VII. SKI CENTER MASTER PLAN

.1 Introduction

Ecosign has carried out a technical assessment and terrain suitability analysis for the Galičica study area and developed a preliminary development concept. For this concept an Order of Magnitude capital budget was calculated to determine if it was advisable to enter the subsequent planning phase to develop a detailed Master Plan for the ski center of Galičica. After review of the findings and conclusions, the client decided to enter into the next step of planning. Based on the previous analysis and feedback and requests from the client listed in Annex 1 to the Contract no. 02-4922/6, a Master Plan was developed. The Master Plan for the ski center Galičica is illustrated in plan view on figures VII.1. Galičica Ski Center - Master Plan Overview and VII.2 Galičica Ski Center - Mountain Master Plan. Figures VII.5a to VII.5d provide 3D views of the envisioned ski center in the Galičica National Park.

.2 Goals and Objectives

The overall vision for the Galičica Ski Center is to develop the previously identified "West Zone" and to provide access to the ski center facilities by means of a gondola system from the Lake Ohrid. After buildout an additional access lift could also provide accesss from the Lake Prespa side.. These gondola systems create also opportunity for sightseeing and other 4 season recreation activities within the ski center and National Park. This section of the Master Plan outlines the ski area facilities proposed for the ski resort development in Galičica.

Generally, a ski area Master Plan involves planning the installation of new facilities, as well as the replacement of existing facilities on the mountain and in the base area. To provide guests with the best possible ski experience, modern ski areas require the most efficient, user-friendly lift and piste systems possible. Facilities are generally constructed over several phases of development, increasing the quality and size of the area as time progresses and the market dictates. In order to accomplish this, it is necessary to have a complete understanding of the total project at build-out so that the facilities can be balanced and capital invested effectively. The proposed developments have been phased in three stages of implementation.

The objectives of the Galičica Ski Center Master Plan are listed below:

- Optimize the utilization and operational efficiency of the proposed infrastructure.
- Balance lift and trail capacities wherever possible.
- Provide maximum capacity and comfort for minimum capital and operating costs.
- Provide base staging facilities (skier services, day skier parking, restaurant facilities, etc.) in balance with mountain access and capacity requirements.
- Optimize quality of the facilities to meet the expectations of the skier market.
- Develop beginner facilities and terrain and provide additional recreational activities other than skiing or snowboarding.
- Define goals and projects to guide the client and inform public agencies during the review and decision making period.

The following section describes the proposed installation of new equipment and facilities for the development of the Galičica Ski Center. The Galičica project will require a significant investment of capital to develop the necessary facilities to make it desirable to the regional and destination skiing and snowboarding public in today's competitive marketplace. The facilities should be planned and installed so that Galičica Ski Center can become successful and competitive in the international destination and regional market.

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

MC	"Magic Carpet" or "Moving Carpet", a conveyor-belt beginner lift
PL	Platter lift
4CLF	Fixed grip 4-seater chairlift
8MGD	8-passenger gondola lift

The Galičica Master Planning process aims to use the most suitable ski lift and planning technology currently available. Since technology and the skier market change over time, the Galičica Master Plan should ultimately be used as a flexible document, subject to periodic review.

A Master Plan is the first step in the development process and by its very nature identifies an individual site's constraints and opportunities and then focuses upon design to resolve issues and concerns identified during the planning process.

The final Master Plan will be a tool to guide the development of the Galičica site and does not preclude the requirements for detailed design, engineering and architecture prior to on-site construction activities. As the ski area proceeds through the detailed design and field layout stages, minor changes to the Master Plan in terms of the site specific placement of buildings, lifts, ski courses and utilities may occur within the prescribed development area boundaries.

.3 Mountain Concept

.3.1 Mountain Planning Methodology

When designing a system of lifts and pistes, the ultimate development should be planned in order that future lifts and additional pistes will not create conflicts, congestion, crowding or worn-out snow conditions. Utilization of various lift loading and unloading patterns, as well as grooming coverage, can direct skiers onto preferred piste systems to improve piste utilization or avoid major congestion areas.

Lifts should be located to service the best skiing terrain. Pistes should be planned to provide the best skiing opportunities without wasting terrain, and then lifts located to best serve these pistes, since lifts are merely a means of access. The type of lift may vary, depending on the natural terrain it must cross and serve, as well as the required capacity. The most favorable type of lifts will be proposed for each specific location.

Lifts should not be located simply because good upper and lower terminal locations have been selected, or to minimize construction costs. There are enough lift design alternatives available to accommodate a wide variety of sites. Lift construction costs should normally be a secondary consideration when compared to skiing quality, aesthetics or environmental factors. Ski lift loading and unloading terminals are preferably located in protected areas on slopes less than 20 percent. Adequate space must be allotted for lift queues, safe stopping, unloading areas and general congregation areas at both the upper and lower lift terminals.

When the majority of ski lift capacity is separated from the base area, it is important that the base area lifts are designed so that sufficient capacity is provided for efficient distribution of skiers throughout the area's lift systems, within a two-hour staging period.

.3.2 Mountain Planning Parameters

In order to determine the potential skier carrying capacity of the terrain within the Galičica study area, we have utilized the planning parameters established in the previous sections of this report and listed them in Table VII.1.

TABLE VII.1
GALIČICA
MOUNTAIN PLANNING PARAMETERS FOR BUILD-OUT

Skill Classification	Skill Mix	Acceptable Terrain Gradients	Skier Demand [VTM / Day]	Skier Densities [Skiers per ha]	
				At Area	On Piste
1 Beginner	10%	8 – 15%	705	75	30
2 Novice	15%	15 – 25%	1.595	75	30
3 Low Intermediate	20%	25 – 35%	2.125	60	23
4 Intermediate	25%	30 – 40%	2.830	60	23
5 High Intermediate	15%	35 – 45%	3.840	45	18
6 Advanced	10%	45 – 60%	4.460	22,5	10
7 Expert	5%	60% +	6.370	30	15

Based on our experience and the Macedonian skier market characteristics, we have applied a skier density of three skiers per hectare for off-piste terrain. Furthermore we have doubled the skier density for the main beginner zone to 150 skiers per hectare as we believe that this number better reflects the expected number of beginner skiers practicing at the Galičica ski area at on time.

.3.3 Mountain Infrastructures

General Description

The Mountain Development Concept Plans (Figure VII.1 and VII.2) illustrate the proposed concept for the ***Galičica Ski Center*** at the build-out stage of development. It has been developed after analysis of the basic data, site inspections and requests from the client.

Due to its great importance for this study and as already indicated prior in this report (Section II.4 – Climate/Solar Analysis), we again want to point out that no weather or snow measurements of the Galičica massive have been provide to Ecosign. Our assessment and assumptions are based on data that has been interpolated from areas in the proximity of the site and thus the overall data basis is not very reliable.

During this and last year's winter site visits Ecosing staff members have experienced unfavorable on-site snow and weather situations. This mainly because of the prevailing strong winds along with very bad visibility due to heavy fog in the alpine areas.

Proper assessment of the weather pattern at the area of interest is an indispensable precondition in order to judge whether or not the site is suitable for ski area development! Therefore the weather patterns on the mountain of the Galičica National Park should be investigated in more detail in order to make reliable recommendations and a founded statement about the suitability of the site for development of a ski center. Consequently we strongly suggest collecting weather data at exposed areas on the mountain tops and the potential lift terminal locations.

By reason of the area's year round attractiveness with significant tourism potential also in summer, Ecosign believes that the Galičica Ski Center should be designed as a tourism attraction not only for alpine skiing but as a holistic project with focus on four-season tourism. Also the natural beauty of the site and the biological diversity of the flora and fauna in the National Park constitute a great value for the region which should be preserved as much as possible. If done right, nature preservation and tourism are not contradictory. Such a project of course causes some impacts on the nature and therefore we believe that the project has to be based on the concept of gentle tourism and that authorities of the National Park should be included in the planning and development process as much as possible.

The development of the resort is envisioned to take place over many years and therefore construction will need to be phased over time.

The mountain concept illustrates lift and piste systems which work both for return cycle skiing and for ease of movement around the resort. It is very important to blend these two uses during design to create an efficient layout, so that the benefit from every investment (lift or piste) is maximized. Obviously, an expensive lift which provides transportation only, and no return cycle skiing, will offer little return on investment from the skiing business. The lift and piste development concepts are described in general terms below.

As illustrated on Fig. VII.2, the Master Plan concept at build-out includes a total of 5 major lifts systems (not incl. Moving Carpet lifts). These lifts have the capacity to comfortably service approximately 3.000 skiers per day.

Overview of the envisioned Mid-Mountain Zone and the west-facing ski terrain

.3.3.1 Lift Description and Specification

Figure VII.1 and VII.2 illustrate the Galičica Ski Center Master Plan Concept in plan view. The mountain development concept is an advanced and more mature version of the Preliminary Development Concept described in Section IV of this report. The big picture did not change but there have been several adjustments during the design process due to findings from site visits and also the more detailed mapping resulted in a more refined version of the concept.

The Mountain Development Concept includes a total of 9 ski lifts; 2 detachable monocable eight-passenger gondolas from which one (Lift 1) will be linked with an intermediate station, 2 fixed grip quadruple chairlifts (Lift 3 and Lift 4), 1 platter surface lift (Lift 2) and 4 moving carpet conveyor belt lifts (MC1, MC2, MC3 and MC4). Lifts in this configuration support approx. 3.000 skiers per day. The specifications for the proposed Galičica Ski Center lifts are listed in Table VII.2.

Lift 1

Lift 1, a detachable eight passenger gondola lift will be the prime lift in the Galičica Ski Center and also the first lift that will be installed. Starting from the bottom station located on a natural plateau above and between Gradiste and Peštani (Upper Peštani Base) at an elevation of 838 meters, the lift provides access for visitors to the alpine facilities of the Galičica Ski Center.

A mid-station with unloading and loading opportunity is planned at an elevation of 1.578 meters. Beginners and Novice skiers will exit at the mid-station from where they have easy access to the envisioned beginner zone at the mid-mountain area, featuring several moving carpet lifts and a platter lift. Also other recreational activities will be offered in the mid-mountain area such as Snow Tubing, Nordic Skiing, Snowshoeing or a Skidooing track for kids.

A mid-mountain lodge will offer main skier service facilities including a restaurant. We also suggest offering some staff accommodation at the mid-mountain lodge for easier start-up of the operation.

Eight-passenger gondola ropeway system with mountain top restaurant in the background.

Lift 1 has a rated capacity of 1.800 passengers per hour. The first section (Lift 1A) is for access from and egress to the base area for skiers and non-skiing visitors. The rated capacity was designed so that at a peak day the staging time will be less than two hours. The gondola ropeway system will also be utilized to cover supply of goods and food to the mid-mountain and the mountain top.

The second section (Lift 1B) serves four pistes for return-cycle-skiing at west to north-west facing slopes as well as attractive off-piste terrain. The terrain accessed by the gondola is relatively steep and ideal for high intermediate and advanced skiers. The proposed construction road can be utilized in winter as a skiway (Skiway S1), but due to the steep terrain it was not feasible to designed the road wide enough in order to use it as a piste for repetitive skiing.

This section will be able to support approximately 590 skiers at one time offering 317 vertical meters. Lift 1B will also be the prime staging lift for skiers to get to Lift 3 and Lift 4.

At the top of Lift 1, we envision a mountain top restaurant offering serveral skier services facilities and a restaurant including a spacious patio from where visitors can enjoy the spectacular view to the mountains of the National Park and the two Lakes.

Lift 2

Lift 2 is a surface platter lift with a rated capacity of 600 pph. and can comfortably support up to 160 skiers at one time. The lift caters one wide 180 meters long beginner slope (Piste 2A), a run ideal for beginners and novice skiers to learn how to turn and to work on their ski technique.

PL - Surface Platter Lift for 1 Passenger per Carrier.

Lift 2, together with the moving carpets located at the mid-mountain zone constitute the main beginner center of the envisioned Galičica ski center.

Beginner Zones

Moving carpets are the ideal means of uphill transportation for beginners. Aiming to provide the best learning conditions possible, three moving carpet beginner lifts (MC1, MC2 and MC3) are planned at the mid-mountain area on the Lake Ohrid side of the ski area and one moving carpet beginner lift at top terminal of Lift 5 on the Lake Prespa side (MC4). The beginner slopes will have an inclination of 8% to 12% with ideally a flat area on top and a flat run out zone at the bottom. These beginner lifts will allow newbies to the snow sports the opportunity to make their first experience on skis or a snowboard. Furthermore, spacious Snow Play and Sliding areas are planned in the mid-mountain area providing additional attractions for kids and non-skiers.

Beginner area with a Moving Carpet lift.

Lift 3

Lift 3 provides skiing on the east side of the mountain range and offers a wide variety of ski pistes suitable for most skier ability levels, i.e. from novice to advanced skiers. This lift is proposed as a fixed grip quadruple chairlift with a rated capacity of 1.500 pph. With the top station of the chairlift next to the mountain top restaurant and the top station of Lift 1 at an elevation of 1.895 meters and the bottom station located at 1.560 meters, this lift offers 338 vertical meters and will be able to comfortably support approximately 1.100 skiers at one time.

4CLF - Fixed Grip Four-Passenger Chairlift

Lift 4

Lift 4 is located approximately 600 meters south of Lift 1B accessible via the top section of piste 1D starting from the top of Lift 1 - the hub of the Galičica ski center. This lift caters west to north-west facing slopes predominantly attractive for intermediate, high intermediate and advanced skiers. Like the aforementioned Lift 3, also this ski lift is proposed as a fixed grip four-passenger chairlift with an hourly rated capacity of 1600 pph., offering about 340 vertical meters of skiing. Lift 4 will be able to comfortably support approximately 970 skiers at one time.

4CLF - Fixed Grip Four-Passenger Chairlift with loading carpet

Lift 5 – Oteshevo Connector

Lift 5 is an access lift system connecting the Galičica Ski Center with the Lake Prespa side of the National Park.

This connection between the Lake Prespa side and the Galičica Ski Center was formally requested by the client (Item 7 in Article 2 of Annex No. 1). Although we can confirm the technical viability of such a lift connection, we would like to point out that this is not something that we would propose. This mainly because of economic inefficiency of such an investment. Alternatively, we would suggest considering a road access from Oteshevo to the Central Plateau. The existing road could be redeveloped and used for guests arriving from the Lake Prespa side to access the Galičica ski center.

The bottom terminal of this lift is proposed near Oteshevo and the top terminal at the central plateau next to the bottom of Lift 5. The lift is exclusively for access to and egress from the ski area as the terrain and the low elevation do not allow any return-cycle skiing on this lift. Lift 5 is proposed as a detachable eight passenger monocable gondola with a rated capacity of 1.200 skiers per hour. This is an extensive ropeway system that spans over a horizontal distance of 4.703 meters and transports visitors 670 vertical meters starting from an elevation of 890 meters and ending at 1.560 meters above sea level. It will be a ride of about 15 minutes on the ropeway system from Oteshevo to the Central Plateau.

Eight-passenger gondola ropeway system

TABLE VII.2
GALIČICA
LIFT SPECIFICATIONS – BUILD-OUT

Lift Number	**1A**	**1B**	**2**	**3**	**4**	**5**	**MC1**	**MC2**	**MC3**	**MC4**	
Lift Type	**8MGD**	**8MGD**	**PL**	**4CLF**	**4CLF**	**8MGD**	**MC**	**MC**	**MC**	**MC**	**TOTAL**
Top Elevation [m]	1.578	1.895	1.578	1.895	1.935	1.560	1.580	1.580	1.582	1.560	
Bottom Elevation [m]	838	1.578	1.547	1.560	1.597	890	1.574	1.575	1.580	1.554	
Total Vertical [m]	741	317	31	335	338	670	7	6	2	7	2.452
Horizontal Distance [m]	2.602	861	190	1.040	879	4.655	60	48	20	60	
Slope Distance [m]	2.705	918	193	1.093	942	4.703	60	48	20	60	10.742
Average Slope [%]	28%	37%	16%	32%	38%	14%	11%	11%	8%	11%	24% Mean
Rated Capacity	1.800	1.800	600	1.500	1.600	1.200	1.200	1.200	1.200	1.200	13.300
V.T.M./Hr.(000)	1.333	571	19	503	541	804	8	7	2	8	3.793
Rope Speed [m/sec]	5,0	5,0	2,0	2,5	2,5	5,0	0,9	0,9	0,9	5,0	
Trip Time [min]	9,02	3,06	1,60	7,28	6,28	15,68	1,12	0,89	0,37	0,9	
Operating Hr./Day	8,0	8,0	7,5	7,0	7,0	8,0	7,5	7,5	7,5	7,5	7,6
Loading Effic. [%]	95%	95%	80%	85%	85%	90%	80%	80%	80	80%	
Access Reduction[%]	100%	40%	0%	9%	0%	100%	5%	30%	50%	0%	
Potential SCC [Skiers/Day]	**0**	**590**	**160**	**1.100**	**970**	**0**	**60**	**40**	**10**	**70**	**3.000**

.3.3.2 Piste Specifications and Capacities

Table VII.3 provides the necessary information on the pistes that are proposed at the build-out stage of the Galičica ski center.

TABLE VII.3
GALIČICA
PISTE SPECIFICATIONS AT BUILD-OUT

Trail Name	Trail No.	Skill Class	Total Vert. [m]	Horz. Dist. [m]	Slope Dist. [m]	Slope Average [%]	Slope Steep. [%]	Ave. Width [m]	Horz. Area [ha]	Slope Area [ha]	Skiers at Area Density [skier/ha]	Total
Lift 1B												
	1A	6	248	741	781	33%	54%	29	2,17	2,29	22,5	50
	1B	5	258	842	881	31%	48%	34	2,85	2,98	45	130
	1C	5	300	871	921	34%	50%	34	2,97	3,14	45	140
	1D	6	315	1.215	1.255	26%	51%	30	3,60	3,72	22,5	80
	Off-Piste	7	233	380	446	61%	70%	-	21,00	24,63	3	70
Total Lift 1B*	4*				3.838*					16,49*		470
Lift 2												
	2A	1	31	180	183	17%	18%	43	0,78	0,79	150	120
Total Lift 2	1				183					0,79		120
Lift 3												
	3A	2	335	2.478	2.501	14%	18%	22	5,49	5,54	75	420
	3B	3	90	278	292	32%	39%	40	1,12	1,18	60	70
	3C	4	140	467	488	30%	43%	42	1,98	2,07	60	120
	3D	5	205	653	684	31%	49%	38	2,45	2,57	45	120
	3E	6	222	635	673	35%	53%	30	1,93	2,04	22,5	50
	3F	5	120	370	389	32%	46%	36	1,32	1,39	45	60
	3G	3	55	193	201	28%	31%	45	0,87	0,90	60	50
50%	4H	4	110	547	558	20%	38%	26	1,41	0,72	60	40
Total Lift 3	7**				5.227 **					16,41		930

* not including off-piste terrain ** not including piste 4H

TABLE VII.3 – CONT.
GALIČICA
PISTE SPECIFICATIONS AT BUILD-OUT

Trail Name	Trail No.	Skill Class	Total Vert. [m]	Horz. Dist. [m]	Slope Dist. [m]	Slope Average [%]	Slope Steep. [%]	Ave. Width [m]	Horz. Area [ha]	Slope Area [ha]	Skiers At Area [ha]	Total
Lift 4												
	4A	5	253	634	683	40%	49%	34	2,18	2,35	48	110
	4B	4	330	1.100	1.148	30%	44%	32	3,57	3,73	60	220
	4C	6	238	578	625	41%	57%	35	2,05	2,22	22,5	50
	4D	5	338	960	1.018	35%	48%	31	3,00	3,18	45	140
	4E	4	125	490	506	26%	37%	37	1,81	1,87	60	110
	4F	4	235	842	874	28%	45%	26	2,21	2,29	60	140
	4G	5	243	785	822	31%	48%	26	2,01	2,10	45	90
50%	4H	4	110	547	558	20%	38%	26	1,41	0,72	60	40
Total Lift 4	8				6.233					18,46		900
MC1												
	6A	1	7	60	60	11%	12%	70	0,42	0,42	150	60
Total MC1	1				60					0,42		60
MC2												
	7A	1	6	48	48	11%	12%	52	0,25	0,25	150	40
Total MC2	1				48					0,25		40
MC3												
SNOWPLAY		1	7	20	20	8%	10%	50	0,05	0,05	150	10
Total MC3	-				60					0,05		10
MC4												
	8A	1	7	60	60	11%	12%	40	0,24	0,24	150	40
Total MC4	1				60					0,24		40
Total All Lifts	**23**				**16,0 km**					**49 Ha**		**2.570**

Two skiway (S1+S2) with an overall length of approx. 3,5 km are proposed in addition to the above listed ski pistes. The skiways are not added to the overall skier capacity as they are not designed for return-cycle-skiing. Overall, the Master Plan of the Galičica Ski Center includes a total of 16 kilometers and 49 hectares of ski piste. The 23 pistes have an overall skier carrying capacity of 2.570 skiers per day.

.3.3.3 Piste Balance by Skill Class

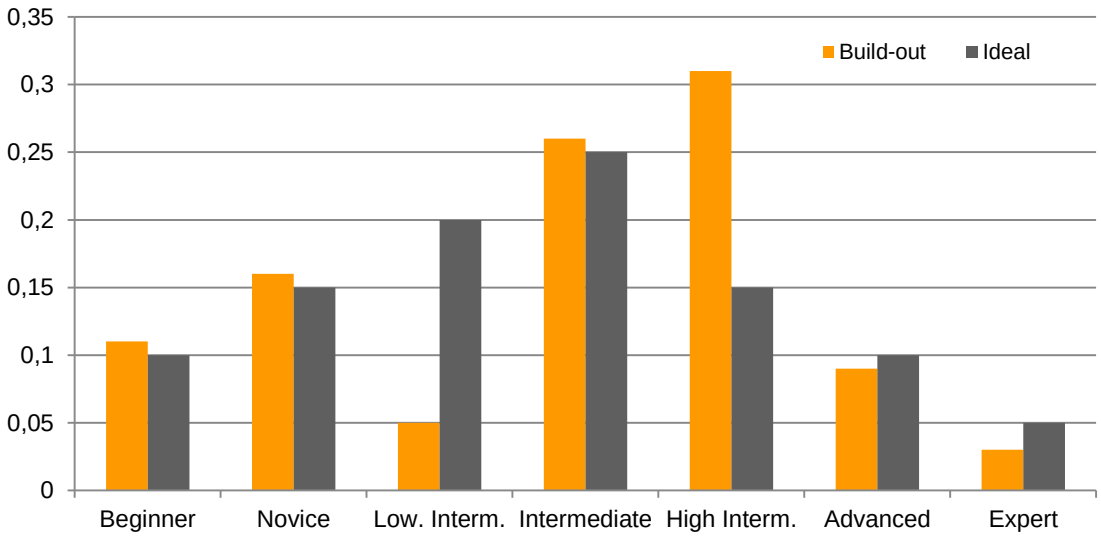
As listed in Table VII.4 and illustrated in Plate VII.1, the piste balance by skill class is not ideally balanced. There is a significant shortage of low intermediate terrain and an excess of terrain for high intermediate skiers. This is because of the characteristic of the natural terrain of the Galičica Ski Center with relatively steep slopes except of the plateau at the mid-mountain area.

TABLE VII.4
GALIČICA
PISTE BALANCE BY SKILL CLASS AT BUILD-OUT
(Lift SCC = 3.000)

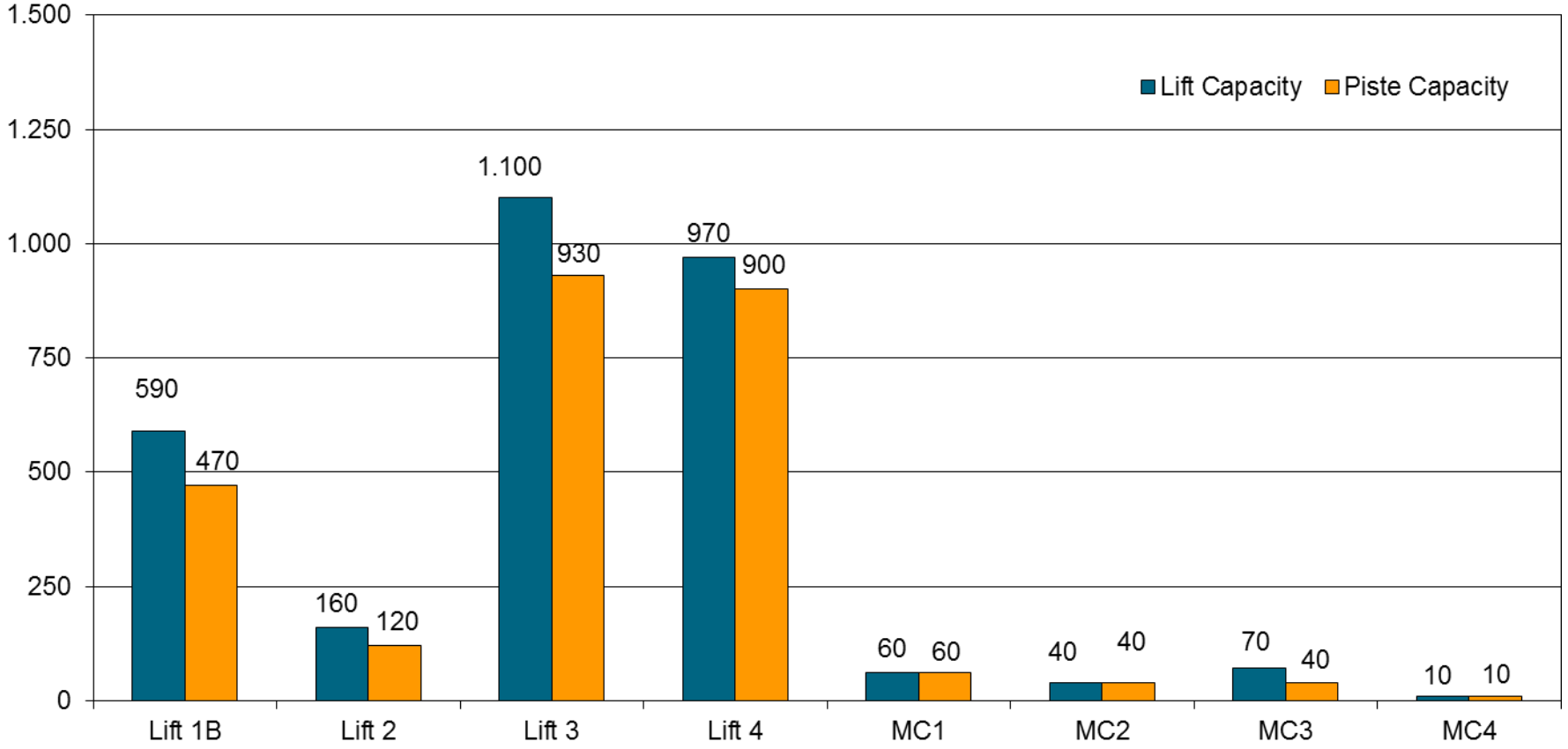
Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	1,8	270	11%	10%
2 Novice	5,5	420	16%	15%
3 Low Intermediate	2,1	120	5%	20%
4 Intermediate	11,4	670	26%	25%
5 High Intermediate	17,7	790	30%	15%
6 Advanced	10,3	230	9%	10%
7 Expert	off-piste	70	3%	5%
TOTALS	48,8	2.570	100%	100%

Average	61,5	Skiers / Hectare
Optimum	55,2	Skiers / Hectare
Weighted Demand	2.925	VTM / Skier / Day

PISTE BALANCE BY SKILL CLASS AT BUILD-OUT
GALIČICA
PLATE VII.1



LIFT VS. SKI PISTE CAPACITIES
BALANCE BY LIFT SYSTEM
GALIČICA AT BUILD-OUT
PLATE VII.2



As illustrated on the above plate VII.2, the capacities of the piste and lift systems are relatively well balanced. This is important to avoid long queues at the lift terminals or crowded ski pistes.

.3.3.4 Skier Staging Routes and Capacities

The staging and egress situation at the Galičica Ski Center is relatively straight forward as there will be just two access options. Guests coming from the Lake Ohrid area will ride Lift 1A to get to the ski area and guests coming from the Lake Prespa side will take Lift 5 and then Lift 3 to get to the mountain. Same situation applies for egress where skiers have to download the gondola to get back to their car, respectively their accommodation. No ski-out opportunity is planned for the Galičica Ski Center as both base areas are much too low in elevation to provide a viable ski out.

.3.3.5 Proposed Phasing

Ecosign proposes to split the implementation of such a project into several phases. For the Galičica Ski Area concept we suggest three phases with the lift installation sequence as listed below:

- ***Phase 1***
  Phase 1 should include the access gondola (Lift 1) and the Beginner Zone (Lift 2, MC1, MC2 and MC3)

- ***Phase 2***
  In this Phase we suggest to build Lift 3 in order to expand the ski center to the east.

- ***Phase 3 (Build-Out)***
  By installing Lift 4 the ski area will reach the build-out capacity of 3.000 skiers per day

As mentioned earlier in this section, the Oteshevo Connector (Lift 5) is not a mandatory lift system for operation of the Galičica ski center. This access lift has only been integrated into the concept in order to meet the requirements listed in the Annex 1 to the Contract no. 02-4922/6. After a proper assessment of the situation, Ecosign advises against the installation of this lift mainly because of the poor cost-benefit ratio. However, if this lift will be built in future then we propose to do it as a final act after build-out of the ski center.

.3.3.6 Snowmaking

Due to periods with lower than ideal natural snowfall and the exposure of some pistes, snowmaking may be required to supplement the natural snowpack to ensure operation in the early and late season and to optimize snowpack during low snowfall years. Snowmaking can also be used to replenish snow when skier traffic wears down the snowpack.

The installation of snowmaking will ensure early and late season snowpack. For a ski area to open and stay open, with significant skier traffic, it is generally accepted that a ski piste requires a minimum of approximately 50 centimeters of packed snow over a fine-groomed summer surface in order to provide a quality surface for skiing and snowboarding. Less than this depth will result in the exposure of vegetation and rocks through the snow surface which can damage the vegetation and skiers' or snowboarders' equipment, as well as accelerate the melting of the snowpack. Ideally, the snowmaking system should first be able to make 50 cm depth of snow to open the ski area, but should also be able to make an equivalent of about 1 meter of snowpack to increase that base and maintain it at an adequate depth for the entire season (due to compaction, sublimation and evaporation). This supplemental snowmaking will ensure a long lasting, quality surface that will stand up to a large amount of skier traffic.

A ski facility with snowmaking normally opens the resort in stages, by making snow in different zones of the mountain during consecutive periods of time. The number of hours available for the first stage of snowmaking in the early season (from the late fall until the resort opens), is generally quite limited due to the climatic conditions, including both temperature and humidity.

A detailed analysis of the weather conditions by a snowmaking engineer will be required to determine the number of hours with conditions suitable to make snow over the course of the ski season. Furthermore it will be crucial to identify potential water sources for the snowmaking. We have not received any information about the amount of water available. Water supply is a critical subject for artificial snowmaking and considering the geological and climatic situation of the Galičica massive we believe that this will be a critical issue which needs to be studied in detail.

For Galičica ski center, we recommend having snowmaking installed on approximately 7,8 hectares of piste area in Phase 1 and 19,9 hectares of pistes at the build-out stage of development. Pistes with proposed snowmaking are illustrated on Fig. VII.2 Mountain Master Plan. Ecosign has also calculated the estimated water requirements for adequate snowmaking at the Galičica Ski Center. Table VII.5 shows the snowmaking coverage and the calculated water requirements for Phase 1 and for Build-Out. A snowmaking pond is proposed at an elevation of 1.870 meters. The ultimate capacity of the pond will depend on the snowmaking concept which needs to be done by a professional snowmaking company.

TABLE VII.5
SNOW COVERAGE AND WATER REQUIREMENTS FOR ARTIFICIAL SNOMAKING IN GALIČICA

Phase	Ski Trail Area [ha]	Opening Depth [cm]	Snow Volume [m3]	Water Required [m3]	Seasonal Depth [cm]	Snow Volume [m^3]	Water Required [m^3]
Phase I	7,8	50	39.000	21.450	100	78.000	42.900
Build-Out	12,1	50	60.500	33.275	100	121.000	66.550
Total	**19,9**		**99.500**	**54.725**		**199.000**	**109.450**

.3.3.7 Snowfencing

Supplemental to the proposed artificial snowmaking system, Ecosign recommends the installation of Snow Fences at wind exposed locations on the upper mountain. Appendix A provides guidance in order to support proper installation of such fences in the Galičica ski center. Proposed locations for snow fencing are illustrated on Figure VII.2 Galičica Ski Center - Mountain Master Plan. The final location of snow fences might need to be adjusted based on conclusions resulting in the analysis from on-site wind data which up to date have not been provided to Ecosign.

.3.3.8 Grooming Requirements

Ecosign has calculated the resulting number of required grooming machines based on the piste areas and piste classifications for Phase I and for the Build-Out, as listed in Table VII.6. Ecosign generally assumes that one fully operable grooming machine be available each nightly shift for every 20 hectares of groomable terrain in Classes 1-5 or for every 5 hectares per shift for Class 6 terrain. Class 6 terrain will not be groomed on a daily basis and we applied a grooming interval of 2, which means that on average, a Class 6 piste is groomed every second day. Off-piste areas and Class 7 terrain are not groomed and thus not included in the calculation. Based upon these criteria, the proposed grooming requirements were calculated as follows:

TABLE VII.6
GROOMING REQUIREMENTS FOR BUILD-OUT IN GALIČICA

Skill Class	Piste Area (ha)	Machine Coverage ([ha]/Machine/shift)	Machine Availability	Grooming Interval (Days)	Recommend # of Machines
Phase I					
Class 1-5	9,0	20	80%	1	0,5
Class 6 (with Winch)	6,0	5	80%	2	0,8
Phase I TOTAL	**15,0**				**1,3**
BUILD-OUT					
Class 1-5	40,7	20	80%	1	2,5
Class 6 (with Winch)	10,3	5	80%	2	1,3
BUILD-OUT TOTAL	**51,0**	(incl. Skiways)			**3,8**

As shown in Table VII.6, one standard grooming machine plus one winch-equipped machine will be required in Phase I. A total of four grooming machines will be necessary to serve the trail system of the Galičica Ski Center at the build-out stage of development. Two out of the four should be equipped with a winch.

Grooming machine with Winch

.4 Summer Use Concept

Summer recreation activities are extremely important for the success of the resort year-round and for creating an environment that attracts investors in the real estate development. These can be activities that make use of the infrastructure and facilities already in place for winter recreation, as well as other recreational amenities which add diversity to the overall resort. There should be a wide range of activities to attract guests to the ski area and provide them with a memorable, enjoyable and entertaining visit.

The design of the Galičica Ski Center was remarkably driven by the goal to develop a year-round tourism attraction. The pristine beauty and the natural diversity of the Galičica National Park are a valuable and unique setting for such a tourism project. Also the fact that there is a considerable amount of existing tourism in the region constitutes a great situation and a significant advantage when developing a new tourism product like the Galičica ski center.

The recreation concept for the Galičica Ski Center is presented on Figure VII.4, Galičica Ski Center Summer and Winter Recreation Plan. This plan illustrates which summer or winter recreational activities are suggested on the mountain besides of alpine skiing. The mid-mountain zone and of course the mountain top area are the centers for such activities offering various kinds of activities for different target groups.

The proposed leisure activities can be categorized into following groups:

Nature Experience

- Lift Accessed Sightseeing and Hiking
- Nature Interpretive Hikes
- Mountain Cinema
- Snowshoeing
- Nordic Skiing
- Camping
- Mountain Biking

Action

- Zip Line
- Climbing Wall
- Paragliding/Hang Gliding
- Euro Bungee Trampoline

Events

- Conference, Seminar, Wedding

Family

- Children`s Activity Zone
- Children´s Skidoo Course
- Snow Tubing

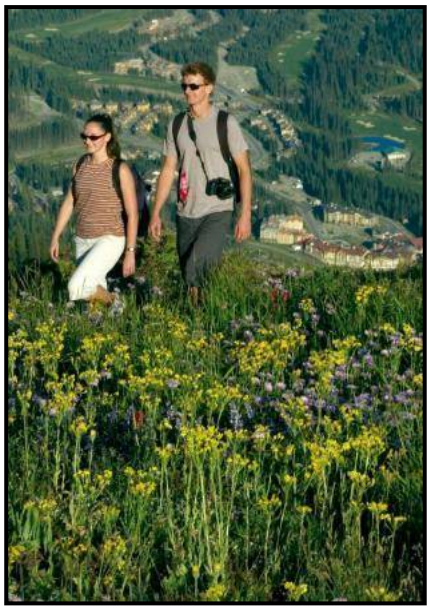
Nature Experience

Lift Accessed Sightseeing and Nature Interpretive Hikes

One of the most popular summer activities at a mountain resort is lift-accessed sightseeing and hiking in the alpine. The gondola cabins can be used in the summer to transport pedestrians to the alpine environment where they can experience spectacular views and hikes.

The hiking program can be expanded to include nature interpretive hikes, with staff from the Galičica National Park assisting in guiding and educating guests. Highlights of the tours will include the identification of local wildlife, flora and fauna. Indoor and outdoor interpretive displays can also be installed in and around the mountain top restaurant/lodge facilities. Lift-accessed sightseeing and hiking is a great way in which a mountain resort can effectively take advantage of their lift system in the summer season and offers a satisfying and inexpensive guest experience.

Typically, the mountain restaurants at the top of summer-operated lifts are open in the summer, allowing visitors the opportunity to spend a day at the top of the mountain. Wild flowers, alpine lakes, wildlife, views, evening-star gazing and trails are popular attractions for guests accessing the alpine in the summer.



Mountain Hiking during Alpine Blossom Season

Mountain Top Nature Interpretive Center, Restaurant and Sightseeing Area

Mountain Cinema

From the mountain top there is a spectacular view tot he surrounding mountains as well as to the two big lakes to the east and to the west. Thus there are several spots predestinated for a Mountain Cinema.

In a Mountain Cinema the landscape and the surround nature take the role of the screen. It invites to pause for a while and to experience and preceive nature with all physical senses.

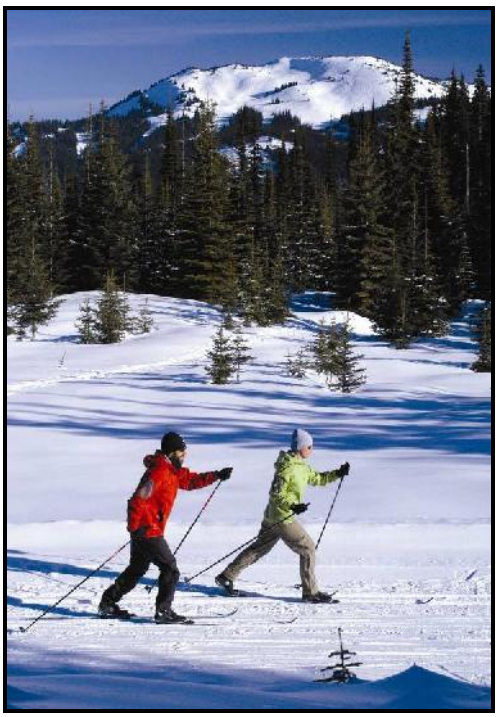
Snowshoeing

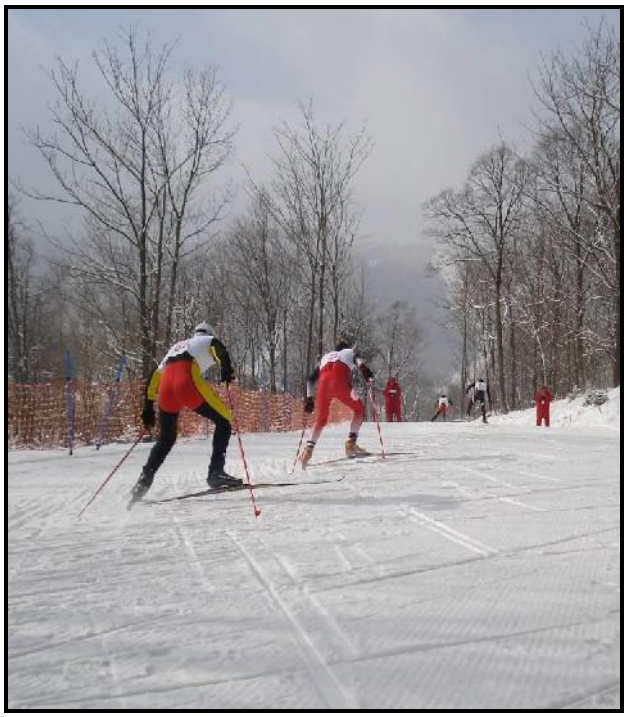
Snowshoeing is a popular winter resort activity for all ages and abilities which can be offered on a trail network with starting points either at the mid-mountain or starting from the mountain top. Snowshoeing can take place off the track but also on summer hiking or biking trails, allowing year-round use for trail facilities.

Snowshoeing

Nordic Skiing / Cross-Country Skiing

Nordic / Cross-country ski trails can be developed on gentle terrain that is too flat for commercial skiing. Ideally, the cross-country ski trails are easily accessible from the lift terminals. For the Galičica Ski Center we propose Nordic skiing to the north of the mid-mountain zone on the Lake Ohrid side as well as at the Central Plateau at the top of Lift 5.





Skate Skiing Competition

The cross-country trail network can be maintained by the staff of the ski center and the mid-mountain lodge and skier services there can be used by Alpine and Nordic skiers. Cross country ski trails can be used by Skate skiers and Nordic skiers alike and are typically 6m wide to allow for two-way circulation. The development of extensive Nordic facilities creates a secondary venue for competitions at the ski center and can contribute to attracting a broader range of resort guests.

Mountain Biking

Mountain bikers can utilize Lift 1, the Gondola to access the mountain or they can ride the pass road to the Central Plateau and from there further up to the highest point. We propose mountain biking on existing paved and gravel roads but also to build some new single trails dedicated for bikers.

Mountain biking on single trails and grave roads

Action

Zip-Line

Zip- Lines are becoming very popular at resorts around the world. A Zip-Line is basically a cable that is mounted on an incline with a carriage, with one or more pulleys that travel down the cable and a seat attached to hold a passenger. Passengers load the Zip Rider at the high point of the Zip Line and travel down the line at speeds up to 80km/hr. The system has a self-braking device so that passengers do not accelerate beyond the design speed and slow down at the end of the ride. Zip Riders can be installed in a variety of terrain with an overall grade of up to 40%.

A Zip-Line cable could for example be installed starting from the top station of Lift 1 going down and crossing the proposed snowmaking pond to the south-east. Then after a short hike another Zip-Line could be installed to bring passengers back to the starting point on the rope.

Zip-Line system

Climbing Wall

Climbing walls are very popular at ski /snowboard resorts. These are usually free standing structures that are modular and set up for the summer. A climbing wall is proposed at the mid-mountain zone of the Galičica Ski Center

Modular type Climbing Wall

Paragliding/Hang Gliding

Paragliding is possible from south-facing slopes in some mountain environments. This sports is already very popular in the Galičica National Park. In future the ski area's lift system can be used to allow paragliders to access a high-elevation launch area.

Paragliding

Euro Bungee Trampoline

The Bungee Trampoline has become very popular at ski and snowboard resorts around the world and can be used both during the summer and winter. The Slingshot Trampoline Bungee Jump provides a safe and fun way for the entire family to experience “big air” in the mountains.

Jumpers are able to reach heights that would be impossible using a trampoline alone. Secured and safe in an adjustable purpose built harness, jumpers are free to experiment with acrobatic movements or simply jump as high as they can. This exciting activity combines the adrenaline rush of a trampoline and bungee jumping in a safe and controlled environment and is very popular for spectators. This piece of equipment could be located on the mid-mountain or at the mountain top both during the summer and winter if desired.

Bungee Trampoline

Events

Conferences/Seminars/Weddings

The presence of a large hotel bed base and activities makes a mountain resort the ideal location for hosting conferences, seminars, retreats, family reunions, weddings and other group activities associated with these gatherings, as long as facilities exist to support such events. Therefore, a conference center is a critical element in mature destination resort villages. The conference center can attract groups, organizations and events to the resort which can contribute significantly to the summer economy. Ideally it is a flexible space that can be used for a wide variety of events that can ultimately add to a destination mountain resort's competitive edge. We suggest to host such events at the mountain top building.

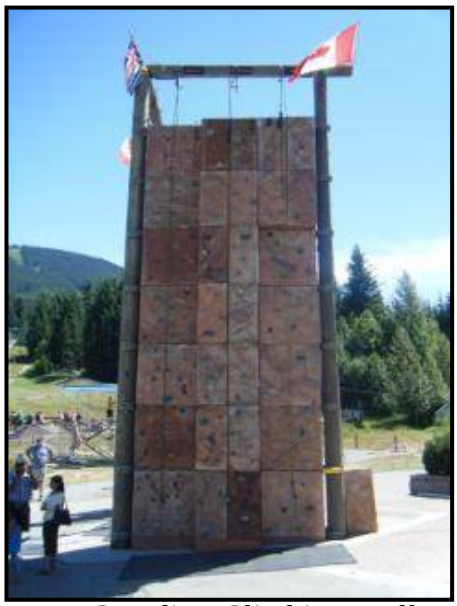
Family

Children's Activities Zone

Several Children's Activity Zones have been dedicated in the Galičica Ski Center Master Plan, one at the mid-mountain, the mountain top and another one at the top of Lift 1. Temporary structures in these areas during the summer months, offering a wide variety of activities including bungee trampoline, climbing wall, mini golf, go-karts, bouncy castle, pony rides etc. The summer activity zones utilize the gentle terrain of the winter snow play areas and help to draw visitors to the retail and restaurants within the resort village during the summer season. Activities usually do not require any specific skills and are offered at a relatively low cost which makes these areas extremely popular for visitors to the resort.

Euro Bungee Trampoline

Playground



Free Standing Climbing Wall

Climbing Structure

Kart Track set up on hard surface of Skier Plaza

Children's Mini-Z's

It is proposed that a Mini-Z snowmobile track for children and families be constructed at the mid-mountain zone so that it is conveniently located for guests. The mini-z's only require the area equivalent top two tennis courts for a "closed circuit" track for children.

Children's Mini Z's

Snow Tubing

A Snow Tubing area is proposed at the mid-mountain zone of the Galičica Ski Center. Other than skiing and snowboarding, snow tubing is becoming a very popular activity at winter resorts. The following section outlines tubing operations at other world class winter resorts. Kids of all ages will enjoy the thrill of snow tubing. Tubing requires no special skills or athletic abilities to participate, making it suitable for almost everyone. Tubes and riders are transported uphill by a mechanical lift, whereupon they choose a tubing lane and begin their ride. Lanes are groomed for various experiences and skill levels.

At the top of the tubing lanes there is a start area where tubers prepare themselves for launching down the tube lanes. Normally, a starter attendant gives the signal for the tubers to start when the lane is clear of tubers below. The starting/acceleration zone is usually around 25 percent slope gradient for 15 to 30 feet of vertical drop. Each lane is shaped with a slight depression in the center and a berm on each side to keep the tubes within their respective lanes. As the tube rider progresses down the tube lane, the slope gradient decreases. The bottom of the lane has a flat run-out and deceleration zone that may even include a slight counter-slope area to slow down and then stop the tubes. The average gradient between the start zone and the stopping point of the tubes is approximately 12-15 percent, depending on the types of tubes used. For the Galičica Ski Center a snow tubing area is proposed at the Mid-Mountain Zone.

Carpet Tubing Lift and Tube Slope

.5 Base Area Land Use Concept

.5.1 Base Area Planning Parameters

Mountain resort base area development includes access roads, overnight accommodation, commercial space, day-use parking and pedestrian circulation space. The base area interfaces the alpine ski area development and serves as a staging portal for all summer and winter recreation activities. Day visitors arrive at parking lots in the base area from various modes of transportation such as private vehicle, regional bus or local public transportation from where they walk to the main staging lifts and service center. Visitors staying in overnight accommodation in close proximity to the base area will walk or take a hotel shuttle to reach the main staging lifts to start their day at the ski center. The base area land use plan is developed with the objective of maximizing all available developable land within walking distance from the main staging lifts to minimize the need for secondary internal modes of transportation. Base area planning parameters are utilized to determine capacities and the overall development program of proposed parking (Day Visitors) and accommodation (Overnight Visitors) parcels that make up the base area land use plan. The capacities of parking and accommodation are estimated using base area planning parameters to ensure that the base area capacity and mountain capacity are balanced at each development phase of the Galičica Ski Center Master Plan.

Planning Parameters - Accommodation

Table VII.7 outlines the land use designations related to various types of accommodation included in base area land use plan for the Galičica Ski Center. Three designations identify different accommodation development types with a range of bed densities (beds per hectare), as shown in Table VII.7.

TABLE VII.7
ACCOMMODATION LAND USE PLANNING PARAMETERS

Land Use Designation	Units/Ha.	Beds/Ha.	Beds/Unit
SFU	10	80	8
Apartments/Multi-Family Units	33	200	6
Hotel/Village	100	400	4

An estimate of the number of beds generated from proposed accommodation parcels is made by applying the assumptions illustrated in Table VII.7 to the area (hectares) of a given proposed development parcel. The three accommodation land use designations are described in detail below.

Single-Family Units

Single-Family Units (SFU) development is defined by privately owned detached units. Depending on the parcel size, the units can vary from simple ski cottages to extravagant homes. Single family units are typically proposed on steeper terrain unsuitable for higher density development, as this development type has a relatively small footprint which requires less earthwork.

Single Family Unit / Chalet

Apartments / Multi-Family Units

The Apartments land use designation describes multi-family overnight accommodation in buildings up to 4 floors with no commercial space. Units can be walk-up or accessed by a central hallway and the building may have a small lobby and shared amenity space. Apartment units are typically privately owned, second home real estate that is managed by a rental company so that the unit is available for use by other guests when it is not in use by the owner.

3,5 floor Apartments

Hotel / Village

The Hotel/Village land use designation is planned within walking distance from the main staging lifts and includes a mix of accommodation, commercial space and other tourist amenities. The Hotel/Village land use designation has the highest density of overnight accommodation (400 beds per hectare) and is typically developed with smaller units with an average of 4 beds per unit.

Areas designated as Hotel/Village are mixed-use development that allow for a combination of both commercial and residential product in each building. Typically, building height is limited to 4 to 5 floors and the ground level is reserved for non-accommodation uses such as commercial space, amenity space, lobby or back of house space. Pedestrian plazas and shopping streets are an essential component of the Village land use and provide an animated experience for guests before and after the ski day, as well as activities for guests who choose not to ski. The Hotel/Village zone should be connected to other summer and winter recreation facilities.

Summer Mountain Village

Accommodation Occupancy

Occupancy assumptions are applied to the land use plan program for accommodation parcels to estimate the overall number of visitors that will be generated from various types of accommodation during peak periods. Furthermore, the number of skiers from accommodation is estimated based on a Skier Participation rate. Occupancy rates vary significantly between beds in private real estate units and hotel units therefore two sets of assumptions are applied, as shown in Table VII.8. An estimate of visitors and skiers generated from accommodation within walking distance to the main staging lifts is an important component of the overall base capacity calculation. Visitors from accommodation outside of walking distance will access the resort by private vehicle or bus and are considered as "Day Visitors".

TABLE VII.8
ACCOMMODATION
OCCUPANCY ASSUMPTIONS

Land Use Designation	Unit Occupancy	Bed Occupancy	Visitor Yield	Skier Participation	Skier Yield
Hotel (Public Accommodation)	70%	70%	49%	60%	29%
Apartments, SFU, MFU (Private Real Estate)	20%	50%	10%	50%	5%

Planning Parameters - Parking

Table VII.9 outlines the planning parameters and assumptions related to parking that are applied in the Galičica Ski Center base area land use plan. These assumptions are used to estimate the capacity and visitor yield from proposed parking lots during peak periods.

TABLE VII.9
ASSUMPTIONS - PARKING

Cars Per Hectare	330
Visitors from Cars	2,7
Buses Per Hectare	70
Visitors from Buses	40

Comfortable Walking Distance

The spatial relationship between the staging lifts, accommodation and parking is important as visitors originating from accommodation or parking beyond comfortable walking distance of the access lift terminals either require some form of vehicular transportation to the lifts, or face a long walk at the beginning and end of the day. This requirement for transportation between accommodation and staging lifts results in traffic and parking demands throughout the base area. Comfortable walking distance is defined as a 500m radius for base areas that are situated below the snow line and for ski centers where the majority of visitors rent equipment and will not be walking in ski boots.

Comfortable Walking Distance is a determining factor for the location of the bottom terminal of the staging lifts, as all parking and as much accommodation as possible should be located within walking distance from the lift to create a truly pedestrian oriented development. A graphic indicating the extent of Comfortable Walking Distance is illustrated on the Base Area Land Use Plans for the Galičica Ski Center Master Plan.

.5.2 Base Area Land Use Plan – Lake Ohrid

The Base Area Land Use Plan for the Lake Ohrid side of the Galičica Ski Center is presented in Figure VII.3a. The ski center's main staging area, day visitor parking and overnight accommodation is located in a new proposed base area located between 830m and 900m in elevation to the south of the existing village of Peštani. This base area development zone has been named the "Upper Peštani Base" and can be accessed from the future highway between Ohrid and the border with Albania.

A second base area development zone, the "Gradište Lakeside Village", is identified in Figure VII.3a on the north side of the Gradište peninsula. The Gradište Lakeside Village is located roughly 2km south of the "Upper Peštani Base" and is therefore disconnected from the Ski Center's base area development. However, the Gradište Lakeside Village offers an attractive development opportunity due to its location adjacent to the shore of Lake Ohrid and has been included in the master plan to add value to the overall development package. The Mid-Mountain Zone is also illustrated in Figure VII.3a and is described in detail on page 53 of this report.

Views to the north from the west side of Parcel P1 in the Upper Peštani Base

Table VII.10 provides a summary of the proposed development parcels included in the land use plan for the Upper Peštani Base and Gradište Lakeside Village. A total of 13 parcels, 18,8 hectares of land and 2.300 beds are included in the land use plan for the Upper Peštani Base. The Gradište Lakeside Village development zone overall includes 9,6 hectares of land in two parcels which could generate 1.640 beds.

Views of the Gradište peninsula to the south from Parcel 13 in the Upper Peštani Base

TABLE VII.10
GALICICA SKI CENTER
BASE AREA LAND USE PLAN
LAKE OHRID

Parcel	Area Ha.	Land Use Designation	No. Beds
LAKE OHRID			
Upper Peštani Base			
P1	1,8	Parking & Drop Off	n.a.
P2	0,5	Parking & Drop Off	n.a.
P3	0,7	Parking & Drop Off	n.a.
1	0,4	SFU	32
2	0,65	SFU	52
3	0,7	SFU	56
4	2,1	SFU	168
5	1,5	SFU	120
6	1,0	Apartments	200
7	0,55	Apartments	110
8	0,4	Apartments	80
9	0,6	Apartments	120
10	3,0	Hotel (Mountain Village)	1.200
11	2,1	SFU	168
12	2,5	Service Center/Staging Area	n.a.
13	0,25	Picnic Area	n.a.
Subtotal Upper Peštani Base	**18,8**		**2.306**
Gradište			
14a	2,6	Hotel (Lakeside Village)	1.040
14b	3,0	Apartments	600
14c	4.0	Public Green Space	-
Subtotal Gradište	**5,6**		**1.640**
TOTAL LAKE OHRID	**24,4**		**3.946**

Upper Peštani Base

The Upper Peštani Base is planned at the base of Lift 1a, the only year round access to the Galičica Ski Center's four-season recreation facilities. This site was identified in the base area development analysis due to the large area with gentle slopes suitable for development and potential connection to the future highway (see Figure VI.10a Parcel LO-1 & LO-2). The Upper Peštani Base has excellent views of Lake Ohrid and its eastern shore, as wells as the mountains in Galičica National Park and future ski center development.

The Upper Peštani Base has been designed to maximize day visitor parking for the ski area to ensure that the buildout capacity of the base area is in balance with the buildout capacity of the recreation facilities. A real estate and mountain village component has also been included in the Upper Peštani Base Area development to capitalize on the increased land value in areas adjacent to the gondola and to diversity the overall master plan package. Parking lots and the gondola terminal are located at the lowest elevation within the base area development to ensure that day visitor traffic does not conflict with circulation within the real estate and village development. Three parking lots with a total area of 3,0 ha are accessed by 1.000m of proposed road from the future highway. The parking lots have a capacity of 935 cars and 12 buses which could generate approximately 3.000 visitors during peak periods, as shown in Table VII.11.

TABLE VII.11
UPPER PESTANI BASE
PARKING CAPACITY

Parcel	Area Ha.	Land Use Designation	Cars per Ha.	No. Cars	No. Buses	No. Visitors
P1	1,8	Surface Parking	330	594		1.604
P2	0,5	Surface Parking	330	165		446
P3	0,7	Surface Parking	330	176	12	955
Total	**3,0**			**935**	**12**	**3.005**

A building is planned adjacent to the gondola terminal to provide essential services for visitors in the base area before they load the gondola. The main drop off zone for vehicles will be located adjacent to this building within the parking lot parcel. A picnic area is identified on the west side of Parcel P1 to provide an amenity for visitors with views to the lake.

Parcel P1 looking south

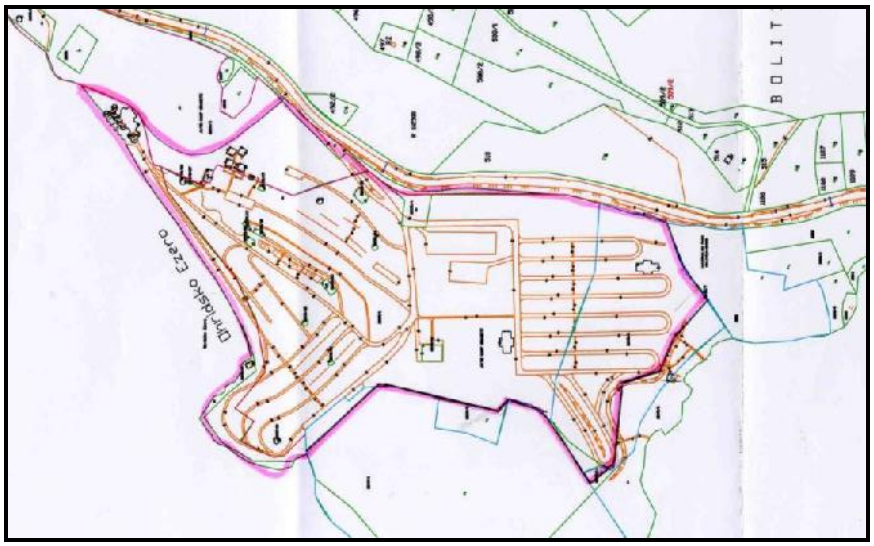
Parcels 1 to 11 identify the real estate and mountain village development zone in the Upper Peštani Base. This area is accessed beyond the day visitor parking area with 2,2 km of proposed road that climbs to an elevation of 900m. The mountain village is located on a flat plateau at 885m overlooking Peštani village and Lake Ohrid. This development is envisioned as a cluster of hotels surrounding pedestrian areas that connect to the gondola terminal and surrounding hiking trails. The mountain village could feature a spa, retreat center, conference facilities or other amenities that would attract groups looking for a quiet mountain setting for an event or function. A mix of commercial space accessible to the public such as restaurant and retail space should also be integrated into the mountain village.

Views to Lake Ohrid from Parcel 10 Mountain Village

A private real estate component with a mix of single family units and multi-family apartments is planned surrounding the Mountain Village and upper slopes. Parcels 1, 2, 3, 4, 5 and 11 are designated as low density single-family units. This development should be carefully integrated into the landscape with as much natural vegetation preserved as possible. Parcels 6, 7, 8 and 9 are designated for medium density apartments that would have views and a good connection to the mountain village.

Gradište Lakeside Village

The Gradište Lakeside Village has been included within the Galičica Ski Center Master Plan as a potentially profitable component of the plan that could help to offset the large capital cost of the ski center facility. Currently, several tourist facilities are located on the Gradište peninsula including a museum, a historical site and an extensive caravan park and camping area. Ecosign was provided with a map of Gradište showing the area of land within the existing caravan park that is owned by the federal government of Macedonia outlined in pink (below). Assuming that the government can cede the land in this area in cooperation with the Gradište Ski Center development project, the Lakeside Village Parcels 14a, 14b and 14c are proposed within state-owned land. The overall Gradište development includes a hotel component, an apartment (private real estate) component and public green space which should be designed in an integrated manner with the surrounding tourist facilities. The total area of parcels 14a, 14b and 14c is 9,6 hectares which could generate approximately 1.040 hotel beds, 600 beds in apartment units and 4,0 hectares of public green space.



Property boundary map provided by MEPSO. Available land for a lakeside village highlighted in pink.

The connection to the lake is the strongest asset for the Lakeside Village. This development should be master planned in detail to allow for public circulation through the village zone to the lake with pedestrian connections to other tourist facilities in the area. Visitors staying in overnight accommodation in the lakeside village will drive or take a shuttle to the Upper Peštani Base to access the Galičica Ski Center facilities year round.

The Gradište peninsula looking south

Table VII.12 provides a summary of the accommodation mix proposed for the Upper Peštani Base and Gradište Lakeside Village. The planning parameters outlined in Tables VII.7 and VII.8 have been applied to the parcel areas to estimate number of beds, units and visitors from accommodation during peak periods. The Upper Peštani Base includes a total of approximately 2.300 beds which translates to 460 units, the majority of which are in the Mountain Village. At peak occupancy, it is estimated that approximately 700 visitors to the Galičica Ski Center could be generated from this development. Only Parcels 4, 5 and 6 are outside of the 500m comfortable walking radius, therefore it is expected that most visitors will walk to reach the lifts.

The Gradište Lakeside Village includes a total 1.640 beds which is equivalent to 260 hotel units and 100 apartment units. Visitors generated from these beds will access the ski center by vehicle and are therefore considered as day visitors in the parking capacity calculation.

TABLE VII.12
ACCOMMODATION MIX
UPPER PESTANI BASE

	No. Beds	% Total Beds	No. Units	% Total Units	No. Visitors
Upper Peštani Base					
SFU	596	26%	75	16%	60
Apartments	510	22%	85	18%	51
Hotel (Mountain Village)	1.200	52%	300	65%	588
Subtotal Upper Peštani Base	**2.306**	**100%**	**460**	**100%**	**699**
Gradište Lakeside Village					
Hotel (Lakeside Village)	1.040	63%	260	72%	-
Apartments	600	37%	100	28%	-
Subtotal Gradište	**1.640**	**100%**	**360**	**100%**	
TOTAL LAKE OHRID	**3.946**		**820**		

Gradiste peninsula looking north

Base Capacity

"Base capacity" is defined as the capacity by which parking lots and accommodation can generate visitors for the Ski Center. The base capacity needs to be planned to match, or balance, with the capacity of the alpine ski area to ensure that planned facilities will be occupied to their comfortable carrying capacity at the buildout phase of the development. As listed in Table VII.2 the buildout Skier Carrying Capacity of the alpine ski facility at the Galičica Ski Center is 3.000 skiers at one time. In addition, the Mid-Mountain Zone has capacity for approximately 500 non skiers that will participate in snow play, snow sliding, Nordic skiing or will simply be sightseeing on the gondola. As non-skiers tend to spend less time at the Ski Center, it is expected that there will be turnover throughout the day and the total number of sightseers during peak periods could be up to 1.000 visitors.

Table VII.13 provides a summary of the balance between the Upper Peštani base capacity and the mountain capacity. Ecosign estimates that 500 visitors from the Upper Peštani Base accommodation will walk to the gondola terminal (70% of the total estimate of 699 visitors in Table VII.12). The total parking capacity as shown in Table VII.11 is 3.005 visitors which results in a total base capacity of 3.505 visitors. This is in balance with the total mountain capacity of 3.500 visitors.

TABLE VII.13
BASE CAPACITY
UPPER PESTANI BASE

	No. Visitors
Visitors from Accommodation	500
Visitors from Parking	3.005
Total Upper Peštani Base Capacity	**3.505**
Buildout SCC	3.000
Sightseers/Snow Players/Nordic	500
Total Mountain Capacity	**3.500**

.5.3 Base Area Land Use Plan – On Mountain

Several land development parcels have been identified within the mountain recreation zone of the Galičica Ski Center in three zones; the Mid-Mountain Zone, Mountain Top Zone and the Central Plateau Zone. The land use parcels in these zones are illustrated in Figures VII.1, VII.2 and VII.3a. Table VII.14 outlines the area and land use designation for the seven on mountain development parcels. The land use designations for these areas include on-mountain lodges and area for supporting winter and summer recreation facilities. No additional guest accommodation or parking is planned within the on mountain zones.

TABLE VII.14
ON MOUNTAIN LAND USE PLAN

Parcel	Area Ha.	Land Use Designation
ON MOUNTAIN		
Mid-Mountain Zone		
15	0,25	Mid-Mountain Lodge
16	2,0	Snow Play / Snow Sliding
17	21,5	Nordic & Snowshoe Zone
Mountain Top Zone		
18	0,2	Mountain Top Lodge
19	0,7	Snow Play / Snow Sliding
Central Plateau Zone		
20	0,2	Backside Lodge
21	0,3	Summer Parking
22	221,0	Nordic & Snowshoe Zone
TOTAL ON MOUNTAIN	**246,2**	

Mid-Mountain Zone

The mid-mountain lodge is identified by Parcel 15 and is situated centrally between the alpine ski trails, the beginner ski zone and snow play area in the mid-mountain zone. The lodge will provide staging facilities for all summer and winter activities in this area as well as restrooms, food service, lockers and seating areas for skiers and non-skiers. Parcel 16 identified 2 hectares designated for snow play and a snow sliding zone (tubing, sledding etc.). Parcel 17 outlines a proposed area for winter Nordic ski trails and snowshoe trails that in summer can be used for mountain biking and hiking.

Mountain Top Zone

Parcel 18 identified the location of the mountain top lodge which will include a restaurant, outdoor patio and additional guest services and operational services. This restaurant will be a destination for non-skiers throughout the year to take in views of Lake Prespa to the east and Lake Ohrid to the west. An area for sledding and snow play has also been designated in the Mountain Top Zone with Parcel 19. Some earthworks may be required to make a suitable slope and starting platform separate from the skier circulation in this area.

Mountain Restaurant with sunny restaurant patio

Central Plateau Zone

The gently sloped terrain between the summit of Mt. Tomoros and Krle Gola Buka is identified as the Central Plateau Zone. Lift 3 provides a connection to this area in the winter when the road over between the east and west side of Galičica National Park is closed. In the summer, this area is accessible by the pass road and has a small pullout area for parking. A building is planned at the base of Lift 3 to provide services for skiers and other recreationalists in this area (Parcel 20). A summer parking lot is proposed to the south of the Backside Lodge to provide a parking are for summer recreation facilities in this area. In the winter, the existing unpaved access road will remain snow covered and be used as part of the winter recreation trail network. Parcel 22 outlines 221 hectares designated for winter Nordic ski trails and snowshoeing trails and summer hiking and mountain biking trails.

.8.4 Base Area Land Use Plan – Lake Prespa

The base area land use plan for the Lake Prespa side of Galičica National Park is presented in Figure VII.3b. The people-mover gondola connection to the bottom of Lift 3 from Lake Prespa has been added to the master plan to illustrate a potential alignment that could be considered once the Galičica master plan has reached buildout. As the connection to Lake Prespa will only likely occur at a point in the future beyond the current planning horizon, only a large generic base area parcel has been identified in the Lake Prespa zone to indicate the most suitable site for the gondola terminal and proposed base area facilities. At this stage in the planning process, the market demand from the Lake Prespa side is so low that it is premature to plan this base area facility in any detail. However, the connection to Lake Prespa has been shown in a conceptual manner so that the master plan can integrate with future planning exercises in this area and that the gondola alignment and Parcel 23 can be preserved for a future connection to the Galičica Ski Center development.

Table VII.15 outlines the area general base area land use designation for Parcel 23 at the bottom of Lift 5 on the Lake Prespa side of Galičica National Park. The existing hotel development to the north should be evaluated for redevelopment and renovation opportunities as tourism grows in this region.

TABLE VII.15
BASE AREA LAND USE PLAN
LAKE PRESPA

Parcel	Area Ha.	Land Use Designation
23	5,0	Mixed Base Area

View of Lake Prespa