

# INFORMATION



June 21, 2017

**Purpose:** Update the Board of Directors on the process of hiring a master plan consultant for the downhill ski area at Tahoe Donner Association.

**Background:** Tahoe Donner's current Downhill Ski Lodge was built by DART in 1970, with subsequent additions and remodels through the last 45 years, attempting to accommodate growing visitation numbers and service levels. A few years ago, the General Plan Committee's Downhill Ski Area Sub-group worked to provide a comprehensive 2013 report, including analysis of the following metrics of the Downhill Ski Operations, see attached;

On August 6, 2016, A project information paper (PIP) was provided to the Board of Directors, and during the 2016 Budget Process, a \$50K Development Fund budget was identified and approved by the Board of Directors for expenditure in 2017. On November 10, 2016, The GPC initiated a Task Force to regain the 2013 momentum, to identify and detail further opportunities at the Downhill Ski Area. In April of 2017, the Task Force received approval to proceed with the RFP process to solicit two industry leaders with experience in ski area master planning, see attached SOQ's.

## **Discussion:**

1. Both consultants provided fee proposals by the deadline of June 16th. After qualifying both proposals, both were thorough and well matched, both with positive references.
2. Both fee proposals are within the Board approved \$50K DF budget for 2017.
3. Further clarifications and questions are currently underway with both consultants, so that scoring results and weighting can be finalized and tallied. If a contract can be executed in early July, the draft report could be available and presented at the September GPC Meeting, which would reflect nearly 80% of the content in final report.
4. Once feedback is provided, the final version would be completed within six weeks.
5. This Master Plan document will provide future Architect necessary details and planning for forthcoming feasibility study and cost estimates, including clarification of agencies requirements and available construction options.
6. Exact project scope, construction costs, and permit fees are to be further defined and approved by the Board of Directors as the project develops.
7. Member Communications will include signage, town hall meetings, formal outreach to neighboring condo associations and detached homes, news articles and member e-blasts.

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**Prepared By:** Forrest Huisman, Director of Capital Projects

# PROJECT INFORMATION PAPER



August 2, 2016

## Issue:

Downhill Ski Lodge and Lift Replacement

## Background:

The current Downhill Ski Lodge was built by DART in 1970, with subsequent additions and remodels through the last 45 years to accommodate growing visitation numbers and improved service levels. During the last five years, the Sub-group provided analysis showing the following metrics of the existing Ski Lodge;

- DH Ski provides positive Net Operating Results (NOR)
- derives 2/3rds of its Utilization and Revenue from Non-Member Users
- Capital Intensive - maintaining the aging facility is requiring increasing capital expenditures
- Seasonal and Weather Dependent - the ski hill can only operate with sufficient coverage
- has Uneven Revenue – daily revenue can vary by 10X depending on day and snow conditions
- is “The Best Place to Begin” - users buy almost 3-times more lessons than the national average
- has Grown in all Service Offerings - Lessons and Rentals show the most growth
- provides excellent Customer Service up to around 1,200 skiers/day
- fails to meet Industry Standards for Indoor Space when utilization is high

## Project Scope Detail:

- Obtain Site Survey, determine property lines and existing building setbacks
- Consider phased approach to minimize member impact and budget

## Considerations:

1. Regulatory:
2. Service Level:
3. Financial impact:
4. Health and Safety:
5. Alternatives available:

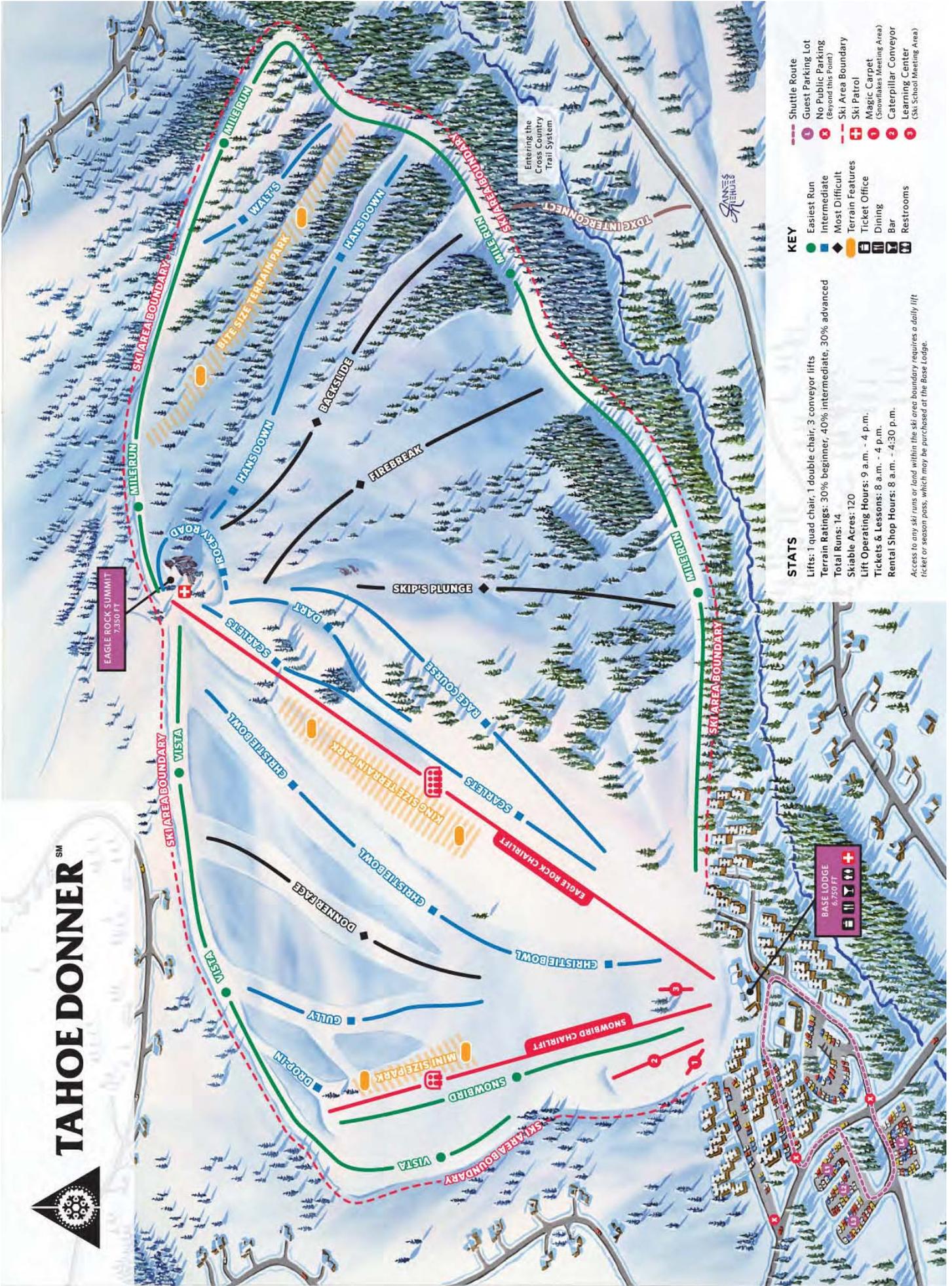
Prepared by: Director of Capital Projects, Forrest Huisman

Approved by: General Manager, Robb Etnyre \_\_\_\_\_ Date: \_\_\_\_\_

Approved by: General Plan Committee, Michael Sullivan \_\_\_\_\_ Date: \_\_\_\_\_

Approved by: Board of Directors, Steve Miller \_\_\_\_\_ Date: \_\_\_\_\_

# TAHOE DONNER<sup>SM</sup>



## STATS

- Lifts: 1 quad chair, 1 double chair, 3 conveyor lifts
- Terrain Ratings: 30% beginner, 40% intermediate, 30% advanced
- Total Runs: 14
- Skiable Acres: 120
- Lift Operating Hours: 9 a.m. - 4 p.m.
- Tickets & Lessons: 8 a.m. - 4 p.m.
- Rental Shop Hours: 8 a.m. - 4:30 p.m.

Access to any ski runs or land within the ski area boundary requires a daily lift ticket or season pass, which may be purchased at the Base Lodge.

## KEY

- Shuttle Route
- Guest Parking Lot
- No Public Parking (beyond this point)
- Ski Area Boundary
- Ski Patrol
- Magic Carpet (Snowflake Meeting Area)
- Caterpillar Conveyor
- Learning Center (Ski School Meeting Area)
- Easiest Run
- Intermediate
- Most Difficult
- Terrain Features
- Ticket Office
- Dining
- Bar
- Restrooms



## **Downhill plan - What's next?**

### **Determine / Analyze the Current State**

Analysis of User Data, Financial Data, Customer and Employee Satisfaction surveys, indicates that the Downhill Ski Area is an enterprise that:

- has a Positive NOR - Operating Revenue exceeds Operating Expense
- derives  $\frac{2}{3}$  of its Revenue from Public Users
- is Capital Intensive - Maintaining and Improving the facility requires large capital expenditures.
- is Seasonal and Weather Dependent - the ski hill can only operate when there is sufficient snow on the ground.
- has Uneven Revenue - Day-to-day revenue can vary by 10X depending on snow conditions, day of the week and holiday periods.
- meets its Goal as "the best place to begin" - Users buy almost 3-times more lessons than the national average
- has Grown in all Service Offerings - Lessons and Rentals show the most growth
- depends upon Lower Capacity Utilization for High Customer & Employee Satisfaction
- fails to meet Industry Standards for Indoor Space when utilization is high
- has Old Facilities and Confined Space for new construction

### **Envision the desired Future State**

The "Tahoe Donner Vision" states that amenities shall provide to the members: "*modern recreational facilities, events, programs, and leading customer service*"

To meet this vision for a planned capacity of:

- 1,300 users per day
- +40% additional users on 10% of the season

The ski area would need

- ~10,000 feet of additional indoor space
- revised operational procedures for the peak days
- Hardware Additions such as Kiosks, Remote Terminals, Website Changes, etc.

### **Create a Plan to close the Gap**

To take the Downhill Ski Area from where it is today to the Desired Future Vision requires:

- an Operational Plan for the Peak Days including a plan for Needed New Hardware
- a Site Plan for construction of ~10,000 feet of additional indoor space
- an Operational Plan for utilization of the additional space
- a Financial Plan for operations after the improvements are made including an ROI calculation

### **Assemble the Resources to carry out the Plan**

Implementing the Plan requires:

- a Hardware Spending Plan
- a Capital Expenditure Plan
- Board of Directors approval

### **Anticipate Roadblocks**

Previous experience with such projects indicate that some constituencies need to be informed in advance and their objections ameliorated

- The Members
- The Board of Directors
- The Town of Truckee Planning Commission
- The Condominium HOA

### **Proceed with the Plan**

## **Downhill Ski Satellite Lodge Building Options Analysis**

The Downhill Subgroup has determined that to adequately accommodate the design capacity of 1,200 skiers/day requires 8,000sf-10,000sf of new space in addition to the existing 14,500sf base lodge. While the existing lodge is old, it has been well maintained and the subgroup does not consider replacement with a new 24,000sf facility to be required or cost effective. Expansion of the existing lodge is infeasible because of site limitations and the cost of code compliance that would be required. Consequently the subgroup has determined that construction of a satellite facility is the preferred alternative. Ticket sales, equipment rental, ski school and other ski support activities would remain in the existing lodge while the staff locker room, break room, and offices would be relocated to a satellite facility. The satellite facility would also provide space for expansion of food and beverage operations and public restrooms. Three potential locations for a satellite facility have been identified:

### **Option 1 - Adjacent to Existing Ski Lodge**

A two story structure with a footprint of 4,000sf-5,000sf could be constructed immediately southwest of the existing base lodge.

#### **Advantages-**

- Slope side location would be ski-in/ski out with easy access
- Operations would be consolidated in a single location and would provide best operational flexibility
- Would provide good place for parents to observe children
- Would provide convenient public rest rooms with ski-in/ski-out access

#### **Disadvantages-**

- Space is constrained by property boundaries and required setbacks, existing lodge, and Eagle Rock chairlift
- Would impact access to Eagle Rock chairlift
- Existing spring may present environmental issues
- Might impact view of some condo owners
- Would require elevator and stairs
- No potential for increased parking

### **Option 2 – Top of Eagle Rock**

A new structure could be constructed on Tahoe Donner property east of the top of the Eagle Rock chairlift. Access would be from Skislope and/or by chairlift.

#### **Advantages-**

- Lots of available space, satellite facility could be constructed on one level
- Site offers spectacular view of Carson Range, Mt. Lola and Castle Peak
- Good location to host events
- Could accommodate additional parking

Disadvantages-

- Not accessible by beginners
- Skislope car access can be problematic on storm days
- Not a nice place on stormy days, wind restricts deck use
- Would require duplicate food service operations
- Not a good place for parents to observe children

Option 3 – Condo Parking Lot

A new structure could be constructed in the southeast corner of the condo parking lot adjacent to the access trail from the TD parking lots

Advantages-

- Lots of space, satellite facility could be constructed on one level
- Could accommodate ski rental and ticket sales

Disadvantages-

- TD doesn't own this property, would have to purchase or lease it from the condo association
- Would require replacement of some of the parking area currently leased for employees
- Not a convenient location for public rest rooms
- Not slope side, would require skiers to walk or take shuttle to ski area
- Not a good place for parents to observe children

Conclusion;

In the opinion of the DH subgroup, access is the critical consideration. Tahoe Donner's primary market is families with young children. Option 1 consolidates all activities in one slope side location with ski in/ski out access. It is the most beginner/family friendly and is recommended as the preferred alternative. However, the other two options should be studied further as back-up.

The Option 1 Alternative should contain a total of 9,000sf and could be constructed in two phases if desired. Phase I would be a two story structure with 2,000sf on each level as indicated below:

Phase I – 4000sf			
Upper Level		Lower Level	
Break Room	1100sf	Locker Room	1100sf
Staff Offices	700sf	Rest Rooms	500sf
Stairs/Elev	200sf	Stairs/Elev/Mech	400sf

Phase II would be a two story addition comprising 5,000sf. With construction of Phase II the break room and staff offices would be relocated from the upper floor of the Phase I structure to the lower floor of the Phase II addition so that the cafeteria/food and

beverage area can be located entirely on the upper floor. The locker room and rest rooms would remain in their original location.

Phase II – 5000sf New, 9000sf Total			
Upper Level		Lower Level	
Cafeteria/Food & Beverage	4300sf	Break Room	1100sf
Staires/Elev	200sf	Staff Offices	1250sf
		Locker Room	1100sf
		Rest Rooms	500sf
		Stairs/Elev/Mech	550sf

The Option 1 site plan and floor plan concepts are illustrated in Attachment 2. Phased construction could allow earlier occupancy of the new staff areas and restrooms, freeing up space in the existing lodge building to expand ticket sales, equipment rental and ski school areas. It would also allow further evaluation of the impact of climate change on downhill ski operations before commitment Phase II funds.

# TASK FORCE PROJECT UPDATE



## **Downhill Ski Area Master Plan, Task Force Meeting**

Jim Beckmeyer, Task Force Chair  
Northwoods Clubhouse Mezzanine / Conference Call  
Tahoe Donner Association  
March 20, 2017 from 4-5pm

### **Task Force Objective;**

Produce an approvable master plan that will improve service levels and operations at the Downhill Ski Area, providing optimized owner satisfaction.

### **Existing Funding;**

- \$50K in Development Funds are Board approved for 2017 Feasibility Studies
- \$5.1MM in Replacement Reserve Funds are scheduled for all DSA components
- Development Funds remain unassigned until the Association Master Plan is complete

### **Current Action;**

- Scoping Guidelines for Board review and approval;
  - Determine target range of skier visits per day
  - Expand and focus service levels for beginner and intermediate clientele
  - Reduce parking constraints
  - Expanded lodge facility will provide improved service levels
  - Coordinate with surrounding homeowner association
- Miguel Sloan will update 2013 Report benchmark chart and numbers, to include recent price increases, consistent with neighboring resorts.
- Katy Stevens will provide hard copies of pages 18/19 of the 2013 Report at the April 3<sup>rd</sup> meeting.

### **Next Steps;**

- Task Force will meet on Friday, March 24<sup>th</sup>, at the Downhill Ski Lodge Dining Room at 2pm. Agenda; Facility Tour.
- Task Force will meet on Monday, April 3<sup>rd</sup>, at the NWCH Mezzanine at 1:30pm. Agenda; debate & close on the scoping guidelines and Feasibility Study consultant decision; deeper dive in to lodge strategy.

## **General Plan Committee - Downhill Ski Subgroup Meeting Notes – January 27, 2014**

### **Attending**

GPC Sub-Group: Hank Lewis, George Rohrback, Bob Heath, Michael Sullivan

Staff: Robert McClendon, Miguel Sloane, Forrest Huisman

Board: None

### **Meeting Purpose and Agenda**

- Discuss and finalize the draft summary (“one page”) plan outline for downhill ski.
- Discuss and finalize feedback to the GPC for the annual update of the 2030 General Plan.
- Continue discussion of site plan options and building feasibility for a new structure to supplement the existing facility, in a phased project, to support the eventual replacement of the existing facility.
- Discuss the draft analysis of snowmaking for the purpose of giving the GPC and the Board an update on feasibility, cost, and major implications.

### **Discussion**

#### Current Operations

Robbie and Miguel discussed the operational and financial impact of low/no snow start of the 2013/14 season. While limited “learning center” operations were offered during the holidays, lack of snow prohibited opening the chair lifts and caused the hill to close in mid-January until conditions improve.

The revenue loss over December and January may likely be in the range of \$700K, but significant steps have been taken to control operating expenses. Normal staffing for operations is in the range of 140 – 160 employees, the vast majority of whom are seasonal employees, 30 of whom are internationals. While all non-essential positions are on hold, and staff could be recalled, the vast majority of seasonal staff have left the area or sought employment elsewhere. Miguel and Robbie estimate that they might be able to recall up to 35 people if they are able to reopen this season, which would only allow for limited operations, including significantly reduced ski school capacity, and other reductions in services. There is also significant concern about the impact this season will have on our ability to hire seasonal employees and regain our momentum next season.

#### Snowmaking

Michael Sullivan provided the group with a first draft analysis of snowmaking. The subgroup discussed many issues including impact on service levels and operating losses in low snow years, weather patterns, temperatures, and trends, feasibility of making snow at TD, equipment and operating costs, environmental impact, and resource requirements (especially water).

The subgroup agreed that an analysis of feasibility and cost needs to be completed quickly, and reviewed with the GPC and the Board in March, to create a proof of concept, before engaging in more detailed analysis. If the proof of concept is positive, it may be desirable to fast track this project ahead of other capital improvement projects to mitigate the impact of weather variability on our winter operations.

Michael Sullivan will take the lead to work with Robbie, vendors, and other key TD personnel to finalize the feasibility and proof of concept analysis.

### Site Planning and Building Feasibility

The subgroup discussed its approach to site planning and building feasibility, most of which was documented in the notes of the November 14, 2013 subgroup meeting, a copy of which is attached.

The subgroup had hoped to observe and analyze this season's operations at to refine its planning concepts, before engaging professional services to conduct a site planning and building feasibility study.

Butch Rohrback presented and discussed a conceptual site plan for a new satellite building to be constructed in phases adjacent to the current base lodge. This approach would address our biggest space needs, which are restrooms, employee locker rooms and break rooms, office space, back of house space, and additional indoor space for seating, food, and beverage.

It was agreed that the subgroup will refine its current plan for review with the GPC and the Board in March, and to seek approval to fund a study of the site plan and building feasibility options.

Butch Rohrback agreed to take the lead to work with Forrest, Robbie, and Miguel on this task.

### ADA Compliance Requirements

Forrest reported that he had recently received the results of an Association wide audit study of ADA compliance that would identify potential liability issues for Downhill Ski. Efforts may be needed to develop a plan to mitigate those compliance issues over time. Forrest will report back to the subgroup on the study/audit results and possible mitigation plan.

### Other Capital Project Requirements

The subgroup believes that Replacement Reserve Funding will be sufficient to meet the needs for ongoing repair, maintenance, and minor improvements over the next 5 years. However, the subgroup wishes to quantify some small projects that may be of benefit to the operation, utilizing Development Fund resources. Some of those projects include the potential for relocating the power supply facility at the base of the Snowbird chair, improving the unloading area at the top of Snowbird chair, minor parking lot improvements, installing another Yurt at top of the hill to serve as a day use facility, and other potential small projects TBD.

### **Next Steps**

- Continue snowmaking feasibility and proof of concept analysis. (Michael and Robbie)
- Continue site planning and building feasibility analysis and engage professional services for study. (Butch, Forrest, Robbie, and Miguel)
- Present updates on snowmaking analysis and downhill facility plans to GPC (Monday, March 3) and the Board (TBD) to gain planning guidance and approve funding to engage professional services. (Subgroup)

- Follow-up on ADA compliance study/audit results and discuss possible mitigation plans.  
(Forrest)

### **Next Meeting**

Two subgroup meetings are planned for:

**Wednesday, February 12, 3:00 p.m., at Downhill Ski Lodge**

**Wednesday, February 26, 3:00 p.m. at Downhill Ski Lodge**

## **General Plan Committee - Downhill Ski Subgroup Meeting Notes – November 14, 2013**

### **Attending**

GPC Sub-Group: Hank Lewis, George Rohrback, Michael Sullivan

Staff: Robert McClendon, Miguel Sloane

Board: None

### **Meeting Purpose**

Members of the Subgroup met to discuss feasible building options to upgrade the facilities and improve customer service requirements at the Tahoe Donner Downhill Ski Area, particularly during period of higher utilization.

Various facility alternatives were examined, which included discussing the characteristics, pros, and cons of each. The judgments were qualitative and there was no attempt yet to quantify the alternatives.

### **Background**

Using the results of previous planning efforts, the Subgroup has determined the following:

- A. The current facilities are seriously dated, i.e., more than 40 years old, and fail to meet modern building/industry codes, customer service standards, or current operational requirements.
- B. During approximately a dozen days a year, the Ski Lodge has far more users than the physical capacity of the facility can accommodate, which results in serious over-crowding of the:
  - a. Access points, common areas, and circulation
  - b. Indoor seating and food service areas
  - c. Bathrooms
  - d. Handicap access and use
  - e. Employee locker rooms, break rooms, and back of house utility/service areas
  - f. Ticket Sales, Equipment Rentals and Ski School
- C. Two-thirds of the revenue is derived from “Public” users, which enables the Ski Area to achieve very high Net Operating Results (NOR). Data on how these “Public” users are related to or support Tahoe Donner Homeowners needs to be determined.
- D. The Ski Lodge building cannot be cost-effectively modified or expanded due to changes in building and health and safety codes since its construction.
- E. In addition, the property line set-backs have changed such that the current building encroaches on land that is excluded from building according to the new set-back rules.
- F. Past proposals to build temporary “sprung structures” at the bottom of the hill have met with complaints from neighboring condo association owners, however, the construction of a yurt on the hill appears to be acceptable.
- G. Due to the above-mentioned constraints, construction of additional indoor facilities to improve customer service and meet current operational requirements requires careful planning and consideration. In addition, whatever solution is proposed must be financially feasible and consistent with the effective and efficient operation of the facility.

## DOWNHILL SKI LODGE OPTIONS

**OPTION A** – Remodel existing 14,200sf structure, Construct new 10,000sf satellite structure

Existing Lodge –

Repair/replace outside deck

Ticket sales, rental shop, Snowflake and staff offices would remain on ground floor

Convert existing locker, ski patrol and breakroom areas to storage and offices

Remodel kitchen, dining and bar area as required to support new food and beverage operations plan

Install exterior web cams

Repaint, replace floor covering, remodel bathrooms as necessary

Incorporate a drop off area in front

Satellite Lodge -

Construct new two story 10,000sf (5000sf footprint) rectangular structure with flat roof and exterior deck or patio adjacent to existing building. Design would focus on functionality.

First floor would include customer restrooms, employee locker room and break room, ski patrol treatment/holding room and storage area

Second floor would be kitchen and dining area

Optional third floor could be housing for employees

**OPTION B** - Build satellite Lodge; do not enhance existing lodge; down the road demolish existing lodge and rebuild.

**OPTION C** - Demolish existing building and deck and construct new 24,000sf structure and deck or patio

Ground floor would house ticketing, rental shop, Snowflakes, restrooms, storage etc.

*Second floor would be food and beverage, bar and staff offices*

*Optional third floor could be employee housing*

**Option D** - Expand existing lodge. Enclose /expand existing deck. Enclose old sun deck. Construct addition in rear for restrooms, elevator, etc.

**OPTION E** - Remodel existing 14,200sf structure, Construct a new "top-of-the-hill" lodge expansion to include grab and go food, bathrooms, inside seating.

- C. Safety and liability issues
- D. Regulatory compliance
- E. Customer satisfaction including waiting time and service delivery
- F. Employee requirements for locker and break facilities
- G. Operational requirements

In some cases, there is a balance among competing needs. For instance, operationally, it is better to have facilities co-located, but if they are too close, this creates crowding, which is both a hazard and an impediment to access. On the other hand, the site plan for the facility is so constrained that new building is challenging at best and rebuilding with a whole new facility may be totally infeasible.

There is also a recognition that some of the alternatives may be more favorable to other uses of the area such as summer activities for day camps, events, and other activities.

### **Evaluation of Alternatives**

The discussion of each alternative started with what part of the operation would go where and how it would be used. This uncovered how well each alternative would serve the needs of customers and the amenity's operating requirements. The remaining discussion focused on cost, timing and compliance.

### **Requirements**

Based on earlier analyses and discussion, it was determined that the supplemental structure alternatives would provide space to house those activities that do not need to be connected with the current ticket sales, ski school enrollment, equipment rental, and current food and beverage service operations, thus freeing space in the existing building to expand those activities and improve customer service for core ski operations.

The spaces that can be relocated or offered on an expanded basis include employee locker rooms, employee break rooms, ski patrol room, back of house storage, utility, and service areas, and additional customer bathrooms, indoor seating, decks, and food and beverage service.

### **Bottom of the Hill – Single Supplemental Structure Near the Current Ski Lodge**

Issues related to building a single supplemental structure near the current Ski Lodge include:

- A. Access to the new structure would be difficult in bad weather as would snow clearing of the current deck and space around the buildings.
- B. The building would create a bottleneck at the bottom of the hill near Eagle Rock chair lift and would also require re-routing the path from mile run to the base.
- C. The building would obstruct the view from the current Ski Lodge bar and deck and from the adjacent condos.
- D. Construction would require obtaining a variance to build across the property lines of two parcels (both owned by Tahoe Donner) and occupy land in two counties (Nevada and Placer) possibly complicating the permitting process.

- E. Construction would need careful planning so as not to impose on the current facilities and to avoid confusion and conflicts about the use of the two structures.

### **Top of the Ski Hill - Single Supplemental Structure**

Issues related to building a single supplemental structure at the top of the ski hill include:

- A. Currently, there is no sewer connection available and it was estimated that the cost of establishing such a connection would be significant. Portable bathrooms could be made available, but food service operations would be limited.
- B. Food service could be provided by transporting “grab and go” food from the current Ski Lodge kitchen for day use.
- C. Parking space for approximately 60 cars may be available to support employee parking and Member only access. This would alleviate some of the parking constraints at the bottom of the hill.
- D. Lift tickets could be available for purchase, but not ski school enrollments. It is anticipated that this could attract skiers of higher skill levels who could drive to the top, park, purchase their tickets, and avoid the congestion at the bottom of the hill.
- E. The flatter terrain at the top could make it possible for some ski school use (the 7 to 12 age group) although lift access does not currently go to the top. A “carpet lift” could be constructed to link the top of the lift to the top of the hill.
- F. Equipment Rentals would not be available although they could be planned for the 7 to 12 year olds in the ski school mentioned above.
- G. The view would attract some users and could enhance some summer activities. This facility would make an excellent “day lodge” with indoor seating and outdoor decks.
- H. Road access during bad weather could be minimal and strong winds during storms might discourage some users.
- I. Construction would not impose on the current facilities at the bottom of the hill, but there could still be confusion among users about what services are offered between the two structures.
- J. This structure could house employee locker rooms. Employees would drive to the top of the hill and start their day there thus alleviating some of the parking constraint. Ski Patrol could operate from “top of the hill” with transport by sled to the base for discharging injured skiers. But transport for employees between the bottom and top of hill could be a problem.

### **Bottom of the Hill - Multiple Supplemental Structures**

This alternative came to light after the recognition of the limits of the other two options. The idea would be to create several smaller structures adjacent to the current lodge with covered ramp access.

These buildings would not be connected to the current Ski Lodge, thus avoiding compliance issues created by modification of the current building.

One two-story structure on the North side of the current lodge would house an eating area and bathrooms upstairs with ski patrol facilities downstairs. This would alleviate the indoor seating constraint and also provide access to a first aid facility that is away from the main building access. The building would not obstruct the views from the deck or the condos.

A second two-story structure on the South side of the current lodge would house ticketing and employee areas downstairs and ski school operations upstairs.

The buildings would be constructed in two phases thus spreading out the cost and limiting the disruption during the construction period.

This option does not address the current parking constraint.

Co-location of these facilities enhances operations such as food service and snow clearing but does not address the congestion that occurs when everyone arrives at once at the same time of the morning.

A third structure in the parking lot was discussed where skiers who do not need rentals could purchase tickets and put on their boots, thus eliminating some of the morning congestion.

### **Other Alternatives**

Thinking “outside the box” was encouraged. This brought out some “blue-sky” ideas such as purchasing the condo association recreation building or purchasing land from the condo association for the construction of a new building between the parking lot and the current Lodge Condos. It is not known if these ideas are possible.

Another idea was a small yurt on top of the hill with minimal facilities such as a warming hut and access to top-of-the-hill parking. This could be a stand-alone idea or done in concert with one of the others.

### **Next Steps**

Option E has not been “fleshed out” to the same degree as the others. Further analysis of an operational and construction plan for this alternative must be done in order to make a valid comparison to the others.

A more quantitative analysis could be done using “Group Quality Tools”. This could result in a comparison that would help validate the qualitative perspective.

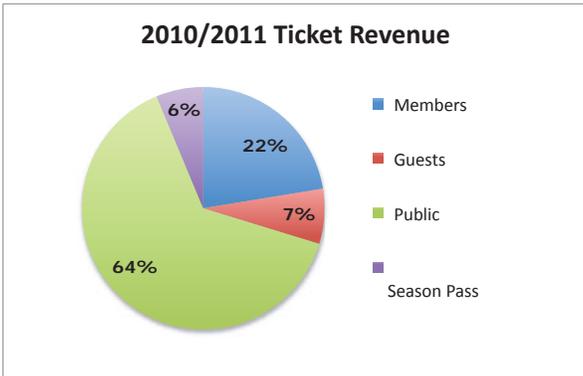
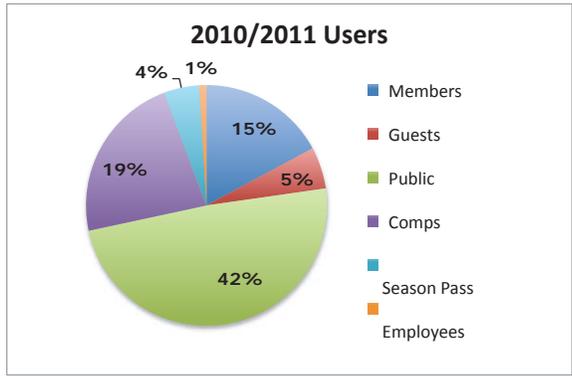
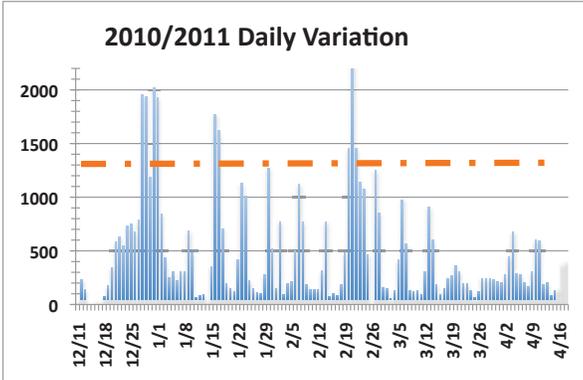
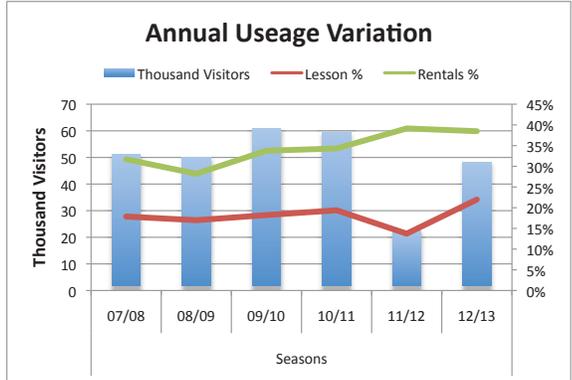
Also given the upcoming start of the 2013/14 ski season, the Subgroup will work with staff to monitor and analyze the operations in real time at various times from low to high utilization periods to get a better sense of how the facilities are being used and what the greatest constraints and opportunities are.

### **Next Meeting**

The next subgroup meeting is to be determined.

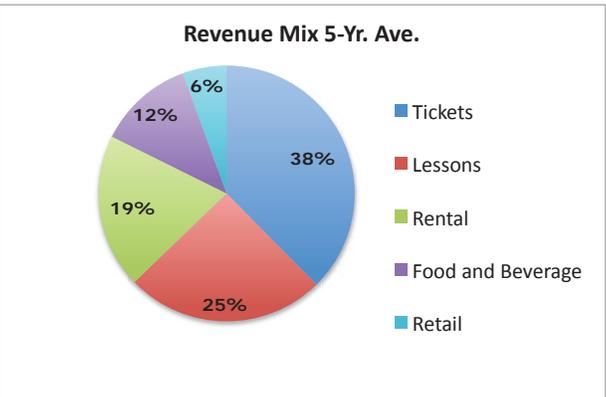
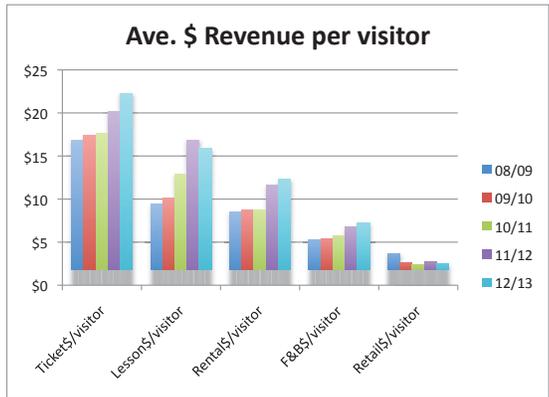
Seasonal use depends on the weather. Daily use depends on Weekends and Holidays. Peak to average ~6  
 The Public makes up >40% of users and >60% of ticket revenue.

Ski Season Usage and Revenue	Seasons						6-Yr Average	National Average
	07/08	08/09	09/10	10/11	11/12	12/13		
Thousand Visitors	51	50	61	59	22	48	49	7.8%
Lesson %	18%	17%	18%	19%	14%	22%	18%	
Rentals %	32%	28%	34%	34%	39%	38%	34%	



Lessons, Rentals and Food&Beverage Revenues are going up, NOR can be substantial

Seasonal Gross Revenue, \$000	08/09	09/10	10/11	11/12	12/13	5-Yr. Average
Tickets	\$839	\$1,060	\$1,047	\$449	\$1,073	\$894
Lessons	\$469	\$616	\$765	\$375	\$765	\$598
Rental	\$424	\$528	\$516	\$259	\$591	\$464
Food and Beverage	\$265	\$330	\$339	\$150	\$349	\$286
Retail	\$183	\$157	\$142	\$61	\$122	\$133
<b>TOTAL</b>	<b>\$2,180</b>	<b>\$2,691</b>	<b>\$2,809</b>	<b>\$1,294</b>	<b>\$2,901</b>	<b>\$2,375</b>
<i>FY NOR, \$000</i>	<i>\$390</i>	<i>\$524</i>	<i>\$821</i>	<i>\$230</i>		



## Snowmaking

The purpose of this report is to present data and analysis relating to the feasibility of snowmaking at the Tahoe Donner Downhill Ski Area.

The focus of the analysis is on maintaining continuity of operations and access for the core mission of Tahoe Donner as "The Best Place to Begin" during the key months of December and January when snow conditions are the most variable.

In good snow years, skier utilization is the highest of the season in December and January, due to the holidays and historical utilization patterns. During that 2-month period, skier visits average over 26,000, of which members and their guests account for approximately 8,500 to 10,400 visits.

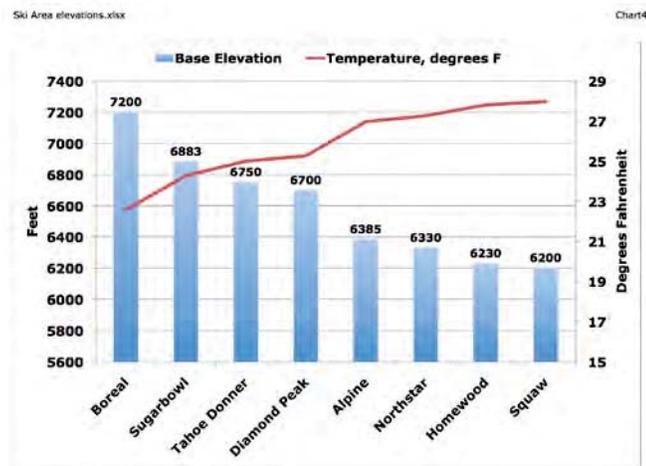
Revenue generated in the two months (really about 6 weeks of actual operations) can be as much as \$1.4 million with Net Operating Results (NOR) of approximately \$550,000. As a result, these two months can represent over 55% of the season's revenue and the bulk of the year's NOR.

The study area for this report is approximately 15 acres of land serviced by the Snowbird chairlift and by three conveyer lifts, which constitute the core of our Leaning Center.

Staff estimates that at least 40% of the entire operation could be maintained in December and January during bad snow years by making snow on the 15-acre area.

Because weather is variable, twice in the last six years, there has been virtually no snow in December and January. Therefore the Board and the General Plan Committee has requested a study of snowmaking at Tahoe Donner to mitigate the risk of poor snow conditions in December and January. The subject engenders a lot of questions, some of which we are able to analyze objectively.

If all other factors are held constant, temperature and elevation are related, i.e., on a clear day, for every 1,000 ft of elevation change temperature varies inversely by 5.4°F. (The higher elevation has the lower temperature.) If the temperature at Tahoe Donner were at the highest ideal temperature for snowmaking of 25°F, the red line indicates the temperature at the base of the other ski areas in the region.

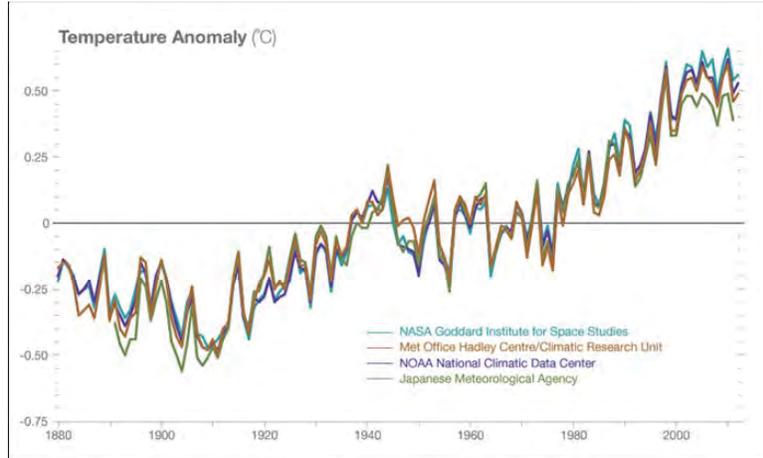


Anyone who has been to Northstar or Squaw this winter will note that they had man-made snow all the way to the bottom in December.

**Will Global Climate Change prevent us from making snow in the future?**

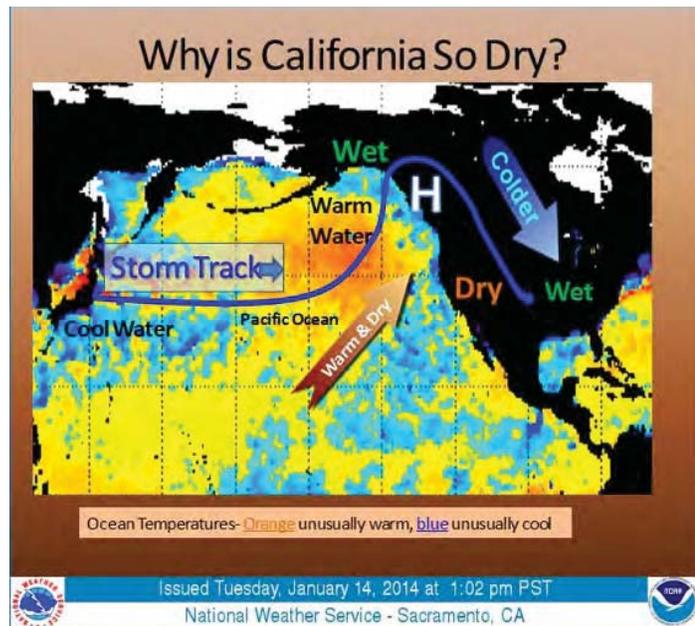
“Climate change is real. There will always be uncertainty in understanding a system as complex as the world’s climate. However there is now strong evidence that significant global warming is occurring.”

(<http://climate.nasa.gov/scientific-consensus>)



It should be noted that while the amount of overall warming from the lowest temperature in 1900 to today is less than 2° F, the rate of temperature increase has been accelerating. Most meteorologists suggest that the major effect we will witness will be a greater variability of weather and a greater frequency and severity of extreme weather events such as tornados, hurricanes, floods and droughts. Also, not every part of the planet will see warmer temperatures. Some parts of the planet will get warmer, some colder, some drier and some wetter. This pattern has been evident in the U.S. this year where the Eastern part of the U.S. has been colder and wetter than normal while the West has been warmer and drier.

Additionally, weather is a macro system that is felt on a micro level. So while the “Polar Vortex” swept across the East, California’s weather has been dominated by a persistent drought resulting from a warm Pacific Ocean current that produces a high-pressure ridge off the coast thus pushing the jet stream and its moisture North. This pattern of low precipitation in the Southwest has been shown on weather maps throughout the fall and so far this winter. Source: <http://opensnow.com/dailysnow/tahoe?page=7>



### ***What weather conditions are needed for snowmaking?***

Snowmaking is dependant on temperature and humidity and is aided by the adiabatic expansion of air (1<sup>st</sup> law of thermodynamics). Snowmaking guns allow cold high-pressure air and water to escape into the atmosphere as small droplets. Expansion of the gas cools the mixture according to the Joule-Thompson effect. Because the droplets are small, the surface area is large causing rapid evaporation of some of the surface water. This further cools the droplet below the freezing point, and creates a tiny ice crystal (evaporation is a cooling process). A large fan behind the water/air nozzles propels the ice crystals through a large orifice surrounded by more water nozzles. These add volume to the ice crystal and create a snowflake. The fan is strong enough to disperse these newly formed snowflakes over a wide area. Ideal conditions occur when the “dry bulb” air temperature is below 25°F and the humidity is less than 70% although, because of the thermodynamic cooling, snow can be made up to 36°F if the humidity is low enough.



Source of picture: [http://www.skiroundtop.com/images/upload/photo\\_112313\\_a\\_lg.jpg](http://www.skiroundtop.com/images/upload/photo_112313_a_lg.jpg).

### ***How long would it take to make enough snow at Tahoe Donner?***

For this report, we consulted three experts in snowmaking all of whom supplied equipment and expertise to local Tahoe area ski hills as well as supplying the same products and services to the Sochi Olympics. Sandy McPherson of PFM Snowmaking spent months in Sochi supervising the installations and both SMI and TechnoAlpin supplied snow guns. All three experts recommended that we put down 2-feet of snow prior to the start of the ski season. Two feet of snow on 15 acres, i.e., 30 acre-feet, would require 5 guns operating for 200 hours at 500 gallons/minutes of water delivery. Note that would require 6,000,000 gallons of water, which the PUD indicates they can supply at 500-gal/min to the bottom of the ski hill.

Thus, the weather conditions would need to be below the threshold temperature and humidity for 200 or more hours prior to our desired start date. The experts also indicated that the condition of the ski hill would determine if 2-feet were needed. In some areas where the ground is smoother, less would be required. Sandy said that in Korea, where the ski hills are a lawn in the summer, they can start skiing on as little as 6-inches of snow, but this is not the case at Tahoe Donner.

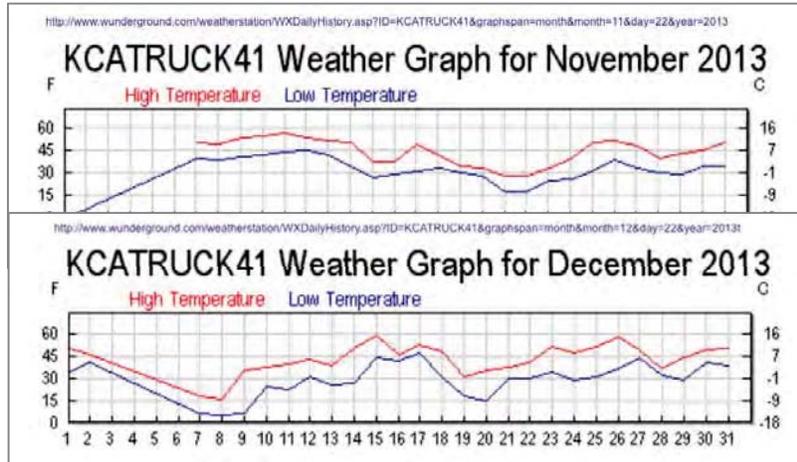
This analysis is for a one-time application of man-made snow to establish a base in advance of opening for the season. Additional snowmaking may be required to

maintain the base in December and January depending on natural weather and snow conditions.

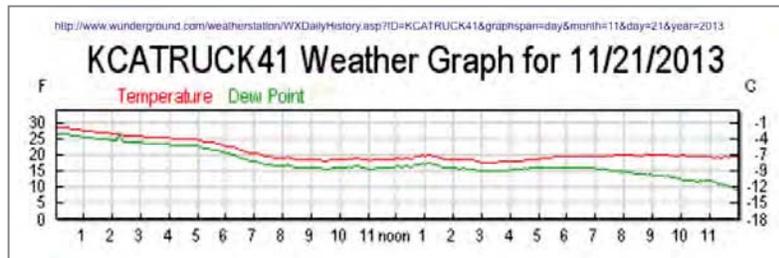
***What are the weather conditions at Tahoe Donner?***

There are several weather stations near the Tahoe Donner ski hill and one that is on the top tower of the Eagle Rock ski lift. They record dry-bulb temperature and relative humidity and charts and graphs of their measurements can be viewed at [www.weatherunderground.com](http://www.weatherunderground.com). The ski hill weather station is "Kcatruck41".

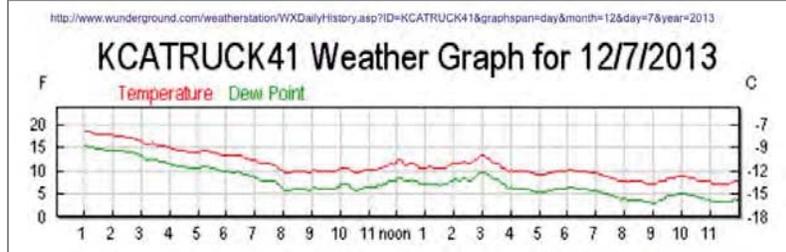
For November 2013 there were 4 days where snow could potentially be made and in December 2013, there were 10 days. To achieve 200 hours would take a little more than 8 twenty-four-hour days.



Each of these days can be examined in more detail to determine if enough hours were available to deposit the desired amount of snow. Two of the 14 days were chosen at random to demonstrate this: November 21 and December 13. Both days would allow 24 hours of snowmaking.



In some circumstances it may be more desirable to make snow at night than during the day.



***What about a temperature inversion?***

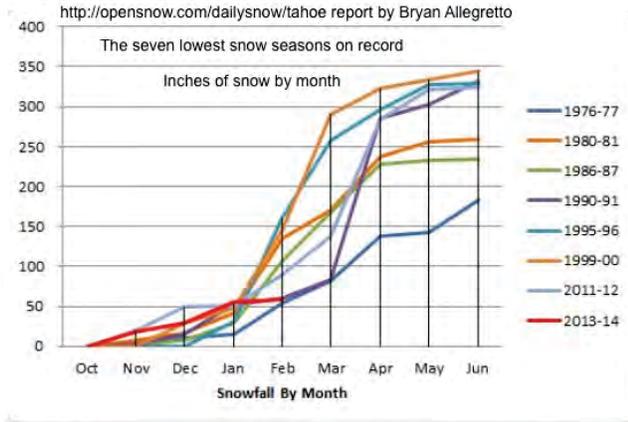
Temperature inversions occur when a blanket of warm air rests on top of colder air. When this happens, the higher elevations are warmer than those lower. Since the above temperatures are measured at the top of the Tahoe Donner ski hill, they record the actual temperature where snow would have been made and any temperature inversion would have been included in the measurement.

**What happens when there is no snow in December and January?**

This report focuses on the December/January time frame for several reasons:

1. In past years when there is little natural snow in December and January the remainder of the winter season has had snow.

Bryan Allegretto of opensnow.com charted the snowfall trends for the 8 years out of the last 30 that had the lowest snow in December and January.

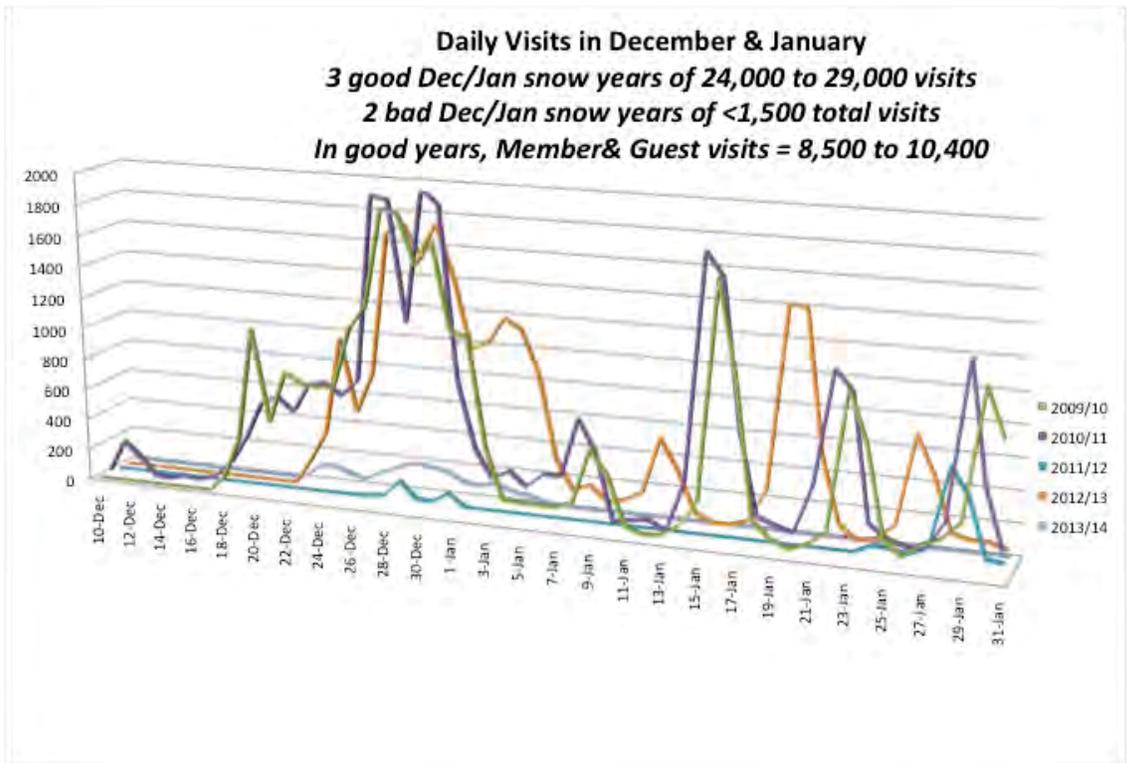


In each of the low December/January snow years, there was significant snowfall in the later part of the season.

2. Twice in the last 7 years, ski area operations in December and January were limited by a lack of snow. When there is no snow, the ski area cannot operate. When the ski area is open, skiers show up. When the ski area is closed, skiers don't show up as evidenced by the blue and grey lines in the following graph.

Total Skier Days 2014 MBS.xls

D-J users



## Snowmaking 140227

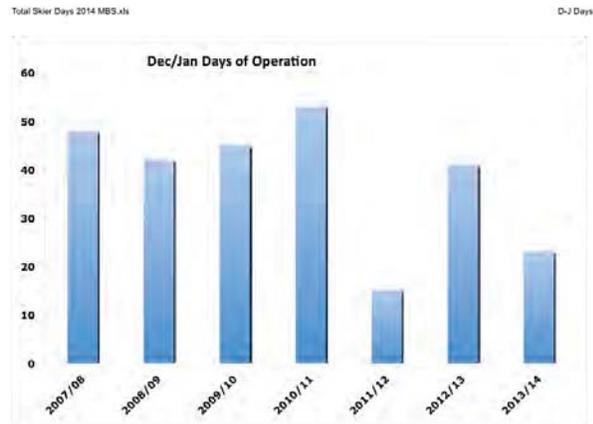
In the low December/January snow years, the ski area operated less than half the time of a normal good snow year and even then, operations were limited to a few slopes and only some of the lifts.

In December 2013, two of the three conveyor lifts and both chair lifts were shut down.

Total skier visits for December and January of the two bad years were 1,575 in the 2011/2012 season and 1,475 in the 2013/2014 season.

Conversely, in the good years we saw an average of over 26,000 skier visits in December and January, of which 8,500 to 10,400 were Members and their Guests.

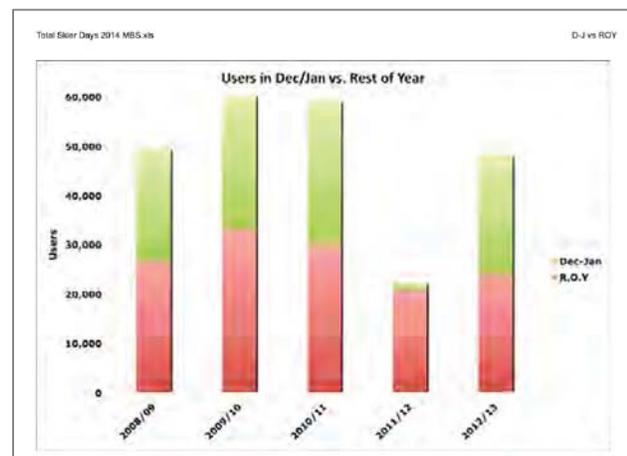
3. The months of December and January contain three important holidays when many families expect to enjoy their property at Tahoe Donner. In addition the total Member, Guest and Public use of the ski area during the holidays of Christmas, New Years and MLK weekend produces over half the revenue of the entire season.



### ***What happens when the snow returns in February?***

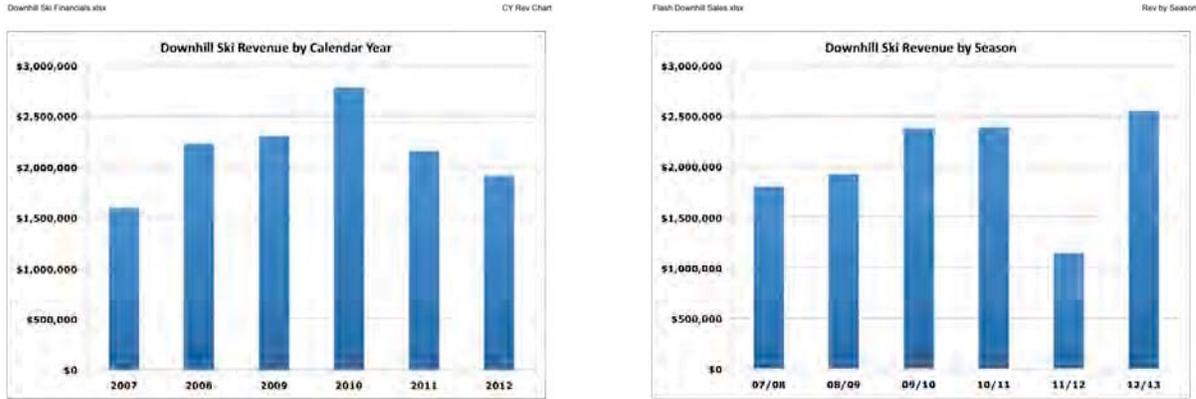
The lack of snow in December and January has a momentum effect on the rest of the season.

In the one full year recorded where December and January had low snow, the users in the February to April timeframe were 27% less than the average of the good December and January snow years.



**What is the financial impact of no Dec/Jan snow?**

To see the effect of a no-snow December/January period, we need to restate the revenue from the normal Calendar Year report to a view by ski Season:

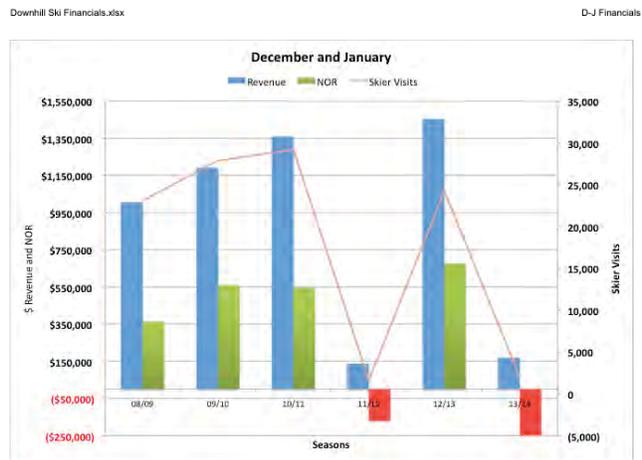


Isolating the December/January period is even more dramatic.

The NOR difference between the average good snow Dec/Jan and the no-snow December/January is over \$700,000 or over \$100 per Tahoe Donner household.

**To what extent can the loss of service to Members and the loss of NOR be mitigated by snowmaking?**

The temperature history of Truckee and the Tahoe Donner ski hill indicates that during 2013, snowmaking could have provided snow in time to open the ski hill for the three important holiday periods.



Staff estimates that at least 40% of the normal user base regularly uses the Snowbird lift and the 3 conveyer lifts. This means that approximately 4,000 skier visits would be served for members, with overall utilization of approximately 10,440 skier visits being maintained.

The daily revenue per skier in a good snow year is \$60/user and during limited operation it has been higher. The cost per day of operating the entire ski hill in a good snow year has been \$16,000/day. The cost of operating the limited area in December 2013 and January 2014 was \$12,800/day. The cost of snowmaking is estimated to be \$50,000. The average good snow year has operated for 45 days in December and January. It is estimated that we could achieve break-even operations by adjusting ticket pricing for the holiday periods at 40% of normal operations.

***What is the cost to install snowmaking?***

We have received estimates from two snowmaking companies for covering the 15 acres of our beginner area. The total cost for all equipment and installation is approximately \$700,000 including a 10% contingency. Details of that estimate are shown in the Appendix.

As we know, actual costs may vary from estimates. For example, we estimated that we need a 6" line to supply the snowmaking system. For this, the PUD would charge us for a \$218,000 metering valve and pipeline installation/connection. We may find, upon further investigation that a 4" line is sufficient saving over \$100,000. Alternatively, we may find that the cost of installing our pipeline under the Snowbird lift will be higher if encounter rock that would increase the cost of trenching. We also may want to install infrastructure to support Eagle Rock lift as well at additional cost.

***What is the cost to make snow for the December/January time period?***

Using the cost of electricity and water from the PUD, and our assumption of the manpower needed, and with advice from experienced snowmakers, we have estimated that we can put down a 2-foot base on the 15 acres for \$50,000. If natural snow falls during December and January, and by February, no additional snowmaking would be needed. However, if weather and temperature conditions in December and January were not favorable, the cost to maintain our base would be higher. Site visits to other ski areas would be able to validate this operating cost.

***Is sufficient electricity available?***

We have assumed that we would run snowmaking when the Downhill Ski Lodge was closed and the lifts were not operating thus their power needs could be diverted to the snowmakers providing sufficient electrical power.

Further investigation will be performed to insure that the transformers and switches are sufficient but it should be noted that the Lodge and Lifts require more power than the snowmakers.

***Is sufficient water available?***

We examined several alternatives including building a pond or buying water from the PUD. While a pond has the advantage of pre-cooling the water, there is no viable site at the bottom of the hill. Building a pond on the top of the hill and piping the water to the bottom would add substantially to the cost.

The PUD indicates that they can supply the 6 million gallons needed at the bottom of the hill (see appendix) for the 500-gal/min flow rate at a capital cost to us of \$218,000, which has been included in the capital cost as the purchase of a metering valve.

Also included in the capital cost is the pumping capacity to supply pressurized water to the snowmakers. Truck mounted pumps could be purchased for a premium that might allow the equipment to be moved to other locations, but those locations would require adequate water and electrical supplies.

***What about noise?***

The original snow guns used 20 years ago had separate water and compressed air nozzles. The air was used to propel the snow onto the ski slope and the large volume of escaping air was noisy. The new fan guns use a large fan to push the atomized water droplets over the ski slope. The suppliers claim they are quieter than the snow groomers (~60Db) that currently operate on the ski hill at night

***Is there a pollution issue?***

Some snowmaking systems add chemicals to facilitate nucleation of the ice crystals. We would not be using chemical additives and the water used is drinking water.

***What about run-off when the snow melts?***

We are not adding water that is not there during a normal snow year, however, the relevant authorities would need to be contacted to determine if permits are required.

***Are there other impacts?***

When there is no snow during the critical December/January holiday periods of Christmas, New Years and MLK weekend, there is an economic impact on other services in Truckee and Tahoe Donner. "Protect Our Winters (POW) and Natural Resources Defense Council (NRDC) contracted with ... the University of New Hampshire to independently examine the economic impacts of the winter tourism industry." Their report (see <http://www.nrdc.org/globalwarming/files/climate-impacts-winter-tourism-report.pdf>) discusses the secondary impact on product and service businesses such as ski equipment sales and rentals, accommodations, food and beverage services and others.

Although the Tahoe Donner Ski Area is a minor factor in the Tahoe winter sports scene, there are Homeowners who benefit from rental income related to the operation of our ski area particularly during the holiday periods. Our Lodge and Pizza on the Hill food services are also affected.

Employment at the Ski Hill is affected in several ways. When the ski area is closed because of a lack of snow, employees are furloughed and thus without income. This year, many have elected to leave the area and will not be back when we finally get snow and we need their presence to operate. This lack of dependability for income also rolls over to future years making it harder to recruit, particularly for skill positions such as the ski instructors who are crucial to us performing our mission as The Best Place to Begin.

## Appendix

The Olympics in Sochi demonstrate the ability of modern snowmaking equipment to overcome Mother Nature's whims when it comes to the availability of snow for winter sports. At 43.6° North Latitude, Sochi is better known for its Black Sea Beaches than for its winter sports, yet the Russians have provided a spectacular venue for the Winter Games, thanks to artificial snowmaking using hundreds of snowmaking "guns" to cover the slopes at night when the weather conditions were right to produce "man-made" snow.



Source: [http://en.wikipedia.org/wiki/File:RIAN\\_archive\\_579736\\_Promenade\\_and\\_beach\\_in\\_Sochi.jpg](http://en.wikipedia.org/wiki/File:RIAN_archive_579736_Promenade_and_beach_in_Sochi.jpg)

For more information about snowmaking the reader may wish to view:

<http://www.technoalpin.com>

<http://snowmakers.com>

<http://www.chssnowmakers.com/Turbocristal.htm>

[http://www.thestormking.com/Weather/Sierra\\_Snowfall/sierra\\_snowfall.html](http://www.thestormking.com/Weather/Sierra_Snowfall/sierra_snowfall.html)

[http://www.nytimes.com/2014/02/08/opinion/sunday/the-end-of-snow.html?nl=todaysheadlines&emc=edit\\_th\\_20140209&r=0](http://www.nytimes.com/2014/02/08/opinion/sunday/the-end-of-snow.html?nl=todaysheadlines&emc=edit_th_20140209&r=0)

<http://www.skiroundtop.com/how-snowmaking-works>

<https://skiswissvalley.com/stuff-to-know/science-of-snowmaking/>

<http://adventure.howstuffworks.com/outdoor-activities/snow-sports/snow-maker.htm>

[https://www.snowathome.com/snowmaking\\_science.php](https://www.snowathome.com/snowmaking_science.php)

<http://www.youtube.com/watch?v=3eOiRM1JApg>

<http://www.youtube.com/watch?v=ah06gimc44Y>

## Snowmaking 140227

The estimate of snowmaking capital cost follows:

Snowmaking cost estimate 0223.xlsx

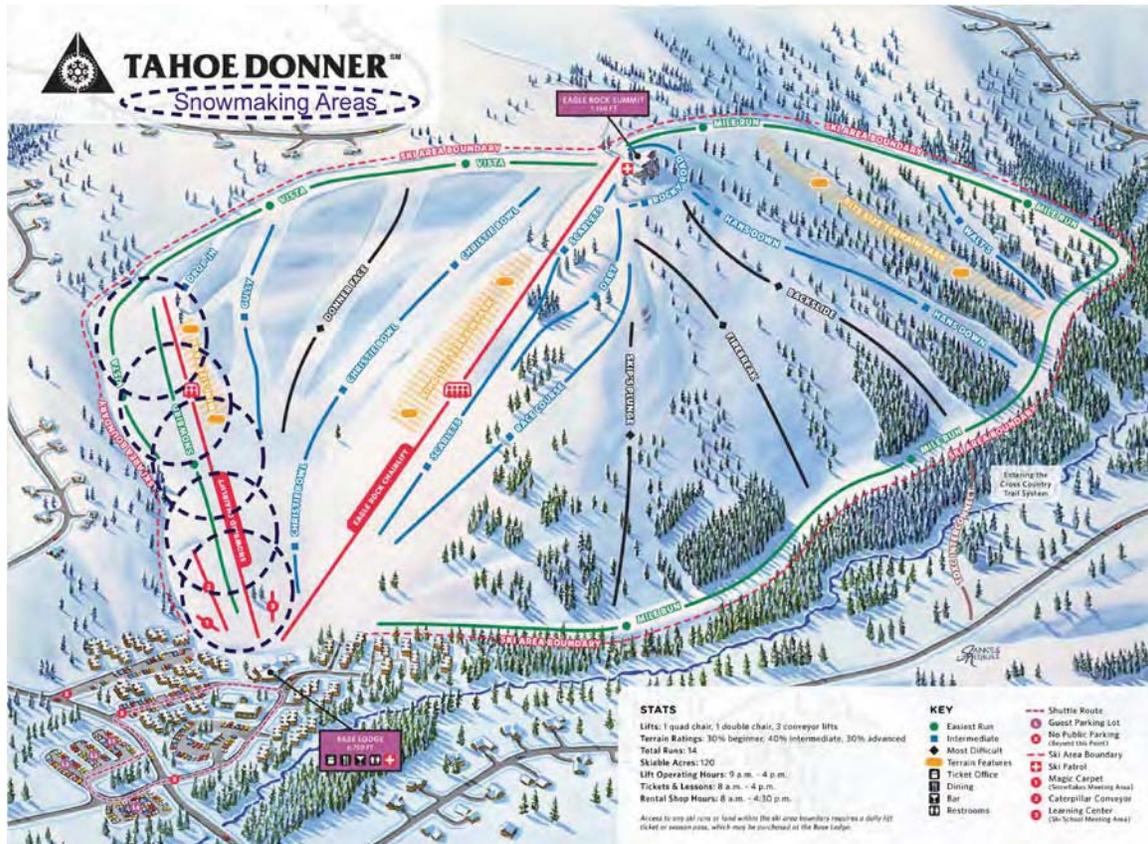
Sheet1

### PFM Estimate

Item #	ITEM DESCRIPTION	BID UNIT	BID QTY	UNIT PRICE	TOTAL PRICE
1	Pipeline Trench/Backfill - No rock removal or blasting is included, backfill is native 2" minus	LF	1,900	\$10	\$19,000
2	6" Water Pipeline .25 wall A53B ERW BLK PE DRL Supply/Receive/Stage/Weld/Install/Test	LF	1,800	\$16	\$28,800
3	2" Water Pipeline .218 wall A53B ERW BLK PE DRL Supply/Receive/Stage/Weld/Install/Test	LF	100	\$8	\$800
4	Bedding	LF	1,900	\$15	\$28,500
5	Water Hydrant Supply/Receive/Stage/Weld/Install/Test	UNIT	5	\$850	\$4,250
6	Elec. Peds Supply/Install	UNIT	5	\$1,250	\$6,250
7	Lateral Piping Trench/Backfill - No rock removal or blasting is included	LF			\$0
8	Anodes-17# Magnesium, Installed	UNIT	16	\$125	\$2,000
9	Pipeline Cut Off Collars Supply/Install	UNIT	4	\$300	\$1,200
10	Pump House - includes structure, lights, house power and ventilation. No transformer or power connection included	UNIT	1	\$15,000	\$15,000
11	Pump System - Includes pump, motor, starter, base and disconnect. No transformer or power connection included	UNIT	1	\$60,000	\$60,000
12	300 Amp Service Disconnects NEMA 3R with Pad and Mounting Structure - One per 5 to 7 Peds (Does not include connection to supply or Transformer)	UNIT	1	\$5,100	\$5,100
13	Install 350 MCM Direct Burial Wire		1,900	\$10	\$19,000
14	Erosion Control	UNIT	N/A		
15	Misc. Equipment	UNIT	1	\$5,800	\$5,800
16	Misc. Over Head	UNIT	1	\$2,150	\$2,150
17	Insurance	UNIT	1	\$800	\$800
18	Fuel - Fuel Supplied by ski area (estimated fuel use 600gal)	UNIT	1		\$0
19	Permits	UNIT	1	\$44,000	\$44,000
20	Water Valve	UNIT	1	\$218,000	\$218,000
21	Snow guns	UNIT	5	\$35,000	\$175,000
	SUBTOTAL				\$635,650
	Contingency	10%			\$63,565
	GRAND TOTAL				\$699,215

2/28/14

# Snowmaking 140227



Dotted lines signify areas to be served by snowmaking guns

# Snowmaking 140227

TDPUD.docx

2/28/2014

I spoke today with Neil Kaufman, the Water Systems Engineer for the Truckee Donner Public Utility District (TDPUD) and asked him if he knew of any environmental concerns we should be aware of if we use TDPUD water to make snow at the Tahoe Donner Downhill Ski area.

He said there were no pollution concerns. Although TDPUD water contains a small amount of chlorine it is not enough to harm the environment as evidenced by the fact that it is used for irrigation including lawns in Tahoe Donner.

I asked about a possible shortage of water in the future.

Neil referred me to the "2010 Urban Water Management Plan, Adopted June 1, 2011", which is [on their website](#) and he was kind enough to walk me through it as follows:

"The District currently obtains its drinking water through the pumping of groundwater from the Martis Valley Groundwater Basin (MVGB)" *(page 5-1)*

A 2001 study "concluded that total subsurface storage volume in the MVGB is 484,000 acre-feet." *(p 5-2)*

From 1975 to 2003, several studies were made to determine the annual recharge of the Basin. They concluded that the amount was between 24,000 and 34,000 acre-feet. *(p 5-2)*

The current demand for TDPUD water is 7,610 acre-feet/year (AFY) and the total expected at maximum build-out is 18,924 AFY. *(p 5-3)* Neil pointed out that at current demand and no recharge, we have 67 years of water supply.

We have asked for 6,000,000 gallons for snowmaking. If we used 7,000,000 gallons i.e. some for touch-up throughout the season, we would use 21 acre-feet of water. Neil did not consider this a concern for the water supply.

You might ask what happens to the 16,390 acre-feet of water that is excess? (24,000 acre-feet go into the basin and 7,610 acre-feet come out). The answer is that some eventually flows underground into the Truckee River.

I asked whether this flow was necessary to maintain the level of the river. Neil said that the Bureau of Reclamation maintains the river level at Floriston by managing outflows from Lakes Tahoe and Donner and the reservoirs at Boca, Prosser and Stampede. They also estimate snowmelt as part of their calculation. Inflow from the MVGB is not considered.

What about other use of the water if the California drought continues? Neil mentioned that there was a Treaty that prevented diversion of the Tahoe Basin water over the mountains to provide water for Western California.

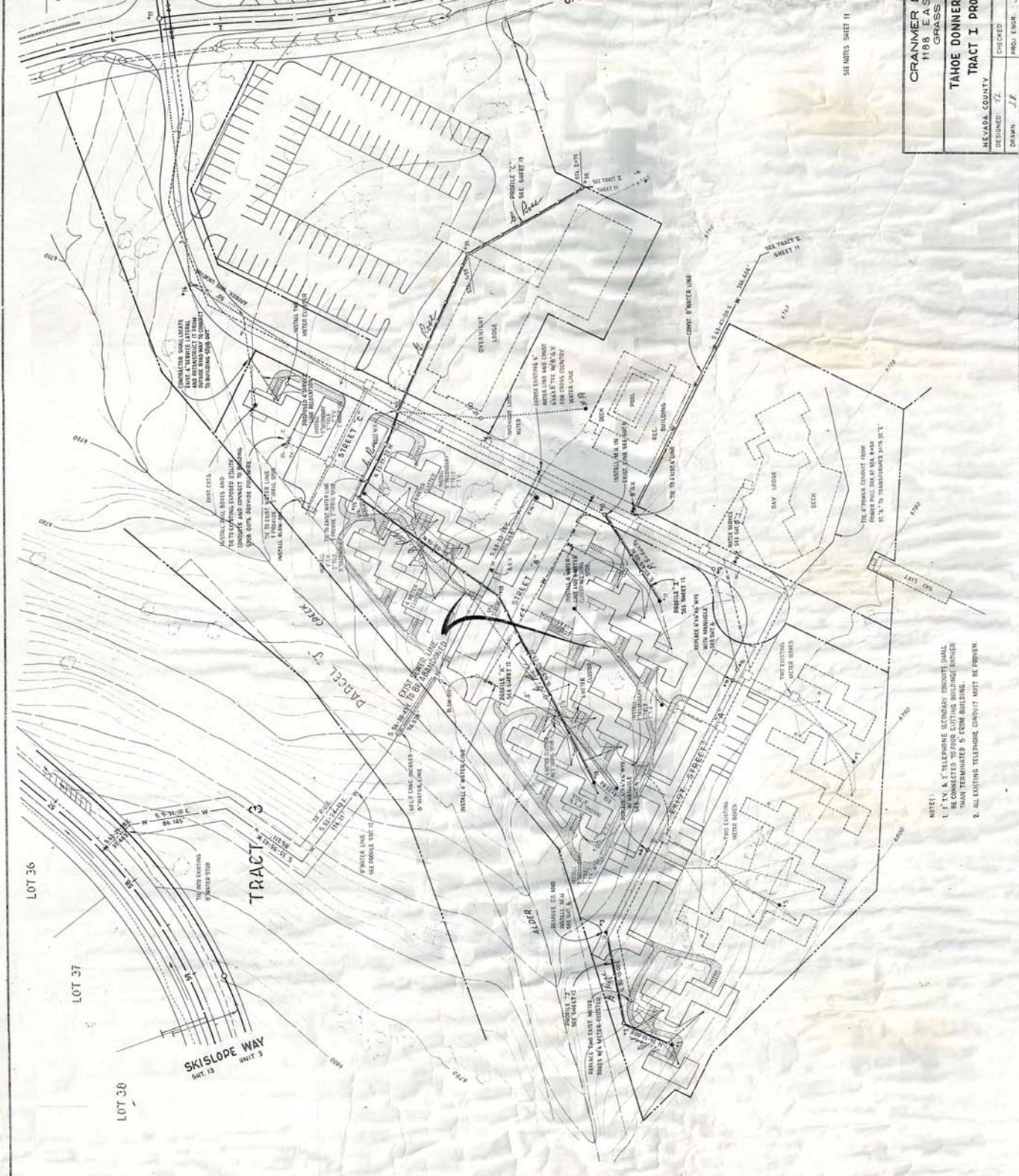
DATE: 7-8-77  
 JOHN R. CRANMER, P.E., R.C.E. 1101

SLALOM WAY  
 SHIT. 40 UNIT 3

SNOWBARK WAY  
 SHIT. 11 UNIT 3

06 M1 TO M1410  
 O.K. PER. P.S. SHEETS  
 10-8-74

**LEGEND**  
 --- LOGIC POWER LINE  
 --- EXIST. CONCRETE TRENCH (WATER, GAS, POWER, TELEPHONE)  
 --- PULL BOX (EXISTING) (WATER)  
 --- WATERLINE SHUT-OFF (WATER)  
 --- WATER LINE (PROPOSED)  
 --- SEWER LINE (PROPOSED)



SEE NOTES SHEET 11

**CRANMER ENGINEERING, INC.**  
 1180 S. MAIN STREET  
 GRASS VALLEY, CALIF.

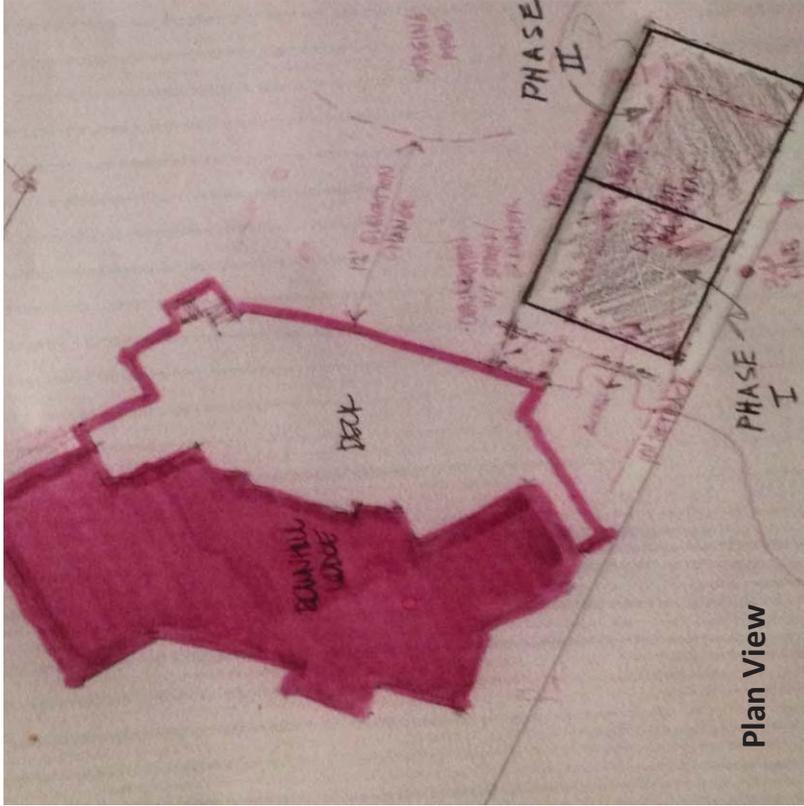
**TAHOE DONNER - CONDOMINIUMS**  
**TRACT I PROPOSED UTILITIES**

NEVADA COUNTY  
 DESIGNED: J.R.  
 DRAWN: J.R.  
 CHECKED: J.R.  
 PROJ. ENR: J.R.P.  
 DATE: 7/8/77  
 SHEET 9 OF 10 SHEETS  
 CALIFORNIA  
 JOB NO.  
 SHEET 9 OF 10 SHEETS

**NOTES:**  
 1. 1" TV & 1" TELEPHONE SECONDARY CONDUITS SHALL BE CONNECTED TO EXISTING BUILDINGS/OTHER THAN TERMINATED 5' FROM BUILDING.  
 2. ALL EXISTING TELEPHONE CONDUIT MUST BE PROTECTED.

George  
Rohrbach

# DOWNHILL SATELLITE SKI LODGE



Plan View

## PHASE I – 4000 SF

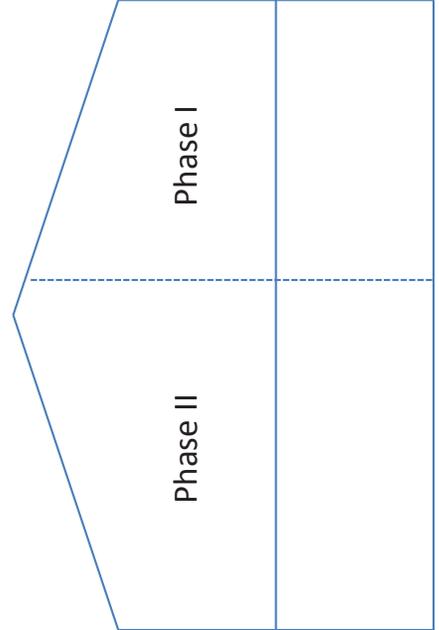
Break RM 1100 SF
Offices 700 SF
Stairs/Elev 200 SF

**Upper Level**  
2000 SF

Locker RM 1100 SF
Rest Rooms 500 SF
Stairs/Elev/Mech 400 SF

**Lower Level**  
2000 SF

## PHASE II – 5000 SF NEW – 9000 SF TOTAL



Front Elevation

Cafeteria/ Food & Beverage 4300 SF
Stairs/Elev 200 SF

**Upper Level** 4500 SF

Break Room 1100 SF.
Offices 1250 SF
Mech 150 SF

**Lower Level** 4500 SF

Locker Room 1100 SF
Rest Rooms 500 SF
Stairs/Elev & Mech 400 SF

## DOWNHILL SKI LODGE OPTIONS

**OPTION A** – Remodel existing 14,200sf structure, Construct new 10,000sf satellite structure

Existing Lodge –

Repair/replace outside deck

Ticket sales, rental shop, Snowflake and staff offices would remain on ground floor

Convert existing locker, ski patrol and breakroom areas to storage and offices

Remodel kitchen, dining and bar area as required to support new food and beverage operations plan

Install exterior web cams

Repaint, replace floor covering, remodel bathrooms as necessary

Incorporate a drop off area in front

Satellite Lodge -

Construct new two story 10,000sf (5000sf footprint) rectangular structure with flat roof and exterior deck or patio adjacent to existing building. Design would focus on functionality.

First floor would include customer restrooms, employee locker room and break room, ski patrol treatment/holding room and storage area

Second floor would be kitchen and dining area

Optional third floor could be housing for employees

**OPTION B** - Build satellite Lodge; do not enhance existing lodge; down the road demolish existing lodge and rebuild.

**OPTION C** - Demolish existing building and deck and construct new 24,000sf structure and deck or patio

Ground floor would house ticketing, rental shop, Snowflakes, restrooms, storage etc.

*Second floor would be food and beverage, bar and staff offices*

*Optional third floor could be employee housing*

**Option D** - Expand existing lodge. Enclose /expand existing deck. Enclose old sun deck. Construct addition in rear for restrooms, elevator, etc.

**OPTION E** - Remodel existing 14,200sf structure, Construct a new "top-of-the-hill" lodge expansion to include grab and go food, bathrooms, inside seating.

## **DOWNHILL SKI LODGE OPTION "A" Deep Dive by Miguel**

OPTION A – Remodel existing 14,200 sq.ft. structure, Construct new 10,000 sq. ft. satellite structure

Existing Lodge – The question that is unanswered relative to remodeling the current lodge is the impact of a major remodel on the need to bring the entire facility to code. Historically, this unknown cost has dictated that we would avoid a major remodel as investing this unknown sum into a facility that we plan to demolish is a bad decision. This is important to consider when outlining remodel options, and is addressed where relevant below:

Repair/replace outside deck –

- This is a replacement reserve project to be completed ASAP. Staff researched options last fall and has a few recommendations for 2017 to complete this project.

Ticket sales and the rental shop functions including the Snowflakes rental room, along with staff offices, would remain downstairs in the existing building

- This would be the most efficient solution, however, it has been discussed that a better customer service experience would be to have a rental shop that exists at lift level rather than having the customer walk up the hill with their gear to access the lifts. This concept will be discussed further as we consider the replacement of the existing building.

Convert existing locker, ski patrol and break room areas to storage and offices

- Storage issues at this facility are a significant concern with the only large storage space being under the deck. This area is very full and a challenge to access.
- The current break room is about 200 sq. ft. and services 80-90 employees so it is very undersized.
- Moving the ski patrol room into a new facility (more on that below) can give us an opportunity to de-conflict the current situation of patrol patients being transported right through our skier access/bus drop off area.

Remodel kitchen, dining and bar area as required to support new food and beverage operations plan

- The primary challenges of this area are not enough interior seats for our customers and insufficient kitchen size for the volume of food being served
  - During the tour on March 24, the concept of enclosing the flat roofed area was brought up again. This has been discussed many times in the past – the limiting factor in developing this area is the concept of having to bring the entire facility up to code if we propose a significant remodel improvement. This would a great point of discussion for the task force: with the timeframe of existing building replacement, is it worth

considering the cost of upgrading the entire facility to code? Would this provide a longer lifespan of the existing facility?

- A second idea that was discussed during the tour was the option to enclose a portion or all of the existing deck and extend the current deck or move it to the roof of the new enclosed area. Same questions as above....

#### Install exterior web cams

- We currently have web cams on the exterior of the building, but this request references installing web cams in the learning center areas with closed circuit TV's in the base lodge so parents can view their children's lesson from the comfort of a conditioned space....a great concept, but probably a lower priority, or an improvement that can be phased into the operation.

#### Remodel bathrooms as necessary

- The existing bathrooms are woefully inadequate. Additionally, there are significant efficiencies to be gained as our restrooms are not vertically aligned which would consolidate plumbing and sewer infrastructure. A remodel/enclosing of the flat roof area and/or the sun deck, could allow for more restrooms above existing restrooms.

#### Enclose the emergency stairs

- During the tour, it was also discussed that an opportunity would be to enclose the emergency stairs on the north side of the building. This would mitigate two challenges:
  - The emergency stairs on the north side of the building are consistently buried as the roof sheds. Covering these would keep them clear all the time.
  - Using this stairway as the primary route between the floors, would be much more effective than the very narrow stairs that are currently being used.
  - Enclosing these stairs may result in a requirement to create a new exit from the second floor.

#### Satellite Lodge -

Construct new two story 10,000 sq. ft. (5000 sq. ft. footprint) rectangular structure with flat roof and exterior deck or patio adjacent to existing building. Design would focus on functionality.

- The advantages of this concept are many
  - Lower cost versus demolition and construction of a new ~25,000 sq. ft. facility in the current facility footprint.

- It will allow us to have a facility to operate from when the time comes to finally replace the current lodge.
- A relatively quick solution to address the major limiting factors of the current operation.
- ETC...
- One major issue that needs to be resolved is the location of this new building.
  - It has been suggested that we could relocate this building between the handicapped ramp and the maintenance building – lot line constraints and snow removal considerations need to be discussed if this location is recommended.
  - Another location that has been discussed is in the current C1 location. There is more space here, but access may be challenging, and the new building would be quite far from the current building.
  - In short, there is quite a bit more discussion that needs to happen relative to this topic,

First floor would include customer restrooms, employee locker room and break room, ski patrol treatment/holding room and storage area

- Locating these functions in this new space could mitigate many of the issue brought up above.

Second floor would be kitchen and dining area

- Mitigation of the issue raised above.

Optional third floor could be housing for employees

- Butch added this option for discussion and initial thoughts are that it could be a excellent option to kill two birds with one stone. Some initial topics for discussion include:
  - Building design would need to consider employee housing access separate from operations functions access – security.
  - Provide food service for employees? Functionality could be right there – one floor below.
  - Employees would be on sight – no excuse to not show up...exposure concerns of employees being on site....
  - Design to include housing for management of employee housing.
  - ETC....I am sure there will be many more topics as discussions begin.



**TAHOE DONNER ASSOCIATION  
Request for Proposal**

**Professional Services for the Master Planning for Tahoe Donner Downhill Ski area located at  
11603 Snowpeak Way, Truckee, Ca.  
April 24, 2017**

It is the desire and intent of Tahoe Donner Association to contract for the Master Planning for Tahoe Donner Downhill Ski area, located in Truckee, California.

Prospective consulting firms should be aware that in evaluating proposals, the association will consider;

- Conforming price of all bid items addressed
- Ability to perform work within the proposed schedules
- Reputation of company
- Executable/Acceptable work schedule

Bids must be submitted from consulting firms appropriately licensed for work in the State of California.

Prospective consulting firms will complete answers to the questions outlined in the Submittal Requirements section of this RFP.

Proposals must address the requirements of all items in the scope of services section in this document. Proposals are to provide a scope of work including a time line for completion of all tasks in relation to the overall project schedule. Provide a not-to-exceed fee proposal for the services identified in your scope of work. Provide a draft contract applicable to a project such as this.

Each consulting firm must provide a list of references where similar services have been performed. Include names of the organizations and telephone numbers of individuals who can be contacted with regard to the services you have provided. Demonstrate the consulting firms understanding of the work to be performed. Interested consulting firms are expected to understand the extent of the work. Please indicate features, skills or services that distinguish your company, making it the ideal choice for the Association.



Please call Forrest Huisman at (530) 587-9487 for an inspection appointment. Consulting firms who are interested and able to provide a bid for this work are requested to notify the Association by end of business on May 15, 2017. The notification can be done by phone at the above numbers, digitally to [fhuisman@tahoedonner.com](mailto:fhuisman@tahoedonner.com), **Proposals are due June 30, 2017** and can be mailed, emailed, or hand-delivered to:

**Tahoe Donner Association**  
**Attn: Forrest Huisman**  
11509 Northwoods Boulevard  
**Truckee, California 96161**  
[fhuisman@tahoedonner.com](mailto:fhuisman@tahoedonner.com)

The consulting firm understands that the Association reserves the right to reject any or all proposals without notice or cause. The Association reserves the right to solicit and accept additional proposals at its sole discretion.

As a business we are required to file Forms 1099. In order to properly complete our reporting requirements, we need certain information from our potential consultants. Please complete the taxpayer identification information (I.R.S. W-9) on the attached bid form.

During the selection process, the Association may request any or all consulting firms to make oral presentations. Such presentations will provide the opportunity for consultants to answer any questions the Association may have in regards to the company's proposal. Not all consulting firms may be asked to make an oral presentation. The Association reserves the right to request additional information or clarifications from any proposer, or to allow corrections of errors or omissions during the selection process.

By submitting a proposal, each consulting firm declares and warrants that no undue influence or pressure will or has been used against or in concert with any director, officer or employee of Tahoe Donner Association in connection with the award of any contract or the terms of this RFP, including any method of coercion, confidential financial arrangement or financial inducement; and that no director, officer or employee of the Association will receive compensation directly or indirectly from the firm or any officer, employee or agent of the firm, in connection with an award under this RFP or any work to be conducted as a result of a contract award.



## Invitation to Bid

### A. PROJECT NAME:

Tahoe Donner Association – Master Planning for Tahoe Donner Downhill Ski area

### B. PROJECT LOCATION:

**Tahoe Donner Downhill Ski Area  
11603 Slalom Way  
Truckee, CA 96161**

### C. SCOPE OF SERVICES:

In consideration of the entire proposed scope at this amenity, please provide a breakdown for costs associated to the professional services requested for the Master Planning for Tahoe Donner Downhill Ski area

#### Master plan to consider:

- **Downhill Ski Area – GPC / Staff Subgroup / Planning Doc – Version 1.0 – Sept. 9, 2013**  
(see attached)

### D. TIMELINE:

<b>RFP Released</b>	<b>4/24/2017</b>
<b>Intent to Respond</b>	<b>5/1/2017</b>
<b>Questions Due</b>	<b>5/8/2017</b>
<b>Answers Back</b>	<b>5/15/2017</b>
<b>Consultant Site Visits</b>	<b>5/20/2017</b>
<b>RFP Closing Date</b>	<b>6/8/2017</b>
<b>TD Analysis and Negotiations</b>	<b>6/22/2017</b>
<b>Contract Signed</b>	<b>6/30/2017</b>

### OTHER CONSIDERATIONS:

The architectural style must be consistent with the Association's Covenants & Restrictions and Architectural/Land Use Rules. Design approval by the Association's Architectural Standards Committee may be required with respect to exterior modifications, if necessary. The Association's Board of Directors will be required to approve the design prior to producing final construction documents.



**SUBMITTAL REQUIREMENTS:**

The Contractor is to complete the information below or submit, as an equal, an office brochure inclusive of items A-F:

- (A) Name of firm, address and telephone/fax numbers(s):
  
- (B) Year established:
  
- (C) Present size of firm:
  
- (D) List the name(s) and qualifications of the person(s) who will be the key contact(s) and manage this project:
  
- (E) Other personnel of your company include:

Employee Name	Years with Company	Experience
---------------	--------------------	------------

- (F) Schedule:  
  
Submit in graphic or narrative form, your company’s assessment of proposed design and construction schedules relative to your ability to meet the schedule as outlined, together with possible revisions you feel necessary. Explain variations in time schedule, if any.

**CUSTOMER SERVICE QUESTIONS:**

1. Please explain what value add you bring to this project. Its ok to attach additional documentation to the RFP.
  
  
  
  
  
  
  
  
  
  
2. Please provide a timeline of events for the work you would perform on this project.



3. Please describe your market position.
  
4. Please describe the past two year's service level.
  
  
  
  
  
  
  
  
  
  
5. Please describe the summer and winter recreational activities would you suggest Tahoe Donner add to their Ski Area.
  
  
  
  
  
  
  
  
  
  
6. Based on the size of our ski hill and the current number of lifts, what is the capacity of skiers per day?
  
  
  
  
  
  
  
  
  
  
7. What is the potential for ski area expansion?
  
  
  
  
  
  
  
  
  
  
8. What should be the capacity of skiers per day based on our current parking? Would a shuttle system make this any different?
  
  
  
  
  
  
  
  
  
  
9. In what spending order (Lodge, ski lifts, parking, et al.) should we consider updating our ski area?



### **ADDITIONAL SUBMITTAL ITEMS AND OTHER PERTINENT INFORMATION:**

- A completed Bid Form and Scope of Services (provided) must be included in all Bids.
- Bidders must have all licenses and certificates necessary to complete the project.
- A Bidder's Bond is not required.
- No bid may be withdrawn within a period of 30 days after the date fixed for opening bids.
- Tahoe Donner Association reserves the right to reject all bids, to waive informalities, and to reject nonconforming, non-responsive or conditional bids. The successful bidder will be contacted within 6 business days of the opening of the bids.
- Proof of required insurance must be provided upon award of contract.

### **FURTHER INSTRUCTION TO BIDDERS:**

- **TAXES AND PERMITS:** Consulting firms shall pay all taxes that are lawfully assessed against owner or contractor in connection with the work. The bid prices shall include such taxes and any other expense, as applicable. Permit fees are not to be included as the Owner will pay fees separately.
- **BIDDER'S ABILITY:** Each bidder must be a licensed professional in accordance with state provisions for licensure, and be skilled and regularly engaged in the general class or type of work called for under this RFP.
- **FAMILIARIZATION WITH THE WORK:** Before submitting the bid, each prospective bidder shall familiarize himself/herself with the work, the site where the work is to be performed, local labor conditions and all laws, regulations and other factors affecting performance of the work. He/she shall carefully correlate his/her observations with requirements of the work and otherwise satisfy himself/herself of the expense and difficulties attending performance of this work. The submission of a bid will constitute a representation of compliance by the bidder. There will be no subsequent financial adjustment for lack of such familiarization.
- **INTERPRETATIONS:** All questions about the meaning or intent of the request for proposals or the contemplated work shall be submitted to Brian Yohn in writing. Replies will be issued by addenda mailed or delivered by facsimile to all parties recorded by Brian Yohn as having received the bidding documents. Questions received less than four days prior to the date for opening bids will not be answered. Only answers issued by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- **CONTRACT TIME:** The schedule proposed by the consulting firm will be an essential part of the contract and it will be necessary for each bidder to satisfy owner of his/her capability to complete the work within the time set forth.
- **INSURANCE:** With respect to operations performed under or incidentally to this project, Contractor agrees to obtain and maintain insurance acceptable to Owner and which, except for



- Workers' compensation and employer's liability insurance, names Owner as an additional insured.

Such insurance shall include:

- Comprehensive general liability insurance with combined single limits of at least \$1,000,000 each occurrence for bodily injury and property damage.
- Comprehensive automobile liability insurance covering all owned, hired or otherwise operated non-owned vehicles with a minimum combined single limit of \$1,000,000 each occurrence for bodily injury and property damage.
- Workers' Compensation Insurance as required by the provisions of California law.
- Employer's liability insurance with a minimum coverage of \$1,000,000 each occurrence.

### **MONTHLY PROGRESS PAYMENTS:**

To be in the pay cycle the consulting firm shall present to Brian Yohn a monthly statement of work estimated and/or completed as agreed upon by the Owner. An inspection by Tahoe Donner's representative will be conducted prior to the authorization of a payment. Lien releases are required from all suppliers and/or subcontractors that give pre-lien notices before issuance of all payments. All insurance must be current.

### **INSPECTION OF WORK:**

The Association will observe the progress and quality of the work and determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. The Association shall not be required to make comprehensive or continuous inspections to check the quality of the work.

### **GENERAL:**

The consulting firm is responsible for obtaining all inspections necessary for the proper execution and completion of the work. The consulting firm warrants to the Owner that materials and equipment furnished under the contract will be as specified or of equivalent quality approved by Owner, that the work will be free from defects, and that the work will conform to the requirements of the contract.

Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

It is understood that any dispute as to this project will be determined by submission to arbitration as provided by California law, and not by a lawsuit or resort to court process except as California law provides for judicial review of arbitration proceedings.



The Owner may terminate the contract if the Contractor:

- Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials; or
- Fails to make payments to subcontractors for materials or labor in accordance with agreements; or
- Persistently disregards laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction; or
- Otherwise is guilty of a substantial breach of provisions of the contract documents.

Should any of the above-mentioned conditions occur, the Owner may give written notice, take possession of the site and all the materials, etc., accept assignment of subcontracts and finish the work by whatever reasonable method the Owner may deem necessary.



**TAHOE DONNER ASSOCIATION**  
**11509 Northwoods Blvd, Truckee, California 96161**  
**Professional Services for Master Planning for DHSki Area and Facilities**  
**BID FORM**

SUBMITTED BY: \_\_\_\_\_

Corporation                       Partnership                       Estate or Trust

PRINCIPAL OFFICE: \_\_\_\_\_

---

Person to contact for additional information on this bid:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Bidder declares and agrees that, if this bid is accepted, bidder is prepared to enter into an agreement to perform all work, including the assumption of all obligations, duties, and responsibilities necessary to the successful completion of the work; the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the work; tools, equipment, supplies, transportation, facilities, labor, taxes, superintendence, and services required to perform the work; insurance and submittals; all to be indicated or specified in said agreement.

If this bid is accepted, the bidder agrees to sign and deliver an acceptable agreement with the required insurance documentation to Tahoe Donner Association within ten (10) days after receipt of notice of award from the owner.

**SIGNATURE OF BIDDER:**

Contractor's License Number(s): \_\_\_\_\_ State: \_\_\_\_\_

State: \_\_\_\_\_

If an individual: \_\_\_\_\_, doing business as

---

If a Partnership: \_\_\_\_\_

By: \_\_\_\_\_, partner

If a Corporation: \_\_\_\_\_

(a \_\_\_\_\_ Corporation)

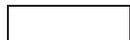
by: \_\_\_\_\_

Title: \_\_\_\_\_

Business Address of Bidder: \_\_\_\_\_

Tax ID #: \_\_\_\_\_

---



Attach Brochure / References / Detailed Qualifications / Proof of Insurance / Licenses / I.R.S W-9



**BID FORM PER SCOPE OF SERVICES**

Consulting Firm: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone/Fax \_\_\_\_\_  
Email \_\_\_\_\_  
Contact/Title \_\_\_\_\_

Complete each item in its entirety. To omit please write "No Bid" on the right.

**Tahoe Donner Association - Master Planning for DHSki Area and Facilities**

**Proposed Cost**

**Phase 1 - DHSki Lodge: -** \_\_\_\_\_

**Phase 2 - DHSki Lifts: -** \_\_\_\_\_

**Phase 3 - DHSki Area: -** \_\_\_\_\_

**Additional Comments:**

\_\_\_\_\_  
Signature / Title

\_\_\_\_\_  
Date

27 April 2017

Tahoe Donner Association  
Attn: Mr. Forrest Huisman, Director of Capital Projects  
11509 Northwoods Boulevard  
Truckee, CA 96161

**RE: PRELIMINARY FEASIBILITY REPORT  
TAHOE DONNER DOWNHILL SKI LODGE ADDITION, TRUCKEE, CALIFORNIA**

Mr. Huisman:

Todd Gordon Mather Architect is pleased to provide this report on the basic feasibility of the enclosing the existing upper level roof located to the north of the current dining area. This report is a general systems analysis and TDA should understand that no mechanical, plumbing, electrical or civil engineers have been consulted. Despite this, our experience with this type of addition/remodel is substantial and our knowledge of such systems is adequate for establishing an initial professional opinion of such the proposed project.

TGMA has reviewed the most recent survey, the CASp Report and has visited the site on two occasions during the creation of this report; once with Doug Gadow, SE of Linchpin Structural Engineering. At one of the site observations, I spoke with some of the staff regarding the typical operations during the ski season.

The addition of approximately 1,200 square feet would require structural modifications to the building beyond normal infill construction. This is described in Linchpin Engineering's report under separate cover. Modifications to mechanical, electrical, and plumbing systems ("MEP") will be required. Circulation and ADA Accessibility compliance with Chapter 11 of the California Building Code will be substantial.

While an addition of this scale will require the typical new MEP in the affected areas, the rest of the building must be made compliant with "ADA Accessibility" requirements as described thoroughly in TDA's CASp Report for the facility in as much as the facility will allow. Those changes are substantial and affect every part and nearly every room within the building.

The facility will very likely need to have an elevator installed. A clear and reasonable location for this is not easily identified in my walk-throughs. This elevator will need to be Accessible and therefore an Accessible path of travel must be created to/from the new elevator's location.

The addition will likely require additional plumbing fixtures (toilets, urinals and sinks). Modifying existing restrooms on either floor will be challenging due to

the limited space and the overall changes that will be required for the Accessibility compliance, namely Accessible paths of travel. All restrooms must be brought into compliance with CBC Chapter 11

Lighting in the new addition must meet the current CA Energy Code. Should the heating system be undersized to be used for the addition, a supplemental system would need to be installed and maintained.

A detailed exit analysis of the building will need to be performed to determine the exiting requirements as related to adding to the upper floor of the existing building. That analysis may reflect the need to modify existing stairways both inside and outside the building.

There may be some parking implications related to an addition to this building. TDA should look into this further with the Town of Truckee. Accessible parking may need to be modified or otherwise included at the facility as is common for commercial/recreational facilities. Having not examined the parking fully, this should be considered.

While operations of the building would remain as-is for most of the building, accessibility-related changes may reduce existing rooms in size and/or in circulation. Having spoken to on-site TDA staff, it seems that the building is functioning at its capacity and any reduction in space, despite a single addition in one area of the facility may not be acceptable.

Of note, there appears to be no ventilation system in the ski tuning area adjacent to the rental department. Though TGMA rarely notes such working conditions, the building code and OSHA does regulate ventilation and air quality. This would likely need to be addressed by a mechanical engineer during the permitting of the new addition.

Having been involved in projects such as TDA is proposing, I believe an addition of this size would create the requirement to disproportionately upgrade many of the building's systems, circulation, finishes and related assemblies. TGMA suggest TDA either substantially increase the scope of the remodel/addition project or to build a new facility. By increasing the size or quantity of additions, TDA would reduce the cost-per-square foot of the proposed small project, thusly distributing "unwanted" but mandatory Code upgrades across a more beneficial project. With a new facility, benefits are substantially more while the upfront cost will be higher.

Sincerely,



Todd Gordon Mather

April 27, 2017

Tahoe Donner Association  
Attn: Forrest Huisman  
11509 Northwoods Boulevard  
Truckee, CA 96161

RE: Report of Feasibility Study  
Modifications of the Downhill Ski Lodge

At your request Linchpin Structural Engineering, Inc. (Linchpin) completed our review of the proposed modifications at the Downhill Ski Lodge. This report presents our understanding of the proposed work and discussion of its structural impact.

### Background

We understand that the TDA Downhill Ski Lodge was originally constructed in 1971. Circa 1985, the lodge was expanded; the expansion included a large space on the south side of the existing lodge (towards the ski slope) that included a roof-deck abutting the slope with the rental shop below it.

We understand that the Association is now considering options regarding the downhill ski lodge including remodel and replacement. One of the concepts for remodel would have a large section of low roof that currently covers just the lower level at the northeast removed and replaced with second story dining space.

Linchpin was asked to coordinate with reports from Todd Mather Architect as well as reference the accessibility report. We understand from those two sources that in addition to the work involved with replacing the roof, second floor openings will be required to include a second stair and elevator.

We also understand that an overall reuse of the building, may require floor plan revisions to improve guest flow and functionality.

### Reference

Linchpin previously prepared a report regarding the Downhill Ski Lodge Roof-Deck. When considering the reuse/remodel of the Lodge, consideration should be given to the conditions and recommendations noted in that report.

### Discussion

Obviously, there are many considerations regarding the reuse and remodel of the Lodge. Structurally, modifications are feasible, but there are significant implications with some of the propositions. It should be noted, that, in general, new work affecting old work requires upgrade of the affected elements, per code.

Below are discussions for the several considerations described above:



## NORTHEAST UPPER LEVEL ADDITION

- The existing first story roof at this area will need to be removed.
- We anticipate that the existing first story roof support structure will be adequate to support the new second floor framing.
- New second story walls will need to be constructed and supported. These are likely able to be supported the new floor.
- The new second story roof will need to be supported. Its support will depend on its configuration. Regardless, a complete load path will be required and will most likely be new. The load path will consist of elements such as bearing walls, posts, beams, and foundations. The work will impact the offices/spaces at the lower level, particularly the installation of foundations.
- The new addition will need to be braced for lateral loads like wind and earthquakes. This will likely be achieved using shearwalls. These new shearwalls will need to have complete load path to the earth. This will require new (or retrofit of existing) lower level elements, including shearwalls and foundations. As stated, foundation work will significantly impact the lower level, during the work.

## ELEVATOR AND STAIR OPENINGS

- Openings in the floor interrupt floor capacity for both vertical and lateral loads.
- For vertical loads, the openings will require heading-out the gap and supporting the stairs. These supplemental supports will need to extend to the nearest vertical support elements (walls and/or beams), so there will be significant impact adjacent the proposed openings.
- The floors work as diaphragms (transferring in-plane forces to shearwalls). Openings in the diaphragms need to be detailed to transfer in-plane forces around the gap. This may require removal of floor finishes above and ceiling finishes below in the vicinity of openings.

## MODIFICATIONS TO FLOOR PLANS

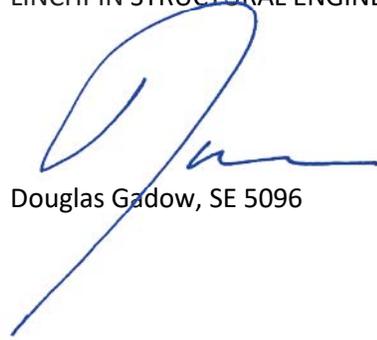
- There are numerous locations within the building where structure passes through the lowest level. If they are desired to be moved, new supports will need to be designed. New supports require not only beams and headers, posts, but also new foundations.
- There are abundant interior shearwalls within the lower level. These shearwalls were already modified for the 1985 addition. Further modification may exceed available capacity of wood bracing elements, requiring steel or concrete. Regardless of the retrofit system, whether high-capacity wood, steel, or concrete shearwalls, foundation work will be likely if there is significant reduction of existing shearwalls.

**Closing**

This letter evaluates the significance of several conceptual modifications to the Downhill Ski Lodge. We hope our discussion provides some useful insights.

Very truly yours,

LINCHPIN STRUCTURAL ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read 'D. Gadow', is written over the company name.

Douglas Gadow, SE 5096

# Tahoe Donner Downhill Ski Area



## Statement of Qualifications



**Primary Contact:**

Claire Humber | Director of Resort Planning & Design

131 Church Street, Suite 300

Burlington, Vermont 05401

802.735.9151 | [chumber@segroup.com](mailto:chumber@segroup.com)

March 30, 2017

Forrest Huisman  
Director of Capital Projects  
11509 Northwoods Blvd.  
Truckee, CA 96161

Dear Forrest:

SE Group is pleased to present the following Statement of Qualifications (SOQ) related to the Tahoe Donner Downhill Ski Area. We appreciate that the ski area is a valued asset and unique family experience for both Tahoe Donner residents and the larger community. *"The best place for family fun and learning in the Tahoe region!"*

We also know from our almost 60-years in the industry that there are many interconnected pieces of the puzzle needed to establish and maintain such an operation. Adequate lift infrastructure, a balanced variety of terrain to entertain all ability levels – especially those new to the sport, a high-quality snow surface, and comfortable, convenient guest services (and parking!) are all vital contributors to the overall experience. You have told us the "circa 1990's" facility needs updating, and you are wise to be turning your attention to this task. Left unattended, inadequate facilities and aging infrastructure can ruin a hard-earned reputation and erode efforts to capture and maintain market share.

Our initial understanding of your goals leads us to the conclusion that there are three primary aspects to this planning exercise:

**Mountain/Ski Area Planning** – the complexion of lifts and trails, and the continued development of your new snowmaking system.

**Base Area Planning** – with a specific focus on the base lodge, the interface with the skiing, and parking.

**Community Engagement** – as a community-owned facility the planning process must engage and solicit input from the residents.

Based on these areas of focus, we are considering a collaboration with Bull Stockwell Allen Architects and Sno.matic Controls and Engineering (Sno.matic). This team is purpose-built to ensure actionable planning intelligence: from concept to completion.

To aid our on-going conversations, this SOQ provides additional information on our team and some examples of relevant project experience. We can provide additional information and outline our proposed approach to this planning exercise as our conversations continue.

Let's get started!

Sincerely,  
SE Group



Claire Humber  
Director, Resort Planning + Design

## OUR TEAM

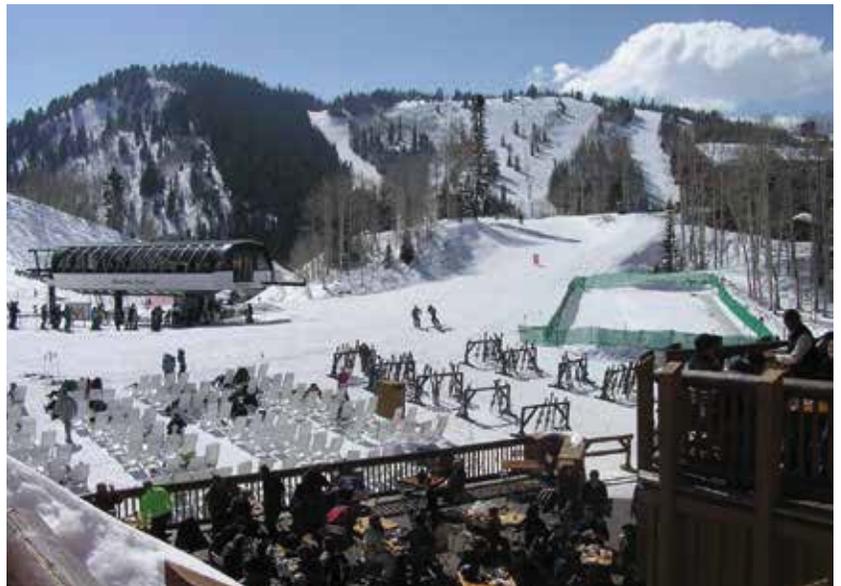
### SE GROUP

For over 50 years, SE Group has been providing resort planning and design services to clients around the world. Sno.engineering, SE Group's corporate entity was formed in 1958 as the first company established for the sole purpose of designing ski resorts and has been involved in thousands of mountain resort projects worldwide.

Today, SE Group is a multi-disciplinary design and planning firm, specializing in places influenced by tourism, outdoor recreation, and "small town" character. Our resort planning and design team continues our legacy, working with small, local ski areas and large, four-season resorts alike. From planning, design and development to implementation and operations, we know what it takes to make these places special - and keep them that way. Our community planning team shares a love for the rural lifestyle with a deep understanding of outdoor recreation, and appreciates the passion of communities who are engaged in thinking about their futures. Our community specialists have an unparalleled expertise in understanding the environmental resources, economic drivers and social dynamics that make small communities thrive.

Our national and international exposure helps us to recognize opportunities that will enhance each project's unique identity and create great destinations and communities. Our design process revolves around preserving and enhancing the landscape; reflecting the distinctive character inherent in a location; and developing a built environment that fits into the natural environment with a sense of balance, scale and harmony.

Our project sites are often distinguished by their desirable characteristics, such as natural beauty and unique character, exceptional views, recreational opportunity, and high land value. Likewise, they tend to be environmentally fragile, constrained by high elevations, steep slopes and wetlands. They are guarded by community members with a passion for the place and an emotional investment in its future.



## **BULL STOCKWELL ALLEN ARCHITECTS**

Our collaboration with Bull Stockwell Allen is grounded by the practice, passion and forward thinking that has made us experts in our fields. SE Group and Bull Stockwell Allen have been industry stalwarts since the late 1950s when the sport and lifestyle of alpine skiing emerged as a growing business opportunity. Our alliance is a strategic collaboration of talented firms, stemming from a natural relationship of over 40 years' experience working together to bring about a better guest experience at mountain resorts and ski areas.

Bull Stockwell Allen has been at the forefront of mountain resort architectural planning and design based on a deep understanding of snow country detailing, operations, guest services and the importance of place making. Our team couples SE Group's unparalleled mountain resort planning and design skills with Bull Stockwell Allen architectural attention to the details key in the creation of best-in-class four-season hospitality design and operation.

Together we holistically address all the main components of a mountain resort: the ski area, guest services, multi-season recreation and overnight accommodations/real estate. The value proposition to resort owners is a streamlined planning and design process: our master plans provide a comprehensive guide for future implementation that will save time, reduce overall design costs, and avoid expensive rework.

Note that depending on the depth of this engagement, and the desires of the client team, Bull Stockwell Allen's role may be limited to advising on architectural programming rather than detailed architecture.

## **SNO.MATIC CONTROLS & ENGINEERING**

Our longstanding relationship with Sno.Matic Controls and Engineering allows SE Group to provide comprehensive snowmaking solutions to our clients. Sno.matic is the premier North American snowmaking design company, with installations throughout the US, Canada, South America and Asia. Having once been a division of Sno.engineering (SE Group's corporate identity) Sno.matic provides our clients with the planning and design of snowmaking systems customized to the specifics of operational goals and the requirements of each unique site.



## SELECTIVE SERVICES

The following services may be provided to Tahoe Donner for this engagement, based on our current understanding of your immediate project needs. We would be happy to provide a more comprehensive summary of our team's expertise if required.

### **MOUNTAIN PLANNING AND DESIGN**

Mountain planning and design is the historic cornerstone of SE Group. Our ski area designs, tested through market and economic feasibility studies, are based on detailed map work and thorough on-the-ground reconnaissance that allow us to capitalize on the unique features of each site. We frequently transform our signature designs into reality via capital cost estimates, construction documentation, field layout of facilities and detailed grading, snowmaking and surface water management plans.

In addition to lift and trail planning and design, we provide multi-season recreation plans, long-range strategic plans, base area site plans, building programming, and operations and circulation studies for facilities ranging from day-use areas to large, four-season destination resorts. We are the best in the business at ski in/ski out real estate design, and respect that this critical integration of recreational terrain and residential accommodations can add significant value to the real estate.

### **COMMUNITY PLANNING & ENGAGEMENT**

Community planning is a complex, intensive and sometimes contentious process. A planning process sets the tone for civic engagement in the long-term, and how effectively a plan is embraced and set into motion once it is completed. This is particularly the case in smaller communities whose residents are highly engaged, creative and passionate.

Working with these distinctive communities and places calls for a thoughtful, intuitive, creative and skillful melding of process and perspective. SE group has proven itself as a leader in doing just that, and in creating outcomes that honor both people and place.

### **BASE AREA PLANNING**

Your guests don't just come to ski, they also come to enjoy the outdoors and a shared experience with family and friends. This experience is achieved through a sum of parts—recreational pursuits, scenic beauty, attractive buildings, a delicious meal—made unique by the consistent reinforcement of the brand.

Our design team works together to integrate guest facilities, overnight accommodations, and amenities while complementing the unique natural features of the area. Our expertise extends from the big picture vision and programming down to the details of the look, function, and feel of buildings and outdoor space. We work with ski areas and mountain resorts of all shapes and sizes that are looking to elevate their guest experience by:

- Improving guest services facilities function or size
- Transitioning to a four-season recreational facility
- Exploring opportunities for overnight facilities, amenities or additional recreational activities
- Updating master plans that no longer fit today's realities

Above all else, our team creates built environments that foster a unique and memorable guest experience.

## OUR APPROACH



### WE BEGIN WITH THE END IN MIND.

The look, feel, and function of the finished product, and the realities of the construction process are always part of the discussion. Our master plans and conceptual designs save time and money, as they can be implemented without extensive reconsideration or rework.



### WE DESIGN FOR ALL SEASONS.

Snow changes the outdoor environment. What a winter guest experiences is vastly different than what one may experience in the summer. When considering year-round operations, enhancing the customer's experience through thoughtful design is paramount. And your guests won't just come to ski. We consider recreational opportunities for all seasons, and all users.



### WE KNOW HOW MOUNTAIN RESORTS SHOULD WORK.

We seamlessly integrate mountain terrain with development, and are not afraid of difficult gradients. Our process addresses the challenges inherent in the interface between operations and development, between tourism visitation and community use. We consider the business complexities that change throughout the year, and understand the need for consistent operational efficiencies.



### WE MAXIMIZE VALUE THROUGH FLEXIBLE DESIGN.

Quality does not have to mean high cost. We create indoor and outdoor spaces that are flexible and efficient. We quantify potential for increased yields, and can provide cost-benefit analysis for upgrading or expanding guest service facilities.



### WE KNOW RESORT REAL ESTATE.

We are actively exploring new product types that provide our clients value, while minimizing investment risks. Efficient and flexible layouts; unique, multi-level unit types; shared amenities; creative phasing; and other innovative approaches are a part of our planning and design arsenal.

### PHASING IS CRITICAL.

We understand the need to carefully plan and phase new improvements so they may be constructed over time. Our team balances the needs for access, parking, multiple ownership, construction, future flexibility and phasing requirements, allowing the projects to look finished at every stage.

### STRATEGY FIRST, RESULTS THAT LAST.

We are strategists. We firmly believe that any planning process must begin with a vision that is grounded in operational, financial and market realities. This allows concept development to be responsive to the needs of the client, and based on a solid foundation of programming.

# Resort Client List

2011 University Winter Games, Turkey	Exclusive Resorts	Marble Mountain	Saioto, Japan
Alacam Mountain Resort, Turkey	Falls Creek, Australia	Massanutten	Salt Lake Organizing Committee
Alpine Meadows	Garibaldi at Squamish (Canada)	Minakami Kogen, Japan	Seven Springs
Alta Ski Area	Gaustablikk Modeling, Norway	Mission Ridge	Shiga Kogen, Japan
Alyeska Resort	Geilo, Norway	Monarch Mountain	Sierra-at-Tahoe Ski Resort
AM Cube, Japan	Giants Ridge	Mont Orford	Ski Bariloche, Argentina
Angel Fire Resort	Golsvjellet Area, Norway	Mont Sutton	Ski Santa Fe
Arapahoe Basin	Gore Mountain	Mont Tremblant	Smugglers Notch
Arizona Snowbowl	Grand Targhee Resort	Mont-Sainte-Anne	Snowbasin
Aspen Skiing Company	GTC, Croatia	Moonlight Basin	Snowbird Ski & Summer Resort
Attitash	Gunstock Mountain Resort	Mount Bohemia	Soldier Mountain
Bankov, Slovakia	Hafjell, Norway	Mount Snow Resort	Solitude Mountain Resort
Bear Valley Mountain Resort	Harahorn & Solheisen, Norway	Mount Sunapee Resort	Squaw Valley USA
Beaver Creek Resort	Heavenly Mountain Resort	Mountain High Resort	Steamboat Ski & Resort
Beitostølen & Raudalen, Norway	Hlidarfjall Ski Resort, Iceland	Mt. Agassiz, Canada	Stowe Mountain Resort
Belnatio Atema Kogen, Japan	Hovden, Norway	Mt. Ashland	Stratton
Big Sky Resort	Hunderfossen	Mt. Bachelor, Inc.	Sugar Bowl Resort
Blue Mountain (Canada)	Familiepark, Norway	Mt. Baker	Sugarbush Resort
Blue Mountain (PA)	Hunter Mountain	Mt. Hood Meadows Ski Resort	Sugarloaf
Boler Mountain	Hyland Ski and Snowboard Area	Mt. Rose-Ski Tahoe	Sun Valley Resort
Bogus Basin	Hyosung Resort, Korea	Mt. Shasta	Sunday River Ski Resort
Bolton Valley Resort	Iida Forest Resort, Japan	Mt. Spokane Ski & Snowboard Park	Sunshine Village, Canada
Breckenridge Ski Resort	Iizuna Kogen, Japan	Narvik Skisenter, Norway	Svandalen Skisenter, Norway
Bretton Woods	Intrawest Corporation	Niseko, Japan	Takano, Japan
Brundage Mountain Resort	Istria Estate Country Club, Croatia	Norefjell, Norway	Taos Ski Valley
Bryce Resort	Itonose Resort, Japan	Northstar-at-Tahoe	Tarnaby, Sweden
Buttermilk Mountain	Jackson Hole Mountain Resort	Oak Valley Resort, Korea	Tatra Mountains, Slovakia
Canaan Valley	Jiminy Peak Mountain Resort	Okemo Mountain Resort	Telemark Region, Norway
Cannon Mountain	Jisan Ski Resort, Korea	Olympic National Park	Telluride Ski & Golf Resort
Chang Bai Shan, China	Joetsu Kokusai, Japan	Olympic Regional Development Authority	The Balsams
Chang Bai Shan, China	Kennecott Land Company	Omote Manza, Japan	The Canyons Resort
Chugach Powder Guides	Keystone Resort	Oppdal, Norway	The Summit at Snoqualmie
CL Resources, New Zealand	Killington Resort	Osorakan, Japan	Timberline Four Season Resort (WV)
CNL Income Properties, Inc.	Kirkwood Mountain Resort	Parks Canada	Town of Telluride
Copper Mountain	Kistelek Thermal Spa and Golf Resort, Hungary	Park City Mountain Resort	Turkish Ski Federation
Cranmore Mountain Resort	L'Aldasa Canillo, Andorra	Pats Peak	Turoa, New Zealand
Crested Butte Mountain Resort	La Tuca, Spain	Ping Tian, China	Uludag Resort, Turkey
Crystal Mountain (MI)	Lake Louise Ski Area	Plumas Eureka Ski Bowl	Uvdal and Dagalifjellet Area, Norway
Crystal Mountain, Inc. (WA)	Lake Songhua, China	Poley Mountain	Vail Resorts, Inc.
Dartmouth Skiway	Lantain Lake, China	Portillo, Chile	Vidauban, France
Deer Valley Resort Company	Le Massif	Powderhorn Resort	Wachusett Mountain Ski Area
Diamond Peak	Loon Mountain	Qebele Mountain Resort, Azerbaijan	Waterville Valley Resort
Dodge Ridge Ski Area	Loveland Ski Area	RA Consulting	Whistler/Blackcomb
Durango Mountain Resort	Lowe Enterprises	Investment Group, Hungary	White Pass Ski Area
Eaglecrest Resort	Lutsen Mountains	Red Lodge Mountain Resort	Whiteface
East West Partners	Lyngen Fritidspark, Norway	Red River Ski Area	Whitetail Mountain Resort
Echo Mountain		Republic of Turkey	Wildcat Mountain Ski Area
Eldora Mountain Resort		Resort at Squaw Creek	Willamette Pass Resort
		Revelstoke Mountain Resort	Wisp Resort
		Riksgränsen, Sweden	
		Rusutsu, Japan	
		Sahoro Ski Area, Japan	

# [ PORTFOLIO ]



## SPRUCE PEAK

Stowe, Vermont

SE Group + Bull Stockwell Allen  
Joint Project

The Spruce Peak at Stowe development marks the renaissance of Stowe Mountain Resort, providing long-anticipated upgrades, accommodations, and four-season attractions to the well-known ski destination. Building on a long-term working relationship, Bull Stockwell Allen and SE Group continue to work with the development team to redefine the resort's emerging village in accordance with new world criteria. We provided a greater focus on families, as well as the scale, amenities and character of the village center. Innovative hospitality and residential product types and four-season use were also important objectives.

The vibrant village green and ice skating rink, the new focus for year-round activities at the resort, is surrounded by the Stowe Mountain Lodge hotel and spa, Spruce Camp base lodge, and the new Adventure Center. Smaller retail buildings complete the village scene and complement the pedestrian scale of the green. Surrounding ski to/from real estate is set into the hillside providing outstanding views, privacy, and convenient connections with the base area development via the new, much needed beginner terrain. This seamless integration of mountain terrain and base area development throughout Spruce Peak is key to the project's success.

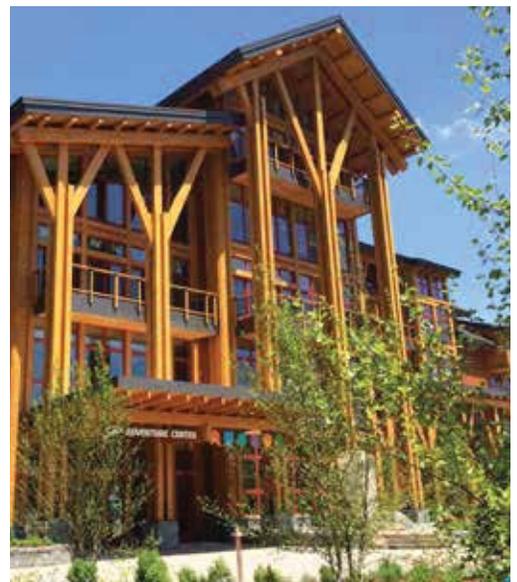
The Spruce Peak development has transformed Stowe Mountain Resort into the premier mountain resort destination in the eastern U.S. and re-established the resort's reputation as an industry leader.

Summer at Stowe Mountain Resort: <https://youtu.be/mIBMW5DgEdc>



### Services

- mountain and multi-season recreation planning •
- site planning •
- architectural planning •
- design and construction administration •
- for both architecture and landscape architecture •
- multi-disciplinary team coordination •



## HYLAND HILLS SKI AREA

Bloomington, Minnesota

SE Group + Bull Stockwell Allen  
Joint Project

SE Group and Bull Stockwell Allen worked with the management team at HNSA to create a better guest experience for this highly-used ski and snowboard area, which operates under the auspices of the Three Rivers Park District, a publicly funded regional parks district in Minneapolis.

The initial Strategic Business Plan articulated opportunities for multi-season recreational activities at the area, as well as a new design and operations concept for the main ski chalet and other guest service facilities. Operational concepts were also developed to improve access and circulation to HNSA including parking and shuttle services in an effort to minimize neighborhood impacts.

Construction of the new Chalet completed in time to open for the 2015/16 season. This 37,000-square foot facility provides more space and improves the flow of guests.



### Services

- strategic planning + community engagement
- multi-season recreation planning
- site and architectural planning + design



HSSA: Reconfigured arrival and parking

New trail connection to HSSA

Normandale: Expanded shuttle service, pick and drop off area, quest services and parking

Ski Jump area



## BRISTOL MOUNTAIN

Canandaigua, New York

SE Group + Bull Stockwell Allen  
Joint Project

SE Group has collaborated with the Bristol Mountain team for many years on a range of projects that have integrated mountain planning with real estate and base facilities development. Building upon the existing Strategic Plan and in the spirit of “planning for implementation,” SE Group and Bull Stockwell Allen prepared a Base Area Master Plan for Bristol Mountain, which established the long-term vision for the upgrading and expansion of the base area guest service facilities at the resort. The team approached the project as a series of steps that would guide the development in a series of implementable phases leading to a fully renovated and functional base area. As a design team, there was strong consensus to retain as much of the existing base area infrastructure wherever possible—for both architectural and historical reasons, and to reinforce the unique brand of Bristol Mountain.

Carver’s Kitchen marked the completion of the first phase of the Rocket Lodge renovation and base area expansion project. The design takes its inspiration from modern day-lit market halls, reflecting the resort’s desire to offer guests fresh, healthy and local food options. In preparation for future expansion, which includes expanded ski school, rental facilities, and retail, the first phase also includes employee support spaces. The new addition ties seamlessly to the existing Lodge’s dining room and bar, which are also slated for renovation as part of the later phases of implementation.



### Services

- mountain master planning •
- site and architectural planning + design •



## MT. ROSE SKI TAHOE

Reno, Nevada

SE Group + Bull Stockwell Allen  
Joint Project

SE Group and Bull Stockwell Allen worked in close collaboration with the resort to upgrade and modernize the skier service facilities. From the preparation of the initial preliminary site design to final architectural design and construction implementation, the bold and contemporary design of Winter's Creek Lodge moved Mt. Rose Ski Tahoe into the future.

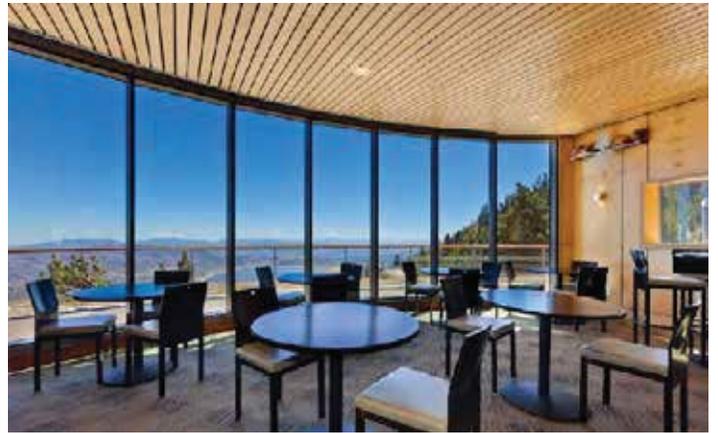
The 7,865-square foot steel and glass building captures the dynamic and rugged natural beauty found at Tahoe's highest base area. Building on the modern aesthetic, the Lodge features shed roofs and a large glass façade bringing the outside in and offering visitors commanding panoramic views of the mountain and Washoe Lake. A large deck with fire pits and outdoor seating provide more opportunities to take in the lake views and action on the slopes. The lodge includes a new 150-seat restaurant and bar plus seating for up to 400 on deck. The Lodge serves a year-round user group consisting of skier and riders, mountain biking and hiking enthusiasts, hanggliders and local Reno tourists. The Lodge's design targeted LEED criteria and features sustainable design elements including windurbines. Additional parking was incorporated into the site design to better accommodate visitor demand.

SE Group also has a long-standing relationship with Mt. Rose, providing mountain planning and design as well as entitlement support as the operation has expanded and improved.



### Services

- mountain master planning •
- strategic planning •
- site and architectural planning + design •
- land use and permitting support •



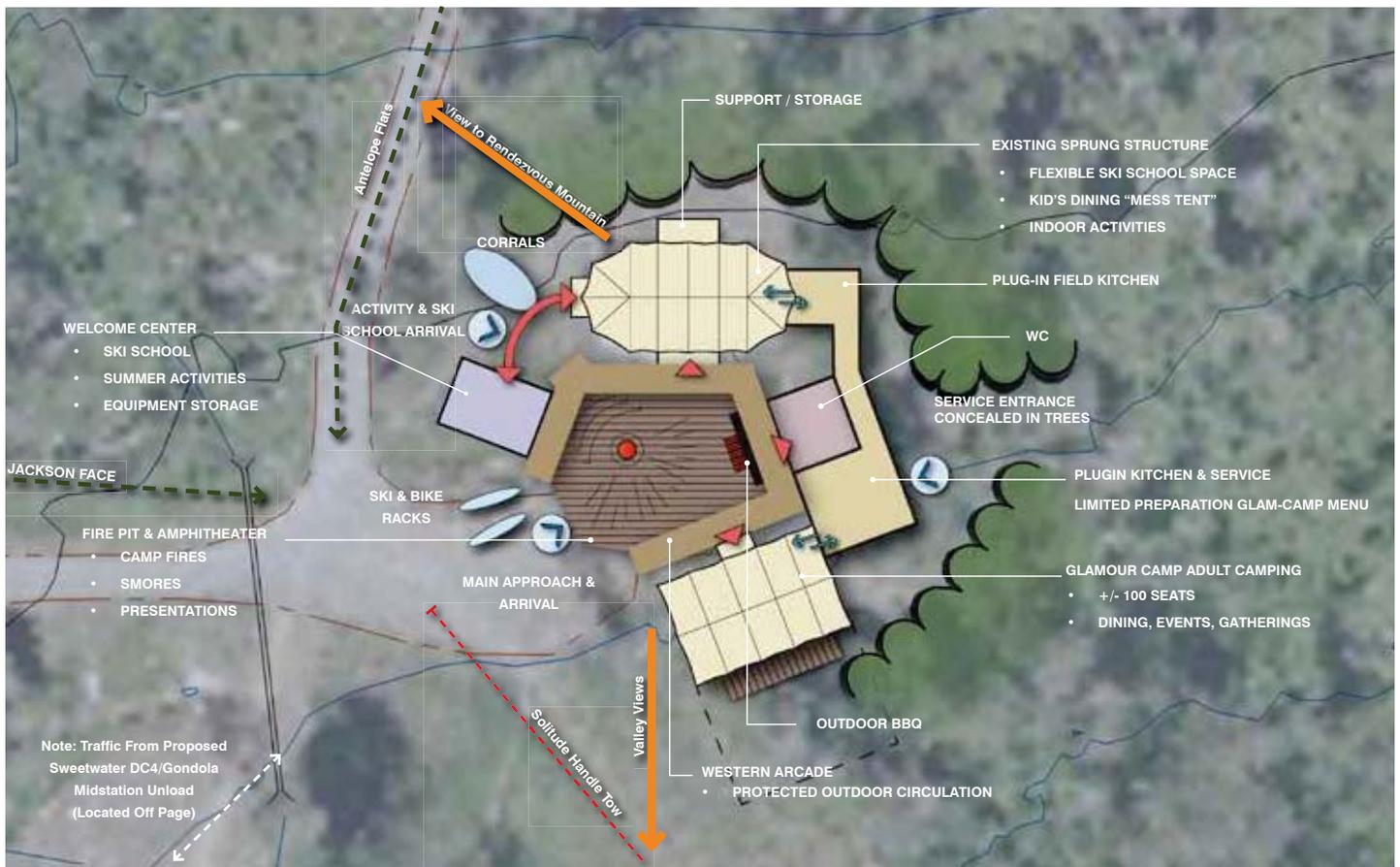
# JACKSON HOLE MOUNTAIN RESORT

Jackson, Wyoming

SE Group + Bull Stockwell Allen  
Joint Project

Rated the #1 resort by Ski Magazine, Jackson Hole (JHMR) is a successful resort with demonstrated yearly growth in visitation. Resort management acknowledged the importance in remaining proactive in determining the F&B capacity requirements throughout the resort—*what is needed, how much and where*. In addition, the resort recognized that to stay competitive in the marketplace they must provide more than good guest service, but rather an elevated experience that reinforces the resort’s brand and is memorable to the guest.

Working with the JHMR team, SE Group and Bull Stockwell Allen undertook a strategic planning exercise that combined the goals of achieving capacity needs with realizing the JHMR promise. The resulting plan, which clarifies priorities and provides a phased approach to implementation, articulates a strategy that achieves both good guest service and a memorable experience for all guests. Numerous on-mountain lift and restaurant projects have been developed as a result, including the recently completed Off-Piste Market (grab-and-go deli) and Piste Mountain Bistro (sit down dining) located on-mountain in the Rendezvous Lodge.



## Services

- mountain master planning
- strategic planning
- site and architectural planning + design
- land use and permitting support



# MOUNT SNOW

West Dover, VT

SE Group Project

The Mount Snow Resort Master Plan articulates the resort’s vision for a successful development of the ski area facilities and expansion of its real estate development. The plan proposes redevelopment of Mount Snow’s base areas with a mix of residential and guest service buildings, and on-mountain improvements.

The Master Plan is unified through several important components and principles: recreation and open space, water quality, a transit center, a long-term phasing plan, and snow management. The Master Plan represents a thoughtful approach to planning that creates new and exciting base areas and mountain improvements while addressing existing environmental issues. By redeveloping existing disturbed areas, environmental impacts are kept to a minimum.



## Services

- master planning
- mountain planning + design
- site planning + design
- land use permitting support

## LINCOLN PEAK VILLAGE AT SUGARBUSH RESORT

Warren, Vermont

SE Group Project

SE Group has assisted Sugarbush Resort with a range of projects that have integrated mountain planning with real estate and base facilities development, from the initial program analysis, master planning, and concept development phase through permitting, design development, construction documentation and administration.

The first two key phases of the Lincoln Peak Village development plan were completed in December 2006. These phases include a new Base Lodge building to replace the Gate House, and Clay Brook—a 133,000-square foot flagship building featuring residences, retail space and restaurant at the heart of the development. Site work extended up the hill to improve skier/rider circulation around the new base area facilities as well as the existing Super Bravo and Gate House lifts.

SE Group worked closely with the client and the architect, lemay+youkel, to site the Vermont farm-inspired structures in a manner that reflects the rural nature of the architecture and creates a unique and enjoyable visitor experience.



### Services

- mountain master planning
- site planning + design
- construction administration

## PARK CITY MOUNTAIN RESORT

Park City, Utah

Bull Stockwell Allen

As a result of Park City being selected as one of the 2002 Olympic sites, Bull Stockwell Allen was commissioned to prepare a master plan for development of a new village center on the property of the Park City Ski Resort. The approvals process for this Master Plan was a complex one, aided considerably by our creation of computer generated fly-through of the development; invaluable for communicating the design intent to the neighbors and the local planning commission. Bull Stockwell Allen also prepared extensive shadow studies to help determine the final allowable massing for the development. The overall master plan is designed to be built in five phases. It includes over 1 million square feet of buildings for residential, retail, hotel and mountain service uses, as well as a large open plaza area. As part of the master plan, Bull Stockwell Allen designed the 450,000 sf Marriott Mountainside and the resorts base lodge, Legacy Lodge. Both facilities received unanimous approval from the City's Planning Department and City Council members for their contextual approach and the creative and efficient use of the land.



### Services

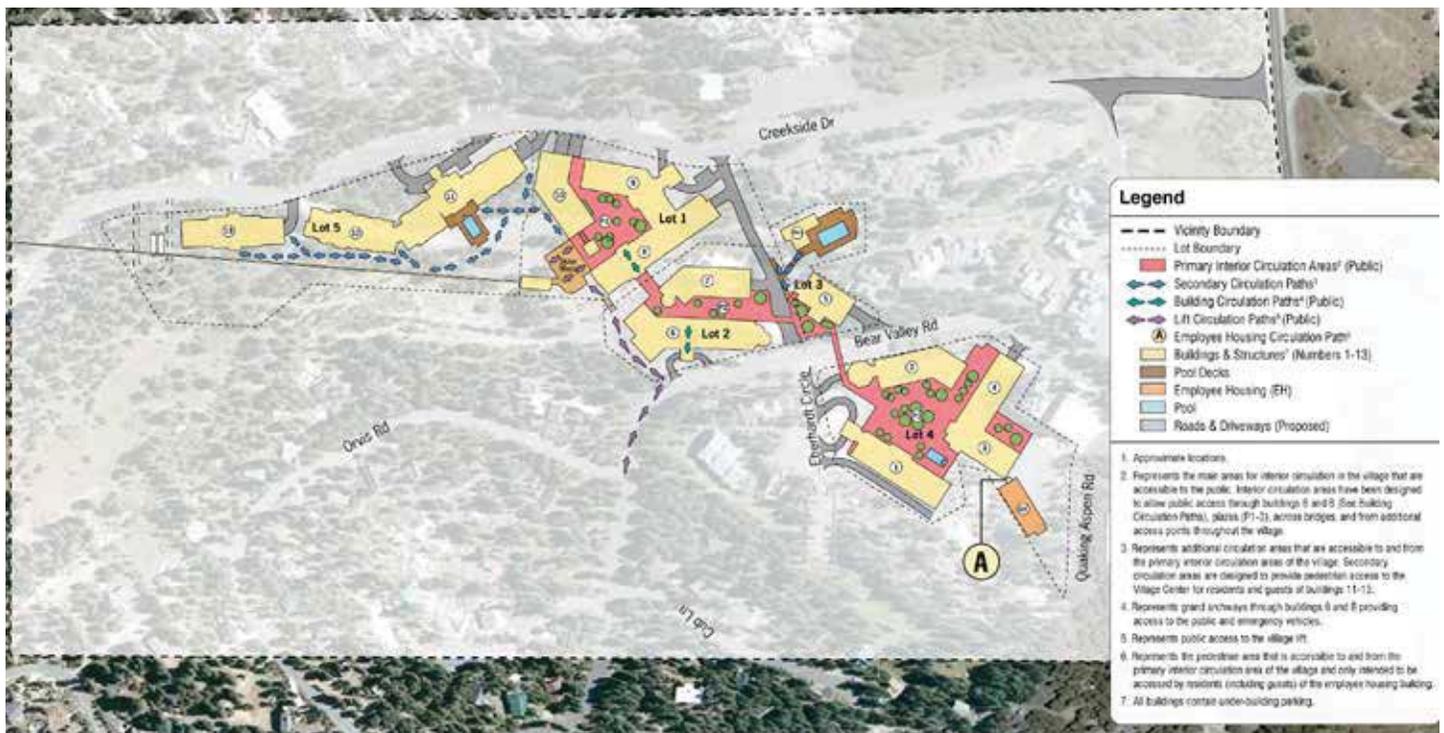
- master planning
- site and architectural planning + design
- construction administration
- multi-disciplinary coordination

# BEAR VALLEY RESORT

Bear Valley, CA

Bull Stockwell Allen

Bear Valley is not being conceived “just another” mountain village following the look and feel of previous resorts. The new Bear Valley center will anchor a new, four-season destination that combines technology with the next generation’s commitment to innovative design in harmony with the environment. The master plan includes a new village lift and over 1.6 million square feet of mixed-use, commercial, and residential development over underground parking. The village is designed to encourage pedestrian circulation in all seasons and weather. It is organized around a series of defined and usable public spaces that relate strongly to the natural environment and to each other. The combination of commercial and residential elements lining the pedestrian routes to the new ski lift will produce an animated and enjoyable experience for all users.



## Services

- master planning •
- site and architectural planning + design •

## NORTHSTAR CALIFORNIA

Truckee, California

SE Group has worked extensively with Booth Creek Ski Holdings and Northstar starting in the late 1990s. This collaboration has resulted in the transformation of Northstar from a simple day ski area into one of the premier destination resorts in the country, with well-developed infrastructure and amenities, both on-mountain and in the village.

The union of on-mountain and base facilities is unparalleled—from the Village at Northstar, to The Highlands, to Martis Camp, all aspects of on-mountain circulation and access were integrated with the lodging, guest services, and development to create a world-class destination.



### Services

- mountain planning + design •
- site planning + design •
- permitting support •

## SQUAW VALLEY RESORT

Squaw Valley, California

SE Group has been working with Squaw Valley since 2011 providing a wide variety of detailed ski area planning and design services.

The resort recently initiated an extensive upgrades program—“Squaw’s Renaissance.” Mountain improvements include lift replacements, terrain enhancements, improved kids’ facilities, new competition venues, and, ultimately, the highly anticipated lift connection to Alpine Meadows.

New lifts target beginner and intermediate riders, provide speedy access to Squaw’s “back-side,” and carry twice as many guests to the terrain parks and half pipe.



### Services

- mountain planning + design •
- permitting support •

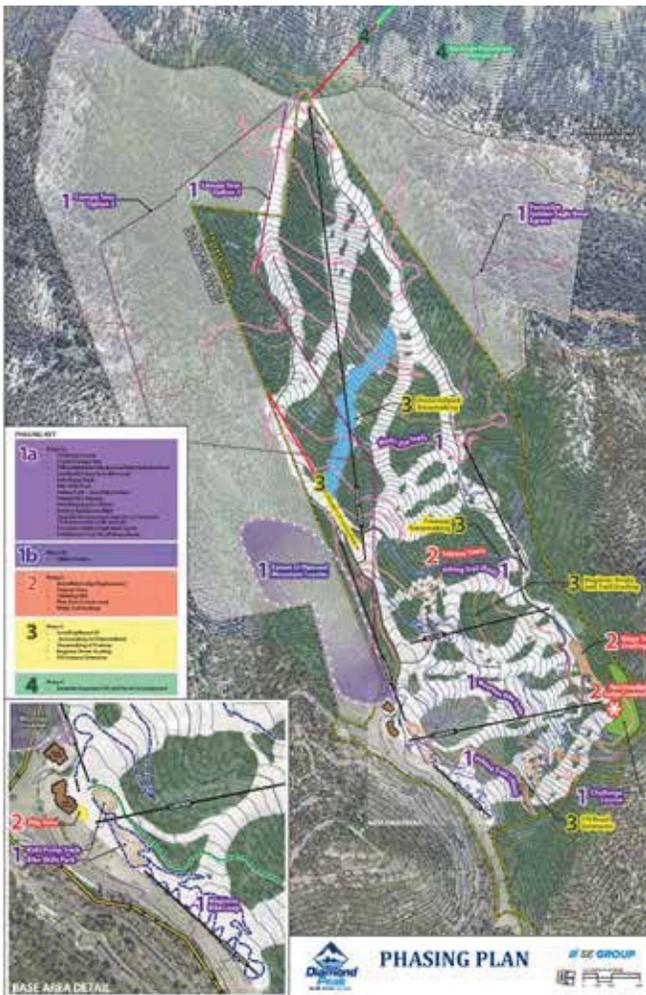
# DIAMOND PEAK MASTER DEVELOPMENT PLAN

Incline Village, Nevada

SE Group, in association with RRC Associates, recently completed a Master Development Plan at Diamond Peak, which focused on establishing multi-season programming and activities at the area. Owned by the community and operated as part of the Incline Village General Improvement District, Diamond Peak is a treasured community resource. In addition, Diamond Peak is uniquely positioned as a potential tourism destination: it is close to Lake Tahoe, provides critical access points to the popular Tahoe Rim and Flume trails, and affords stunning on-mountain views of the lake and surrounding mountains.

A series of public engagement meetings were conducted, along with community surveys to gather valuable community input.

Future development plans for the area must find the balance between maintaining the community-oriented recreation resource and creating a successful revenue-generating tourism destination. Hence, financial feasibility is a major emphasis of the plan, to ensure that new infrastructure will pay for itself and generate revenue in the future. Plan elements are focused on recognizing new opportunities to use this community-owned facility for mountain biking, an alpine slide, on-mountain hiking and yoga, team-building, etc.



## Services

- strategic planning and community engagement
- mountain + multi-season recreation planning
- permitting support

## HICKORY HILLS RECREATION AREA

Traverse City, Michigan



SE Group prepared a Master Plan for Hickory Hills Recreation Area in collaboration with City of Traverse City, Garfield Township, Preserve Hickory, and the Grand Traverse Ski Club. Hickory Hills is an important community park that offers recreation through all four seasons and includes a ski area that has operated since 1952.

The Master Plan and the accompanying recommendations are derived from an in-depth understanding of the site, market and financial analysis, and community input. Two rounds of surveying and an Open House have brought to light the demographics and desires of the community.

The Master Plan provides guidance on recreational opportunities, facility and operational improvements, and programs/events that will contribute to the greater community. Combined, the recommendations will provide a framework for funding partnerships, capital improvements, and long term financial sustainability.

### Services

- strategic planning + community engagement
- mountain + multi-season recreation planning

## EAGLECREST SKI AREA

Juneau, Alaska

SE Group recently completed a Multi-Season Recreation Master Plan for Eaglecrest Ski Area, which is owned and operated by the City and Borough of Juneau, Alaska. The master plan articulates a 20-year vision for the area, as well as provides a method for evaluating future opportunities for establishing additional multi-season recreation at the area.

The planning exercise included a rigorous public involvement process that was designed to enable on-going community input throughout the creation of the Master Plan. SE Group collaborated with two local Juneau firms for this project—McDowell Group and Jan Caulfield Consulting.



### Services

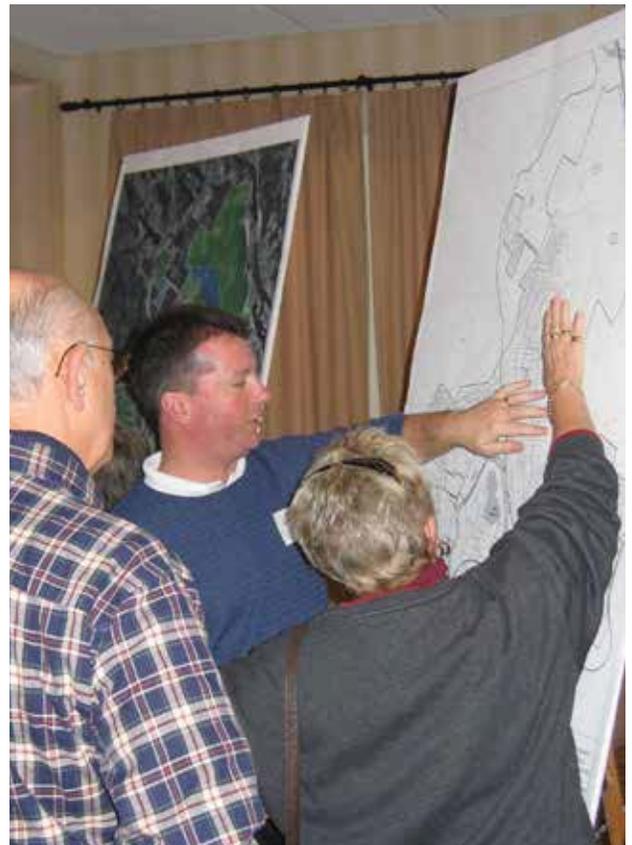
- strategic planning + community engagement
- mountain + multi-season recreation planning

## QUECHEE LAKES LANDOWNER ASSOCIATION

Quechee Lakes, Vermont

In January 2008, SE Group was retained by the Strategic Planning Committee (SPC) of the Quechee Lakes Landowners Association to product a Long-Range Community Plan. Quechee Lakes is a uniquely special place. Its slow evolution in the nearly 40 years of its existence has allowed it to remain true to its mission: to provide the members with a quality four-season community sensitive to the natural beauty of the valley. The demographics of the Quechee Lakes homeowner, however, are very different today than they were in the 1970s and the recreation and membership facilities have aged through general wear and tear.

Recognizing the need to comprehensively address the challenges arising from the changing needs of its membership and the aging facilities, the SPC resolved to develop a long-range plan that would provide direction for future decision making. Under the guidance of SE Group, the process to create the plan sought broad input and encouraged diverse thinking from the membership, yet was grounded in a sense of pragmatic realism. Goals, alternatives and strategies for addressing the range of amenities, facilities and community fabric issues were presented in the plan, in addition to recommendations to guide implementation of the proposed alternatives and strategies.



### Services

- strategic planning + community engagement •
- master planning •



# **Ecosign Mountain Resort Planners Ltd.**

## Company Profile

Ecosign (ECOLOGICALDeSIGN) was founded by Mr. Paul Mathews in Whistler, British Columbia, Canada in 1975 with a single corporate mission: design the most efficient, humanly pleasing mountain resorts in the world.

Our worldwide experience, knowledge of mountain resort planning and our extensive industry network has positioned Ecosign as a leader in the four season mountain resort design field. Ecosign brings a unique approach to mountain resort planning with sophisticated computer software capabilities and an innovative approach to realize environmentally friendly mountain resort design solutions. Our extensive portfolio of local, national and international projects sets Ecosign apart from other resort planning companies around the world. During the past 40+ years, Ecosign has successfully completed mountain resort master plans, detailed village designs and resort feasibility studies for mountain resort communities in over 500 resorts in 41 countries including Andorra, Argentina, Australia, Austria, Bulgaria, Canada, Chile, Columbia, Croatia, Czech Republic, China, Finland, France, Georgia, Greece, Italy, Japan, South Korea, Kazakhstan, Kosovo, Lebanon, Macedonia, Mexico, Montenegro, Morocco, New Zealand, Norway, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Turkmenistan, Ukraine, United Arab Emirates and the United States.

The company is comprised of two major planning and design studios including a Mountain Planning department and a Resort /Village Planning and Design department. These departments work hand in hand to create integrated and comprehensive four season mountain resort, village and real estate master plans. Supporting each department is an experienced team of specialists that utilize a variety of computer technologies and analytical tools, hand drawn illustrations and 3D visualization methods throughout the master planning process to help realize the vision of our clients: "From Vision to Reality".

Additional staff expertise in mountain operations, land economics, development and financial planning enable Ecosign to provide our clientele with a complete range of Mountain and Resort Village planning and design services.

### **LIST OF SERVICES**

#### **RESORT MASTER PLANNING**

Mountain Resort Planning & Layout • Ski Lift and Trail Design • Skier Services Facility Design & Programming • Resort Area Land Use Planning • Resort Village Design & Programming • Residential Site Planning • Golf Course Routing & Design • Landscape & Urban Design • Four Season Recreational Facility Planning • Financial Feasibility Analysis.

#### **LAND CAPABILITY ASSESSMENT**

Resort Site Identification & Feasibility Studies • Regional Studies • Biophysical Inventory & Analysis • Facility Carrying Capacity & Balance • Terrain Capacity Analysis.

#### **EXTENDED SERVICES**

Project Management/Construction Supervision • Ski Trail Survey Layout & Inspections • Market Analysis & Forecasting • Resort Operations & Management Consulting • Resort Transportation /Connection Studies • Visual Impact Studies • Three-Dimensional Computer Modeling • Environmental Impact Assessment • Government Policies & Approvals • Resort Association Structure.



CREATIVE DESIGN FOR WORLD CLASS RESORTS

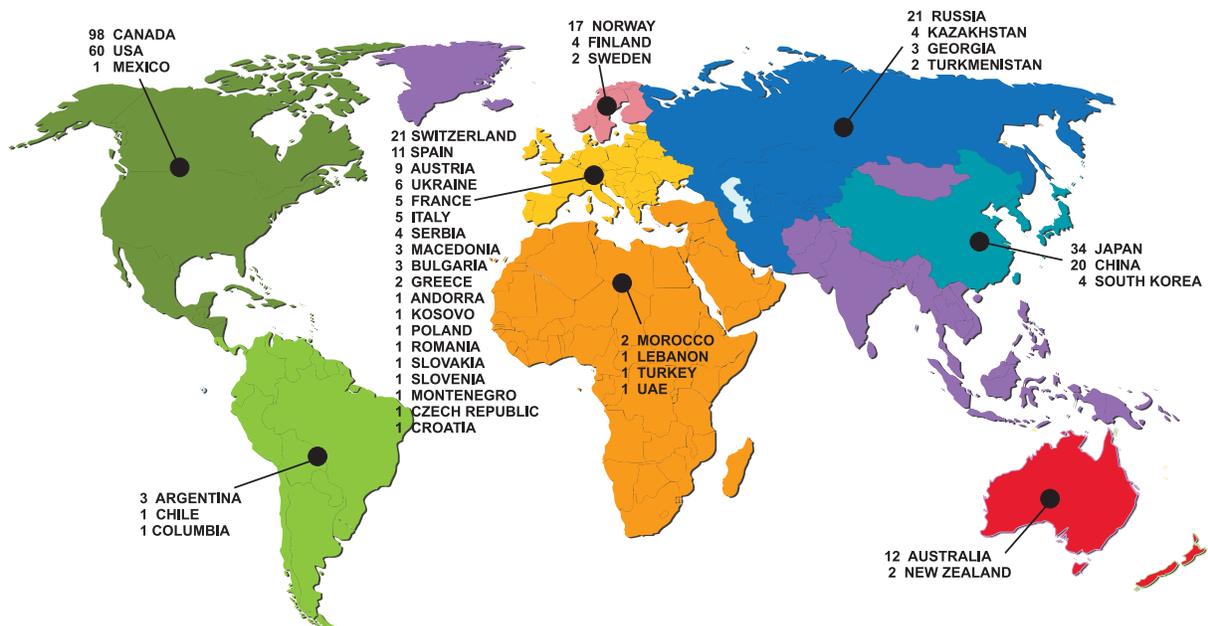
## COMPETITIVE EVENTS MASTER PLANNING

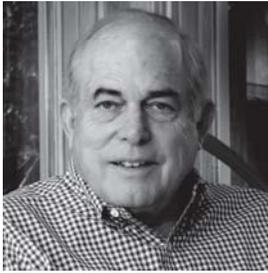
Olympic Winter Games • World Alpine Skiing Championships • National Level Alpine & Winter Games.

Ecosign has a long history of master planning experience related to the Alpine, Freestyle and Nordic Facilities for the Olympic Winter Games. Our experience includes the master planning of 6 Olympic Winter Games including Calgary, Canada (1988), Salt Lake City, USA (2002), Vancouver, Canada (2010), Sochi, Russia (2014), PyeongChang, South Korea (2018) and Beijing, China (2022).

From an Alpine skiing competitions perspective, Ecosign has completed master plans for Mount Allan (Nakiska), Alberta, the site of the 1988 Winter Olympics; Snowbasin, Utah, the site of the 2002 Winter Olympic Downhill and Super G.S. events; and Sierra Nevada, Spain, the site of the 1996 World Alpine Championships. Ecosign has also completed a redesign of the world famous Kandahar downhill course at St. Anton, Austria for the 2001 World Championships. Ecosign completed a master plan for the Beidahu Ski Resort in Jilin Province, P.R.C., which integrated the competitive components for the 2007 Asian Winter Games. Ecosign prepared the Master Plan of Whistler and Blackcomb Mountains, site of the 2010 Olympic Alpine skiing events and the Master Plan for the Whistler Olympic Park, venue for the successful 2010 Olympic Winter Games.

## ECOSIGN WORLDWIDE RESORT PROJECTS





## **Mr. Paul E. Mathews**

**Chairman / CEO**

Mr. Mathews founded Ecosign in 1975, to provide environmentally sensitive planning and design services to mountain resort areas. Over more than 40 years, Mr. Mathews has directed the planning and design of 500 major mountain resort projects in 45 countries.

Mr. Mathews has developed extensive experience and a keen eye for the location and arrangement of lifts and pistes in the mountain zones, as well as the design of new or renovated resort villages in the mountains. This expertise has also led to the study and redesign of several traditional mountain villages in Central Europe, with substantial improvements in the pedestrian environment and the traffic and transportation systems for holiday makers, local people, and the movement of goods and freight.

Mr. Mathews has received numerous awards for his work on various projects by the Association of Landscape Architects, the Canada West Ski Areas Association and other organizations.

Mr. Mathews is a frequent lecturer on Ski Resort Planning and Design worldwide.

Mr. Mathews holds a Bachelor of Science degree in Forest Ecology from the University of Washington in Seattle, USA where he also studied landscape architecture for two years.

Mr. Mathews holds a membership in the following Associations and Professional Societies.

Member - Association of Ski Area Consultants

Member - Society of American Foresters

Associate Member - National Ski Areas Association

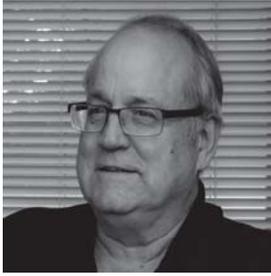
Associate Member - Canada West Ski Areas Association

Associate Member - Pacific Northwest Ski Areas Association

Associate Member - Intermountain Ski Areas Association

Associate Member – Association des stations de ski du Québec

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**Mr. Don Murray**  
Senior Vice President

Mr. Murray has over 40 years of experience in ski resort management and operation, mountain design, construction management, mountain planning, ski area construction, terrain modification and slope revegetation, drainage control, financial analysis and resort feasibility, as well as operational experience in varying capacities throughout his ski related work experience. Mr. Murray has held senior supervisory and management positions in all facets of ski resort operations.

As Ecosign's Senior Vice President, Mr. Murray has been directly involved in all aspects of the resort design, operations planning and consulting. Planning work has included both mountain and base area planning for major competitive events at Sierra Nevada (1996 World Championships), St Anton (2001 World Championships) and Snowbasin at Salt Lake City (2002 Winter Olympic Games). Additionally, he was responsible for the design and layout of all ski trails at the 1988 Winter Olympic site, Nakiska Ski Resort, and assisted in the design of terrain modifications required for the Olympic events. Mr. Murray completed the FIS Homologation surveys and documentation of all Alpine Ski Courses used for the 1988 Olympics. Mr. Murray was directly involved in Ecosign's planning of the 2010 Vancouver and 2014 Sochi Olympic Alpine skiing facilities.

Mr. Murray has been involved with many other resort planning and design projects, including mountain and base area work in 26 countries of the world. These projects ranged from mountain master plans, detailed village designs, feasibility studies for mountain resort communities, capital budgets and financial and market forecasts. Mr. Murray also is very knowledgeable in resort economic and financial planning and has been the author of the Canada West Annual Economic Survey and Analysis since 1987. He has undertaken numerous presentations on ski resort planning, operations, and financial analysis in both North America and Asia. Mr. Murray holds a degree in Science from the University of British Columbia.

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## **Ryley Thiessen** President

Ryley Thiessen is a graduate of Landscape Architecture from the University of Guelph with 15 years of experience in mountain resort planning. Ryley is the President at Ecosign Resort Planners (2016) Ltd.; a world leading design firm specializing in Ski and Mountain Resort design. Having personally worked on over 100 Master Plans in 23 countries worldwide including the United States, Canada, China, South Korea, Chile, Russia, Mexico, Serbia, Montenegro, Bulgaria, Austria, Switzerland, Finland, Norway, France, Greece, Italy, Spain, Macedonia, Romania, Ukraine, Kosovo, Georgia; Ryley offers specialty expertise in resort design including pedestrian village and real estate design and four season recreation master planning.

During his 15 year career at Ecosign, Ryley has been involved in the design of four Olympic Winter Games Snow Cluster Competition Venues and was the lead designer for the Snow Cluster Athletes' Village in the recently awarded 2022 Winter Olympic Games for Beijing, China. Ryley was the lead resort designer of perhaps three of the fastest growing four season resorts in the world; Bukovel Resort, Changbaishan Resort and Gudauri. Bukovel Resort in the Ukraine experienced growth from 50,000 annual visitors to over 1 million in just 8 years. Changbaishan Resort in Northern China was constructed by the largest commercial developer in China, with an estimated investment of over \$2.5 billion (USD) in just over 2 years. Skier visits doubled in just two years since opening.

In 2010, Ecosign was commissioned to create an "Immediate Action Plan" for the Gudauri Resort, Georgia in order to improve the existing facilities and create a new, modern slope-side pedestrian resort village. Following Ecosign's design work in 2011, the "New Gudauri" resort village base area was constructed and included a new beginner ski and snow play zone, snow tubing, guest parking lots and a new high-speed gondola. A total of four new village commercial and condotel buildings have been built since construction commenced in 2011. Since the implementation of the first phase of the Master Plan in 2011, Gudauri has experienced a 300% increase in the number of skier visits.

Ryley has worked with various public agencies including all levels of government on the production of feasibility studies and regional master plans, as well as the study of entire countries to help to identify potential/ optimal locations for the development of four season resorts. Ryley has extensive experience and knowledge in working with both the public and private sector throughout the design and construction process in order to satisfy the needs of the client and help attract resort investors or successful regional and flag international hotel operators at the resorts.

Currently, Ryley is the lead Resort Designer for the Thaiwoo Four Season Destination Resort located 3 hours from Beijing, which is positioned to be perhaps the best and largest ski resort in China at buildout. The grand opening of the resort village took place in December of 2015. The total investment of the Phase 1 resort is estimated at \$475 million (USD).

Career awards, highlights and achievements:

- Alberta Association of Landscape Architects Achievement Award (2000)
- American Society of Landscape Architecture design award (2002)
- Northern Alberta Institute of Technology (N.A.I.T.) Alumni Award (2008)
- Induction into the N.A.I.T. Alumni Wall of Fame (2008 ) and honoured with the cover article “The Real Life of Ryley” for Techlife Magazine (Fall 2009)
- In 2013, Ryley was featured in the Salomon Freeski TV Series episode “The Architect”
- Horizons Achievement Award and induction into the Horizon’s Wall of Fame (2015)
- Keynote speaker for the Brand Launch Grand Opening of the Thaiwoo Resort, China (2015)

Ryley continues to enjoy his active mountain lifestyle of skiing, snowboarding, mountain biking and golfing in Whistler where he currently resides.

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**PROPOSAL FOR PROFESSIONAL MASTER PLANNING SERVICES  
TAHOE DONNER SKI AREA  
REVISED JUNE 20, 2017**

**Prepared for:**  
**Tahoe Donner Ski Area**  
**Forrest Huisman, Director of Capital Projects**  
11509 Northwoods Blvd., Truckee, CA 96161  
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**Prepared by:**  
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**PROPOSAL FOR PROFESSIONAL MASTER PLANNING SERVICES  
INVENTORY, TECHNICAL ASSESSMENT, CONCEPTUAL LODGE  
DESIGN, LIFT AND TERRAIN ANALYSIS AND EXPANSION PLAN  
Tahoe Donner Ski Area  
Revised June 20, 2017**

## **1.0 INTRODUCTION**

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This proposal has been prepared in response to the RFP received from Mr. Forrest Huisman, Director of Capital Development at Tahoe Donner dated April 24<sup>th</sup>, 2017. Ecosign has discussed the project requirements with Mr. Huisman in phone call meetings undertaken on March 24<sup>th</sup> and May 16<sup>th</sup>, 2017. Ecosign staff members Mr. Eric Callender, Vice President and Adam Schroyen, Resort Planner, undertook a detailed site inspection with Mr. Huisman on May 25<sup>th</sup>, 2017. Ecosign has also been supplied with the report entitled “Downhill Ski Area Planning Document 2013 – Version 1.0” and initial architectural and structural assessment documents of the existing day lodge facility.

These meetings, documents, and the comprehensive RFP have provided Ecosign with a clear picture of project requirements, and we formally submit this proposal for professional master planning services related to preparing an Inventory, Technical Assessment, Conceptual Lodge Design, Lift and Terrain analysis and Expansion Plan for Tahoe Donner Ski Area. We are pleased to discuss all aspects of our proposal and are able to modify our recommended approach as requested.

### Project Background

Ecosign previously produced a Master Plan for the Tahoe Donner ski facility in 1994 which envisioned a significantly expanded ski area and a new stand-alone base portal. While the scope of the current assignment focuses on maximizing the potential of the existing base area portal, our past study of the area provides Ecosign with a unique baseline perspective and historical knowledge of the site.

The Tahoe Donner Ski Area is primarily a winter orientated recreation area, operated within the Tahoe Donner Homeowners Association, located northeast of Donner Pass near the Town of Truckee, California. The alpine ski and snowboard facilities consist of 15 ski trails with varied terrain from beginner to advanced, including a beginner area and three terrain parks which are accessed via two ski lifts and three moving carpets. In particular, Tahoe Donner is known as “the place to learn to ski”, with an intimate, family-friendly atmosphere.

By utilizing our standard planning methodologies to assess Tahoe Donner Ski Area’s assets and challenges, our goal is to provide conceptual planning solutions for both the mountain and resort base lands to resolve the issues outlined in the RFP and form a strong vision moving forward for the ski area’s future development.

Appendix A provides additional information about Ecosign, and Appendix B outlines our team and the key members who will lead the Tahoe Donner project.

## **2.0 SCOPE OF WORK**

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Ecosign has proposed a step-by-step approach that includes an analysis and inventory of the existing ski area which is required in order to establish a comprehensive set of standards to apply to the design of the ski lodge and expansion master plan.

Appendix C provides a suggested List of Figures that will accompany the final report and Appendix D illustrates the approximate study area boundary.

### **PHASE 1 – Existing Downhill Ski Area Inventory**

#### **Topographic Map Setup**

The client shall provide Cadastral and ground survey information of the base area in Vector CAD format if available (Ecosign has been provided with a Jpeg copy of the base area plan). In addition, Ecosign will utilize the best available topographic mapping to assess the ski area. We have sourced bare-earth LiDAR DTM GeoTIFF with 1-meter resolution raster data of the entire site which was collected in June 2014 as part of the Tahoe National Forest LiDAR project. The cost to process and prepare the mapping required for this assignment is included in our fee.

### Ski Terrain and Lift Inventory

The existing lift systems will be reviewed and the skier carrying capacity and mountain circulation analyzed. The existing ski trails will be accurately measured, classified into seven skier skill categories and summarized in conjunction with the lift system. Capacities and balance for the existing lift and trail systems will be calculated. Additionally, Ecosign will determine the skier skill level distribution of the ski terrain at Tahoe Donner. Significant discrepancies in the balance of lifts and trails, or the present lift and trail system's ability to satisfy the skill levels of the skier market will be noted.

### Base Area & Guest Services

The existing base lodge and maintenance buildings will be inventoried. Ecosign will provide Building Inventory Data Input forms for collection of data by Tahoe Donner staff. The built space for skier services operated at Tahoe Donner will be broken into 15 skier service categories which will then be compared with ski industry averages developed by Ecosign for regional ski areas. Utilizing the mountain capacities generated from the mountain inventory, we will compare the skier services capacities against the parking, circulation and skier amenity capacities in the preparation of a facilities balance statement. These capacities will also be compared to the current business levels as provided. This analysis may point out critical shortages in revenue space or "pressure points" in the area's physical plant which may be affecting the area's overall ability to deliver quality service to its clientele.

### Parking and Arrival Area

A similar analysis will be completed for the parking/arrival areas to determine parking configurations and capacity based on the new topographic mapping. If there are any parking lot counts available from the busiest days, these should be provided to Ecosign. The site has a complex parking solution which requires a highly organized shuttle bus system in order to function effectively during peak times. As parking is a major concern for the Homeowners Association, Ecosign will prepare an existing parking and circulation plan in order to identify opportunities for improvement.

## **PHASE 2 – Technical Assessment**

### **Mountain and Base Slope Analysis**

Utilizing the latest topographic mapping of the mountain available, the natural terrain gradients will be color-coded, illustrating beginner, intermediate and advanced skiing terrain, as well as terrain considered too steep or flat for skiing/snowboarding. A similar slope inventory analysis will be undertaken on the lower slopes of the mountain to determine which areas are suitable for skier service facilities, parking, and/or four-season recreational activities.

### **Solar Radiation**

As part of the Phase 2 Technical Assessment of the ski area terrain, we will calculate the incoming solar radiation on all areas of Tahoe Donner based upon aspect and steepness of slope. This analysis allows us to very accurately calculate the kilowatt hours of solar energy that hits every square foot of the ski terrain, and provides a colorful map printout of the solar radiation throughout the resort. The results of this analysis allow us to identify areas which naturally retain snow or suffer burn-out due to solar exposure, in order to identify high priority areas for snowmaking.

### **Snowmaking**

Using the Solar Radiation Analysis and the Mountain Slope Analysis prepared as part of the Technical Assessment, we will identify areas within the existing Tahoe Donner ski facility which should be prioritized for future snowmaking coverage and installation, based on an assessment of solar exposure and desirability due to skier skill class / essential coverage required to operate.

At the culmination of the Physical Inventory and Technical Assessment, Ecosign will prepare a summary comparison of the daily capacity of the following operational elements:

**Ski Lifts** – Effective hourly capacity, daily Skier Carrying Capacity.

**Trails** – Skiers at one time, hourly flow, restrictions, etc.

**Mountain Balance** – We will identify the existing lift and trail systems as balanced, underlifted or overlifted.

**Parking and Transportation** – The capacity of parking lots, drop-offs and transit to bring skiers to the staging portals at the ski area.

**Food Services** – Restaurant seating capacity at the alpine ski facility.

**Skier Services** – Capacity and location of tickets, rentals, retail, day-care, children's program, etc.

This summary will provide a graphic and narrative description of the overall balance of the Tahoe Donner facilities for use in preparing the future long range development alternatives.

### **PHASE 3 – Downhill Ski Area Lift Expansion Master Plan**

Using baseline information collected in Phase 1, Existing Facilities Inventory, Ecosign will prepare a lift renovation / and or expansion Master Plan concept which we anticipate will propose a replacement of the existing antiquated Snowbird double chair. We will advise on the capacity and configuration of the replacement chairlift, as well as any recommended re-alignment in order to maximize the potential of the beginner facility. We will prepare a lift tender document including an overall lift profile plan and detailed top and bottom grading plans, suitable for obtaining accurate lift quotes from manufacturers. We envision that in particular, modifications to the bottom lift terminal location and elevation due to the renovation and expansion of the day lodge will be required. We will also review the siting and location of the moving carpets in order to maximize the potential of the beginner learn-to-ski facilities.

We will review the Eagle Rock chairlift and provide long-term planning advice concerning future renovation / replacement of that lift system, and we will also provide a general Future Ski Area Expansion Master Plan which considers expansion of the existing facilities. While the main focus of our planning assignment is the renovation and optimization of the existing base area and beginner learn-to-ski facilities, Ecosign recommends that the overall future potential of the site be documented. In essence, a refresh of the 1994 Master Plan using new high accuracy mapping and current trends.

In Phase 3, we will also explain and indicate on plans further potential for additional Summer and Winter activities to support investment in the base area. Possible ideas may include, but are not limited to: mountain top teahouse, ropes course, zipline, lift accessed sightseeing, additional mountain bike trails/mountain bike pump track and skills park.

## **PHASE 4 – Lodge Programming and Conceptual Design**

Using the data generated from previous phases, an accurate design brief will be developed which will serve as the baseline for the planning of the base area portal / Ski Area Base Lodge redesign. The key goals of this phase include:

- Create a building program for a new day lodge that will achieve a level of service that meets or exceeds the nearby competition. The building program will be calculated using the latest recommended floorspace calculations and ratios for skier services based on current and future potential demand.
- Vastly improve the overall guest arrival experience, with special consideration to shuttle drop-offs, pedestrian circulation and accessibility requirements.
- Consider a phased implementation that allows for a gradual investment of new facilities, while maximizing the use of available resources.
- Illustrate a creative solution to the vertical separation between the main drop-off and lift terminal / snowfront grading.
- Utilize information from local authorities (provided by the client) to assess the zoning regulations and development constraints within the site to ensure the building will conform to local regulations.
- Create an overall conceptual plan of the base area which illustrates the relationship between the arrival and drop-off zones, new ski area lodge and the bottom terminals of the ski lifts.
- Illustrate a building site plan, and 3D views (via Sketchup Massing Model) to show how the lodge is positioned on site.
- Illustrate with building sections and conceptual floor plans how the layout of public facilities, guest circulation, and operational spaces are arranged within the building.
- Illustrates the conceptual architectural style that meets the requirements of the HOA guidelines and considers other recent projects (i.e. Tahoe Donner's new Nordic Center)
- Consider options to optimize and enhance the spatial and circulation relationships between the beginner learn-to-ski zone and the ski lift terminals to the new day Lodge.

Our emphasis will be to create a strong “Sense of Place”, focusing on visitor comfort, ease of circulation and orientation in consideration of the functional service, staging and commercial/retail requirements. Our creative solutions and how they are programmed and physically laid out will ensure the new lodge building offers guests a special and memorable experience.

### **3.0 PROJECT SCHEDULE**

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As described above, we recommend completing the work outlined in this proposal in three phases over a period of approximately 14 weeks. We propose the following general planning schedule with an approximate start-up date of July 15<sup>th</sup> 2017.

#### Draft Report and Onsite Presentation

We anticipate the Draft Phase 1, 2, 3 & 4 report will reflect approximately 70-80% of the Final report content which will be presented by an Ecosign lead designer who will travel to the site to meet with the client group. The report entitled; “Tahoe Donner – Conceptual Master Plan” will document the Inventory and Technical Assessment findings and conclusions, ski area Conceptual Master Plan, the basis for the lodge design and the plans, programming and supporting description of the Ecosign concept for the base area and new day lodge.

Ecosign will provide the following deliverables as part of the Draft Report which will be sent electronically in PDF format, and hard copies sent by courier.

- 3 copies of the Phase 1, 2, 3 ,& 4 Draft Report
- Digital files with the text and drawings in Adobe Acrobat PDF format
- PowerPoint Presentation of the findings

## **APPENDIX A - ECOSIGN INTRODUCTION**

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### **Ecosign Resort Planners (2016) Ltd.**

P.O. Box 63

Whistler, British Columbia

Canada, V0N 1B0

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Ecosign Mountain Resort Planners Ltd. was founded by Paul E. Mathews in July of 1975 in Whistler, British Columbia with the term Ecosign being a contraction of the words “**ecological design.**” The company has grown through the decades and has earned the reputation as one of the most innovative and experienced mountain resort planning companies worldwide. Ecosign has worked on well over 400 different mountain resort projects in 42 countries of the world and has gained prominence, not only in the design of successful new resorts in Canada, USA and China, but also for the redesign and renovation of some of Europe’s oldest and most famous resorts such as Davos, Laax, Grindelwald, Verbier.

The company is comprised of two major planning and design studios including a Mountain Planning division and the Base Area/Village Planning and Design department. These departments work hand in hand to create integrated, comprehensive and complete mountain resort and resort village master plans. Supporting each department is a complement of graphics design and CAD drafting support staff utilizing leading edge 3D modeling, photo realism, animated fly-bys and CAD software. Additional staff expertise in mountain operations, land economics, development and financial planning enable Ecosign to provide our clientele with a complete range of Mountain and Resort Village planning and design services. Ecosign currently has a staff of 20 in our Whistler head office, with additional staff in Beijing and Tokyo.

## **APPENDIX B - PROJECT PERSONNEL**

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If Ecosign Mountain Resort Planners Ltd. is selected for this assignment, the project director and base area planner will be Mr. Eric Callender, Vice President, and Adam Schroyen, Resort Planner will be responsible for analysis and design relating to the base area and mountain facilities. Additional Ecosign project personnel and areas of expertise include:

*Mr. Paul Mathews – Founder/CEO* - Has personally undertaken over 400 ski area development projects and designed 225 major mountain resorts.

*Mr. Ryley Thiessen, President.* B.L.A., L.A.T. Ski base and resort village planning, design and resort programming. Four season recreation planning, land use, site planning and real estate design.

*Mr. Eric Callender, Vice President.* Diploma of Building Technology, Architectural Draftsman, Canadian Ski Instructor - Level 3, Canadian Ski Coach - Level 2

*Mr. Don Murray – Senior Vice President, B.Sc.* - Over forty years of experience in mountain design, construction management, operations consulting, market and financial analysis.

*Mr. Peter C. Alder - Senior Associate* - Project management and management consulting, resort association implementation and management, government relations.

*Mr. Dave Felius, B.Sc. Engineering,* Senior Mountain Planner - Mountain design and programming, computer modeling, construction inspection and monitoring.

*Ms. Jill Almond, Engineer and MBA – Development Manager.* Financial analysis. Real Estate and base area programming.

*Ms. Emily Mann, B.L.A.* Senior Resort Planner - Ski base and resort village design and programming, site planning and landscape design.

*Mr. Adam Schroyen, B.Arch.* – Resort Planner, Site planning, Village Design & Visualization.

*Ms. Paula Palmer, Diploma CAD/CAM and Adv. Diploma GIS* – Senior AutoCAD Technician and Computer Graphics, System Administrator.

*Ms. Shelagh Thiessen,* Resort Technician/Production Manager

*Mr. Bernard Messeguer* – AutoCAD/GIS Technician

*Mr. Nathan Smalley,* AutoCAD Technician and Junior Mountain Planner.

*Mr. Goar Bermudez Garcia,* AutoCAD Technician and Computer Graphics.

*Mr. Peter O'Loughlin,* AutoCAD Resort Technician/3D Specialist and Computer Graphics.

*Ms. Linda Mathews, Graphics Coordinator/Analyst* - Over forty years experience with Ecosign in charge of researching and preparing inventory data, maps, market data, report design and production.

*Ms. Sue Stearns, B.Ed.* – Executive Assistant to Don Murray, market research.

*Ms. Louise Buchholz* - Executive Assistant to Paul Mathews.

## **APPENDIX C - SUGGESTED LIST OF FIGURES**

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### **PHASE 1 – Downhill Ski Area Existing Inventory**

1. Area Location
2. Regional Context
3. Study Area Map
- 4a. Existing Mountain Facilities
- 4b. Existing Resort Base Area Facilities
- 4c. Existing Parking and Circulation Plan

### **PHASE 2 – Technical Assessment**

5. Mountain Slope/Terrain Capacity Analysis
6. Resort Base Area Slope and Design Analysis
7. Solar Radiation Analysis - Winter Season Composite - December – March
8. Ski Area Snowmaking Coverage Concept Plan

### **PHASE 3 – Downhill Ski Area Lift Expansion Master Plan**

9. Ski Area Master Plan Concept Plan
10. Lift Specification Plans (Overall Profile, Top and Bottom Terminal Grading Plans for 1 Main Lift)
11. Ski Area Summer Recreation Overlay
12. Ski Area Winter Recreation Overlay

