2

Based on our worldwide experience and the nature of the proposed development, Ecosign feels that the ideal density for the Eidfjord project is that typically utilized for European destinations, as exhibited in Table II.3. This density will result in a high quality ski experience that will allow sufficient room for skiers to progress their skills. This density will be used in subsequent sections to determine the potential terrain carrying capacity of the total site, as well as the capacity of the ski pistes proposed for the Eidfjord ski facility.

During the past several years, Ecosign has undertaken and reviewed substantial research dealing with skiing demand, skier skill class distribution and skier densities on a worldwide basis. This research and observation of the skiing/snowboarding population, suggests that the total worldwide market would conform to a bell curve distribution of skier skill levels. Plate II.3 illustrates the normal "Bell Shape" distribution used for planning purposes.

Some regions, such as Japan and Korea, where skiing and snowboarding has experienced high growth rates, the "Bell Shaped" curve is skewed towards the lower skill levels due to the high number of new participants entering the sport. On the other hand, regions with mature skiing populations, such as Europe and North America, have the curve skewed slightly toward the more advanced skill levels. For planning purposes, Ecosign believes that the normal distribution is appropriate at Eidfjord Resort for current conditions. The skier skill class distribution may shift over the long term as the Norwegian skier market further matures.

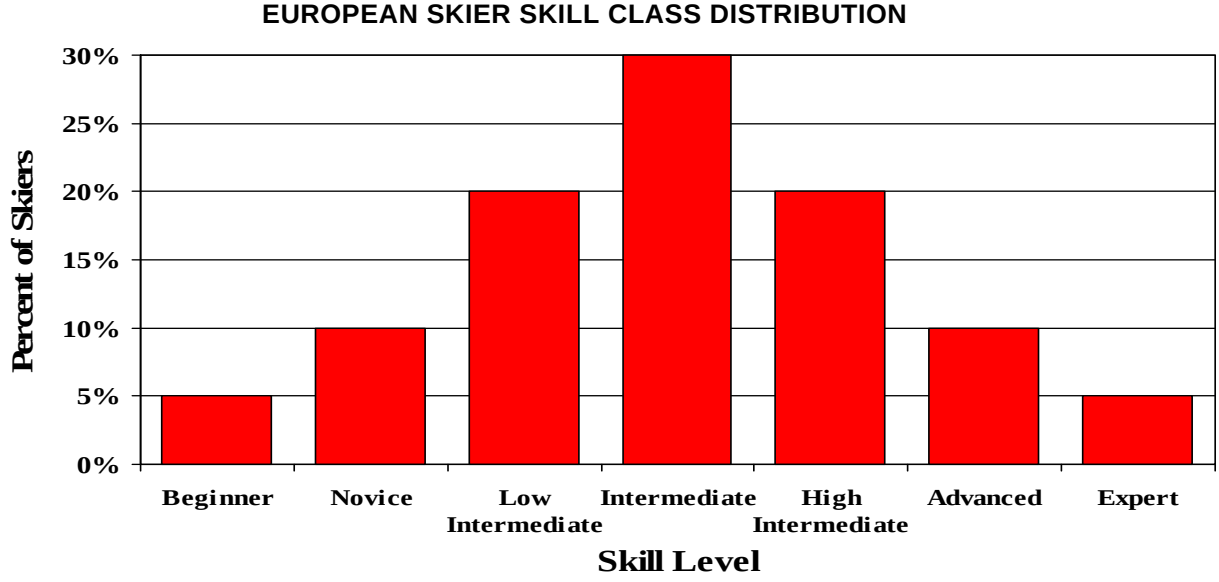


PLATE II.3

Skier Demand - Vertical Transport Meters

Each skier ability level places different demands upon an area's lift and piste system. Empirical observations have determined that each skier ability level will ski a relatively constant number of vertical meters per day. As the proficiency of the skier increases, the demand for vertical meters also increases. Table II.4 lists the skiing demand by skill classification.

TABLE II.4
SKIING DEMAND BY SKILL CLASSIFICATION

	Skier Demand VTM/Day		
Skill Classification	**Low**	**Average**	**High**
1 Beginner	610	705	940
2 Novice	1,370	1,595	2,120
3 Low Intermediate	1,830	2,125	2,825
4 Intermediate	2,440	2,830	3,770
5 High Intermediate	3,290	3,840	5,080
6 Advanced	3,840	4,460	5,935
7 Expert	5,485	6,370	8,475
Weighted Average	**2,582**	**3,001**	**3,988**

In Europe, Scandinavia, Canada and the United States, we use the industry high VTM demand to ensure a quality, uncrowded sliding experience for the better conditioned, more aggressive skiers. In urban markets and the emerging markets (Japan, Australia, China and Korea), we select the average levels of demand for use in planning. We believe that the Eidfjord Resort skier market falls into the high level of demand.

Summary of the Eidfjord Resort Area Planning Parameters

The planning parameters used for the analysis of the terrain (in this section of the report) and in the planning of the ski area (in later sections) for the Eidfjord Resort study area are listed in Table II.5.

TABLE II.5
EIDFJORD RESORT - PLANNING PARAMETERS

Skill Classification	Skill Mix	Acceptable Terrain Gradients	Skier Demand VTM / Day	Skier Densities Skiers per Ha. At Area	On Pistes
1 Beginner	5%	8 - 15%	940	75	30
2 Novice	10%	15 – 25%	2,120	75	30
3 Low Intermediate	20%	25 – 35%	2,825	60	23
4 Intermediate	30%	30 – 40%	3,770	60	23
5 High Intermediate	20%	35 – 45%	5,085	45	18
6 Advanced	10%	45 – 60%	5,935	22.5	10
7 Expert	5%	60% +	8,475	30	15

.5 Mountain Design Analysis

Accurate topographic mapping is a prerequisite for good mountain planning. During the technical assessment phase, the planning team utilized topographic mapping with 2-meter contours of the valley areas and 5-meter contour intervals of the mountain slopes.

Utilizing this topographic mapping, the most critical analysis map for the ski area design and evaluation process was prepared, as illustrated on Figure 7 (Mountain Slope / Terrain Capacity Analysis). This analysis map was utilized in the evaluation of the terrain and plays a critical role in identifying terrain suitable for further analysis. This map, in combination with the Aspect Analysis (Figure 4), the Elevations Analysis (Figure 5) and the Solar Radiation Analysis map (Figure 6) is utilized in the evaluation of the terrain suitable for potential lift and slope development, as well as the development of conceptual alternatives.

The Mountain Slope 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 skiing and snowboarding. The natural slope gradients were carefully measured and color-coded into the following five classifications related to skiing ability.

Slope Gradients	Color	Type of Skiing/Snowboarding
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	unskiable, safety zones

Slope Analysis Conclusions

The slope analysis reveals that the study area has a large variety of terrain suitable for the development of ski pistes consisting of good beginner, novice, intermediate and high intermediate terrain. There is less than ideal amounts of advanced and expert terrain, and what is available is concentrated on the south facing slopes at the west end of the North zone and the center of the West zone.

.6 Mountain Ski Terrain Capacity Analysis

We have analyzed the natural terrain within the Eidfjord Resort study area which exhibits characteristics suitable for skiing and snowboarding, to accurately establish the area's overall ski development potential. The Mountain Slope/Terrain Ski Capacity Analysis Map as shown on Figure 7 graphically illustrates terrain "pods" within the study area which possess potential for ski development. The pods were selected by consulting the Slope Analysis Maps 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 8 percent and less than 70 percent
- pods have primarily northern aspects with some moving into the east and southeast aspects; terrain with topography suitable for skiing but with southern aspects as less desirable due to potential snow quality and snowpack depth problems.

Within each ski terrain pod, the upper and lower points are joined to establish the total vertical rise, horizontal distance, straight line slope and average slope gradient. The total ski terrain pod area was then measured and input to our terrain capacity computer program. The final program input is a judgment which identifies the "primary" skier skill classification for each terrain pod. The program outputs are as follows:

AVAILABLE SKI TERRAIN – net developable terrain within the pod. It is assumed that pods will be able to support skiing on about 35 percent of the useable terrain within the pod, depending on topography, as well as the shape of the pod. In most regions around the world, pistes within the forest encompass between 20 and 40 percent of the pod area and much less than that over the whole ski area.

TOTAL SKIERS/SNOWBOARDERS – number of skiers possible in the pod within developable terrain at acceptable 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 Mountain Slope & Terrain Capacity Analysis Map and program printouts provide a reliable indication of the maximum development potential of each pod and the various zones of the study area and the lift capacity necessary to balance with the terrain.

The Eidfjord study area has a very large amount of skiable terrain with a total of 55 ski terrain pods. Figure 7 illustrates the terrain pods within the entire Eidfjord Resort study area which contain topography suitable for skiing/snowboarding.

Within the overall study area, there are 4 geographic zones identified as the North, Southeast, Southwest and West zones. The aspect and slope gradients of the terrain within study area are fairly conducive for ski area development with a wide variety of slopes facing all different aspects. A summary of the attributes of each zone is presented below.

North Zone - Grytehorga

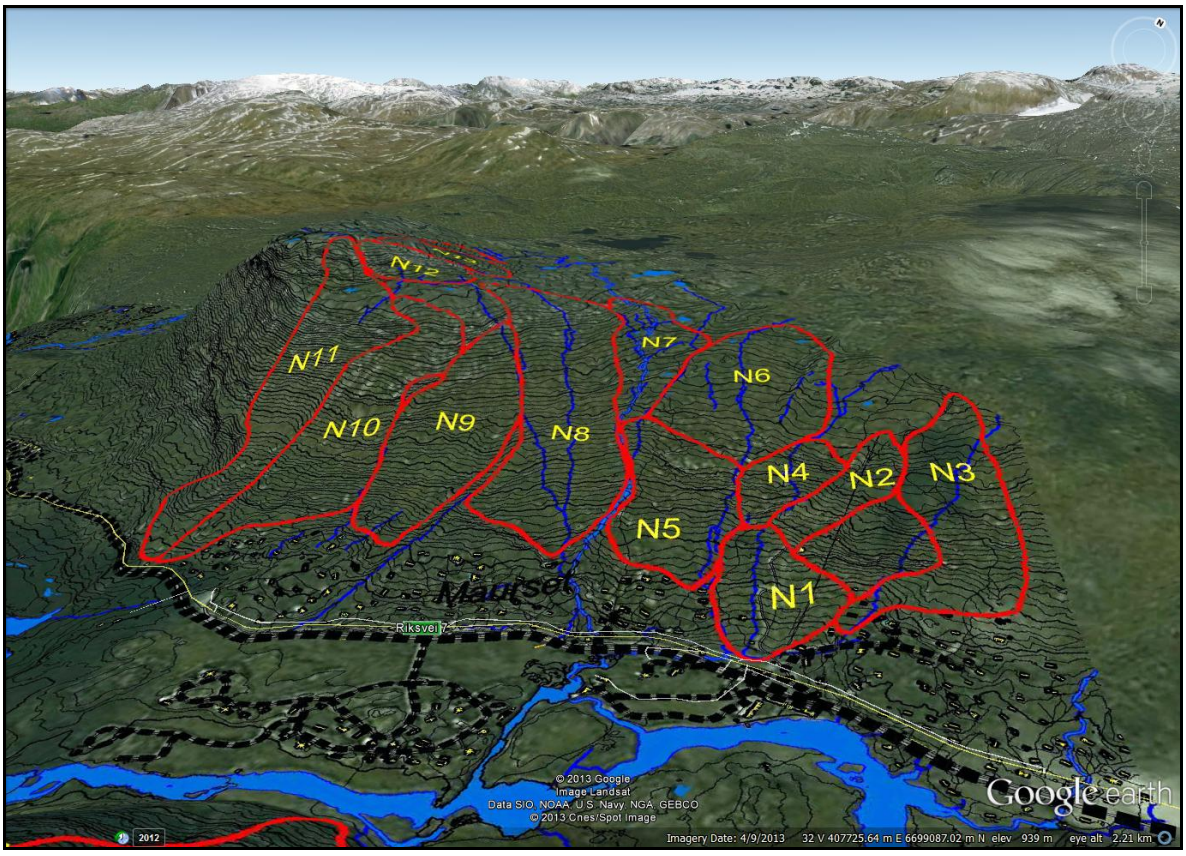
The North zone is located on the northern one- half of the study area and contains ski pods with primarily southerly aspects. The 14 pods within this zone which exhibit characteristics suitable for alpine ski resort development have a total area of 186.6 hectares. These pods range between 1,222 meters elevation near the Grytehorga Peak down to 778 meters in the valley at Maurset, for a skiable vertical of 444 meters.

Based on the assumption of 35 percent developable within each pod, these 14 pods would result in 65.3 net hectares of ski pistes that could accommodate approximately 3,130 skiers at one time, as listed in Table II.6. The 3,130 skiers would require lifts to be installed that could supply a total of 11,942 passengers per hour capacity. A total of 3,550 square meters of skier service facilities including ticket sales, retail shops, rental shops, public lockers, restaurants, washrooms, etc., would be required to service this number of skiers. Additionally, approximately 3.9 hectares of parking would be required. The total staging area which includes the flow area of the skier service buildings, circulation around each building equal to the floor area of the buildings and the parking requirements is approximately 4.6 hectares. This amount of generally level terrain should be within a comfortable (10 minutes) walk of the main access lift system. A very large cabin development (fjellandsby) lies on the lower slopes of the North zone, so it is a challenge to find suitable base area terrain to support full development of the North zone.

View of two Existing Area Ski Lifts. Children's lift on left and Main lift is on right.

TABLE II.6
NORTH ZONE SKI TERRAIN CAPACITY ANALYSIS

Terrain Pod	Top Elevation m.	Bottom Elevation m.	Total Vertical m.	Horizontal Distance m.	Slope Distance m.	Average Slope %	Skill Class	Skier Density/Ha.	VTM Demand/Day	Total Area Ha.	% Ski Terrain Available	Available Ski Terrain	**Total Skiers**	Demand VTM (000)	Lift Capacity.Hr.
NORTH ZONE	Grytehorga														
N1	866	778	88	382	392	23%	3	60	2,825	1.6	35%	0.5	**30**	13	153
N2	985	854	131	424	444	31%	5	45	5,085	4.8	35%	1.7	**80**	65	493
N3	1,016	798	218	810	839	27%	4	60	3,770	14.4	35%	5.0	**300**	180	824
N4	976	868	108	295	314	37%	6	23	5,935	4.4	35%	1.5	**30**	28	262
N5	966	823	143	552	570	26%	5	45	5,085	12.0	35%	4.2	**190**	153	1,072
N6	1,061	937	124	688	699	18%	3	60	2,825	23.1	35%	8.1	**480**	215	1,736
N7	1,096	963	133	637	651	21%	3	60	2,825	11.6	35%	4.1	**240**	108	809
N8	1,131	838	293	1,095	1,134	27%	4	60	3,770	31.9	35%	11.1	**670**	401	1,368
N9	1,083	833	250	816	853	31%	5	45	5,085	17.7	35%	6.2	**280**	226	904
N10	1,132	788	344	926	988	37%	6	23	5,935	21.0	35%	7.4	**170**	160	466
N11	1,208	788	420	1,115	1,191	38%	7	30	8,475	22.7	35%	7.9	**240**	323	769
N12	1,222	1,129	93	329	342	28%	5	45	5,085	6.7	35%	2.3	**110**	89	955
N13	1,222	1,128	94	415	426	23%	4	60	3,770	6.8	35%	2.4	**140**	84	891
N14	1,210	1,128	82	334	344	25%	4	60	3,770	8.1	35%	2.8	**170**	102	1,241
Subtotal			2,521		9,186					186.6		65.3	**3,130**		11,942



North Zone Ski Terrain Pods Source: Google Earth

We have calculated the skill level balance for the potential ski terrain delineated by the 14 pods within the North zone, as listed in Table II.7 and graphically illustrated in Plate II.4. The North zone has a good mix of terrain from low intermediate right up to expert terrain, however there is a lack of terrain in the beginner and novice skill classes.

TABLE II.7
NORTH ZONE
SKI TERRAIN POD BALANCE

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	0.0	0	0.0%	5%
2 Novice	0.0	0	0.0%	10%
3 Low Intermediate	12.7	750	24.0%	20%
4 Intermediate	21.4	1,280	40.9%	30%
5 High Intermediate	14.4	660	21.1%	20%
6 Advanced	8.9	200	6.4%	10%
7 Expert	7.9	240	7.7%	5%
Total	**65.3**	**3,130**	**100%**	**100%**

Optimum Density =	52.1	Skiers/Hectare
Weighted Demand =	4,320	VTM/Skier/Day

NORTH ZONE TERRAIN POD BALANCE

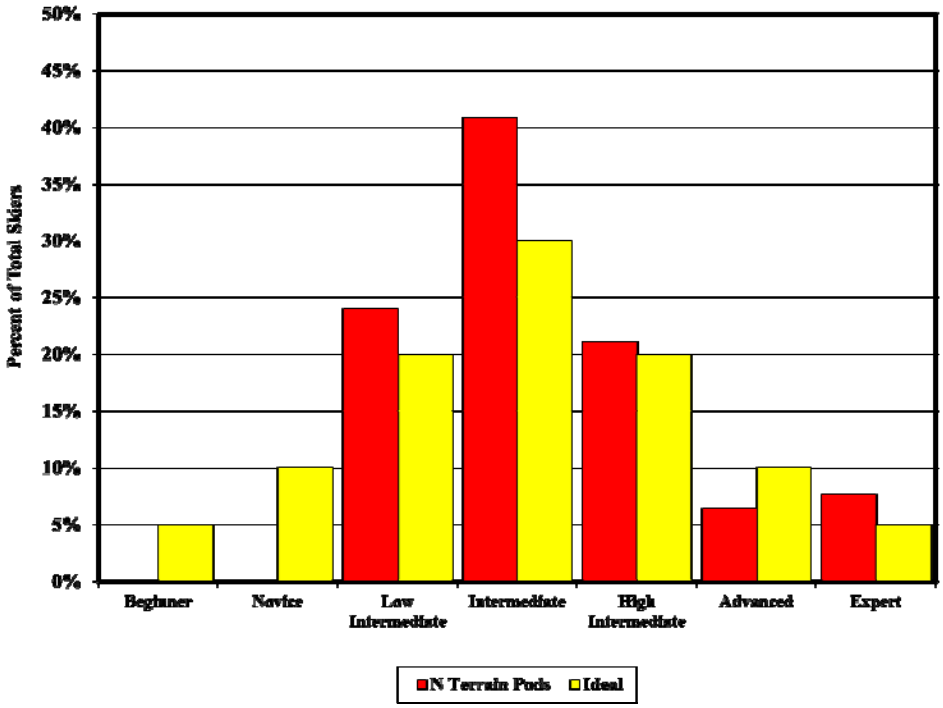


PLATE II.4

Panorama of North Area with Grytehorga Summit and Existing Ski Resort

Southeast Zone - Kistenuten

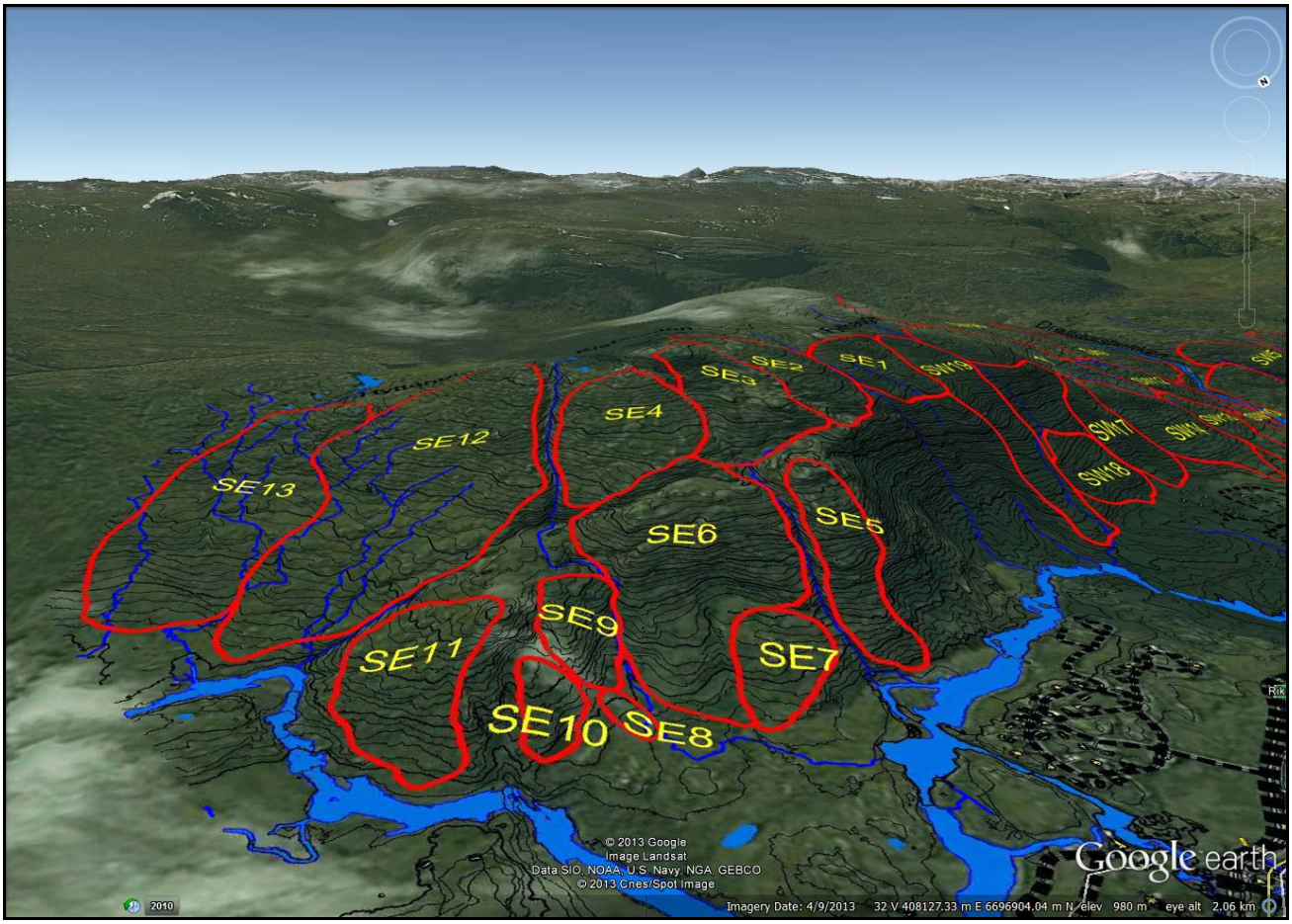
The Southeast zone is located across the valley from the North zone and consists of ski pods with aspects that range from the northwest to northeast. The 13 pods within this zone which exhibit characteristics suitable for alpine ski resort development have a total area of 217.9 hectares. These pods range between 1,125 meters elevation near the Kistenuten Peak and 774 meters in the base beside the Bjoreio River.

View of SE Zone to the left and SW Zones to the right.

Based on 35 percent developable within each pod, these 13 pods would result in 76.3 hectares of ski pistes that could accommodate approximately 4,600 skiers, as listed in Table II.8. The 4,600 skiers would require lifts to be installed that could supply a total of 14,603 passengers per hour capacity. A total of 5,260 square meters of skier service facilities including ticket sales, retail shops, rental shops, public lockers, restaurants, washrooms, etc., would be required. Additionally, approximately 5.7 hectares of parking, both in the hotels and accommodation, and day skier surface parking would be required. The total staging area which includes the flow area of the skier service buildings, circulation around each building equal to the floor area of the buildings and the parking requirements is approximately 6.7 hectares and this amount of gently sloping base terrain is easily available at the base of Pods SE7, SE8 and SE10.

TABLE II.8
SOUTHEAST ZONE SKI TERRAIN CAPACITY ANALYSIS

Terrain Pod	Top Elevation m.	Bottom Elevation m.	Total Vertical m.	Horizontal Distance m.	Slope Distance m.	Average Slope %	Skill Class	Skier Density/Ha.	VTM Demand/Day	Total Area Ha.	% Ski Terrain Available	Available Ski Terrain	**Total Skiers**	Demand VTM (000)	Lift Capacity.Hr.
SOUTH EAST ZONE			Kistenuten												
SE1	1,102	991	111	403	418	28%	4	60	3,770	12.8	35%	4.5	**270**	162	1,456
SE2	1,125	983	142	663	678	21%	3	60	2,825	16.2	35%	5.7	**340**	152	1,074
SE3	1,111	953	158	590	611	27%	4	60	3,770	17.3	35%	6.0	**360**	215	1,363
SE4	1,071	927	144	660	676	22%	3	60	2,825	17.3	35%	6.1	**360**	161	1,121
SE5	975	774	201	680	709	30%	4	60	3,770	8.9	35%	3.1	**190**	114	566
SE6	978	781	197	826	849	24%	4	60	3,770	26.2	35%	9.2	**550**	329	1,671
SE7	827	781	46	321	324	14%	2	75	2,120	4.7	35%	1.6	**120**	40	878
SE8	802	789	13	116	117	11%	1	75	940	0.8	35%	0.3	**20**	3	230
SE9	890	802	88	331	342	27%	4	60	3,770	4.9	35%	1.7	**100**	60	680
SE10	833	797	36	204	207	18%	2	75	2,120	2.1	35%	0.7	**50**	17	467
SE11	900	797	103	457	468	23%	3	60	2,825	10.8	35%	3.8	**230**	103	1,001
SE12	1,080	828	252	1,450	1,472	17%	3	60	2,825	59.5	35%	20.8	**1,250**	561	2,224
SE13	1,010	828	182	1,114	1,129	16%	3	60	2,825	36.4	35%	12.7	**760**	341	1,872
Subtotal			1,673		8,000					217.9		76.3	**4,600**		14,603



Southeast Zone Ski Terrain Pods Source: Google Earth

We have also calculated the skill level balance for the terrain delineated by the 13 pods within the Southeast zone, as listed in Table II.9 and graphically illustrated in Plate II.5. The Southeast zone has a poor balance of ski terrain, with a surplus of low intermediate terrain, good amounts of novice and intermediate terrain but no high intermediate, advanced or expert terrain.

TABLE II.9
SOUTHEAST ZONE
SKI TERRAIN POD BALANCE

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	0.3	20	0.4%	5%
2 Novice	2.4	170	3.7%	10%
3 Low Intermediate	49.1	2,940	63.9%	20%
4 Intermediate	24.6	1,470	32.0%	30%
5 High Intermediate	0.0	0	0.0%	20%
6 Advanced	0.0	0	0.0%	10%
7 Expert	0.0	0	0.0%	5%
Total	**76.3**	**4,600**	**100%**	**100%**

Optimum Density =	60.6	Skiers/Hectare
Weighted Demand =	3,093	VTM/Skier/Day

SOUTHEAST ZONE TERRAIN POD BALANCE

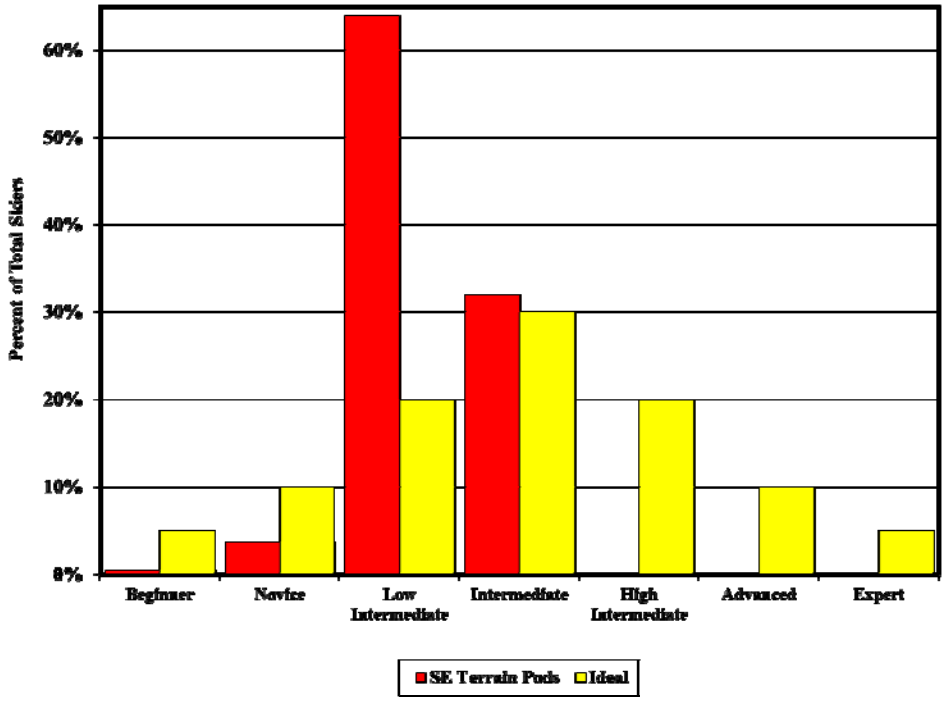


PLATE II.5

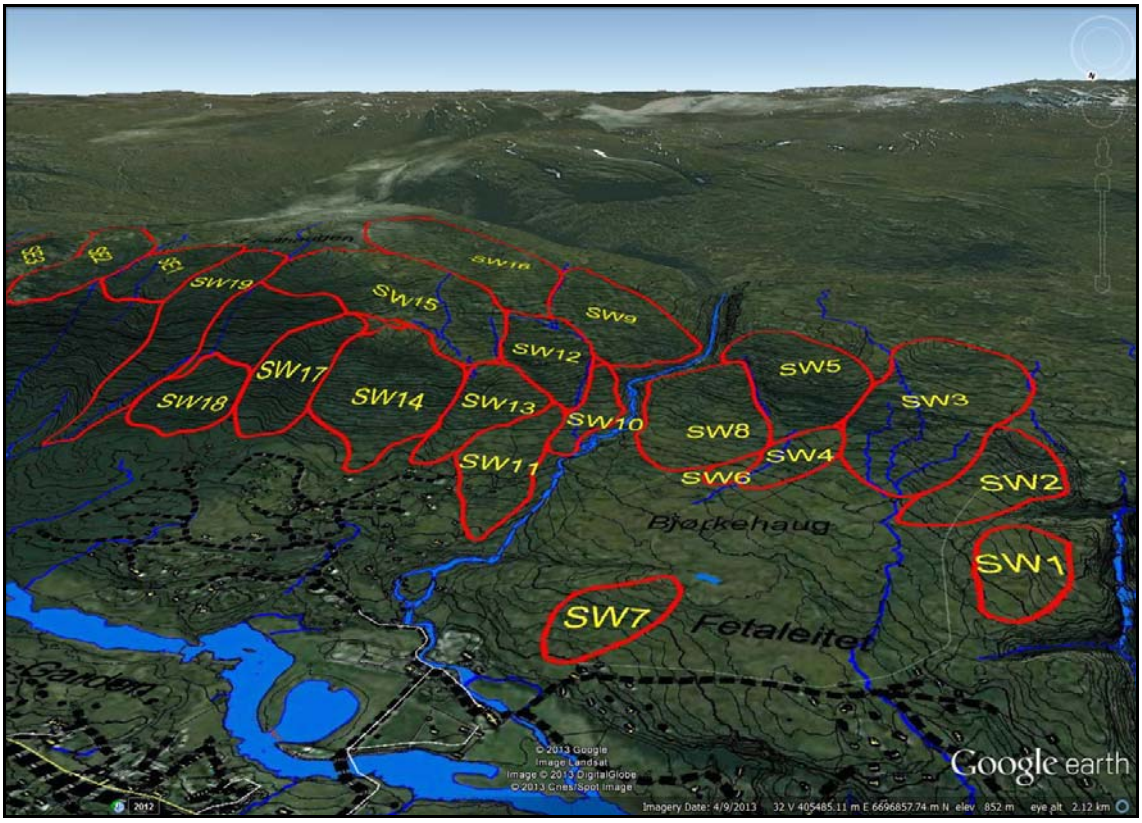
Southwest Zone - Fjellhaugen

The Southwest zone is adjacent to the Southeast zone and consists of ski pods with aspects that range from north to northwest. The 19 pods within this zone which exhibit characteristics suitable for alpine ski resort development have a total area of 269.7 hectares. These pods range between 1,135 meters elevation in Fjellhaugen down to 750 meters in the valley near Fetaleitet.

Based upon 35 percent developable within each pod, these 196 pods would result in 94.4 hectares of ski pistes that could accommodate approximately 5,600 skiers, as listed in Table II.10. The 5,600 skiers would require lifts to be installed that could supply a total of 20,398 passengers per hour capacity. A total of 6,410 square meters of skier service facilities including ticket sales, retail shops, rental shops, public lockers, restaurants, washrooms, etc., would be required. Additionally, approximately 6.9 hectare of parking, both in the hotels and accommodation, and day skier surface parking would be required. The total staging area which includes the flow area of the skier service buildings, circulation around each building equal to the floor area of the buildings and the parking requirements is approximately 8.2 hectares which can easily be found in the Bjorkehaug area.

TABLE II.10
SOUTHWEST ZONE SKI TERRAIN CAPACITY ANALYSIS

Terrain Pod	Top Elevation m.	Bottom Elevation m.	Total Vertical m.	Horizontal Distance m.	Slope Distance m.	Average Slope %	Skill Class	Skier Density/Ha.	VTM Demand/Day	Total Area Ha.	% Ski Terrain Available	Available Ski Terrain	Total Skiers	Demand VTM (000)	Lift Capacity.Hr.
SOUTH WEST ZONE			Fjellhaugen												
SW1	859	817	42	302	305	14%	2	75	2,120	4.8	35%	1.7	**130**	44	1,042
SW2	915	822	93	473	482	20%	3	60	2,825	8.6	35%	3.0	**180**	81	868
SW3	975	826	149	826	839	18%	3	60	2,825	27.7	35%	9.7	**580**	260	1,745
SW4	860	817	43	352	355	12%	1	75	940	4.7	35%	1.6	**120**	18	416
SW5	990	848	142	586	603	24%	5	45	5,085	16.5	35%	5.8	**260**	210	1,478
SW6	833	813	20	179	180	11%	1	75	940	1.2	35%	0.4	**30**	4	224
SW7	795	750	45	315	318	14%	1	75	940	4.6	35%	1.6	**120**	18	398
SW8	923	813	110	561	572	20%	3	60	2,825	17.0	35%	6.0	**360**	161	1,468
SW9	1,026	888	138	704	717	20%	4	60	3,770	21.8	35%	7.6	**460**	275	1,995
SW10	893	803	90	487	495	18%	2	75	2,120	4.8	35%	1.7	**130**	44	486
SW11	845	772	73	649	653	11%	1	75	940	10.4	35%	3.6	**270**	40	552
SW12	970	843	127	580	594	22%	4	60	3,770	12.0	35%	4.2	**250**	150	1,178
SW13	901	797	104	475	486	22%	3	60	2,825	9.3	35%	3.3	**200**	90	862
SW14	965	794	171	626	649	27%	4	60	3,770	19.8	35%	6.9	**420**	251	1,470
SW15	1,091	902	189	940	959	20%	4	60	3,770	36.3	35%	12.7	**760**	455	2,406
SW16	1,135	964	171	934	950	18%	2	75	2,120	34.7	35%	12.1	**910**	306	1,791
SW17	976	793	183	497	530	37%	5	45	5,085	9.6	35%	3.4	**150**	121	662
SW18	895	783	112	322	341	35%	5	45	5,085	8.2	35%	2.9	**130**	105	937
SW19	1,095	782	313	960	1,010	33%	6	23	5,935	17.8	35%	6.2	**140**	132	421
Subtotal			2,315		11,037					269.7		94.4	**5,600**		20,398



Southwest Zone Ski Terrain Pods Source: Google Earth

We have calculated the skill level balance for the potential ski terrain delineated by the 19 pods within the Southwest zone, as listed in Table II.11 and graphically illustrated in Plate II.6. The Southwest zone has a good distribution of terrain, however it skews toward the lower skier level abilities. While there is an excess of beginner and novice terrain and a lack of advanced and expert terrain, overall the terrain balance is excellent for alpine skiing development.

Panorama View of the SW Zone from Garden

TABLE II.11
SOUTHWEST ZONE
SKI TERRAIN POD BALANCE

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	7.3	540	9.6%	5%
2 Novice	15.5	1,170	20.9%	10%
3 Low Intermediate	21.9	1,320	23.6%	20%
4 Intermediate	31.4	1,890	33.8%	30%
5 High Intermediate	12.0	540	9.6%	20%
6 Advanced	6.2	140	2.5%	10%
7 Expert	0.0	0	0.0%	5%
Total	**94.4**	**5,600**	**100%**	**100%**

Optimum Density =	62.2	Skiers/Hectare
Weighted Demand =	3,111	VTM/Skier/Day

SOUTHWEST ZONE TERRAIN POD BALANCE

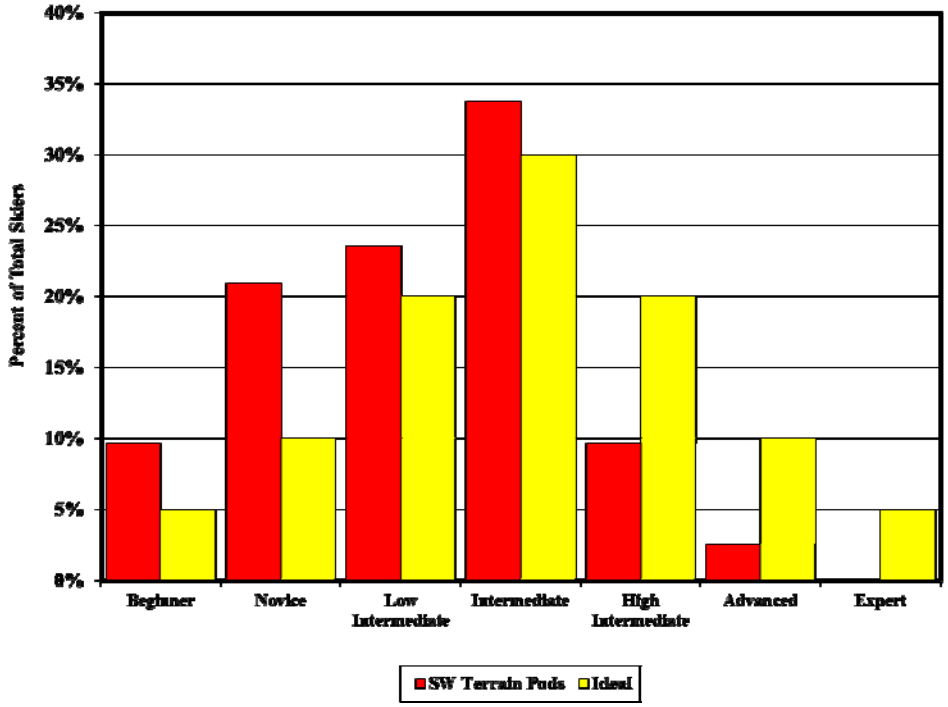


PLATE II.6

West Zone - Hyloksla

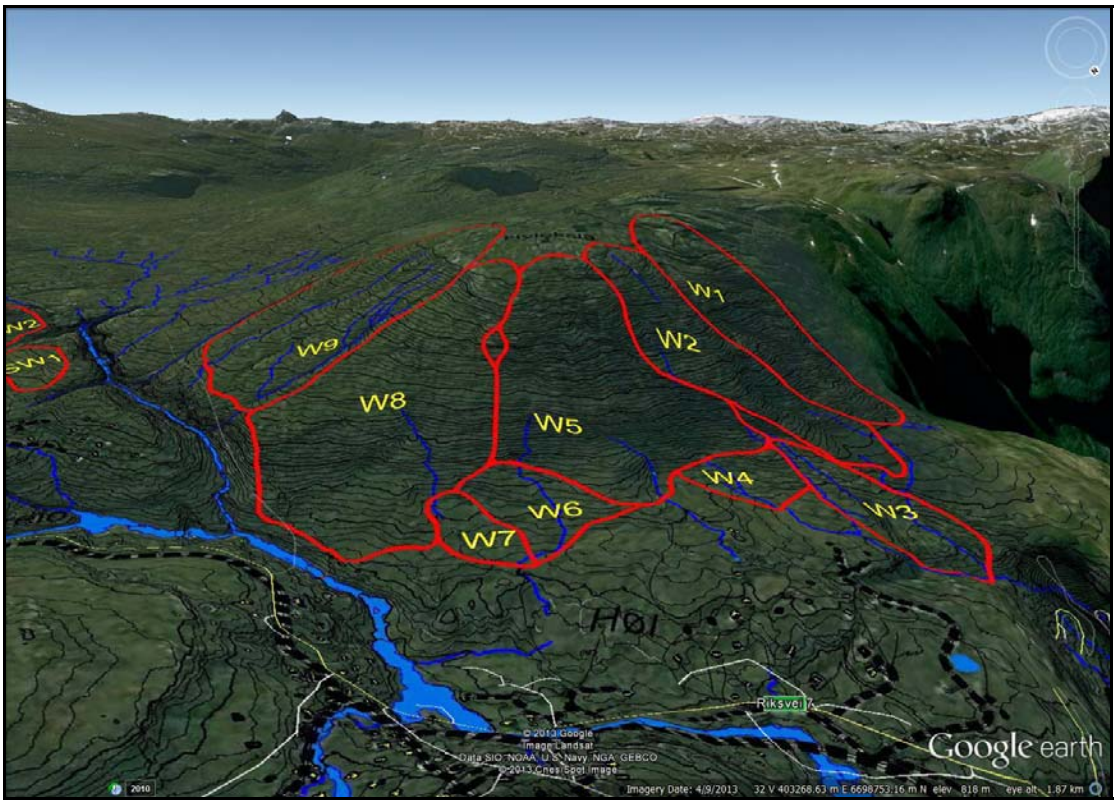
The West zone is located on the far western end of the study area and consists of ski pods with primarily north and northeast aspects. The 9 pods within this zone which exhibit characteristics suitable for ski resort development have a total area of 229.7 hectares. These pods range between 1,140 meters elevation near the Hyloksla Peak and 653 meters in the valley towards the Village of Høl.

West Zone

Based on 35 percent developable within each pod, these 9 pods would result in net of 80.4 hectares of ski pistes that could accommodate approximately 3,770 skiers, as listed in Table II.12. The 3,770 skiers would require lifts to be installed that could supply a total of 10,608 passengers per hour capacity. A total of 4,320 square meters of skier service facilities including ticket sales, retail shops, rental shops, public lockers, restaurants, washrooms, etc., would be required. Additionally, approximately 4.6 hectare of parking, both in the hotels and accommodation, and day skier surface parking would be required. The total staging area which includes the flow area of the skier service buildings, circulation around each building equal to the floor area of the buildings and the parking requirements is approximately 5.5 hectares.

TABLE II.12
WEST ZONE SKI TERRAIN CAPACITY ANALYSIS

Terrain Pod	Top Elevation m.	Bottom Elevation m.	Total Vertical m.	Horizontal Distance m.	Slope Distance m.	Average Slope %	Skill Class	Skier Density/Ha.	VTM Demand/Day	Total Area Ha.	% Ski Terrain Available	Available Ski Terrain	Total Skiers	Demand VTM (000)	Lift Capacity.Hr.
WEST ZONE	Hyloksla														
W1	1,140	749	391	1,105	1,172	35%	5	45	5,085	34.0	35%	11.9	**540**	436	1,115
W2	1,082	737	345	1,125	1,177	31%	5	45	5,085	26.3	35%	9.2	**410**	331	959
W3	767	653	114	625	635	18%	3	60	2,825	11.8	35%	4.1	**250**	112	983
W4	760	709	51	288	292	18%	3	60	2,825	6.1	35%	2.1	**130**	58	1,143
W5	1,082	728	354	949	1,013	37%	6	23	5,935	41.8	35%	14.6	**330**	311	878
W6	762	704	58	368	373	16%	2	75	2,120	7.8	35%	2.7	**200**	67	1,160
W7	743	702	41	314	317	13%	1	75	940	3.9	35%	1.4	**100**	15	364
W8	1,062	702	360	1,137	1,193	32%	5	45	5,085	47.5	35%	16.6	**750**	605	1,682
W9	1,100	827	273	1,092	1,126	25%	4	60	3,770	50.6	35%	17.7	**1,060**	634	2,324
Subtotal			1,987		7,297					229.7		80.4	**3,770**		10,608



West Zone Ski Terrain Pods Source: Google Earth

We have calculated the skill level balance for the potential ski terrain delineated by the 9 pods within the West zone, as listed in Table II.13 and graphically illustrated in Plate II.7. The West zone has a good mix of terrain. There is however a complete lack of pure expert terrain.

TABLE II.13
WEST ZONE
SKI TERRAIN POD BALANCE

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	1.4	100	2.7%	5%
2 Novice	2.7	200	5.3%	10%
3 Low Intermediate	6.3	380	10.1%	20%
4 Intermediate	17.7	1,060	28.1%	30%
5 High Intermediate	37.7	1,700	45.1%	20%
6 Advanced	14.6	330	8.8%	10%
7 Expert	0.0	0	0.0%	5%
Total	**80.4**	**3,770**	**100%**	**100%**

Optimum Density =	51.1	Skiers/Hectare
Weighted Demand =	4,295	VTM/Skier/Day

WEST ZONE TERRAIN POD BALANCE

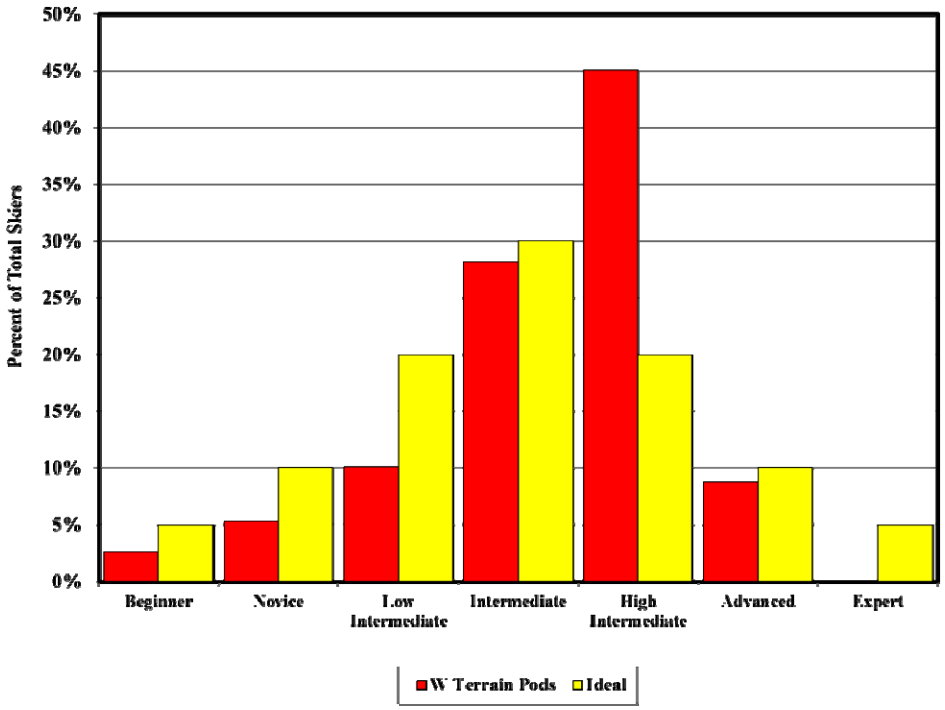
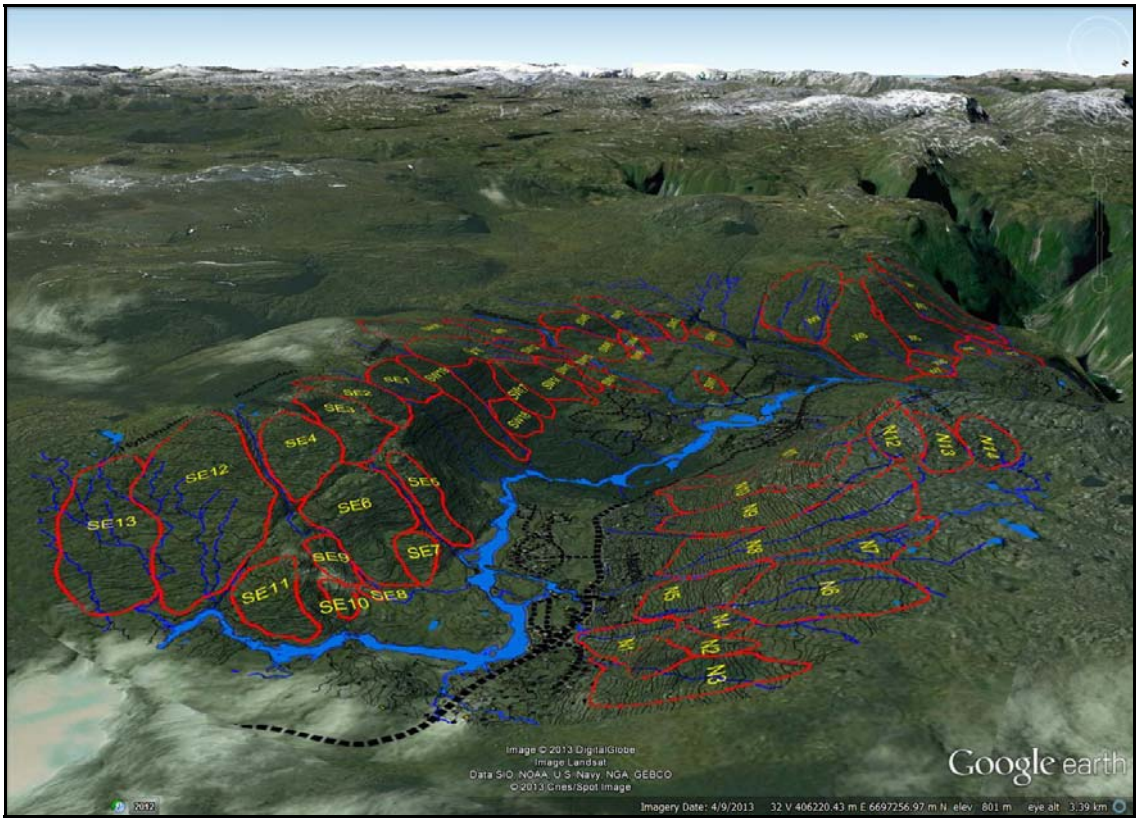


PLATE II.7

Summary of All Zones

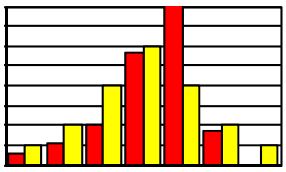
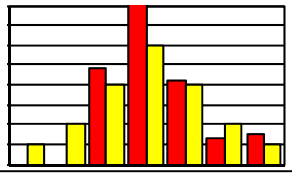
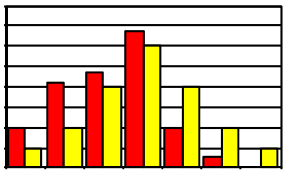
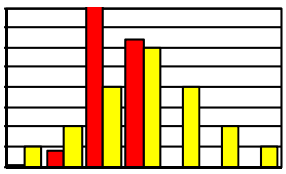
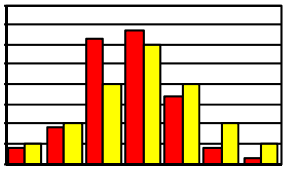
The 55 pods within the 4 zones of the overall study area have a total area of 903.8 hectares. Based upon 35 percent developable within each pod, these 55 pods would result in approximately 316.3 net hectares of ski pistes that could accommodate approximately 17,100 skiers. These 17,100 skiers would require lifts to be installed that could supply a total of close to 57,550 passengers per hour capacity. These results reveal that the Eidfjord area of the Sysendalen has a huge overall potential for commercially viable mountain resort development.

Table II.14 summarizes the Terrain Capacity Summary.



Study Area Ski Terrain Pods Source: Google Earth

TABLE II.14
EIDFJORD STUDY AREA
TERRAIN CAPACITY SUMMARY

	MOUNTAIN CAPACITY					
	Number of pods	Estimated Piste Capacity	Developed Pistes (hectares)	Piste Balance	Average Skier Capacity/Pod	Average Vertical Meters/Pod
WEST ZONE Hyloksla	9	3,770	80.4		419	221
NORTH ZONE Grytehorga	14	3,130	65.3		224	180
SOUTH WEST ZONE Fjellhaugen	19	5,600	94.4		295	122
SOUTH EAST ZONE Kistenuten	13	4,600	76.3		354	129
TOTAL	55	17,100	316		311	154

The overall skill level balance for the terrain delineated by the 55 pods within the study area, as listed in Table II.15 and graphically illustrated in Plate II.8. The total study area has an excellent overall skill level balance of ski terrain with a surplus of low intermediate terrain and shortages of advanced and expert. Nevertheless, this large potential and overall balance portend a bright future for ski development in the Eidfjord region.

TABLE II.15
EIDFJORD STUDY AREA
TERRAIN POD BALANCE SUMMARY

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	8.9	660	3.9%	5%
2 Novice	20.6	1,540	9.0%	10%
3 Low Intermediate	89.9	5,390	31.5%	20%
4 Intermediate	95.1	5,700	33.3%	30%
5 High Intermediate	64.1	2,900	17.0%	20%
6 Advanced	29.8	670	3.9%	10%
7 Expert	7.9	240	1.4%	5%
Total	**316.3**	**17,100**	**100%**	**100%**

Optimum Density =	57.5	Skiers/Hectare
Weighted Demand =	3,588	VTM/Skier/Day

OVERALL TERRAIN POD BALANCE

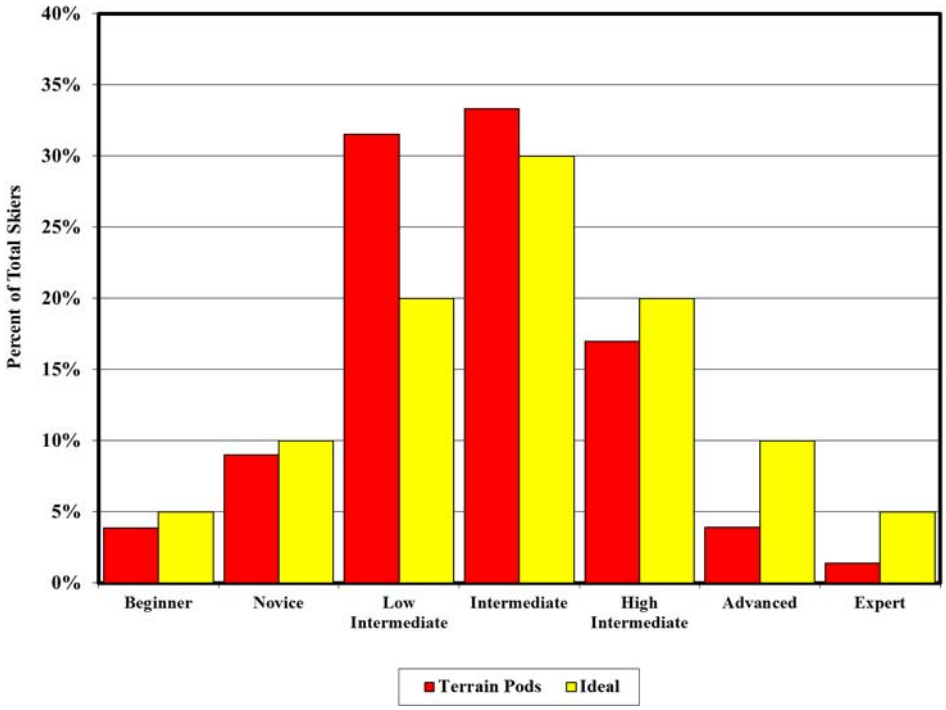


PLATE II.8

.7 Accommodation Inventory

Overnight Accommodation

Most mountain resorts provide both “public accommodation” and “private accommodation”. Public accommodation is defined as tourist beds that are available for nightly rental by the general public and includes hotels, hostels, apartments, townhouses and cabins that are actively rented throughout the season. Private accommodation includes apartments, townhouses and cabins that are owned privately and are used by the owner and their friends and relatives but are not available to the general public. While during peak holiday periods and on weekends, both private and public accommodation will be in use, public accommodation has a much higher seasonal occupancy rate than private accommodation and as a result is commonly referred to as “hot beds” while beds in private accommodation are referred to as “cold beds”.

Occupancy Rates and Skier Yield

To estimate the number of skiers generated from resort accommodation on a peak day (the skier yield), an occupancy rate needs to be assumed for each type of accommodation, and an estimate of the percentage of guests that ski or snowboard on a given day must be made. A peak period day represents the business level of the average of the top ten days in the last season. In developing these percentages, some key factors need to be considered.

- For each type of accommodation, there is a unit occupancy rate. The unit occupancy rate is the percentage of the available hotel rooms or dwelling units that are occupied during peak holiday periods. Our experience at other resorts, has taught us that the occupancy rates for commercial public accommodation are higher than the occupancy rate of private accommodation, unless the private accommodation is used as a full time residence. For Eidfjord, we estimate that for the public accommodation, the unit occupancy percentage is 95% in peak periods and for the private accommodation, the estimate is 70%.

- Even though a hotel room is rented, or the owner of a private apartment is occupying their unit, not every pillow in it may be occupied. For example, a private apartment capable of sleeping eight may be occupied by a group of four or five, or a hotel room with four pillows may be occupied by one couple. For the public accommodation, the bed occupancy rate is estimated at 85% and for the private accommodation it is 70%.

- Not all of the guests staying at the resort will ski or snowboard on any given day. Some of the guests may be non-skiers accompanying the family, some may be pursuing other alternative winter activities around the resort and some may not ski because it is the day they are arriving at, or departing from the resort. At Eidfjord, we have estimated the skier participation rate to be 90% for the public accommodation, as we assume that people who decide to spend the money to stay overnight at the resort will mostly be skiers. For the private accommodation we have assumed 70%.

Table II.16 outlines the occupancy assumptions for peak visitation periods applied to the inventory of public and private accommodation at Eidfjord. The unit occupancy rate multiplied by the bed occupancy rate gives the guest yield. When the guest yield is multiplied by the skier participation rate, the result is the skier yield from the beds.

TABLE II.16
EIDFJORD RESORT
BASE DEVELOPMENT PLANNING ASSUMPTIONS

Land Use Designation	Public vs. Private Accomm. Ratio	Occupancy Rate		Guest Yield	Skier Participation	Skier Yield
		Unit	Bed			
Village & Townhouse	100% Public Accommodation	95%	85%	81%	90%	**69%**
Cabins	25% Public 75% Private	70%	70%	49%	70%	**34%**
Employee Housing	n.a.	100%	100%		10%	**10%**

There are approximately 800 existing cabins in the study area and the immediate surroundings. In addition there are regulated areas permitting another 600 cabins to be built during the next decade. There are several hotels in Eidfjord, a short drive from the potential Eidfjord resort. We found approximately 170 rooms/units are available and we estimate they could yield approximately 430 visitors, of which 390 will be skiers.

Existing Cabins in Study Area

Table II.17 is Ecosign's estimate of the number of cabins in the Sysendalen study area and a summary of the warm beds (hotels and cabins available year round for nightly rental) between Eidfjord and Sysendalen. This table gives an indication of the potential number of visitors and skiers that could come from the immediate region around the study area, assuming occupancy rates on peak days. In total, the existing accommodation of cold and warm beds within a short drive of Eidfjord Resort can yield around 2,000 skiers. If we add to this capacity the 600 cabin units in the study area that are already approved for development, the area will have accommodation for more than 3,200 skiers in the near future

without any new real estate development. This existing accommodation is beyond walking distance to the potential ski area and these visitors/skiers will drive to the resort and park in day use parking areas.

TABLE II.17
EIDFJORD RESORT
EXISTING ACCOMMODATION

West	**Cabins**	**Pillows**	**Visitors**	**Skiers**
Høl				
N. of Hwy	129	774	379	265
S. of Hwy	30	180	88	62
Subtotal	***159***	***954***	***467***	***327***
Southwest				
Garden	89	534	262	183
South of Garden & River	116	696	341	239
Fetaleitet	66	396	194	136
Subtotal	***271***	***1,626***	***797***	***558***
East				
Maurset N. of Hwy	164	984	482	338
S. of Hwy	104	624	306	214
Subtotal	**268**	**1,608**	**788**	**552**
Other Locations	100	600	294	206
Total Cabins	***798***	***4,788***	***2,346***	***1,643***
Hotels/Rental Cabins in Area	**Units**	**Pillows**	**Visitors**	**Skiers**
Quality Hotel Vøringsfoss	81	243	196	176
Fossli Hotel	21	63	51	46
Liseth Pensjonat& Hytte	29	100	81	73
Eidfjord Fjell& Fjord Hotel	28	84	68	61
Eidfjord Gjestgiveri	14	42	34	31
Total Hotels	***173***	***532***	***430***	***387***
Total Existing Accommodation	**971**	**5,320**	**2,776**	**2,030**
Approved Future Cabins	***600***	***3,600***	***1,764***	***1,235***
Existing & Future Accommodation	**1,571**	**8,920**	**4,540**	**3,265**

In the region outside the study area but within a short drive from the potential ski terrain, several existing small hotels provide additional warm beds that are available for winter use and there are also more cold beds in existing cabins close by. A more in-depth study of the region's bed base is not in Ecosign's scope.

.8 Base Area Development Suitability Analysis

The Base Area Development Suitability Analysis is a process that evaluates the capacity of the resort's potential base area lands to support the development of the accommodation, parking, alternative recreational and commercial facilities that are required at a destination mountain resort. The result of the Base Area Development Analysis is an opportunities and constraints plan which identifies areas that have the highest value for resort base area development, as well as areas where development should not occur. Criteria for suitable base area development land is based on slope gradients (slopes less than 15%), proximity to the bottom of ski terrain pods and feasibility of access from existing roads and infrastructure.

Resort guests and day use visitors are attracted to a four season mountain resort for the primary purpose of spending holiday and vacation time in a unique environment that offers a wide variety of seasonal, active and passive recreation and leisure activities. The majority of time will be spent exploring the outdoors; skiing, snowboarding, sightseeing and hiking. Other holiday time will be spent in the resort village, in restaurants and cafes, retail shops, spas and overnight accommodation. A carefully achieved balance between the natural eco-systems and natural site amenities, parks, real estate and the developed ski areas and village will optimize the quality of the resort experience, while maintaining the integrity and natural beauty of the surrounding environment and landscape.

The ultimate development potential of the mountain and resort lands depends on the biophysical limitations, constraints and opportunities of the site, road access and the proposed location of four season recreational activity centers and ski area lifts and pistes.

Base Area Slope Analysis

The Base Area Development Suitability Analysis (Figure 8) illustrates the Base Area Slope Analysis, as well as the Terrain Capacity Analysis as a basis for identifying suitable base area development zones. The Base Area Slope Analysis was produced utilizing 1-meter contour mapping of the Eidfjord Study Area provided by the client. Slope gradients within the base area have been analyzed based on ranges that represent suitability for various types of development. The Base Slope Analysis gradient ranges have been measured and color-coded into the following five classifications as listed below.

SLOPE GRADIENT	COLOUR	DEVELOPMENT SUITABILITY
0 to 8%	White	Suitable for roads, parking, high density village style developments, snow play zones with limited terrain modification
8 to 15%	Green	Smaller multi-family townhouse (medium density) developments, roads with some terrain modification, snow play and beginner zones roads and parking with some terrain modification
15 to 25%	Yellow	Single-family chalet (low density) developments with substantial grading to provide access.
25 to 40%	Blue	Marginal for low density, single-family development with substantial grading required to provide access
40%+	Red	Too steep for development

Areas that have slope gradients between 0 and 8 percent are suitable for high-density and commercial development such as hotels and condominium hotels (condotels), surface parking lots, and adventure and snow play zones. Very little earthworks are required for any type of development with slopes less that 8%. Terrain with slopes between 8 and 15 percent is suitable for high density development such as resort village development or medium density accommodation. Parking on slopes greater than 8% will require terracing and earthworks. Land with slope gradients between 15 and 25 percent is suitable for medium to low density development only. Slopes ranging from 25 to 40 percent may have some potential for low-density single-family development if there are opportunities to provide road

access to the development site through more gentle terrain but will require major terrain modification. Land with slope gradients greater than 40 percent is too steep for efficient development, as substantial earthworks is required for road construction which greatly reduces the net developable area of the land.

The Base Area Slope Development Suitability Analysis (Figure 8) illustrates the most suitable terrain for potential base area development. A second design parameter, Comfortable Skier Walking Distance is applied as part of the process to illustrate the connection between potential ski terrain and potential base area development zones.

Comfortable Skier Walking Distance

Slope gradients and proximity to potential ski terrain are the primary considerations when identifying suitable land for base area development. The spatial relationship between potential developable base area lands and the potential ski area facilities are evaluated using "Comfortable Skier Walking Distance" as a planning tool. "Comfortable Skier Walking Distance" is measured from the base of the main staging lift terminals to determine the extents of developable land that is within walking distance to ski area facilities. Comfortable Skier Walking Distance is defined as the distance an individual wearing ski boots and carrying equipment can walk in a 10-minute period. Assuming a 2.7-kilometer per hour walking speed, comfortable skier walking distance is approximately 450 meters over level ground. This spatial relationship between the lifts and the base areas is critical, since skiers originating from accommodation and parking beyond comfortable walking distance will require a secondary mode of transportation to access the lifts, resulting in higher traffic and parking demands within the ski area facility. Potential staging points/lift terminals are shown on Figure 8 with a star symbol, and the extents of Comfortable Skier Walking Distance is illustrated with a purple dashed line.

Beginner Areas and Snow Play Zones

Gently sloping terrain at the base of the mountain is suitable for resort base area development but also is very important, as potential novice or beginner ski terrain. This terrain can be serviced with lifts that are within walking distance from accommodation and the day skier parking. Therefore, the need for base area facilities must be carefully weighed against the opportunities for developing important ski and snowboard teaching terrain. Terrain within the 8 - 15% slope range is considered ideal for beginner skiing and snowboarding and snow play zones.

Base Area Capacity

Base area capacity is defined as the number of skiers that can be generated from base area facilities such as day skier parking and overnight accommodation. At the master plan level, the base capacity of parking lots and various types of accommodation is balanced carefully with the mountain's lift and piste capacity. At this preliminary stage of planning, base capacity is estimated roughly at 150 skiers per hectare of developable land which can be compared to the SCC of the four ski zones. This assumes that the land will be developed with a mix of parking and high density and low density accommodation. The preliminary

calculation of base capacity at the Technical Assessment stage provides an initial estimate of how much base area development land would be required to create a balanced resort with the skiable terrain identified in the Terrain Capacity Analysis. At this point, a conclusion can be drawn about whether or not adequate suitable base area lands exist in proximity to the potential ski area development. A detailed analysis of base area capacity will be applied to the Base Area Land Use Concepts in Phase II.

Base Area Development Suitability Analysis

The Base Area Development Suitability Analysis Plan is presented on Figure 8 and illustrates 6 areas suitable for resort base area development in conjunction with the four potential ski area development zones (West, North, Southwest and Southeast zones). The base area development zones have been named according to their associated ski zone and are described below. A total of 142.3 hectares of potential base area development land has been identified in 5 general zones. We have only looked at the land's configuration and topography and no individual landowner has been identified or favored in this analysis.

Potential staging areas have been identified to indicate the approximate location for the potential lift terminals, and the limit of comfortable skier walking distance is drawn from these points indicating the general area within walking distance to potential future staging lifts. The base area capacity of the 5 potential base areas is summarized in Table II.18 and compared with the ski area SCC.

TABLE II.18
EIDFJORD RESORT
BASE AREA DEVELOPMENT SUITABILITY ANALYSIS

Area	Area ha	Base Capacity 150 Sk. / ha	No. Skiers SCC	Difference +/(-)
West Zone				
W-A	30	4,500		
W-B	6.8	1,020		
Subtotal West Zone	*36.8*	*5,520*	3,770	1750
North Zone				
N-A	2.5	375		
Subtotal North Zone	*2.5*	*375*	3,130	(2755)
Southeast Zone				
SE-A	25	3,750	4,600	(850)
Southwest Zone				
SW-A	60	9,000		
SW-B	18	2,700		
Subtotal Southwest Zone	*78*	*11,700*	5,600	6100
Total Study Area	**142.3**	**21,345**	**17,100**	**4245**

West Zone – Hyloksla / Høl

Two base development areas have been identified in conjunction with the West zone ski terrain (Areas W-A and W-B). These areas include terrain to the south of Høl and can be accessed from the highway either directly (W-B) or from an existing bridge across the Bjoreio River. The center of the resort is identified at the bottom of Terrain Pods W3, W4 and W6/W7. A total of 36.8 hectares of undeveloped land suitable for resort base area development has been identified for the West zone, which could generate approximately 5,500 skiers of base capacity. This is in excess of the 3,770 SCC, indicating that there is sufficient base area to fully develop the ski terrain capacity. The aesthetic qualities such as views and sightlines of the West zone base area need to be checked during the next site inspection.

North Zone - Grytehorga / Maurset

The lack of undeveloped base area land in the North zone, as a result of existing cabin development was highlighted in a previous section of this report. The base area for the existing lift includes a small parking lot located at the bottom of terrain Pod N1 on the north side of the highway. There is existing development at the bottom of all other North zone pods with the exception of Pod 11 which extends to the highway. The only viable opportunity for extending base area development in the North zone is to expand the existing facility onto the south side of the highway. There is an undeveloped area (N-A) of 2.5 hectares that could potentially be used for this purpose, however land ownership is unknown. Area N-A is too small to provide enough base capacity to balance with the potential SCC of 3,130 skiers. The base area development potential of the North zone is therefore very weak compared to the other zones.

Southeast Zone – Kistenuten - Maurset

The potential base area for the Southeast zone is located at the bottom of terrain Pods SE7/SE6 and includes flat land on a peninsula-like land feature on the south side of the Bjoreio River. Area SE-A includes 25 hectares of land which has an estimated base capacity of 3,750 skiers, which is less than the ski terrain SCC of 4,600 skiers. However, additional base capacity could be used in Area SW-B to support the Southeast zone and it is likely that not all of the ski terrain will be developed because of the imbalance in the skill class mix. Area SW-A is an interesting site with good development potential and should be explored further on site. The main weakness to development in this area is road access which would require a new bridge over the Bjoreio River adding significant cost to the development.

Southwest Zone – Fjellhaugen - Fetaleitet

The Southwest zone terrain pods extend over almost 3 km. horizontal length and are split by the Drøllstølsbekken. The highest point in the Southwest zone is at the top of Pod SW16 on the east side of the Drøllstølsbekken, however it was determined on site that it is possible to connect across the river with a skier bridge, therefore the river does not create a barrier from a skiing point of view. Two alternative potential base area development zones are identified for the Southwest zone; Area SW-A on the west side of the Drøllstølsbekken and Area SW-B on the east side of the Southwest zone (in fact, this potential base area could also serve the Southeast zone). The area of interest in the Bjørkehaug zone is identified by Area SW-A with 60 hectares of developable land. This area could have a base capacity of 9,000 skiers which is close to double the Southwest zone SCC of 5,600 skiers. There is also some potential for base area development within terrain pod SW11on the east side of the Drøllstølsbekken, perhaps a total of 5 hectares. Area SW-A is certainly a very viable option for base area development and should be studied in detail at the next phase of planning.

A second option for base area development for the SW Zone is shown with Area SW-B. Area SW-B is also a suitable site for a base area and includes 18 hectares of land at the bottom of Pod SW19. This parcel can be accessed through the existing cabin development or by a potential new bridge across the Bjoreio River.

Base Area Development Suitability Analysis Summary

In summary, three of the four potential ski zones identified in the Terrain Capacity Analysis have suitable potential base area development zones. The North zone is lacking viable base area lands therefore cannot be considered moving forward as a good potential resort development area. The West Zone, Southwest Zone and Southeast zones all have large areas with slopes suitable for development at the bottom of potential ski terrain. Areas W-A and SW-A have the best opportunity for resort village development, as these zones can be easily connected to existing roads and are well connected to the ski terrain. Areas SW-B and SE-A are more difficult to access but should be considered for design moving forward. Site inspection, land ownership issues, soil quality (wet areas), views, and solar exposure and feedback from the client need to be considered for each potential base area as the planning process progresses.

Ecosign concludes that the potential Eidfjord Resort passes the Technical Assessment test with flying colors. The area has total ski potential for between 10,000 and 17,000 skiers per day and the adjacent base lands can comfortably support those levels of development.

III. RESORT MASTER PLAN CONCEPT

.1 Introduction

A Ski Area Master Plan involves planning the phased installation of ski facilities over time. Modern mountain resorts require the most efficient and user friendly lift and piste systems possible. It is therefore necessary to have a complete understanding of the total project at build-out so that facilities can be balanced and capital invested effectively.

Eidfjord Resort is a new “greenfield” project which focuses upon development of Alpine and Nordic skiing facilities in the winter season and a variety of summer recreation and sightseeing activities during the non-winter seasons.

We have prepared a phased Master Plan for the development of ski facilities at Eidfjord Resort, which is described in detail in the following section.

.2 Goals and Objectives

The objectives of the Eidfjord Resort Ski Area Master Plan are as follows:

- Provide a first class ski/snowboard facility with high technology lifts, snowmaking, piste design with high quality grooming and guest service facilities
- Build a resort which is equal or beyond the standards provided by competing resorts in the region.
- Provide a selection of ski pistes with a variety of skier skill levels that are closely balanced to the distribution of the skier/snowboarder market.
- Provide facilities in appropriate locations to service skiers in each zone of the mountain.
- Provide base staging areas with adequate capacity in locations to satisfy mountain access requirements. Lifts used for staging should be able to stage all skiers throughout the mountain system within 1.5 hours so that return cycle skiing/snowboarding can occur on these lifts starting relatively early in the morning, with minimum lift queues.
- Each phase of development should provide an optimally balanced facility between the Ski Area Capacity and Base Lands Capacity, while at the same time move toward the ultimate goal for build-out of the resort.
- Define goals and plans to guide management and inform public agencies during the ensuing ten year period.

Glossary

We have utilized a number and letter code to indicate the type of lift installations proposed. The coding is illustrated below.

MC	Moving Carpet
P	Platter (Surface Lift)
TB	T-Bar (Surface Lift)
4C	Fixed Grip Quadruple Chairlift
D6C	Detachable Grip Six-Passenger Chairlift
D8G	Detachable Grip Eight-Passenger Gondola
PG4x2x8	Pulse Gondola (Fixed grip gondola with four groups of two cabins with eight persons per cabin)

.3 Ski Area Master Plan Development

The Eidfjord Ski Area Master Plan is an expansion of original ideas as envisioned by Mr. Ivan Løvheim, a cabin owner in the Fetalia area. The proposal is to develop the terrain in the south-west and south-east zone in Phases 1 and 2 with a major resort village and cabin development at the Fetaleitet zone near Bjorkenhaug.

Phase 1 and 2 Lifts

The Master Plan assumes that the main resort village will be developed within skier walking distance (450 meters) of Lifts A, B and C. The Phase 1 and 2 Resort Master Plan Concept is illustrated in plan view on Figure 9. The specifications for the Phase 1 and 2 lift systems are listed in Table III.1.

Lift A is a fixed grip quad chairlift servicing low intermediate to high intermediate terrain on the north facing slopes of Rundehaugen (998 m.). Lift A has a vertical rise of 175 meters and a slope distance of 810 meters, for an average slope of 22 percent. We have recommended a capacity of 2,400 passengers per hour on this lift, as it will serve 5 ski pistes. A rope speed of 2.2 meters per second is suitable for these better skiers which provides a trip time of 6.1 minutes.

The Lift B platter lift lies in the village area and will be developed for the ski school and children, possibly in conjunction with several magic carpets. Lift B has a vertical rise of 28 meters and a slope distance of 319 meters for an average slope of 9 percent, which is absolutely ideal for beginners and children. Lift B has a capacity of 1,440 persons per hour with maximum rope speed of 2.3 meters per second, resulting in a trip time of just under two minutes.

Lift C is an eight-passenger gondola which is a key part of the Eidfjord Resort Master Plan Concept to create the experience of a sightseeing expedition that is attractive to the 750,000 people who visit the Vøringsfossen Waterfall every year. A scenic gondola ride to the Amundsen's Viewpoint above Fjellhaugen is proposed at the 1,095-meter elevation. Lift C has a vertical rise of 297 meters over a slope distance of 1,885 meters. A rope speed of 5 meters per second provides a trip time of 6.28 minutes and we have recommended a capacity of 2,800 persons per hour.

During the summer operation, it is most likely that the operator will remove up to one-half of the cabins on Lift C and run the lift at just 3.5 meters per second, which would provide about a nine minute ride on the theory of giving the

sightseeing guests more for their money. At the top of the lift, we recommend building a panoramic restaurant which would provide beautiful views of Sysenvatnet Lake behind the Sysen Dam, the Grytehorga Peak (1,223 m,) Vøringsfossen, and distant views of the Hardanger Jøkulen Glacier 19 kilometers to the north (summit 1,863 meters). If we move Lift C further up the mountain towards Kistenuten, (1,135 m.) it would bring one closer to the National Park and the land becomes quite flat such that the views are lost. Therefore, we have selected this lower location for the Lift C top, where there is a "military crest" that provides outstanding views.

On a preliminary basis, we have named the top of Lift C the "Amundsen Viewpoint" in honor of the great explorer, Roald Amundsen, a famous Norwegian explorer of Polar Regions. Mr. Amundsen was the first person to traverse the Northwest Passage and led an Antarctic expedition in 1910-1912 to discover the South Pole in December of 1911. In 1926, he was the first expedition leader to be recognized without dispute as having reached the North Pole. Mr. Amundsen used this region for training for his Arctic and Antarctic expeditions.

Another interesting aspect of Lift C is that the skiing ends up on the eastern side of Drøllstølsbekken, while the base lands are located on the west side of this small creek. Our proposed solution is a level skier bridge across the Drøllstølsbekken at approximately the 800-meter elevation, which allows skiers to cross the valley in both directions, connecting the lift terminal and ski slopes with the base lands and resort centre.

The issue remains that with a bottom station for Lift C on the east side of the creek, the skier walking distance from this lift only covers about one-half of the potential resort lands on the Fetaleitet area. Accordingly, our resort village planners have suggested a two-section gondola by extending the eight-passenger gondola onto the west side of the creek to be in the centre of developable real estate in the resort centre. The lower terminal of the gondola is therefore proposed to be in the centre of the village on the west side of the creek. From there, 300 meters further along the lift line on the east side of the creek, we propose a one-side on-load station; here the doors of the gondola cabins will open at the station so skiers can load and ride up to the top of the mountain. Passengers riding back down on the gondola would not be able to disembark at that middle station but would ride to the bottom terminal in the village centre.

Lift D is a fixed grip quad chairlift with the top station at the Amundsen Viewpoint at 1,095 meters and the bottom in the valley at 781 meters for a vertical rise of 314 meters. The slope distance is 991 meters with an average slope of 33 percent. This lift services a pod for experts and high intermediate skiers, so based upon the slope suitability on the TCA we have only recommended a lift capacity of 1,800 persons per hour. The trip time for Lift D is 7.5 minutes.

From the Amundsen Viewpoint, we have designed a 9 to 10 percent gradient ski-way in combination with full width ski slopes to transfer to the Southeast Zone. Lift E is a detachable grip six-seat chairlift with a vertical rise of 330 meters and a length of about 1.5 kilometers. We have specified 2,600 persons

per hour on this lift which has a ride time of just under 5 minutes. A total of eight ski pistes are proposed, with lengths ranging from 1.5 to 1.8 kilometers in the low to high intermediate skill classes.

Phase 1 and 2 Summary

We have proposed a total of six lifts in the first two phases of development of the Eidfjord Resort including an eight-passenger gondola, a detachable six-passenger chairlift, two fixed grip quadruple chairlifts and two surface lifts.

We estimate the capacity of Phase 1 at approximately 1,100 skiers per day in the first phase, and a total Ski Area Capacity of 4,820 per day at the end of Phase 2 when all lifts have been installed. It is quite possible that Lift C, the eight-passenger gondola to Amundsen Viewpoint may be installed prior to and independent of Lifts D and E depending on economic resources of the developer. We certainly believe that the potential for summer sightseeing to Amundsen Viewpoint is a key economic potential for the Eidfjord Resort.

TABLE III.1
PHASE 1 AND 2
LIFT SPECIFICATIONS

Lift Number	**A**	**B**	**C**	**D**	**E**	**K**	
Lift Type	**4C**	**2P**	**D8G**	**4C**	**D6C**	**MC**	**TOTAL**
Phase	**1**	**1**	**2A**	**2A**	**2B**	**1**	
Top Elevation m.	990	839	1,095	1,095	1,110	810	
Bottom Elevation m.	815	811	798	781	780	802	
Total Vertical m.	175	28	297	314	330	8	1,152
Horizontal Distance m.	791	318	1,861	940	1,450	100	
Slope Distance m.	810	319	1,885	991	1,487	100	5,592
Average Slope %	22%	9%	16%	33%	23%	8%	14% Mean
Rated Capacity	2,400	1,440	2,800	1,800	2,600	800	11,840
V.T.M./Hr.(000)	420	40	832	565	858	6	2,722
Rope Speed m/sec.	2.2	2.3	5.0	2.2	5.0	0.6	
Trip Time min.	6.14	2.31	6.28	7.51	4.96	2.79	
Operating Hr./Day	7.0	7.0	7.0	7.0	7.0	7.0	7.0
V.T.M. Demand/Day	2,947	1,126	2,796	5,762	3,595	940	
Loading Eff. %	80%	80%	95%	75%	85%	85%	
Access Reduction	0%	0%	10%	0%	0%	0%	
SCC Skiers/Day	**800**	**200**	**1,780**	**520**	**1,420**	**100**	**4,820**

Phase 3 and 4 Lifts

Once the Eidfjord Resort reaches 223,000 winter skier visits and several hundred thousand summer sightseers, the area would be in a position to expand onto the very attractive slopes at Hyloksla Mountain. We have proposed a connecting lift, (Lift G) as a pulse gondola with four groups of two cabins with eight persons per cabin. This lift departs from the western side of the resort centre, adjacent to the bottom of Lift F and travels 663 meters, including a 100-meter span over the large canyon named Skitsetegila. Lift G has a capacity of 630 persons per hour in each direction which should be adequate to transport skiers from the central part of the resort to the western part of the resort. From the resort village centre, people could ride up Lift A and ski down to the bottom of

Lift G, ride about four minutes over to ski Piste H1 which is a green, beginner piste that skis about 1.5 kilometers down to the west base area. Skiers can return from the top of Lift I or Lift H to the western terminal of Lift G, ride four minutes across, disembark and then ride up Lift F and ski back to the central resort area.

Lift F is a fixed grip quadruple chairlift with 1,800 persons per hour and a vertical rise of 80 meters which services a low intermediate and a beginner run and provides the transit from Lift G over to the resort centre. This lift will also provide nice skiing for nearby cabins and apartments.

On the Hylosksla side, we have proposed three lifts (Lift H, I and J). Lift H is a detachable six-passenger chairlift with a vertical rise of 373 m. and a length of 1,160 m. resulting in an average gradient of 34 percent. Lift H services four main ski pistes and also provides access to the pistes on Lift I. A capacity of 2,600 persons per hour is proposed.

Lift J is an eight-passenger gondola from the potential western resort centre above Høl. Lift J has a vertical rise of 350 m. over a slope length of 1.2 kilometers resulting in an average slope gradient of 35 percent. This lift services intermediate and high intermediate skill level pistes and provides access to a potential summit restaurant which has dramatic views of the Bjoreio River and Vøringsfossen in the valley bottom. We have examined the lands of the west base area and they certainly seem suitable for development of a second resort centre, as well as cabins and apartments and we have illustrated land use schematics for these base lands.

We have also proposed two surface lifts for ski school and transportation between base areas. Lift I is a double platter lift for beginners and children adjacent to the east base area. People can ski from the top of Lift I down to the bottom of Lift J for access up the mountain and return to the east side skiing.

Phase 3 and 4 Summary

A total of three lifts are proposed in Phase 3 including the two connecting lifts with a combined capacity for 1,600 skiers per day. The total resort capacity at this level of development could comfortably accommodate 6,320 skiers at one time and accommodate about 330,000 skiers annually.

In Phase 4, Lifts I and J are proposed with a Skier Carrying Capacity of 1,270 skiers at one time such that the total development at build-out has a capacity of 7,820 skiers per day. This level of development could accommodate about 410,550 skiers per year assuming a 35 percent utilization over a 150 day snow season.

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TABLE III.2
PHASE 3 AND 4
LIFT SPECIFICATIONS

Lift Number	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**	
Lift Type	**4C**	**2P**	**D8G**	**4C**	**D6C**	**4C**	**PG 4X3X8**	**D6C**	**2P**	**D8G**	**MC**	**MC**		
Phase	**1**	**1**	**2A**	**2A**	**2B**	**3**	**3**	**3**	**4**	**4**	**1**	**4**		
Top Elevation m.	990	839	1,095	1,095	1,110	913	898	1,192	746	1,082	810	733		
Bottom Elevation m.	815	811	798	781	780	833	833	819	703	732	802	726		
Total Vertical m.	175	28	297	314	330	80	65	373	43	350	8	7	2,070	
Horizontal Distance m.	791	318	1,861	940	1,450	475	660	1,098	404	988	100	50		
Slope Distance m.	810	319	1,885	991	1,487	482	663	1,160	406	1,048	100	50	9,402	
Average Slope %	22%	9%	16%	33%	23%	17%	10%	34%	11%	35%	8%	14%	23%	Mean
Rated Capacity	2,400	1,440	2,800	1,800	2,600	1,800	630	2,600	1,440	2,600	800	800	21,710	
V.T.M./Hr.(000)	420	40	832	565	858	144	41	970	62	910	6	6	4,854	
Rope Speed m/sec.	2.2	2.3	5.0	2.2	5.0	3.0	3.0	5.0	2.3	5.0	0.6	0.6		
Trip Time min.	6.14	2.31	6.28	7.51	4.96	2.68	3.73	3.87	2.94	3.49	2.79	1.40		
Operating Hr./Day	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
V.T.M. Demand/Day	2,947	1,126	2,796	5,762	3,595	3,094	0	3,324	1,485	5,769	940	940		
Loading Eff. %	80%	80%	95%	75%	85%	80%	95%	85%	85%	95%	85%	80%		
Access Reduction	0%	0%	10%	0%	0%	20%	100%	20%	0%	0%	0%	0%		
SCC Skiers/Day	**800**	**200**	**1,780**	**520**	**1,420**	**210**	**0**	**1,390**	**250**	**1,050**	**100**	**100**	**7,820**	

Phase 1 and 2 Pistes

There are 5 pistes associated with Lift A that are approximately 4.0 km. in length and cover 18.4 hectares of terrain. These pistes offer a fair distribution of ski piste skill level with mostly novice and low intermediate pistes and some high intermediate and advanced. Piste A5 will be used to connect Lifts A and B in the first phase of development to the midload station on Lift C installed in phase 2. It is estimated that the Lift A pistes can accommodate 1,060 skiers at one time.

Lift B services 3 beginner pistes that total 1.0 km. in length and have a slope area of 5.1 hectares. The average density of 39 skiers per hectare is well below the optimal density of 75 skiers per hectare which will allow for lots of comfortable room for beginners to learn on. An estimated 380 skiers at one time can be accommodated on these 3 pistes which are also suitable for ski school and children's programs.

Lift C services the largest amount of slope area in Phase 1 and 2 with 27.1 hectares of pistes totaling 7.5 km in length. These 8 pistes offer a good distribution of skier skill level with novice and low intermediate pistes to the west and the high intermediate and advanced slopes on the north facing slopes. The Lift C pistes can support an estimated 1,660 skiers at one time.

There are 5 pistes associated with Lift D that combined have approximately 4.4 km of pistes and cover 16.4 hectares of terrain. These pistes offer terrain that is skewed towards the high intermediate, advanced and expert skill levels. From the top of Lift D a 1.1 km ski-way (SW1) will connect the Phase 2A development with Phase 2B. It is estimated that the Lift D trails can service 560 skiers at one time.

Lift E services 8 pistes that combined add to 6.8 km. in length and encompass 18 hectares of terrain. These pistes offer a good mix of terrain composed of mostly novice and low intermediate skill levels with some high intermediate and advanced. An estimated 1,410 skiers can be appropriately accommodated on these 8 pistes.

Lift K is a Moving Carpet that services one true beginner piste that is 100 meters in length and has a slope area of 0.4 hectares. An estimated 40 skiers at one time can be appropriately accommodated on this beginner piste. Lift K is also used to transport skiers from the gondola terminal up to the Lift A and B platform.

Phase 1 and 2 Piste Summary

The Phase 1 and 2 piste systems proposed for the southeast and southwest zones have a total skier trail capacity of 5,100 skiers at one time. The specifications for these pistes are listed in Table III.3. Phase 1 and 2 will service approximately 23.8 kilometers of ski trails encompassing 92.6 hectares of terrain. The lift and piste plan is illustrated on Figure 9, the Resort Master Plan Concept.

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TABLE III.3
PHASE 1 AND 2
SKI PISTE SPECIFICATIONS

Trail Name	Trail No.	Skill Class	Elevation Top Meters	Elevation Bottom Meters	Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope Avg.	Percent Slope Steep.	Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Area Density	Skiers At Area Total
Lift A														
Phase 1	A1	2	991	817	174	1,136	1,149	15%	21%	46	5.19	5.25	75	390
	A2	5	987	853	134	633	647	21%	40%	37	2.36	2.41	45	110
	A3	6	950	825	125	548	562	23%	50%	40	2.19	2.25	23	50
	A4	3	987	817	170	872	888	19%	27%	66	5.77	5.88	60	350
	A5	3	914	805	109	706	714	15%	23%	36	2.57	2.60	60	160
Total Lift A	5						3,961					18.39		1,060
Lift B														
Phase 1	B1	1	860	810	50	470	473	11%	12%	43	2.03	2.04	75	150
	B2	2	856	826	30	181	183	17%	17%	42	0.76	0.77	75	60
	B3	1	859	812	47	382	385	12%	15%	60	2.28	2.30	75	170
Total Lift B	3						1,041					5.11		380
Lift K														
Phase 1	K1	1	810	801	9	100	100	9%	9%	44	0.44	0.44	75	30
Total Lift K	1						100					0.44		30
Lift C														
Phase 2A	C1	2	1,095	813	282	1,719	1,742	16%	21%	35	5.99	6.07	75	460
	C2	2	980	811	169	1,498	1,508	11%	14%	28	4.24	4.27	75	320
	C3	2	940	908	32	130	134	25%	25%	32	0.42	0.43	75	30
	C4	3	980	891	89	572	579	16%	27%	37	2.10	2.13	60	130
	C5	3	968	814	154	805	820	19%	25%	40	3.21	3.27	60	200
	C6	4	1,038	811	227	1,193	1,214	19%	40%	40	4.75	4.84	60	290
	C7	6	972	822	150	827	840	18%	50%	43	3.52	3.58	23	80
	C8	3	1,095	972	123	651	663	19%	28%	39	2.51	2.55	60	150
Total Lift C	8						7,499					27.14		1,660
Lift D														
Phase 2A	D1	6	1,089	781	308	978	1,025	31%	54%	43	4.23	4.43	23	100
	D2	7	1,090	781	309	944	993	33%	63%	50	4.68	4.92	30	150
	D3	5	1,009	795	214	739	769	29%	50%	45	3.34	3.48	45	160
	SW1	3	1,090	981	109	1,168	1,173	9%	9%	15	1.80	1.81	60	110
Total Lift D	5						4,384					16.35		560
Lift E														
Phase 2B	E1	3	1,109	782	327	1,757	1,787	19%	30%	38	6.74	6.86	60	410
	E2	3	1,087	1,012	75	342	350	22%	31%	48	1.63	1.67	60	100
	E3	4	1,033	781	252	1,243	1,268	20%	35%	37	4.58	4.67	60	280
	E4	4	955	783	172	781	800	22%	39%	41	3.18	3.26	60	200
	E5	5	963	805	158	698	716	23%	40%	39	2.70	2.77	45	120
	E6	3	929	865	64	227	236	28%	29%	43	0.98	1.02	60	60
	E7	5	1,110	933	177	777	797	23%	44%	43	3.37	3.46	45	160
	SW2	3	1,112	1,033	79	882	886	9%	11%	16	1.40	1.41	60	80
Total Lift E	8						6,839					25.12		1,410
Total Phase 2b Lifts	30						23.8	km				92.6	Ha	5,100

The overall skill level balance for the Phase 1 and 2 terrain piste development is listed in Table III.4 and graphically illustrated in Plate III.1, which compares the proposed trail skill level balance and the Norwegian market. The proposed ski pistes are fairly well balanced for Phase 1 and 2, however they are skewed towards the lower skill classes, which is ideal for the family market. In Phases 3 and 4 more terrain will be developed that is appropriate for high intermediate and advanced skiers.

TABLE III.4
PHASE 1 AND 2
SKI PISTE SKILL LEVEL BALANCE STATEMENT

Lift SCC =	4,820

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	4.8	350	7%	5%
2 Novice	16.8	1,260	25%	10%
3 Low Intermediate	29.2	1,750	34%	20%
4 Intermediate	12.8	770	15%	30%
5 High Intermediate	12.1	550	11%	20%
6 Advanced	12.0	270	5%	10%
7 Expert	4.9	150	3%	5%
TOTALS	**92.6**	**5,100**	**100%**	**100%**

Average Density =	52.1	Skiers/Hectare
Optimum Density =	60.3	Skiers/Hectare
Weighted Demand =	3,239	VTM/Skier/Day

SKI PISTE SKILL LEVEL DISTRIBUTION – PHASE 1 AND 2

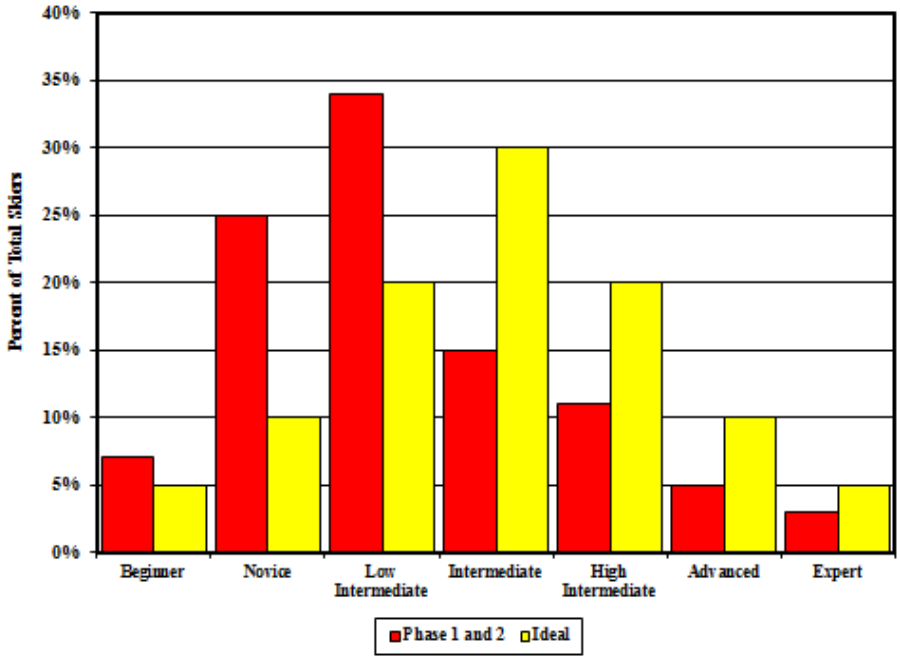


PLATE III.1

Phase 3 and 4 Pistes

As previously described, Lifts G and F are transport lifts and therefore the pistes they service are primarily used for connecting Phases 1 and 2 with Phases 3 and 4. Lift G is a pure transfer lift which offers zero skiing and Lift F has 3 pistes that are suitable for beginners and novice skiers. These pistes offer 1.6 km. in length and 6.0 ha. of slope area.

There are 7 pistes associated with Lift H that combined have approximately 6.1 km of pistes and cover 22.4 hectares of terrain. These east facing slopes offer almost exclusively low intermediate and intermediate terrain. Within this piste cluster there are 3 ski-ways that are critical to the connectivity of the resort. As displayed on Figure 9, SW5 carries skiers from Lift G past the bottom of Lift H to the west base at Høl. SW4 connects skiers from Phase 4 to the connection Lift G and SW6 brings skiers from the top of Lift H to the Lifts J and I. It is estimated that the Lift H trails can service 1,360 skiers at one time.

Lift I services 2 beginner pistes that combined are 851 meters in length and have a slope area of 3.5 hectares. An estimated 260 skiers at one time can be accommodated on these beginner pistes. These pistes provide the only true beginner terrain in the Phase 4 development.

Lift J services the largest amount of terrain in the Eidfjord Resort Master Plan Concept with 33.4 hectares of pistes totaling 9.1 km. in length. These 11 pistes are primarily high intermediate and advanced and can support an estimated 1,030 skiers at one time.

Lift L is a Moving Carpet which services 1 true beginner piste and one ski-way that connect skiers from the bottom of Lift J to the base at Lift I. Combined, they are 122 meters in length and have a slope area of 0.62 hectares. An estimated 30 skiers at one time can be appropriately accommodated on this beginner piste.

Phase 3 and 4 Piste Summary

After the completion of Phase 3 and 4, the overall piste systems proposed for Eidfjord Resort will have a total skier trail capacity of 8,160 skiers at one time. The specifications for these pistes are listed in Table III.5. After Phase 4, approximately 41.7 kilometers of ski trails encompassing 158.5 hectares of terrain will be accessible. The lifts and pistes are illustrated on Figure 9, the Resort Master Plan Concept.

TABLE III.5
PHASE 3 AND 4
SKI PISTE SPECIFICATIONS

Trail Name	Trail No.	Skill Class	Elevation Top Meters	Elevation Bottom Meters	Total Vert. Meters	Horz. Dist. Meters	Slope Dist. Meters	Percent Slope Avg.	Percent Slope Steep.	Avg. Width Meters	Horz. Area Ha.	Slope Area Ha.	Skiers At Density	Area Total
Lift F														
Phase 3	F1	3	911	822	89	597	604	15%	29%	44	2.63	2.66	60	160
	F2	4	911	822	89	555	562	16%	33%	46	2.55	2.58	60	150
	SW3	2	910	862	48	473	475	10%	11%	17	0.79	0.79	75	60
Total Lift F	3						1,641					6.03		370
Lift G														
Phase 3	G1	1	2,200	1,635	565	2,230	2,300	25%	25%	0	0.00	0.00	75	0
Total Lift G	1						2,300					0.00		0
Lift H														
Phase 3	H1	3	1,098	820	278	1,551	1,576	18%	30%	40	6.28	6.38	60	380
	H2	4	1,030	832	198	837	860	24%	36%	41	3.45	3.55	60	210
	H3	4	1,070	826	244	947	978	26%	36%	45	4.27	4.41	60	260
	H4	4	1,098	820	278	1,154	1,187	24%	36%	42	4.83	4.97	60	300
	SW4	3	985	892	93	638	645	15%	17%	18	1.17	1.18	60	70
	SW5	2	813	732	81	606	611	13%	27%	24	1.43	1.44	75	110
	SW6	4	1,098	1,071	27	275	276	10%	10%	17	0.47	0.47	60	30
Total Lift H	7						6,133					22.40		1,360
Lift I														
Phase 4	I1	1	762	703	59	467	471	13%	15%	40	1.88	1.89	75	140
	I2	2	762	707	55	376	380	15%	26%	42	1.57	1.59	75	120
Total Lift I	2						851					3.48		260
Lift J														
Phase 4	J1	6	1,082	728	354	1,449	1,492	24%	56%	32	4.57	4.70	23	110
	J2	5	1,060	703	357	1,439	1,483	25%	48%	36	5.23	5.39	45	240
	J3	6	867	721	146	524	544	28%	48%	41	2.13	2.21	23	50
	J4	6	1,002	758	244	558	609	44%	51%	40	2.25	2.46	23	60
	J5	6	865	728	137	474	493	29%	48%	39	1.87	1.95	23	40
	J6	6	1,077	735	342	887	951	39%	60%	41	3.66	3.92	23	90
	J7	6	1,080	743	337	826	892	41%	56%	40	3.33	3.60	23	80
	J8	7	1,060	752	308	722	785	43%	69%	41	2.96	3.22	30	100
	J9	5	1,082	728	354	1,329	1,375	27%	53%	31	4.18	4.33	45	190
	J10	5	869	760	109	352	368	31%	43%	42	1.49	1.56	45	70
	SW7	5	955	944	11	102	103	11%	11%	3	0.03	0.03	45	0
Total Lift J	11						9,095					33.37		1,030
Lift L														
Phase 4	L1	1	733	726	7	50	50	14%	14%	36	0.18	0.18	75	10
	SW8	1	733	726	7	71	71	10%	10%	62	0.44	0.44	75	30
Total Lift L	2						122					0.62		40
Total All Lifts	55						41.7	km				158.5	Ha	8,160

The overall skill level balance for the terrain identified for the Phase 3 and 4 ski piste development is listed in Table III.6 and graphically illustrated in Plate III.2, which compares the proposed piste skill level balance and the Norwegian market. The proposed pistes are well balanced overall, but skewed towards the lower skill levels.

TABLE III.6
PHASE 3 AND 4
SKI PISTE SKILL LEVEL BALANCE STATEMENT

Lift SCC =	7,820

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	7.3	530	6%	5%
2 Novice	20.6	1,550	19%	10%
3 Low Intermediate	39.4	2,360	29%	20%
4 Intermediate	28.8	1,720	21%	30%
5 High Intermediate	23.4	1,050	13%	20%
6 Advanced	30.8	700	9%	10%
7 Expert	8.1	250	3%	5%
TOTALS	**158.5**	**8,160**	**100%**	**100%**

Average Density =	49.4	Skiers/Hectare
Optimum Density =	57.8	Skiers/Hectare
Weighted Demand =	3,499	VTM/Skier/Day

SKI PISTE SKILL LEVEL DISTRIBUTION – PHASE 2 AND 3

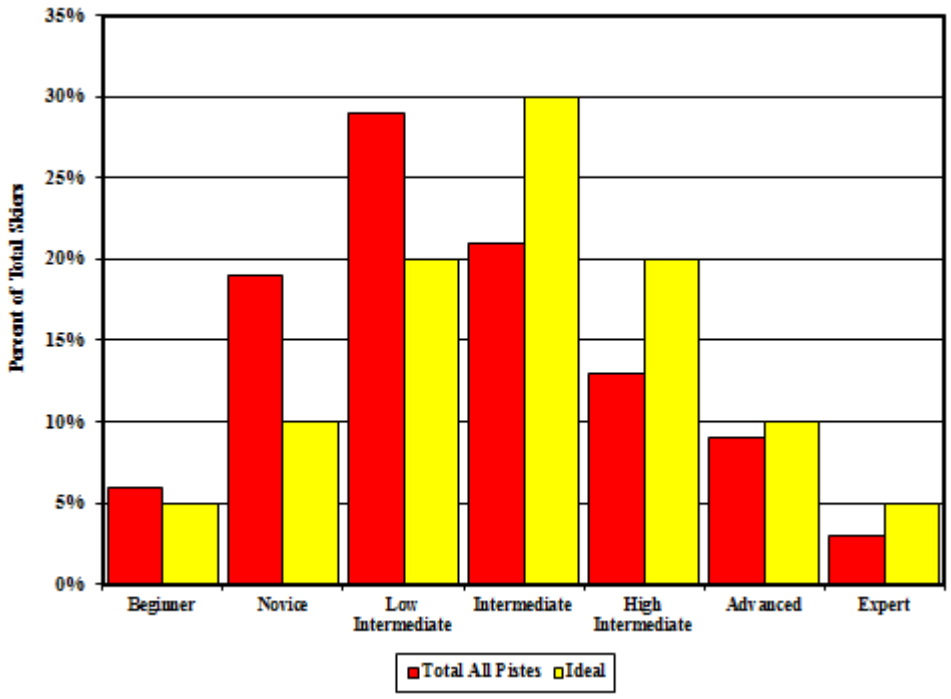


PLATE III.2

.4 Base Area Development Concept

Overall Land Use Concept

The Overall Land Use Concept is illustrated schematically on Figure 9, the Resort Master Plan Concept. The proposed development types in the resort master plan concept are a mix of hotels, guest lodges, multi family and single family residences or cabins. In order to create as much critical mass as possible in one place in the resort, we propose to develop only one commercial resort centre. This commercial centre will be the village in Parcel A1, located in the middle of the ski area at the base of the lifts in the Southwest Zone.

The proposed development for the main base area is illustrated on Figure 10, the Southwest Base Land Use Concept. It shows in more detail the Southwest zone with the main village and surrounding development zones, with a sketch format for the village and the development zones for later phases represented in a schematic bubble format. Figure 11 illustrates the proposed Eidfjord Resort Village, with 1,860 beds proposed in a development zone of approximately 6 hectares. The village buildings are proposed to be 3 to 4 levels high, with a mix of accommodation and commercial space.

Winter Village Street, Whistler, Canada

The primary objective of public accommodation in the Village zone is to concentrate the warm beds close to the lift staging area and to promote a pedestrian-oriented resort experience for guests, with a vibrant atmosphere in the streets. The development of a compact, pedestrian oriented village creates the opportunity to locate the staging of other activities for non-skiers and for summer recreation. The resort village, with its restaurants and shops, will be a resort amenity in itself.

Summer Village Street, Sun Peaks, Canada

Parcels A2 and A3 are day visitor parking areas with capacities for 1,400 and 800 visitors in Parking Lots P1 and P2 respectively. We have assumed that in winter, 90% of the day visitors will be Alpine skiers/snowboarders. Adjacent to the village area there is a proposed townhouse development zone (Parcel A4) that will have small multifamily buildings with individual entrances directly from ground level for each unit and a one car garages for each unit. This is a two hectare zone with a total of 224 beds. Parcel A5 is a cabin zone of 6 hectares and 43 ski-in/ski-out parcels. Another townhouse area (A6) and a cabin area (Parcel A7) are proposed within walking distance to the village and the lifts.

At the base of Lift D, an 8 hectare cabin development is proposed in Parcel A8 for development in Phase 2 when this lift is constructed.

In the Southeast Zone, we have proposed a parking area (A9) for the guests and residents coming from Maurset. Parcel A9 has an area of 0.75 hectares, with a capacity for approximately 250 cars, or 620 visitors.

The West Zone base area is closest to Vøringsfossen, which is the current arrival area for buses with cruise ship guests and the existing commercial zone. The West Base is also proposed to have a substantial amount of development, but no commercial centre. The only commercial space in the West Base will be the day lodge to serve the skiers that start in this location. The West Zone base area will have a total capacity to accommodate 2,150 guests and day visitor parking for 1,240 people. Parcel B1 is a 4.8 hectare parcel located between Lift I Platter and the Lift J Gondola, following the snow front for most of its length.

Parcel B1 is proposed as a townhouse development with potential for over 800 beds. Parcel B2 is the main day visitor parking lot located on a long bench directly below B1 and has capacity for approximately 825 visitors within walking distance to the Lift J skiing/sightseeing gondola. From Parking Lot B2, it is a short walk to the load station of Lift I. Parcel B3 is a smaller 0.5 hectare parking lot located at the base of Lift J Gondola. Parcels B4 (5.5 hectares) and B5 (3.5 hectares) are townhouse parcels with ski-in/ski-out locations. Parcels B6 through B8 are cabin development zones. Parcel B6 is an area at the snow front where the steeper land doesn't lend itself for high density development, therefore a cabin area is proposed in this central location. Parcel B7 is a 0.7 hectare cabin area and Parcel B8 is the largest cabin development in the West Base of 5 hectares with potential for 240 beds.

Land Use Program

In order to calculate the number of visitors and skiers accommodated in the development zones and the visitors and skiers coming from the parking areas proposed in the base development concept, we have made assumptions about the occupancy rates in the different types of development and about the parking capacities. By assuming a percentage of skier participation for the development types, we have estimated the number of skiers coming from the proposed development zones. Table III.7 lists the base development planning assumptions.

TABLE III.7
EIDFJORD RESORT
BASE DEVELOPMENT PLANNING ASSUMPTIONS

Land Use Designation	Public vs. Private Accomm. Ratio	Occupancy Rate		Guest Yield	Skier Participation	Skier Yield
		Unit	Bed			
Village & Townhouse	100% Public Accommodation	95%	85%	81%	90%	**73%**
Cabins	25% Public 75% Private	70%	70%	49%	70%	**34%**
Employee Housing	n.a.	100%	100%	100%	10%	**10%**

Cars per Hectare	330
Buses per Hectare	70
Skiers per Car	2.5
Skiers per Bus	40

Table III.8 is the Base Development Concept Program summarizing the development yields of all proposed parcels in the resort master plan concept. The number of skiers that come from parking and accommodation matches the skier capacity of the Phase 4 mountain development concept.

TABLE III.8
EIDFJORD RESORT
BASE DEVELOPMENT CONCEPT

Area	Parcel	Area (ha.)	*Parking Capacity (Cars)*	*Base Capacity (Beds)*	Base Capacity (Visitors)	Base Capacity (Skiers)
Southwest Zone						
SW Main Base						
Village	**A1**	6.3		*1,856*	**1,499**	1,349
Parking 1a	**A2**	**2.4**	*189*		**473**	425
Parking 1b	**A2**		*390*		**975**	878
Parking 2	**A3**	**1**	*315*		**788**	709
Townhouse Zone 1	**A4**	**1.8**		*224*	**181**	163
Cabin Zone 2	**A5**	**6**		*344*	**169**	118
Townhouse Zone 3	**A6**	1.9		*342*	**276**	248
Cabin Zone 4	**A7**	3.4		*163*	**80**	56
Subtotal SW Base			*894*	*2,929*	***4,440***	**3,946**
SE Zone						
Cabin Zone 5 (Lift D Base)	**A8**	**8**		*384*	**188**	132
Parking 3 (Lift E Base)	**A9**	0.75	*248*		**620**	558
Subtotal SE Base		***8.75***	*248*	*384*	***808***	**690**
Subtotal SW & SE Zones			*1,142*	*3,313*	***5,248***	**4,636**

Area	Parcel	Area (ha.)	*Parking Capacity (Cars)*	*Base Capacity (Beds)*	Base Capacity (Visitors)	Base Capacity (Skiers)
West Zone						
Townhouse Zone	**B1**	4.8		*864*	**698**	628
Parking 1	**B2**	1	*330*		**825**	743
Parking 2	**B3**	0.5	*165*		**413**	372
Townhouse Zone	**B4**	5.5		*990*	**799**	719
Townhouse Zone	**B5**	3.5		*630*	**509**	458
Cabin Zone 1	**B6**	0.5		*24*	**12**	8
Cabin Zone 2	**B7**	0.7		*34*	**17**	12
Cabin Zone 3	**B8**	5		*240*	**118**	83
Subtotal West Zone		***21.5***	***495***	***2,782***	***3,391***	***3,023***

Total Resort Concept			*1,637*	**6,095**	**8,639**	**7,659**

90% skier participation rate assumed from Day Visitor Parking Lots

The Eidfjord Land Use Concept assumes that approximately half of the skiers at the resort will come from parking areas and half will come from the proposed accommodation, as shown in Table III.9.

TABLE III.9
EIDFJORD RESORT
SKIERS FROM BEDS AND PARKING

% Skiers from Parking	48%	3,684
% Skiers from Accommodation	52%	3,980
Total	100%	7,664

The decision regarding the size of the parking areas and the number of proposed beds is our estimate of what could be required at the resort; however this is not based on market research. At this point, no detailed research has been done regarding the regional skier market in the Eidfjord area and the effect of the competing ski areas within a reasonable driving distance. We do know that there is a substantial number of cabins in the area, and once this new ski area is developed, we can safely assume these cabins will be used more in winter than they were in the past. In addition, we estimate that there are at least 600 existing hotel beds at less than half an hour driving distance of the study area. In the Technical Assessment section of the report we established that in the near future at least 3,000 skiers can be accommodated in the immediate region of the study area. Therefore, the proposed capacity of the day skier parking areas for 3,700 skiers seems to be a reasonable size.

Table III.10 illustrates that the base capacity of the development concept is approximately 7,840 skiers, designed to closely match the ski area's capacity. The Southwest base is the main focus of the resort and has the largest parking and accommodation capacity, for a total of 4,440 visitors of which 3,946 are skiers. In the Southeast zone, the base capacity is 808 skiers, with a large cabin zone at the base of Lift D and a parking area at the base of Lift E for the cabin owners in Maurset. In the West zone, closest to the Vøringsfossen waterfall, the base capacity is 3,400 skiers. In addition, we have assumed that a public resort shuttle bus will bring approximately 200 skiers to all base areas combined.

TABLE III.10
EIDFJORD RESORT
BASE CAPACITY

Southwest Zone		
From Parking	**Visitors**	**Skiers**
From Parking SW Zone	2,235	2,012
From Accommodation		
From Public Beds WSWD	1,956	1,760
From Private Beds WSWD	249	174
Subtotal from Accommodation	***2,205***	***1,934***
Subtotal Southwest Zone	**4,440**	**3,946**
Southeast Zone		
From Parking	**Visitors**	**Skiers**
From Parking SE Zone	620	558
From Accommodation		
From Private Beds WSWD	188	132
Subtotal Southeast Zone	***808***	***690***
West Base		
From Parking	**Visitors**	**Skiers**
From Parking W Zone	1,238	1,114
From Accommodation		
From Public Beds WSWD	2,006	1,805
From Private Beds WSWD	147	103
Subtotal from Accommodation	***2,153***	***1,908***
Subtotal West Zone	**3,391**	**3,023**
FROM PUBLIC SKIER SHUTTLE	**200**	**180**
Total Base Capacity	**8,839**	**7,839**

Eidfjord Base Trails and Skier Connections

The existing trails in Eidfjord Resort that we have illustrated on the Master Plan are a mix of unpaved road connections to cabins, Nordic trails and summer mountain access trails. The re-routing of the trails that will be interrupted by the proposed development and the additional recreational trails that have been planned around the village development zones are indicated on the Master Plan Concept Figures. Most of these trails will be used as Nordic trails in winter and will also be summer walking trails. More site inspections and planning work is needed to determine if some of the trails are not usable as summer hiking trails because of wet summer conditions. In the main village we have proposed a Nordic skiing trailhead area close to the Lift C gondola, where several trails can start and will connect to the existing valley network. We have indicated a Nordic skiing warming hut/clubhouse (Building BB) on our plan, located at the end of Parking Lot 1.

Eidfjord Base Snow and Summer Play

The moving carpet lift in the Village base is for beginner skiers and teaching but also brings skiers up out of Parking Lot P1 to the Lift A and Platter Lift B load stations. The other option to reach Lift A for skiers parking in Lot P1 is to first ride up on the Gondola Lift C and ski to Lift A.

Soda Springs Snow Play Area

The Village Base has several areas suitable for snow play. To the left (looking uphill) of the Platter load terminal is an area with natural grades suitable for a 150-meter long tubing area. The width of the tubing finish area allows for three 10-meter wide lanes. A flat area located between the village and Lift C is well suited for general snow play for children and in summer could be used as a park with water play features.

The gentle terrain in this snow play zone is ideal for an outdoor concert venue in the summer with grassy slopes to sit on and a stage at the base of the beginner terrain.

Eidfjord Base Skier Services

Ecosign has developed a detailed program for the primary guest service functions that need to be provided in ski resort base areas. Using international resort planning standards as a baseline, Ecosign has customized standards for recommended floorspace per skier to the particular needs of the Norwegian market. For Eidfjord, which is envisioned as a destination resort we propose to design the skier services at the highest level of service. In Norway this generally requires less building space than it would in other destination resorts, as the requirements for rental shops, retail space and restaurant space are lower in Norway. The skiers here tend to eat at home more often than in other ski resorts around the world. Most Norwegians have their own ski equipment, which reduces the need for rental shops, and the interest in retail is also lower than in other resort locations.

Main Day Lodge at Sun Peaks, Canada

Design Day

To assist in the planning of skier and guest service facilities at the base areas of the ski resorts, the number of visitors at the resort on a “Design Day” needs to be determined. The “Design Day” is used as the business level to which the skier services buildings are designed and is chosen to represent the average business levels expected during the high season but is not the “peak day” experienced during the season. If facilities were designed for the peak day, they would be under-utilized for the majority of the season. As this is a new resort, we recommend using 80 percent of the mountain SCC as the Design Day for Eidfjord Resort.

Skier Services Standards and Program at Build Out

Table III.11 lists the square meters per skier that should be provided for each of the skier services and the total required GFA of skier services space recommended at build out of the resort.

TABLE III.11
EIDFJORD RESORT
GUEST SERVICE FLOORSPACE REQUIREMENTS

SCC at Build out	**7,820**	**Skiers**
Design Day (80% of SCC)	**6,256**	**Skiers**
Guest Service Function	**Resort Standard**	**Total Recommended Floorspace**
Staging Facilities	**Skiers Served**	**6,256**
	Sq.m. / Skier	m2
Ticket Sales	0.014	88
Public Lockers	0.065	406
Equipment Rental & Repair	0.093	582
Guest Services/Ski School	0.035	218
Children's Programs	0.047	295
Restrooms (for staging)	0.038	235
Subtotal Staging Facilities	**0.291**	**1,824**
Commercial Facilities	**Skiers Served**	**6,256**
	Sq.m. / Skier	m2
Food Service Seating	0.343	2,145
Kitchen & Scramble	0.171	1072
Restrooms (Food Service-related)	0.060	375
Accessory/Retail Sales	0.053	332
Subtotal Commercial Facilities	**0.627**	**3,924**
Operational Facilities	**Skiers Served**	**6,256**
	Sq.m. / Skier	m2
Administration	0.074	465
Employee Facilities	0.037	232
First Aid & Ski Patrol	0.028	174
Subtotal Operational Facilities	**0.139**	**871**
Subtotal all Facilities	**1.058**	**6,619**
Storage @ 10%	0.106	662
Circ./Walls/Waste/Mech. @ 15%	0.159	993
Total (Sq.m.)	**1.323**	**8,274**

Number of Seats	**1,788**

There are two proposed mountain restaurants, one at the top of the Lift C Gondola and another at the top of the Lift J Gondola. The West base will also need a day lodge building at the load station of the Lift J gondola for ticket sales, washrooms and a small restaurant or café. Most of the other skier services are located in the Southwest base area in the skier services buildings or on ground level of the village buildings. Some of this skier services space may not need to be built by the ski area operator, as the commercial space in the village buildings can also provide several of the services, such as a portion of the restaurant seats, rental shops and retail shops.

Mountain Restaurant in Grandvalira, Andorra

Typically we program the restaurant space requirements assuming that most people are skiers having a quick lunch, and most restaurants are designed as self-serve with a simple menu. We calculate the number of seats required in the restaurants using 4 “turns” per seat during the lunch period; meaning that during a two hour lunch period, each seat will be used an average of 4 times by different people. The floor area per seat is 1.2 square meters which is the standard used in most ski resorts for on-mountain restaurants. Within this efficient level of service, different approaches can be taken to provide the skier with a choice of restaurant and food styles.

The sum of the areas required for the above functions is the recommended functional space. To this total, an additional ten percent is added for storage and fifteen percent is added for walls, circulation, mechanical and electrical space.

Skier Services Program Phase 2A

Phase 2A is the size of the resort considered in the financial model in Section IV of this report. In Table III.12, the total amount of guest service floorspace recommended for Eidfjord resort at the end of Phase 2A is calculated by applying the recommended floorspace per skier to the "Design Day" business levels.

TABLE III.12
EIDFJORD RESORT
SKIER SERVICES PROGRAM PHASE 2A

SCC at Phase 2a	**3,400**	**Skiers**		
Design Day (80% of SCC)	**2,720**	**Skiers**		
Guest Service Function	**Resort Standard**	**Total Recommended Floorspace**	**SW Base & Village Floorspace**	**On-Mountain Floorspace**
Staging Facilities	**Skiers Served**	**2,720**	**2,720**	**-**
	Sq.m. / Skier	m2	m2	m2
Ticket Sales	0.014	38	38	
Public Lockers	0.065	177	177	
Equipment Rental & Repair	0.093	253	253	
Guest Services/Ski School	0.035	95	95	
Children's Programs	0.047	128	128	
Restrooms (for staging)	0.038	102	102	
Subtotal Staging Facilities	**0.291**	**793**	**793**	**-**
Commercial Facilities	**Skiers Served**	**2,720**	**2,335**	**385**
	Sq.m. / Skier	m2	m2	m2
Food Service Seating	0.343	933	801	132
Kitchen & Scramble	0.171	466	400	66
Restrooms	0.060	163	140	23
Accessory/Retail Sales	0.053	144	124	20
Subtotal Commercial Facilities	**0.627**	**1,706**	**1,465**	**241**
Operational Facilities	**Skiers Served**	**2,720**	**2,245**	**475**
	Sq.m. / Skier	m2	m2	m2
Administration	0.074	202	167	35
Employee Facilities	0.037	101	83	18
First Aid & Ski Patrol	0.028	76	63	13
Subtotal Operational Facilities	**0.139**	**379**	**313**	**66**
Subtotal all Facilities	**1.058**	**2,878**	**2,571**	**307**
Storage @ 10%	0.106	288	257	31
Circ./Walls/Waste/Mech. @ 15%	0.159	432	386	46
Total (Sq.m.)	**1.323**	**3,598**	**3,214**	**384**

Number of Seats	**668**	**110**

The program for Phase 2A includes a restaurant located at the top of the Lift C gondola with 110 seats and a GFA of 384 square meters. The skier services in the village are located mostly in the day lodge Building AA, which has a GFA of 2,370 square meters on two levels. The lower level of the day lodge is at the drop-off level of the building and at the elevation of the top of the moving carpet

and the load stations of the two platter lifts. The upper level of the day lodge is at the load elevation of the Quad Chair Lift A.

The lower level is ideal for the children's program, washrooms, operations space and a ticket office. The children's program space could have a lunch room, children's program registration desk and rental shop for children's ski equipment, depending on how the organization of the ski school is set up. The upper level is best suited for the restaurant, ski rentals, and some operational facilities space.

Building CC is a second, smaller skier services building located at the base of the Lift C Gondola. Building CC will have an information kiosk that can also run the ticketing for the gondola and rent tubes and sleds for the snow play zone and should also have some washrooms.

Any other skier services space that does not fit in Buildings AA and CC can be located in the commercial spaces of the village buildings that are located close to the snow front.

Village Program

At build out of the Master Plan, the Eidfjord Resort Village will have approximately 1,800 beds. The proposed density of approximately 300 beds per hectare with buildings up to 3.5 floors can only be achieved if all parking for guests is provided in underground parking below the village buildings. It is essential for the efficiency of the resort that adequate underground parking be supplied in one level below the accommodation buildings at an average of between 0.5 – 1 stall per unit (or 4 beds). This concept is planned with village buildings that have up to five floors but the overall average building height should be no more than 3.5 floors; the capacity of one level of underground parking below each building limits the number of beds that can be built above it. Parking requirements may be reduced if direct bus transportation from an international airport or major city centre to the resort is established and guests do not need to drive to the resort.

Whistler Village, Example of a Successfully Designed Mixed-Use Village

Each building located along the main village street is a mixed-use building with the floorspace at pedestrian street level reserved for non-accommodation uses such as commercial space, amenity space and lobby or back of house (BOH) space, and accommodation space located on the levels above. For the mixed-use buildings we have assumed that 70% of each ground floor is for commercial space and 30% is for amenity space, lobby and BOH space. At this preliminary level, the gross accommodation space equals all building space minus the commercial space and a lobby area. The net accommodation space for the apartment buildings is 75% of the gross accommodation space and for the hotel buildings it equals 70% of the gross accommodation space, as hotels typically need more amenity space and back of house space. The village buildings are proposed with an average of 15 square meters per bed and we have assumed a theoretical average unit size of 60 square meters (with 4 beds) to estimate the number of units. Table III.13 provides a summary of the proposed Eidfjord Resort Village Program. The total proposed number of beds in the village is 1,856.

TABLE III.13
EIDFJORD RESORT
VILLAGE BUILDING PROGRAM

	Building Type	Foot print m²	# of Floors (Inc. Parking)	GFA (Excl. Parking) m²	Commercial & Skier Serv. Space m²	Lobby, BOH Space m²	Net Accomm. Space m²	# of Units @ 60sq.m.	# of Beds @4/ Unit
AA	Day Lodge	1188	2.0	2376	2376	0			
BB	Nordic Ski Warming Hut	144	1.0	144	144	0			
CC	Resort Info/Snack Bar	210	1.0	210	210	0			
Subtotal		***1,542***	***1.8***	***2,730***	***2,730***				
A	Apts./Rest./Retail	1080	4.5	3780	756	121	2177	36	144
B	Apts./Rest./Retail	954	4.5	3339	668	107	1795	30	120
C	Apts./Rest./Retail	936	4.5	3276	655	105	1887	31	124
D	Apts./Comm.	648	4.5	2268	454	73	1306	22	88
E	Apts./Comm.	666	4.5	2331	466	75	1343	22	88
F	Apts./Comm.	792	4.5	2772	554	89	1597	27	108
G	Apts./Comm.	702	4.5	2457	491	79	1415	24	96
H	Apts./Comm.	990	4.5	3465	693	111	1996	33	132
I	Multi Purpose Center	900	4.5	4050	630	137	2462	41	164
J	Multi Purpose Center	522	4.5	2349	365	79	1429	24	96
K	Apts./Grocery Store	738	4.5	2583	517	83	1487	25	100
L	Apts./Comm.	630	4.5	2205	441	71	1270	21	84
M	Apts./Office	630	4.5	1905	441	59	1054	18	72
N	Apartments	1044	4.5	3654	731	117	2105	35	140
O	Hotel/Conference/Spa	1836	4.5	6426	1285	514	3239	54	216
P	Apts./Welcome Center	612	4.5	2142	428	69	1234	21	84
Subtotal Other Village Bld.		***13,680***	***4.5***	***49,002***	***9,575***	***1,889***	***27,796***	***464***	***1,856***
	Public UG Parking (Bld. (	1785							
Total Village		***15,222***	***4.2***	***51,732***	***12,305***	***1,889***	***27,796***	***464***	***1,856***

Village Concept

The village street at Eidfjord has a northwest/southeast alignment, with open spaces between the relatively small buildings along the pedestrian street so that throughout most of the day the sun can penetrate from the east, south and west onto the main street and the village square. The open spaces also allow for existing drainage patterns on the site to be maintained and featured as small streams in landscaped areas that run through the village. The pedestrian village has a square framed by Buildings A, B, D and E where walking routes come together, forming a gathering space for events.

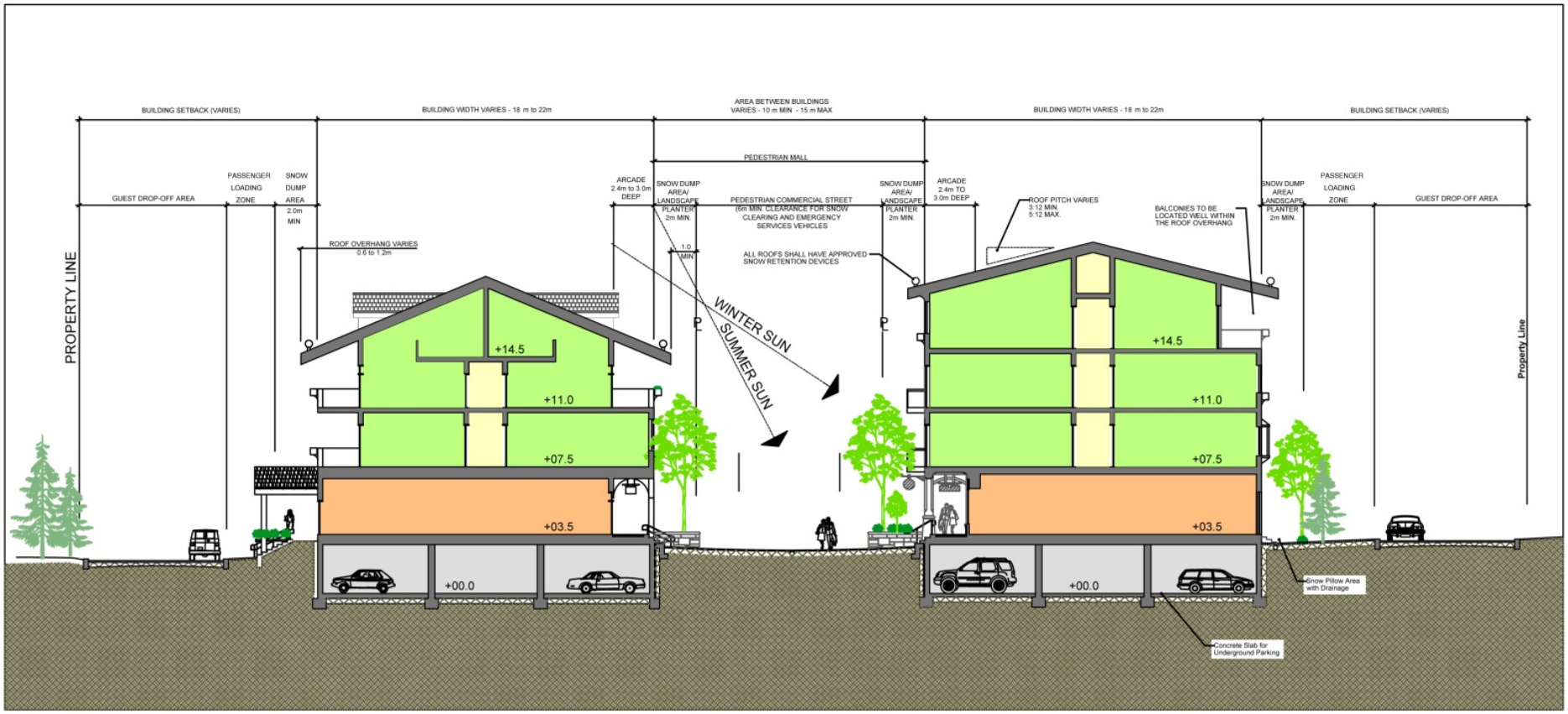
The Village has two hotels and several apartment buildings. The hotel in Building O is located on the mountainside of the village in a ski-in/ski-out location. The building faces southwest on the mountainside, so it will have sun exposure on the south and west facades that are suited for secluded outdoor pool areas and/or outdoor patios and green space. Building O has potential to be a luxury hotel that can have a high end restaurant and après ski bar with quieter outdoor space separate from the village square. Building B can be a small boutique hotel, as it is located on the main village street.

Family Hotel with Outdoor Green Space

We propose that the apartments in the village have privately owned units that are available for nightly rental, using a sale and lease-back model operated by a reservations and maintenance company. A central reservations check-in desk can be located on the north side of the Village near the snow front at the main drop-off for the day lodge and Building P, where it can be run out of the lobby of Building P.

Central Reservations

We provide a typical village section below, where several critical design principles of the pedestrian resort village street are pointed out.



Snow Management

Pedestrian streets should be no more than eight to fifteen meters wide between the buildings to maintain intimacy in the village environment. Due to the narrowness of the streets, it is best to manage the snow by keeping it on the roofs of the buildings; hence a general recommendation for roof slopes ranging from 3 vertical in 12 horizontal up to 7 vertical in 12 horizontal. Cold roofs and heated gutter systems are necessary to prevent icicle buildup at the eaves which can injure pedestrians. A dormer, gable or shed roof is required at all main building entrances so that snow is prevented from dropping on pedestrians.

Village Planters as Snow Catch Areas

The spaces around the buildings that are used for landscaping can also serve as snow storage in winter but also soften the appearance of the buildings and the village street. Snow storage areas can be in the centre of the streets or plazas, in potential snow dump areas, beside restaurant terraces, etc. Covered arcades along the pedestrian street allow pedestrians to walk comfortably through the village in any weather.

Arcades in Village Streets

IV. FINANCIAL ANALYSIS

.1 Introduction

As part of the Master Planning process, Ecosign has prepared a basic financial analysis of the initial stages of the Eidfjord project to determine the financial feasibility of the project. This analysis includes an Order of Magnitude capital budget, a ski area break-even analysis and a summer sightseeing gondola pro forma income statement. The following describes each of the steps in the financial feasibility analysis.

.2 Order of Magnitude Capital Budget

The Capital Budget for Phase 2A of the Eidfjord Master Plan Concept is the first step in establishing the economic viability of the potential development. The objective of this analysis is to determine the "Order of Magnitude" (OoM) capital costs for the initial phase of the ski facility and summer sightseeing operation. Throughout the development of the Eidfjord Master Plan Concept, there has been interaction between financial and resort planners. As various sub-projects were identified, a capital cost was estimated and added to the capital budget.

The alpine ski area development for Eidfjord envisions the development of a ski facility for the regional and destination markets. The estimated capital costs for the ski facility have been broken into 10 project accounts generally accepted by the ski industry around the world. Within each of the major accounts, sub-project accounts have been costed out either as a lump sum or, where appropriate, on a per unit basis. The majority of the capital cost estimates are based on construction and/or installation costs experienced by other ski areas in Europe and Scandinavia, or on manufacturers' budgetary estimates. All capital costs are estimated in 2014 United States dollars (USD). The costs have been allocated to winter or summer use and some facilities are prorated between these two seasons of operation. This budget is for the ski area/summer sightseeing operation only and does not include any portion of the real estate development or its associated infrastructure.

The Order of Magnitude Capital Budget has been prepared using the following assumptions.

Pre-Development Planning - #01

All costs associated with the Eidfjord Master Planning process including planning and design, surveying and mapping, and master planning of the facility are in this account and are listed in Table IV.1. It is assumed that certain sub-accounts within this account would cease following the planning submission, or when construction commences. Engineering costs are based on 7 percent of capital cost of roads, sewage, water, parking, site works and electrical supply. Architecture fees are based on 9 percent of total building costs and include architectural design and structural/mechanical engineering of the buildings.

We have also included a lump sum allowance for basic environmental studies. Depending on the level of environmental assessment required, these costs could be lower or substantially higher. The environmental study costs are for the ski area only and environmental studies for the real estate component are not included in this budget.

TABLE IV.1
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - PREDEVELOPMENT COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#01 Pre-development						
Master Plan Study	lump sum	1	$300,000	$300	$300	
Mapping	lump sum	1	$100,000	$100	$100	
Surveying	lump sum	1	$100,000	$100	$100	
Environmental/Geotechnical Studies	lump sum	1	$200,000	$200	$200	
Engineering	Accounts	#05 & #06	7%	$453	$453	
Architecture	Account	#02	9%	$920	$485	$435
Site Planning & Field Layout	lump sum	1	$200,000	$200	$200	
Total Pre-development				**$2,273**	**$1,838**	**$435**

Building Development - #02

The building costs include the cost for the development of buildings or floorspace area in the base village that are directly required for the operation of the ski area, as listed in Table IV.2. The skier service facilities are located in the base area and at the top of the mountain adjacent to the top terminal of the gondola, Lift C.

Base Lodges

The base lodges are located at the bottom of Lift C the Summit Gondola and will provide basic arrival skier services such as ticket sales, public lockers, ski school and guest services desk, ski rental and repair, ski school desk, limited convenience and accessory retail sales, restrooms, etc. We anticipate that some service space may be purpose built by the developer whilst other spaces may be leased from the individual parcel developers. Floorspace for the corporate and management administration offices for the ski area operations and employee services and facilities may also be in the resort center area.

Mountain Top Lodge

The Amundsen Viewpoint mountain top lodge located at the top of the Summit Gondola will provide skier services for guests who are using the alpine ski facilities and for foot-passenger guests who are sightseeing both during the winter and summer seasons and using the mountain top restaurant. These services include short term public lockers, ski school and guest services, limited ski rental and repair, limited convenience and accessory retail sales, restrooms, children's programs and ski patrol and first aid. We propose 110 seats of food and beverage seating, as well as kitchen, circulation/scramble and storage areas and employee services and facilities.

We have estimated the cost of construction, to a destination area level of finish, at $3,200 per square metre for buildings in the valley, and $3,600 per square metre for the mountain lodge at the top of the gondola.

A 300-square metre, five-bay maintenance building with a parts storage area, mezzanine for small parts storage, offices and staff facilities will be required. This maintenance facility also requires a fuel depot. A metal, "Butler" style building on a heated concrete slab foundation will cost about $1,800 per square metre installed.

A small 20-square metre structure is required for the storage of tubes at the base of the tubing hill. This structure has been costed at $1,000 per square metre.

Furniture, Fixture and Equipment (F.F. & E.) are included in the floor area unit costs. The F, F & E includes all kitchen equipment, restaurant small wares, furniture, cabinets and fixtures, as well as floor and wall coverings but not rental and repair equipment or maintenance tools.

TABLE IV.2
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - BUILDING COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#02 Buildings						
Base Lodges	sq.m.	2,586	$3,200	$8,275	$4,138	$4,138
Mountain Top Lodge	sq.m.	384	$3,600	$1,382	$691	$691
Maintenance Bldg.	sq.m.	300	$1,800	$540	$540	
Tube Storage	sq.m.	20	$1,000	$20	$20	
Total Buildings				**$10,217**	**$5,389**	**$4,829**

Ski Lifts - #03

We have assumed that all ski lifts will be new equipment to be installed by the manufacturer on a “turnkey” basis. The estimated costs provided are order of magnitude budget estimates based on a preliminary price estimate for budgetary purposes from Leitner. The lift costs include all lift related equipment and structures including operator huts, lift superstructures, concrete footings and foundations, “turnkey” installation, load testing and acceptance but not gondola cabin storage or terminal grading. The gondola cabin storage building has been included in the Leitner price quotation. Lift line clearing and grubbing has been estimated to cost $50 per lineal metre. Lift terminal grading has been estimated to cost $20,000 per lift. The capital cost estimates for ski lifts are listed in Table IV.3. We propose that Lift C, the Summit Gondola, costs be split 50 percent to the winter ski operation and 50 percent to the summer sightseeing concept.

TABLE IV.3
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - SKI LIFT COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#03 Lifts						
Lift A - 4C - 2400 pph	lump sum	1	$4,056,000	$4,056	$4,056	
Lift B - 2P - 720 pph	lump sum	2	$724,000	$1,448	$1,448	
Lift C - D8G - 2800 pph	lump sum	1	$11,913,000	$11,913	$5,957	$5,957
Lift D - 4C - 1800 pph	lump sum	1	$4,030,000	$4,030	$4,030	
MC1 - Beginner Moving Carpet	lump sum	1	$175,000	$175	$175	
Lift Line Clearing	lineal m.	4,000	$50	$200	$200	
Terminal Grading (per terminal)	lump sum	8	$20,000	$160	$160	
Operator Huts	lump sum	9	$25,000	$225	$225	
Total Lifts				**$22,207**	**$16,251**	**$5,957**

Ski Pistes - #04

The construction of alpine ski pistes will require the removal and disposal of all vegetation (clearing and grubbing), surface grading and re-vegetation of the slope where a suitable soil surface exists. The surface grading process for alpine ski pistes will also include the installation of water bars across the ski slopes to remove surface water and prevent erosion of the soil. Ski pistes with a soil surface should be seeded with a suitable re-vegetation mix after the installation of the water bars to establish a vegetative cover to minimize erosion. We have used a unit cost for this work of $10,000 per hectare.

Some areas on the alpine ski pistes will not require any work but others may require extensive contouring and re-grading work (terrain modification). The ski trail construction includes cut and fill of soil material and possibly a small amount of rock removal, drilling, blasting and grading. For this study, we have utilized a lump sum of $400,000 as an estimate.

The tube hill grading work is estimated to require approximately 10,000 cubic metres of earthworks at $10 per cubic metre.

A snowmaking system has been allocated for 50 percent of the ski pistes and a night lighting system for 25 percent of the ski pistes. We have proposed a large snowmaking reservoir (83,400 m^3) but it may be possible to pump directly from the Bjoreio River.

Table IV.4 lists the Eidfjord Concept Plan ski trail development costs.

TABLE IV.4
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - SKI TRAIL COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#04 Pistes						
Ski Trail Construction	ha.	67.4	$10,000	$674	$674	$0
Terrain Modification	lump sum	1	$400,000	$400	$400	$0
Night Lighting	ha.	17	$50,000	$843	$843	$0
Snowmaking	ha.	34	$125,000	$4,250	$4,250	$0
Snowmaking Reservoir	cu. m.	84,150	$10	$842	$842	$0
Snowmaking Pump Station	lump sum	1	$500,000	$500	$500	$0
Tube Hill Grading	cu. m.	10,000	$10	$100	$100	$0
Misc.	Account	#04	20%	$383	$383	$0
Total Pistes				**$7,992**	**$7,992**	**$0**

Roads, Parking and Site Works - #05

On-mountain access roads used for the construction of the lifts and trails are typically gravel surfaced, with a slope gradient not exceeding ten percent and a road bed width of seven to eight metres. An uphill ditch with culverts placed at suitable intervals is required to provide positive drainage from the slopes above the road. New mountain construction roads are estimated to cost $400 per metre.

The parking area will consist of a paved surface parking lot in the resort center adjacent to the bottom terminal of Lift C, the Summit Gondola. We estimate that this parking lot will cost on average $1,200 per stall. These unit costs include earthworks and sub-grade gravel and a paved surface.

The valley base area, mountain top area and the maintenance building will all require site works. Lumps sum site works costs have been allocated for each location.

Table IV.5 lists the capital costs for roads, parking and site works for the Master Plan Concept. Additional roads will be required to access the real estate development and village but these are not included in the Ski Area OoM Capital Budget.

TABLE IV.5
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET – ROADS, PARKING AND SITE WORKS COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#05 Roads and Parking						
Resort Access Road	lineal m.	100	$1,800	$180	$90	$90
Car Parking Lot	stalls	894	$1,200	$1,073	$537	$537
Parking in Drop-off Loop	stalls	20	$1,200	$24	$12	$12
Base Area Site Prep and Grading	lump sum	1	$50,000	$50	$25	$25
Mountain Top Area Site Prep	lump sum	1	$50,000	$50	$25	$25
Maintenance Area Site Prep	lump sum	1	$50,000	$50	$25	$25
Mountain Construction Roads	lineal m.	5,000	$400	$2,000	$2,000	$0
Total Roads and Parking				**$3,427**	**$2,714**	**$714**

Utilities - #06

The base area will require an electrical supply, potable water supply and sewage disposal system for the facility. We assume that these infrastructure requirements will be provided by the local government as part of the village development.

We have assumed that the mountain sewer disposal system for the Amundsen Viewpoint mountain lodge and the on-mountain restaurant will require a small sewage treatment facility and exfiltration field. We have allocated a lump sum of $500,000 for the sewage treatment facility associated with the mountain top location. The potable water will require either a water supply line from the lower mountain or a well with a reservoir. The reservoir must be big enough so that it can provide water to operate a fire suppression sprinkler system in the mountain top lodge. We have allocated a lump sum of $500,000 for potable water at the mountain top.

The mountain electrical distribution system will provide electricity to all lift drive terminals. This electrical distribution system will consist of direct burial armoured cable at an estimated cost of $150 per lineal metre. Each lift drive station will require switch gear and transformer within 20 metres of the terminal to step up the 25 kVA electrical power to 480V or 600V 3-phase depending on the manufacturer of the lift. This type of transformer and electrical switch gear is estimated to cost $ 80,000 each. Electrical cable from the transformer vault to the back mast of the lift will also be required, which has been costed as a lump sum of $5,000 for a total cost per lift of $80,000. Utilities costs are listed in Table IV.6.

TABLE IV.6
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - UTILITIES COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#06 Mountain Infrastructure						
Power Line Power Line	lineal m.	2,000	$150	$300	$180	$120
Building Transformers and Switch	lump sum	4	$80,000	$320	$192	$128
Base Lodge Potable Water System	lump sum	1	$100,000	$100	$60	$40
Base Lodge Sewage Disposal System	lump sum	1	$500,000	$500	$300	$200
Mtn. Top Restaurant Potable Water	lump sum	1	$500,000	$500	$300	$200
Mtn. Top Restaurant Sewage Disposal	lump sum	1	$500,000	$500	$300	$200
Misc.	Account	#06	20%	$508	$305	$203
Total Mountain Infrastructure				**$3,048**	**$1,925**	**$1,123**

Vehicles and Equipment - #07

All of the sub-accounts under this category are self-explanatory and based on costs experienced at other ski areas or manufacturer's prices, as shown in Table IV.7.

TABLE IV.7
EIDFJORD MASTER PLAN CONCEPT
SKI AREA CAPITAL BUDGET - VEHICLES AND EQUIPMENT COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#07 Vehicles and Equipment						
Grooming Machines (BP 300)	per vehicle	3	$325,000	$975	$975	$0
1/2 Pipe Shaper (Pipe Magician)	unit	1	$50,000	$50	$50	$0
Ski-doos	per vehicle	6	$10,000	$60	$60	$0
Quad	per vehicle	2	$10,000	$15	$15	$0
4 x 4 Pickup Trucks	per vehicle	2	$50,000	$75	$45	$30
Radios and Communication	per radio	17	$1,000	$17	$15	$2
Maintenance Tools & Equipment	lump sum	1	$100,000	$100	$60	$40
Office Equipment	lump sum	1	$100,000	$100	$60	$40
Lift Operations Tools	lump sum	1	$75,000	$75	$75	$0
Staff Uniforms	lump sum	460	$600	$276	$248	$28
Ticketing System	lump sum	1	$300,000	$300	$180	$120
Rental Shop F. F. & E.	lump sum	1	$250,000	$250	$250	$0
Ski Repair Shop F. F. & E.	lump sum	1	$100,000	$100	$100	$0
Rental Sets	per set	510	$400	$204	$204	$0
Ski Patrol & Safety Equipment	lump sum	1	$50,000	$50	$50	$0
Signage	lump sum	1	$150,000	$150	$135	$15
Miscellaneous	Account	#07	10%	$280	$224	$56
Total Vehicles and Equipment				**$3,077**	**$2,747**	**$330**

Miscellaneous Operating - #08

The Miscellaneous category includes construction management fees of four percent of Accounts 02 through 06. Permits for building, electrical, water, sewer, etc., are estimated to be 2 percent of Accounts 02 and 06.

Legal Fees - #09

Legal fees for the preparation of tendering, contracts, etc., are normally included in the capital budget. For the purposes of this order of magnitude capital budget, we have included a cost for legal fees at 1 percent of the cost of Accounts #01 through #08.

Contingency

All projects of this magnitude include contingencies to cover the costs of any unforeseen conditions. Since most of the total account budgets do not allow for contingencies, we have used 15 percent as an overall goal due to the Order of Magnitude level of estimation.

Table IV.8 lists the miscellaneous operating cost, construction financing cost and contingency for the Eidfjord Master Plan.

TABLE IV.8
EIDFJORD MASTER PLAN CONCEPT
MISCELLANEOUS, CONSTRUCTION FINANCING, LEGAL AND CONTINGENCY COSTS

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
#08 Miscellaneous						
Construction Management	Accounts	#02 - #06	4%	$1,876	$1,595	$281
Permits	Accounts	#02 & #06	2%	$265	$225	$40
Total Miscellaneous				**$2,141**	**$1,820**	**$321**
#09 Misc. Legal Fees	**Accounts**	**#01 - #08**	**1%**	**$544**	$462	$82

Description	Units	Quantity	Unit Price	TOTAL (000)	Winter Allocation	Summer Allocation
Project Subtotal	**All Accounts**			**$54,926**	**$41,137**	**$13,790**
#10 Contingency		**15%**		**$8,239**	**$6,170**	**$2,068**
Project Total				**$63,165**	**$47,307**	**$15,858**
Skier Carrying Capacity				**3,400**		
Cost/SCC				*$18,578*	*$13,913.72*	

Summary

We estimate that the Phase 2A of development, to a point where the resort can capitalize on the summer sightseeing market, will cost approximately $63.2 million (2014 $US), as listed in Table IV.9. Based on a skier carrying capacity of 3,400 skiers per day for the initial phase for year-round operation, these Order of Magnitude capital costs are $18,578 per unit of skier carrying capacity. We have allocated costs to summer and winter operations so that each seasonal operation can be evaluated on its own merits. The winter component is estimated to cost $48.7 million or $13,914 per unit of skier carrying capacity. The summer component is estimated to cost about $15.9 million.

TABLE IV.9
EIDFJORD MASTER PLAN CONCEPT END OF PHASE 2A
PHASE 2A ORDER OF MAGNITUDE CAPITAL COST SUMMARY

Description	Winter Allocation	Summer Allocation	Total (000)
#01 Pre-development	$1,838	$435	$2,273
#02 Buildings	$5,389	$4,829	$10,217
#03 Lifts	$16,251	$5,957	$22,207
#04 Pistes	$7,992	$0	$7,992
#05 Roads and Parking	$2,714	$714	$3,427
#06 Mountain Infrastructure	$1,925	$1,123	$3,048
#07 Vehicles and Equipment	$2,747	$330	$3,077
#08 Miscellaneous	$1,820	$321	$2,141
#09 Misc. Legal Fees	$462	$82	$544
#10 Contingency	$6,170	$2,068	$8,239
Project Total	**$47,307**	**$15,858**	**$63,165**
Skier Carrying Capacity			3,400
Cost Capacity Ratio ($/SCC)	$13,914		$18,578

.3 Summer Pro Forma Income Statement for Sightseeing Gondola Operation

The Amundsen Viewpoint Sightseeing Gondola financial plan is fundamental in order to evaluate the Master Plan Concept and determine the economic viability of the project. The objectives of the financial plan are three-fold:

1. Determine the Order of Magnitude capital costs of the initial stage of the Master Plan up to the level of development that the area can operate for both the summer sightseeing business and the winter ski season.
2. Formulate the economic parameters associated with the operation of the summer sightseeing facilities.
3. Prepare a ten-year pro forma income statement.

Summer Sightseeing Gondola Capital Budget

In the previous section, all of the capital costs for the Eidfjord summer and winter resort were listed. We have suggested that half of the capital cost of the access gondola and cabin parking, half of the buildings, parking lots and approximately 37 percent of the infrastructure be allocated to the summer sightseeing operation. We have estimated that 25 percent ($15.9 million) of the total capital cost ($63.2 million) be allocated to the summer operation.

Summer Sightseeing Economic Operating Parameters

The financial success of the sightseeing gondola development is dependent on a number of factors. Within each category, the key factors and any assumptions and/or sources for each factor are listed. Ecosign has, in the past, analyzed aerial sightseeing tramway and gondola operations at several locations around the world to determine visitation levels, operating information (days, hours, etc.), variety of activities offered, food and beverage facilities, technical specifications and other associated amenities.

<u>Operating Characteristics</u>

Each aerial cableway sightseeing facility area has its own operating characteristics which are significantly influenced by the site and geographic location of the area, as well as the proximity to major population centres or other tourist attractions. We assume that the Eidfjord aerial sightseeing gondola will be a regional/destination attraction located near the Bergen Cruise Ship Port, the Eidfjord docks and the Vøringsfossen Waterfall. Based on the information in this report, we have identified the following operational characteristics for the tourist facility.

- Length of Summer Sightseeing Season - We propose that the summer season for the Eidfjord sightseeing gondola operation will operate approximately 120 days during the peak tourist season.

- Hours of Operation - The gondola will operate 9 hours daily from to 11:00 hours. to 21:00 hours during the summer operation.

- Hourly Capacity - The sightseeing gondola could utilize a maximum capacity of 2,800 passengers per hour as required for the winter ski operation. However, we anticipate that the lift will operate at a much lower capacity, perhaps 50 percent capacity or 1,400 passengers per hour, through most of the summer operating period.

Sightseer Visitation Forecasts

Currently there are approximately 100,000 cruise ship passengers disembarking at the Port of Eidfjord each summer. We estimate that it should be possible to capture 75 percent of these guests. Additionally, the Vøringsfossen Waterfalls receive about 675,000 visits during the summer. We estimate that it might be possible to capture 25 percent of these visitors. These high capture rates are possible because, other than the Vøringsfossen Waterfalls, there are limited other major tourist attractions in the region. If these capture rates are realised, they result in 243,750 potential visits to the Eidfjord summer sightseeing gondola to Amundsen's Viewpoint.

For the purpose of the summer gondola operation, we estimate that the visitation in year one of operation could range between 125,000 and 175,000 visits. We have, therefore, prepared a low, mid and high visitation estimate based on this range of possible summer visitation to the Eidfjord gondola. The visitation is increased by 5 percent each year for each of the scenarios to reflect increased market awareness and improved attractions such as a Museum for Roald Amundsen's exploits in the Arctic and Antarctic regions.

Sightseeing Aerial Cableway Revenue Parameters

We have looked at sightseeing gondola ticket pricing in Europe and North America. It is assumed that the Eidfjord Aerial Sightseeing Gondola will offer a $25.00 top day introductory adult lift ticket in 2014. The lift ticket will be increased in price by 2 percent $1.00 annually. We estimate that the gross lift revenue will average 60 percent of the full adult day ticket price based on experience at other sightseeing operations. This discount is used to factor in the effects of children's tickets and senior's tickets, and other promotional ticket prices that may be used throughout the season.

Supporting Activity

Supporting revenue is derived from the operation of secondary activities associated with the sightseeing lift. These supporting activities include, but are not limited to, food and beverage, retail sales, equipment rentals, tour bookings and special events.

Food and Beverage

Gross revenues for the food and beverage operation are estimated at $8.00 per visit. These revenues would be derived from the food and beverage outlets in the base village area and at the mountain top station. Cost of goods sold (COGS) is estimated at 30 percent of gross revenues, and labour is estimated to amount to 45 percent of the gross sales. The food and beverage operation would have a margin of 25 percent and contribute $2.00 per visit in Year 1 of operation. The revenue per visit is inflated by 2 percent per year.

Retail

Gross revenues for the retail and accessory shops are set at $5.00 per visit during the first year of summer operation. These revenues are derived from the sale of licensed souvenirs, film, sunglasses, gifts, postcards, etc., only from the retail outlets at the mountain top and base stations. Cost of goods sold is estimated at 50 percent of sales. The labour and expenses for the retail ski shop operations are estimated to amount to 20 percent of the gross sales. The retail/accessory operation would have a margin of 30 percent and contribute $1.50 per visit. The revenue per visit is inflated by 2 percent per year.

Miscellaneous

Miscellaneous revenues are set at $2.00 per visit. These revenues would be derived from special events, group interpretation tours, vending machines, etc. The revenue per visit is inflated by 2 percent per year. We anticipate that miscellaneous revenues would result in a margin of 50 percent or $1.00 per visit in Year 1 of the summer operation.

.4 Operating Expense Parameters

Lift Operations Wages and Salaries

The summer sightseeing lift operations, maintenance and repair, ticket sales and other wages are based on a combination of the type of lift, hourly capacity, daily guest carrying capacity and the number of visits. We estimate that the operation of the lift will require 6 attendants per day (2 at the bottom station and 2 at the top station), 2 relief attendants for breaks and a lift foreman or manager. All staff would work a 10-hour day to allow for opening and closing procedures before and after the 9 hours of public access to the facility. Entry-level staff will start at the $16 per hour range and returning staff at the $17 to $18 per hour range. The lift supervisor is in the $20 per hour range. These employees are only required during the124 day summer operating season from May 15 to September 15.

Two lift mechanics (one tradesman and one apprentice) and one electrician are required for the summer operation of this lift. The tradesman staff would be paid in the $50 to $60 per hour range, while the apprentice's rate would be about half of the tradesman rate. The maintenance staff would work 10 hours per day during the regular season. A 15-day pre-season start-up and maintenance work schedule is required after the end of the ski season and prior to summer operation, as well as a 15-day work period at the end of the summer season for routine maintenance and shut-down procedures before the gondola can be used for the winter operation.

One ticket sales person is required over the course of the summer season. The ticket sales staff would be required to work 10 hours per day and receive an average rate of $18 per hour.

Two additional general staff members are required over the course of the summer season. These staff members would undertake a variety of tasks such as parking lot attendants and janitorial, and line control and ticket sales on busier days. These staff members would generally be students hired on a part-time basis and be paid $16 per hour.

Other Direct Costs

Other direct costs include utilities, fuel, operating supplies, repair and maintenance parts and supplies, uniforms, safety supplies, lift tickets and any other costs that are directly attributable to the area operations. These costs can range from 10 to 15 percent of the lift gross revenue. We have set the direct costs at 12 percent of total revenue.

Property Operations

Property operation expenses are items involved in the operation and maintenance of the area that do not lend themselves to a direct charge to an operating department. These costs historically average between 2 and 4 percent of operations revenue. We have set the property operations costs at 3 percent of total revenue.

General and Administrative

General and administration costs are “common costs” and include salaries, wages and benefits for management, finance and accounting and any other staff in this department. This account also includes stationary, postage, telephone computer expenses, office expenses, director’s and trustees’ fees, dues and subscriptions, travel expenses, etc. We have set the General and Administration costs at 8 percent of total revenue based on experience at similar operations.

Marketing

Marketing costs are committed to before the opening of the attraction and generally based on a percentage of the projected revenue. The marketing costs include the salaries, wages and benefits for all employees working in the marketing department. All operating supplies, postage, telephone, travel, entertainment, trade shows and other selling expenses that are incurred by the marketing department are also included in this category. Advertising expenses such as outdoor billboards or other signs, print media, radio and television, exchange of goods or services (contra) are marketing expenses. Marketing expenses also include all production costs relating to the production and distribution of advertising material, advertising agency fees and commissions, etc., and are included in this category.

New products that are introduced to the market require higher initial marketing efforts. Since the Eidfjord Amundsen Viewpoint Sightseeing Gondola will be a new facility, we have set marketing at 9 percent of gross revenue in the first year. The percent of gross revenue allocated to marketing is reduced each year so that by Year 6, marketing costs are 8 percent of gross revenue and 6.5 percent by Year 10 when the attraction is well established in the tourism market.

Insurance

Insurance is divided into two main types: liability and property. The liability insurance covers the costs of guests who take legal action against the aerial cableway operation as a result of an injury. Liability insurance is usually based on guest visitation or gross revenues. We have set the liability insurance at $1.00 per visit. Property insurance is set at 0.5 percent of GFA.

Land Expenses

The land for the Eidfjord Aerial Sightseeing Gondola operation is private land owned by the shareholders of the company. The cost of this land is not included in this analysis, however, a 2 percent land use fee has been included.

Property Taxes

The development will be subject to property taxation. The taxation rate for property is estimated at 0.5 percent of GFA.

Depreciation

Depreciation is a non-cash operating expense. We have used a 15 year term with a 15 percent salvage value. Since all of the facilities will be new, the depreciation rate has been set at 5.7 percent of the gross fixed assets.

Interest

We have set interest on any bank loans at 4 percent.

.5 Summer Sightseeing Gondola Pro Forma Income Statement

The pro forma financial tool is one of the most important for evaluating any long-term project. Not only does the pro forma consider the financial performance in Year 1, but also the long-term outcomes in successive years. The primary assumption of the Eidfjord Amundsen Viewpoint Sightseeing Gondola operations financial plan is that cash flow will be used aggressively to offset half of the capital cost of the gondola and other facilities that are used as part of the summer operation.

All assumptions are in the year 2014 United States dollars. An annual inflation rate of 2 percent has been incorporated into the model. The Eidfjord Amundsen Viewpoint Sightseeing Gondola 10-year pro forma income statements summaries for the three visitation scenarios are listed in Tables IV.10, IV.11 and IV.12.

Under the low visitation estimate forecast, gross revenues range from just a little over $3.75 million in Year 1 to $6.95 million in Year 10. The gross revenue, under the high visitation forecast, ranges from slightly over $5.25 million in Year 1, to over $9.73 million in Year 10.

The low visitation estimate scenario shows EBITDA of $625,400 in Year 1 increasing to $1.75 million by Year 10. The Net Cash Flow after principal payments is -$3,000 in Year 1 and by Year 10 is 1.17 million. The high visitation scenario shows EBITDA of $1.1 million in Year 1 increasing to $2.79 million by Year Ten. The Net Cash Flow after principal payments is $482,000 in Year 1 and by Year 10 is $2.16 million.

We conclude that there is adequate summer business potential to justify the summer sightseeing gondola.

TABLE IV.10
EIDFJORD MASTER PLAN CONCEPT
SUMMER SIGTHSEEING OPERATION - LOW VISITATION FORECAST
$000 USD 2014

Year	1	2	3	4	5	6	7	8	9	10
VISITATION	**125,000**	**131,250**	**137,813**	**144,703**	**151,938**	**159,535**	**167,512**	**175,888**	**184,682**	**193,916**
GROSS REVENUE										
Tickets	$1,875	$2,008	$2,151	$2,303	$2,467	$2,642	$2,830	$3,031	$3,246	$3,476
Food & Beverage	$1,000	$1,071	$1,147	$1,228	$1,316	$1,409	$1,509	$1,616	$1,731	$1,854
Retail	$625	$669	$717	$768	$822	$881	$943	$1,010	$1,082	$1,159
Miscellaneous	$250	$268	$287	$307	$329	$352	$377	$404	$433	$463
GROSS REVENUE	$3,750	$4,016	$4,301	$4,607	$4,934	$5,284	$5,659	$6,061	$6,492	$6,952
Supporting Department Margins										
Food & Beverage	$250	$268	$287	$307	$329	$352	$377	$404	$433	$463
Retail	$188	$201	$215	$230	$247	$264	$283	$303	$325	$348
Miscellaneous	$125	$134	$143	$154	$164	$176	$189	$202	$216	$232
Supporting Dept. Margin	**$563**	**$602**	**$645**	**$691**	**$740**	**$793**	**$849**	**$909**	**$974**	**$1,043**
Total Lift Revenue	$1,875	$2,008	$2,151	$2,303	$2,467	$2,642	$2,830	$3,031	$3,246	$3,476
Lift Gross Revenue Plus Supporting Margin	**$2,438**	**$2,611**	**$2,796**	**$2,994**	**$3,207**	**$3,435**	**$3,679**	**$3,940**	**$4,219**	**$4,519**
less: Lift Operations Expenses	$842	$876	$912	$949	$990	$1,032	$1,077	$1,124	$1,175	$1,228
OPERATIONS MARGIN	**$1,596**	**$1,735**	**$1,884**	**$2,045**	**$2,217**	**$2,403**	**$2,602**	**$2,815**	**$3,045**	**$3,291**
less:										
Common Expenses	$971	$1,029	$1,092	$1,113	$1,181	$1,254	$1,304	$1,355	$1,408	$1,497
EBITDA	**$625**	**$706**	**$793**	**$932**	**$1,036**	**$1,149**	**$1,298**	**$1,460**	**$1,637**	**$1,794**
Depreciation	$683	$683	$683	$683	$683	$683	$683	$683	$683	$683
Interest	$341	$330	$318	$306	$293	$279	$265	$251	$236	$220
PROFIT (LOSS)	-$399	-$307	-$208	-$56	$61	$186	$349	$526	$718	$891
CASH FLOW (EBITDA-Interest)	$284	$376	$474	$627	$744	$869	$1,032	$1,209	$1,401	$1,574
Principal Payments	$287	$298	$310	$322	$335	$349	$363	$377	$392	$408
NET CASH FLOW	**-$3**	**$78**	**$164**	**$304**	**$408**	**$520**	**$670**	**$832**	**$1,009**	**$1,166**
Cumulative Cash Flow	-$3	$75	$239	$543	$951	$1,472	$2,141	$2,973	$3,982	$5,148

TABLE IV.11
EIDFJORD MASTER PLAN CONCEPT
SUMMER SIGTHSEEING OPERATION - MID VISITATION FORECAST
$000 USD 2014

Year	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10
VISITATION	**$150,000**	**$157,500**	**$165,375**	**$173,644**	**$182,326**	**$191,442**	**$201,014**	**$211,065**	**$221,618**	**$232,699**
GROSS REVENUE										
Tickets	$2,250	$2,410	$2,581	$2,764	$2,960	$3,171	$3,396	$3,637	$3,895	$4,171
Food & Beverage	$1,200	$1,285	$1,376	$1,474	$1,579	$1,691	$1,811	$1,940	$2,077	$2,225
Retail	$750	$803	$860	$921	$987	$1,057	$1,132	$1,212	$1,298	$1,390
Miscellaneous	$300	$321	$344	$369	$395	$423	$453	$485	$519	$556
GROSS REVENUE	**$4,500**	**$4,820**	**$5,162**	**$5,528**	**$5,921**	**$6,341**	**$6,791**	**$7,273**	**$7,790**	**$8,343**
Supporting Department Margins										
Food & Beverage	$300	$321	$344	$369	$395	$423	$453	$485	$519	$556
Retail	$225	$241	$258	$276	$296	$317	$340	$364	$389	$417
Miscellaneous	$150	$161	$172	$184	$197	$211	$226	$242	$260	$278
Supporting Dept. Margin	**$675**	**$723**	**$774**	**$829**	**$888**	**$951**	**$1,019**	**$1,091**	**$1,168**	**$1,251**
Total Lift Revenue	$2,250	$2,410	$2,581	$2,764	$2,960	$3,171	$3,396	$3,637	$3,895	$4,171
Lift Gross Revenue Plus Supporting Margins	**$2,925**	**$3,133**	**$3,355**	**$3,593**	**$3,848**	**$4,122**	**$4,414**	**$4,728**	**$5,063**	**$5,423**
less: Lift Operations Expenses	$909	$948	$989	$1,032	$1,078	$1,127	$1,179	$1,234	$1,292	$1,353
OPERATIONS MARGIN	**$2,016**	**$2,185**	**$2,366**	**$2,561**	**$2,770**	**$2,994**	**$3,235**	**$3,494**	**$3,772**	**$4,070**
less:										
Common Expenses	$1,131	$1,201	$1,275	$1,300	$1,382	$1,469	$1,528	$1,590	$1,652	$1,759
EBITDA	**$885**	**$984**	**$1,091**	**$1,261**	**$1,388**	**$1,526**	**$1,707**	**$1,905**	**$2,119**	**$2,311**
Depreciation	$683	$683	$683	$683	$683	$683	$683	$683	$683	$683
Interest	$341	$330	$318	$306	$293	$279	$265	$251	$236	$220
PROFIT (LOSS)	**-$139**	**-$29**	**$90**	**$272**	**$413**	**$563**	**$759**	**$971**	**$1,201**	**$1,408**
CASH FLOW (EBITDA-Interest)	$544	$654	$773	$955	$1,096	$1,246	$1,442	$1,654	$1,883	$2,091
Principal Payments	$287	$298	$310	$322	$335	$349	$363	$377	$392	$408
NET CASH FLOW	**$257**	**$356**	**$463**	**$633**	**$760**	**$897**	**$1,079**	**$1,276**	**$1,491**	**$1,683**
Cumulative Cash Flow	$257	$613	$1,076	$1,708	$2,469	$3,366	$4,445	$5,721	$7,212	$8,895

TABLE IV.12
EIDFJORD MASTER PLAN
SUMMER SIGTHSEEING OPERATION - HIGH VISITATION FORECAST
$000 USD 2014

Year	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10
VISITATION	**$175,000**	**$183,750**	**$192,938**	**$202,584**	**$212,714**	**$223,349**	**$234,517**	**$246,243**	**$258,555**	**$271,482**
GROSS REVENUE										
Tickets	$2,625	$2,811	$3,011	$3,225	$3,454	$3,699	$3,962	$4,243	$4,544	$4,867
Food & Beverage	$1,400	$1,499	$1,606	$1,720	$1,842	$1,973	$2,113	$2,263	$2,424	$2,596
Retail	$875	$937	$1,004	$1,075	$1,151	$1,233	$1,321	$1,414	$1,515	$1,622
Miscellaneous	$350	$375	$401	$430	$460	$493	$528	$566	$606	$649
GROSS REVENUE	**$5,250**	**$5,623**	**$6,022**	**$6,450**	**$6,907**	**$7,398**	**$7,923**	**$8,486**	**$9,088**	**$9,733**
Supporting Department Margins										
Food & Beverage	$350	$375	$401	$430	$460	$493	$528	$566	$606	$649
Retail	$263	$281	$301	$322	$345	$370	$396	$424	$454	$487
Miscellaneous	$175	$187	$201	$215	$230	$247	$264	$283	$303	$324
Supporting Dept. Margin	**$788**	**$843**	**$903**	**$967**	**$1,036**	**$1,110**	**$1,188**	**$1,273**	**$1,363**	**$1,460**
Total Lift Revenue	$2,625	$2,811	$3,011	$3,225	$3,454	$3,699	$3,962	$4,243	$4,544	$4,867
Lift Gross Revenue Plus Supporting Margins	**$3,413**	**$3,655**	**$3,914**	**$4,192**	**$4,490**	**$4,809**	**$5,150**	**$5,516**	**$5,907**	**$6,327**
less: Lift Operations Expenses	$1,012	$1,056	$1,103	$1,153	$1,206	$1,261	$1,321	$1,383	$1,450	$1,521
OPERATIONS MARGIN	**$2,401**	**$2,599**	**$2,811**	**$3,039**	**$3,284**	**$3,547**	**$3,829**	**$4,132**	**$4,457**	**$4,806**
less:										
Common Expenses	$1,291	$1,372	$1,459	$1,487	$1,582	$1,684	$1,753	$1,824	$1,897	$2,021
EBITDA	**$1,110**	**$1,227**	**$1,352**	**$1,552**	**$1,702**	**$1,863**	**$2,077**	**$2,308**	**$2,560**	**$2,786**
Depreciation	$683	$683	$683	$683	$683	$683	$683	$683	$683	$683
Interest	$341	$330	$318	$306	$293	$279	$265	$251	$236	$220
PROFIT (LOSS)	**$85**	**$214**	**$351**	**$563**	**$726**	**$901**	**$1,128**	**$1,374**	**$1,642**	**$1,882**
CASH FLOW (EBITDA-Interest)	$768	$897	$1,034	$1,246	$1,409	$1,584	$1,811	$2,057	$2,325	$2,565
Principal Payments	$287	$298	$310	$322	$335	$349	$363	$377	$392	$408
NET CASH FLOW	**$482**	**$598**	**$724**	**$924**	**$1,074**	**$1,235**	**$1,448**	**$1,680**	**$1,932**	**$2,157**
Cumulative Cash Flow	$482	$1,080	$1,804	$2,728	$3,802	$5,037	$6,485	$8,165	$10,097	$12,255

.6 Winter Ski Facility Break-Even Analysis

Introduction

Since we do not have a market study forecast for the number of skier visits that the ski area might receive during the winter season, we have elected to prepare a break-even analysis instead of a pro forma income statement. The break-even analysis is a snap shot in time compared to a pro forma income statement which looks at the economic performance over time. In order to undertake a meaningful pro forma income statement, a range of reliable skier visit forecasts are required. The break-even, on the other hand, is an excellent tool to calculate the number of skier visits required to provide a desired return to the investor. The break-even analysis is a technique for studying the relationship among fixed costs, variable costs, pricing and skier visitation. Until the break-even point is reached, where total costs equal total revenue, the ski area operates at a loss. Above the break-even point, each additional skier visit adds to the profit. The break-even model combines all of the critical variable and economic parameters on one chart to illustrate the inter-relationship of these elements. The break-even chart illustrates three levels of break-even expressed in three ways. Skier visits and dollars of revenue are absolute measures, while percent utilization is a relative measure. The three levels of break-even are defined as follows:

a) **Cash Operating Break-Even** - where the volume of business meets all operating expenses.

b) **Operating Break-Even** - where the volume of business meets the annual operating expenses including depreciation.

c) **Economic Break-Even** - where the volume of business meets the annual operating expenses, depreciation, interest, principal payback and return to the investors.

Ski Area Operating Characteristics

Each ski area has its own operating characteristics including the capacity of the ski facility, the number of days of operation, etc. We have utilized economic ratios from other ski areas with similar characteristics and adjusted revenue and expense parameters to closely match the Norwegian price and cost structure.

TABLE IV.13
EIDFJORD MASTER PLAN CONCEPT
WINTER SKI OPERATION REVENUE AND MARGINS

Adult Ticket Price	$65.00
Net Realized	55%
Ski School Gross	$7.00
Margin	35%
Food Service Gross	$15.00
Margin	25%
Bar/Lounge Gross	$2.00
Margin	40%
Ski Shop Retail and Accessory	$5.00
Margin	15%
Rental Shop	$5.75
Margin	60%
Miscellaneous	$2.00
Margin	25%

Ski Lift Revenue

For the 2013/14 ski season, Norwegian ski areas (Geilo, Hemsedal and Voss Fjellandsby) are currently offering 380 NOK to 385 NOK (64.37 to 65.22 USD) adult lift tickets. We have set the Eidfjord adult lift ticket to 65 USD. The Effective Ticket Price (ETP) takes into account discounts, season passes and children's' rates which normally results in a net realized ticket revenue that ranges from 50 to 60 percent of the top day rate. We have used an average Effective Ticket Price that is 55 percent of the top day rate.

Ski School Revenue and Margin

We propose that Eidfjord will have revenue of $7.00 per skier visit. Margins for ski school range from a low of 20 percent to a high of 40 percent. We have used a 35 percent ski school margin for Eidfjord.

Food Service Revenue and Margin

We propose that Eidfjord will have revenue of $15.00 per skier visit. The Food and Beverage margins range from a low of 22 percent to a high of 28 percent within the ski industry. We have used a 25 percent food and beverage margin for Eidfjord.

Bar Revenue and Margin

We propose that the bar will have revenue of $2.00 per skier visit and a margin of 40 percent.

Ski Shop Retail Revenue and Margin

We propose that the ski shop retail will have revenue of $5.00 per skier visit and a margin of 15 percent.

Ski Rental Revenue and Margin

We propose that the ski rental shop will have revenue of $5.75 per skier visit and a margin of 60 percent.

Miscellaneous Revenue

We propose that there will be miscellaneous revenue of $2.00 per skier visit and a margin of .25 percent.

We have utilized ski area operating costs that have been grossed up to reflect the higher operating costs experienced in Norway. There are seven generally accepted operating expense parameters that have been identified by ski area economic experts. These parameters tend to vary proportionately, or linearly, to one of several independent variables. A brief description follows:

a. Fixed Expenses

   Fixed expenses include those which are committed, regardless of the number of days the area operates, or the volume of skier visitation recorded. The fixed expenses include general and administrative costs, property insurance and property taxes. Fixed costs maintain a rather stable relationship with the size of the ski area, as measured by Vertical Transport Metres/hour (VTM/hr.). The fixed expenses are a linear relationship that is represented by the formula: Fixed Costs = (b x VTM/hr.).

b. Semi-Variable Expenses

   The semi-variable expense parameter includes all expenses that vary with both the length of the operating season and the volume of skier visits handled. Semi-variable expenses include salaries and wages for ski lift, ticket sales, slope grooming, maintenance and repair, ski patrol and guest

services, plus the balance of energy costs, supplies, etc. The semi-variable expenses are a linear relationship that is represented by the formula: Semi-Variable Costs = (b x Utilization) + a.

c. Variable Expenses

The variable expenses are all those tied directly to revenue. Variable expenses include liability insurance sales taxes and land use fees. These expenses change directly with utilization.

d. Marketing Expenses

Even though the marketing expenses are committed to before the season starts, they are based on the projected revenue. Marketing expenses include salaries and wages for the marketing department staff and advertising, public relations and promotional activities.

e. Depreciation

Depreciation is a non-cash operating expense. We have used a 15 year term with a 15 percent salvage value. Since all of the facilities will be new, the depreciation rate has been set at 5.67 percent of total capital.

f. Snowmaking Expense

Normally, snowmaking costs are a specific added fixed cost and include salary and wages, energy costs and water costs. We have estimated the snowmaking hours at 200 and the cost set at $12.00 /hectare/hour.

g. Cost of Capital

The cost of capital is an expense parameter used in the break-even analysis and includes interest expenses, building or equipment leases, income taxes, capital pay back obligations and return to investors. The cost of capital can, at times, be difficult to measure, yet is a real cost. For the purposes of this break-even analysis, we have set the cost of capital to 10 percent. In simplistic terms, the cost of capital could be explained at 50 percent of the debt at 4 percent interest and 50 percent of the equity investment with a 15 percent return to the investor.

During the preparation of the Order of Magnitude Capital Budget, we allocated cost to either winter or summer operations. The winter capital cost allocation was $47.7 million USD or $14,208 per unit of skier carrying capacity. We have listed proposed break-even expense variables used the development use in the development of the break-even model.

TABLE IV.14
EIDFJORD MASTER PLAN CONCEPT
WINTER SKI OPERATION BREAK-EVEN EXPENSE VARIABLES

Fixed Expense/VTM	$0.70
Marketing Expense	6.0%
Snowmaking Costs/Ha./Hr.	$12.00
Snowmaking Area (Ha.)	17
Snowmaking Hours	200
Semi Variable "a"	4.2
Semi Variable "b"	0.03
Variable Expense	3.00%
Depreciation	5.67%
Cost of Capital	10.00%

Break-Even Chart

Based on the break-even parameters listed above, the Break-Even Chart illustrates the number of skier visits required to meet the three break-even points. The Eidfjord winter ski operation Break-Even Analysis is listed in Table IV.15 and shown graphically in Plate IV.1.

TABLE IV.15
EIDFJORD MASTER PLAN CONCEPT
WINTER SKI OPERATION BREAK-EVEN ANALYSIS
(2014 USD)

Revenue/Skier Visit:	**USD**	**USD**
Ski Lift Ticket price		$65.00
	GROSS	MARGIN
Ticket Revenue	$35.75	$35.75
Ski School	$7.00	$2.45
Food Service	$15.00	$3.75
Bar	$2.00	$0.80
Ski Shop	$5.00	$0.75
Rental	$5.75	$3.45
Miscellaneous	$2.00	$0.50
Total Revenue/Skier Visit	**$72.50**	**$47.45**

Critical Variables:	
Day Capacity	3,400
Night Capacity	1,000
Equiv. Operating Days	150
Seasonal Capacity	510,000
Snowmade Hectares	17
Snowmaking Hours	200
Cost of Capital	10%
Max. Rev. Potential	$24,199,500
Winter Investment	$47,306,650

Break-Even Points	**Cash Operating**	**Operating**	**Economic**
Dollars of Revenue (USD)	$4,118,286	$7,284,072	$9,704,967
Skier Visits	86,792	153,510	204,530
Utilization	17.02%	30.10%	40.10%

EIDFJORD MASTER PLAN CONCEPT
WINTER SKI OPERATION BREAK-EVEN ANALYSIS

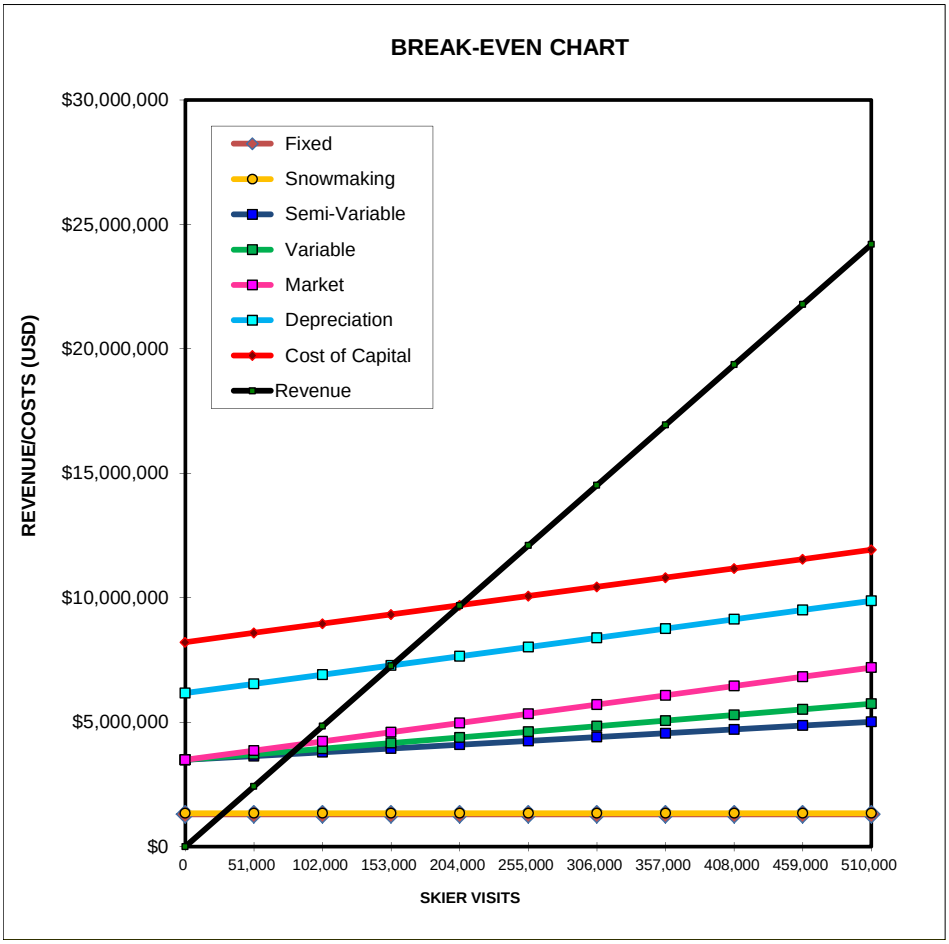


PLATE IV.1

The different break-even costs are listed in Table IV.16.

TABLE IV.16
EIDFJORD MASTER PLAN CONCEPT
WINTER SKI OPERATION BREAK-EVEN ANALYSIS

Costs	Cash Operating	Operating	Economic
Fixed	$1,304,464	$1,304,464	$1,304,464
Snowmaking	$40,800	$40,800	$40,800
Semi-Variable	$2,402,376	$2,602,531	$2,755,591
Variable	$123,549	$218,522	$291,149
Market	$247,097	$437,044	$582,298
Depreciation		$2,680,710	$2,680,710
Cost of Capital			$2,049,955
Total Costs	$4,118,286	$7,284,072	$9,704,967