

PANORAMA MOUNTAIN VILLAGE INC.

AMENDED MASTER PLAN

PANORAMA

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File: 4403791

September 14, 2016

Tori Meeks
A/Sr. Manager, Major Projects | Mountain Resorts Branch
Ministry of Forests, Lands and Natural Resource Operations
510 - 175 2nd Avenue
Kamloops, BC, V2C 5W1

Via Email: Tori.Meeks@gov.bc.ca

Dear Tori.

As you know Panorama Mountain Resort has been working on amending our Master Plan to include all of an area known as Taynton Bowl into our overall CRA. There are many risk and safety benefits associated with the proposed amendment including:

- Ability to take avalanche control measures in terrain currently affecting our "inside the boundary" terrain, and monitor and control terrain that is regularly accessed by "backcountry" skiers and riders through Panorama's lift network.
- Ski / Ride compaction to complement snow stabilization efforts
- Increased ski terrain at altitude where temperature fluctuations have less effect on snow quality (thaw refreeze cycles),

In response to Panorama's Amended Master Plan package submitted June 15th, 2016 and other correspondence with your office, Panorama would like to submit an update Amended Master Plan package. The following and attached addresses these additional requests from you and your team to continue the review process for our application.

- PMV Amendment to Mountain Master Plan Section 5.4 revised in July 2016. Included in this
 amendment are two maps; the first showing the current boundaries and how the proposed
 expansion reunites Taynton Bowl in its entirety how, and the second showing what the new
 boundary would look like as a whole. This revised Section 5.4 Mountain Master Plan replaces the
 existing Section 5.4 of the Comprehensive Development Plan dated April 1999.
- Panorama commissioned the Updated Environmental Review of Taynton Bowl completed by Cascade Environmental Resources in September 2016. Appendix D references Wildlife Management Plan which was completed by Cascade in July 1999.

 Also included is the Wildlife Management Plan Summary Report completed by Cascade in March 2001.

Panorama appreciates that the Ministry of Forests, Lands and Natural Resource Operations considers this application to be a minor amendment of the MDA and we are inclined to agree.

If you have any questions or require any additional information, please do not hesitate to contact me directly.

Sincerely,

Steve Paccagnan

President & CEO | Panorama Mountain Resort

Phone: 250 341 3012

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CC:

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5.4 MOUNTAIN MASTER PLAN

5.4.1 GOALS AND OBJECTIVES

Ecosign Mountain Resort Planners prepared the 1998 Panorama Mountain Village – Mountain Master Plan document. The 1998 update brings the Mountain Master Plan to a current status consistent within the Comprehensive Development Plan's overall Master Plan for Panorama Mountain Village. The following sections are excerpts from the Ecosign Mountain Master Plan Document.

A winter resort area master plan involves planning the removal or replacement of existing equipment integrated with the addition of new facilities. It is important to have an overview of the complete project at build-out so that facilities can be balanced and capital effectively invested.

The objectives of the Panorama Mountain Village Master Plan are as follows:

- Optimize the use and operational efficiency of the existing physical plant;
- Provide skiers/snowboarders with a high quality experience including some of the best lifts, trails, and skier service facilities in western Canada;
- Balance lift and trail capacities;
- Provide adequate amount of skier services in appropriate zones of the mountain;
- Define goals to guide management and inform public agencies during the ensuing 5 -10 year period.

The following section proposes the installation of new equipment and the relocation and upgrading of existing equipment. Panorama must be prepared to invest capital to improve facilities and increase capacity to sustain market growth.

Ecosign utilized a number and letter code to indicate the type of lift installation proposed. The coding is listed below.

- P Platter Surface Lift
- T-B T-Bar Surface Lift
- 2C Double Chairlift
- 3C Triple Chairlift
- 4C Fixed Grip Quadruple Chairlift
- Cab Cabriolet Type Gondola People Mover
- D4C Detachable Grip Quadruple Chairlift
- R Replacement Lift (i.e. 2R)

5.4.2 MOUNTAIN MASTER PLAN SUMMARY

This section of the Master Plan has been updated to reflect changes in the names of the lifts that have taken place since 1998. Since that time, several of the lift systems that were part of the master plan have now been installed. The date that the lift was installed has been noted in the text and also delineated on the summary tables. The only change to the 1998 Master Plan is an adjustment to the Taynton Bowl top lift terminal location. The Taynton Bowl Lift and terrain were included in the 1998 Master Plan. Text regarding the Taynton Bowl lift and the terrain that it services has been expanded to describe this adjustment more fully. These modifications are to be used as an amendment to the Master Plan.

The goal of the Mountain Master Plan is to renovate and modernize Panorama to make it a more desirable place to ski and snowboard and bring it up to, and beyond standards set by competitive destination resorts in western Canada.

This plan will provide facilities to increase the quality of the skier/snowboarder experience and the attractiveness of the area to both local and destination visitors. Physically, this plan will improve skier circulation in the existing area, speed up access to the upper mountain, as well as add new terrain.

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Panorama Mountain Village

Included in the Mountain Master Plan is the renovation and expansion of the mountain facilities, as well as new development which will consist of:

- The construction of several new lifts;
- Development of the Beckie Scott Nordic Centre/Greywolf Clubhouse and day-skier parking area;
- Construction of mid-mountain restaurants;
- Re-grading and construction of several new trails to alleviate bottlenecks which currently exist on the mountain:
- Fine (summer) grooming of ski trails;
- Installation of additional snowmaking;
- Construction of infrastructure.

5.4.3 Mountain Facilities and Phasing

LIFTS - In 1998, Panorama operated one detachable grip lift and 6 fixed grip lifts including one triple, two doubles, two T-Bars and one platter. In order to attract additional destination visitors, Panorama must join the leaders in the industry by providing additional high speed detachable chairlifts. This type of lift is now quite prevalent at leading destination resort areas, due to skier's preference for more comfortable loading and unloading, not to mention the speed of the lift and the opportunity to increase the amount of skiing/snowboarding possible in one day. In fact, the number and size of detachable quadruple chairlifts offered at a winter resort area has become a very important factor when skiers/snowboarders make their decision on where to spend their day.

Vertical rise is also a very important factor in a skier's decision making process. The total amount of vertical serviced by high speed, detachable quad chairlifts available at the ski area significantly affects the decision making process, as does the vertical rise on each individual lift, but to a lesser degree.

The 1998 Master Plan proposed the installation of four new detachable quadruple chairlifts, two quadruple chairlifts and the addition of a moving carpet and a handle tow. By 2016, most of these improvements are in place and only 3 detachable lifts remain to be installed. At completion of this Master Plan, the lift system will be able to stage guests from the Village through the Mile One Chair and the Toby/Sunbird lift system.

Currently (2016), Panorama operates a total of 10 lifts including the Village Pulse Gondola Cabriolet, 2 high speed detachable quadruple chairlifts, 2 quadruple chairlifts, 1 triple, 1 double, 1 platter and 2 moving carpets.

Lift 1, the Mile One quadruple chairlift (formerly known as the First Ascent Quad), has been retained in its current configuration but will be upgraded to increase its capacity to 2,800 pph when required. The Sunbird, Toby and Silver Platter will also remain in their current configurations. The Red Rider Handle tow is replaced with a moving carpet and the Little Ripper moving carpet is added. Night skiing/snowboarding is serviced by Mile One Express on Show Off.

The Master Plan envisions the replacement of the existing Horizon Chairlift and Champagne T-bar with a high speed detachable quadruple chairlift (Lift 2R The Champagne Quad). The top terminal of this new detachable lift will be located three-quarters of the way up the Champagne T-bar, about 120 vertical meters higher than the existing Horizon double chairlift, at the 2,160-meter elevation. The bottom terminal will be moved 26 vertical meters lower at the 1,530-meter elevation, just below the existing bottom terminal. This lift will be approximately 1,930 meters in length and will have a vertical rise of 630 meters. would be installed with an hourly capacity of approximately 2,400 pph and would have a ride time of 6.4 minutes, running at 5.0 meters per second. This lift would use the existing Horizon

trails, as well as several more to be constructed between these trails and Schober's. With the construction of a skiway to the southwest from the top terminal, this lift will service return skiing on Schober's Dream, Hopeful Sun Bowl and the gladed areas on either side of Schober's Dream, which currently requires a total of three lift rides.

A mid-mountain restaurant is proposed to be constructed adjacent to the top of the new Lift 2R. The Champagne detachable quad will be able to accommodate 1,730 skiers per day. (Note: this lift was installed in 2003).

The skiway from the top of the new Champagne detachable quad (Lift 2R) will merge with Schober's Dream near the 2,100 meter elevation, approximately 65 meters lower than the existing Summit T-Bar. In order to provide access to the summit, it is proposed that the Summit T-bar be replaced by a fixed grip quadruple chairlift with the bottom terminal relocated to the 2,085 meter elevation, adjacent to Schober's Dream. (Note: this lift was installed in 2003). The new Summit chair Lift 6R) will have a vertical of 285 meters and a carrying capacity of 170 skiers and snowboarders per day. This lift can be installed using the existing Horizon equipment when it is replaced. The extension of this lift to a lower elevation will allow the mountain to remove the Champagne T-Bar (resulting in less maintenance and operation costs) and will allow skiers to access the Summit with fewer lift rides.

In order to provide additional beginner terrain, a fixed grip quadruple chairlift (Lift 9) located between the Village and the proposed Trapper's Loop subdivision has been included in the Master Plan. When installed as a fixed grip quadruple chairlift, this lift will allow three students to be accompanied by an instructor or adult on each chair. The Lift 9 (Discovery Chair) will have an hourly capacity of 1,000 passengers per hour and a loading interval of nine seconds, which is very suitable for beginners. The lift will be able to accommodate 340 beginner skiers per day. (Note: this lift was installed in 2014).

A detachable grip quadruple chairlift (Lift 10) is proposed to be installed within Taynton Bowl Valley, with the top terminal at the 2,450 meter elevation of Taynton Ridge which is a slight departure from the top terminal location proposed in the 1998 Master Plan. The bottom terminal is located at the same location as proposed in the 1998 Master Plan at the bottom of the existing Stumbock's ski trail at the 1,740 meter elevation, as illustrated on Figure 5-8, The Mountain Master Plan. With the chairlift in this configuration, it will have a vertical rise of 710 meters and, with a capacity of 2,400 passengers per hour, will be able to accommodate approximately 1,100 skiers per day. This lift will provide a large expanse of skiing in the advanced and expert skill classes. This ski terrain is at a relatively high elevation where temperatures are cooler and snow quality is maintained. A portion of the terrain proposed to be serviced by this lift lies outside the existing Panorama Controlled Recreational Boundary (CRA) as identified in the 1998 Master Plan. This terrain outside the CRA is currently utilized by "side-country" and "back-country" skiers using Panorama's lift and trail system. As a result, Panorama has found it necessary to monitor snow stability and control avalanches within the entire Taynton Valley, both inside and outside the CRA for skier safety. installation of a lift within this zone will assist Panorama in the control of avalanches and safety. It should be noted: that increased skier traffic in this area will also assist in avalanche control through skier compaction.

In order to bring all of this terrain within the CRA, it is proposed that the boundary be adjusted to include 383 additional hectares of terrain, as illustrated on Figure 5-8. Taynton Bowl terrain would include 23 gladed and open bowl ski trails supporting approximately 700 skiers on 117 hectares of ski trails. Most of the ski terrain within the Taynton zone is steep terrain and naturally open or gladed, requiring minimal tree clearing for trail construction. The development of these gladed trails will be undertaken in a phased approach

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using best practices for gladed ski trail development and forestry silvaculture. No snowmaking is proposed for the Taynton Bowl ski terrain. A ski-out trail has been established stretching from the bottom of the Taynton Valley to the base area for egress, as illustrated on Figure 5-8.

Three-phase, 25K volt power would be supplied to the top terminal of the Taynton Bowl lift from the existing powerline that services the top terminal for the Summit Chairlift. An underground cable would be routed up the Taynton Ridge to the Lift 10 Top Terminal and the Warming Hut. A lower voltage line would be routed from the top of the Summit Chairlift down the Stumbock's ski trail to provide electrical power to the bottom station of Lift 10. Water would be supplied to the hut via snowcat and the hut would also contain composting toilets.

A warming hut with minimal services would be established at the top of the Taynton Bowl Lifts. This hut would be used by ski patrol as a "bump room" where patrol waits on standby at the top of the lift. This hut would also serve as a warming hut for guests using the Taynton Bowl area.

An environmental inventory and review of the Taynton Bowl drainage was undertaken by GeoAlpine Environmental Consulting Ltd. in 1998. In 2016, Cascade Environmental Resource Group Ltd., updated the environmental inventory of the entire Taynton Bowl drainage area.

In terms of cultural features their report stated that no archeological or heritage features were identified. The only evident anthropogenic activities in the area related to recreational uses such as tree cutting to produce gladed helicopter ski runs for commercial backcountry recreation. A number of horse trails were also observed at various elevations. These trails were attributed to back country guiding, hunting and possible recreational riding during the summer. With the exception of a number of trails and glades within

the existing portion of the CRA, little has changed over the ensuing 18 years. The proposed expansion area remains unchanged to any appreciable degree.

Climatic conditions are well documented from the skiing operation and no constraints were noted. Exposed bedrock occurs frequently in steep areas and does not pose a geological hazard such as related to slope failures from weather or highly fractured units. The site, however, indicated areas with landslide and snow avalanche activity.

The mid and upper reaches of Taynton Creek include several deep channels with steep terrain with high snow loading and are likely associated with mass movement events during spring runoff.

There were no specific constraints associated with the various tree and plant species found within the Taynton Bowl study area. Whitebark Pine (Pinus albicaulis), an endangered terrestrial plant was observed in the upper elevations of Taynton Bowl. The whitebark pine is protected on federal land under the Species at Risk Act (SARA), Schedule 1 (COSEWIC, 2010). It is blue listed in BC. It should be assumed that other red and blue listed species may occur within the study area and care should be taken to survey areas with anticipated ground disturbance prior to construction. No rare or endangered plants were identified within the wetlands in the study area.

No rare or endangered animals were identified, however, recommendations were made to limit construction to specific times of the year. General recommendations were also made for habitat protection.

The entire environmental report is on file with the Ministry of Forest, Lands and Natural Resource Operations as part of the Master Plan.

A detachable quadruple chairlift (Lift 11) starts in the Hopeful Creek Valley at the 1,645-meter elevation, and runs up to the 2,160 meter

elevation, slightly above the bottom terminal of the Summit chair. This top terminal has been chosen to provide better and easier access to good skiing/snowboarding in the upper Hopeful Creek area and also to provide easy access to the Summit lift and Schober's run. The Hopeful Creek Quad will have a total vertical rise of 515 meters and a ride time of 4.6 minutes, based on a cable speed of 5.0 meters per second. Hopeful Creek detachable quad will have a rated hourly capacity of 2,100 passengers per hour resulting in an estimated carrying capacity of 960 skiers per day. This lift, by itself or in conjunction with the Summit chair, will also service a huge expanse of "backcountry" terrain to the east of these lifts.

The Sunbowl detachable quadruple chairlift (Lift 12) starts at the 1,265 meter elevation in the Hopeful Creek Valley and terminates at the 1,850 meter elevation of Schober's Dream trail, a total of 585 meters of vertical. With a cable speed of 5.0 meters per second, this lift has an estimated ride time of 7.1 minutes. With a rated

hourly capacity of 2,000 passengers per hour, this lift will have a capacity of 1,730 skiers per day. In addition to servicing return cycle skiing, this lift will provide an important second access route to the large amount of skiing terrain in the "back" of the ski area.

At the completion of the Master Plan, the resort will be able to accommodate 8,970 skiers per day with 12 lifts. Detailed specifications for the existing and proposed Master Plan lifts are listed in Table 5-8. Table 5-7 summarizes ski facility statistics associated with the Mountain Master Plan. A total of 504 hectares of ski trails have been designed to provide adequate trail capacity for the proposed SCC. The proposed trails will be able to accommodate 9,830 skiers per day. As a result of the trail capacity exceeding lift capacity, the overall average densities will be lower than the planning parameters resulting in higher quality snow conditions on the slopes as a result of less wear and tear.

MASTER PLAN SUMMARY

PHASE	LIFTS	NUMBER OF LIFTS	SCC (skiers)	TRAILS	TRAIL BALANCE
1999	Lift 1 - Mile One - D4C - 1,992 pph Lift 2 - Horizon 2C - 994 Lift 3 - Toby - 2C - 1,217 pph Lift 4 - Sunbird - 3C - 1,700 pph Lift 5 - Champagne - T-Bar - 450 pph Lift 6 - Summit - T-Bar - 600 pph Lift 7 - Silver - Platter - 720 pph Lift 8 - Red Rider - Handle Tow - 720 pph	8	3,600	290.3 ha. 6,125 skiers/day	100 100 100 100 100 100 100 100 100 100
MASTER PLAN AS OF 2016	Remove: Lift 2 - Horizon 2C - 994 Lift 5 - Champagne - T-Bar - 450 pph Lift 6 - Summit - T-Bar - 600 pph Install: Lift 2R - Champagne Express D4C - 2,400 pph (2003) Lift 6R - Summit 4C - 998 pph (2003) Lift 8a Red Carpet - 900 pph (2006) Lift 8b Little Ripper HT - 600 pph (2006) Lift 9 - Discovery Beginner - 4C - 1,000 pph (2014) Lift 10 - Taynton Bowl - D4C - 2,400 pph (ammended) Lift 11 - Hopeful Creek - D4C - 2,100 pph Lift 12 - Sunbowl D4C - 2,000 pph Increase Capacity: Lift 1 - Mile One - D4C to 2,800 pph Existing: Lift 3 - Toby - 2C - 1,217 pph Lift 4 - Sunbird - 3C - 1,700 pph Lift 4 - Sunbird - 3C - 1,700 pph Lift 7 - Silver - Platter - 720 pph	12	8,970	504 ha. 9,830 skiers/day	10 P

Note: The date of lifts that have been installed since 1998 are noted in red.

The Taynton Bowl Lift has a revised alignment as a result of a proposed new top terminal location.

PANORAMA MASTER PLAN LIFT SPECIFICATIONS

TABLE 5-8

Lift Number	1	2R	3	4	6R	7	8a
Lift Name	Mile	Champagne	Toby	Sunbird	Summit	Silver	Red
	One	Express	Double	Triple	Quad	Platter	Carpet
Lift Type	D4C	D4C	2C	3C	4C	P	MC
Year Constructed	1988	2003	1978	1980	2003	1975	2006
Top Elevation m.	1,560	2,160	1,273	1,596	2,365	1,220	1,209
Bottom Elevation m.	1,180	1,530	1,150	1,181	2,080	1,160	1,185
Total Vertical m.	380	630	123	415	285	60	24
Horizontal Distance m.	1,345	1,824	572	1,156	846	476	164
Slope Distance m.	1,400	1,930	584	1,230	893	480	166
Average Slope %	28%	35%	22%	36%	34%	13%	15%
Rated Capacity	2,800	2,400	1,217	1,700	998	750	900
V.T.M./Hr.(000)	1,064	1,512	150	705	284	45	22
Rope Speed m/sec.	5.0	5.0	2.0	2.3	2.0	2.5	1.8
Trip Time min.	4.67	6.43	4.87	8.91	7.44	3.20	1.51
Operating Hr./Day	7.0	7.0	7.0	7.0	6.0	7.0	7.0
V.T.M. Demand/Day	3,567	5,003	2,827	4,095	6,799	1,243	940
Loading Eff. %	95%	95%	90%	85%	85%	80%	95%
Access Reduction	26%	13%	50%	0%	19%	10%	10%
SCC Skiers/Day	1,460	1,730	170	1,020	170	180	100

Lift Number	8b	9	10	11	12	
Lift Name	Little	Discovery	Taynton	Hopeful	Sunbowl	
	Ripper	Quad	Bowl	Creek		
Lift Type	HT	4C	D4C	D4C	D4C	TOTAL
Year Constructed	2014	2014				
Top Elevation m.		1,351	2,450	2,160	1,850	
Bottom Elevation m.		1,180	1,740	1,645	1,265	
Total Vertical m.	4	171	710	.515	585	3,902
Horizontal Distance m.	40	880	1,782	1,280	2,040	
Slope Distance m.	40	898	1,918	1,380	2,122	13,040
Average Slope %	10%	19%	40%	40%	29%	31% Mean
Rated Capacity	600	1,000	2,400	2,100	2,000	18,865
V.T.M./Hr.(000)	2	171	1,704	1,082	1,170	7,910
Rope Speed m/sec.	1.8	2.2	5.0	5.0	5.0	
Trip Time min.	0.37	6.80	6.39	4.60	7.07	
Operating Hr./Day	7.0	7.0	.5.5	6.0	6.5	6.7
T.M. Demand/Day 940		2,543	8,076	6,437	4,188	
Loading Eff. % 959		80%	95%	95%	95%	
Access Reduction	0%	10%	0%	0%	0%	
SCC Skiers/Day	40	340	1,100	960	1,730	8,970

The Cumulative Trail Balance Statement (Table 5-9) illustrates that the proposed trails, are somewhat unbalanced as compared to the skier market. The beginner and novice skill class trails (green circle) are able to service almost 5 percent of the market, as compared to the planning goal of 15 percent. The intermediate skill class trails (blue square) service 68 percent

of the market, compared to the planning goal of 70 percent. The intermediate skill class trails therefore are in good balance with the skier market. The advanced and expert skill class trails (black diamond) service 27 percent of the market compared to a planning goal of 15 percent. The skill class balance of terrain is graphically illustrated in Figure 5-9 and Table 5-9.

8,970

PANORAMA MASTER PLAN
CUMULATIVE TRAIL BALANCE STATEMENT

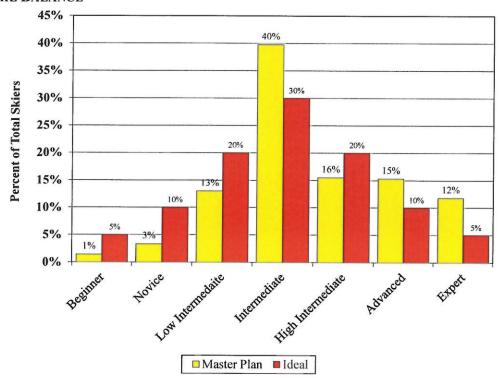
TABLE 5-9

Skill Classification	Hectares	Skiers	Balance	Ideal
1 Beginner	2.8	140	1.4%	5%
2 Novice	6.5	325	3.3%	10%
3 Low Intermediate	31.9	1,275	13.0%	20%
4 Intermediate	100.3	3,905	39.7%	30%
5 High Intermediate	74.8	1,525	15.5%	20%
6 Advanced	121.2	1,505	15.3%	10%
7 Expert	166.9	1,155	11.7%	5%
TOTALS	504.3	9,830	100%	100%

Lift SCC =

Average Density =	17.8	Skiers/Hectare	
Optimum Density =	32.7	Skiers/Hectare	
Weighted Demand =	4,641	VTM/Skier/Day	

PANORAMA MASTER PLAN SKI TRAIL BALANCE



The balance between lift and trail capacity is listed in Table IV.5 in CDP Volume II -Technical Background Report graphically shown in Table 5.8. The most significant imbalances occur on the Silver Platter and the Red Carpet beginner lifts, which only have 64 and 35 percent of the optimal amount of terrain. Taynton Bowl also appears to have more lift capacity than trail capacity but this is a little deceiving because the area has lots of advanced and expert gladed areas that can be skied. All of the other lift systems have adequate or more than adequate terrain to match the lift capacities.

SNOWMAKING

Since Panorama's inception, the need for snowmaking has been foreseen as important to supplement the natural snowpack in order to extend the season.

The system was originally designed in 1980 by Delta Engineering. The existing system has been added to over the years and currently provides snowmaking coverage to approximately 75 percent of the groom ski trails. The area uses a combination of both fan guns and air/water guns to make snow.

The water source for snowmaking is drawn exclusively from Toby Creek. The main snowmaking plant consists of multistage vertical turbine high pressure This pumping station has two operating modes. In the low pressure, the four pumps are operated in parallel and can supply 3000 GPM and 930 PSI. The low pressure mode is used for snowmaking on the lower mountain. In the high pressure mode, the system is operated in series with two pumps acting as booster pumps. This mode is used to provide water to terrain above the top of the Mile One Express and can supply 1500 GPM of water at 1800

PSI. A valve house/booster pump is located at the 2050 meter elevation to supply snowmaking water to the top section of the ski terrain delivering 450 GPM at 220 PSI. The snowmaking system also has a high pressure air delivery system for the air/water snow guns.