

# TAHOE DONNER PHASE 1 - 4 TECHNICAL ASSESSMENT AND RESORT CONCEPTS

Prepared for:

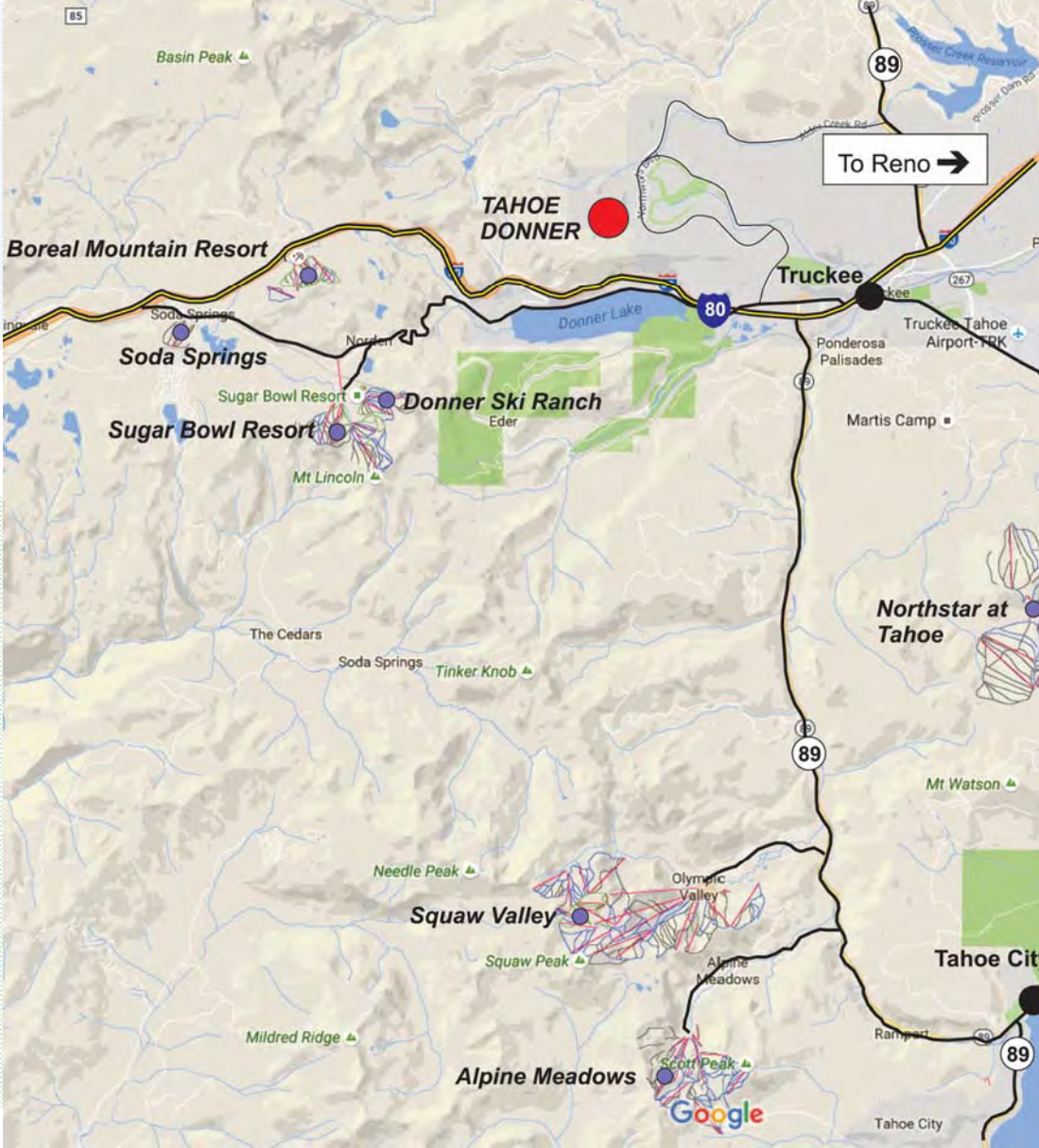


September 11<sup>th</sup>, 2017

**Presented by: Eric Callender – Ecosign VP  
Adam Schroyen – Resort Planner**

**ECOSIGN RESORT PLANNERS (2016) LTD.  
Whistler, British Columbia, Canada**

# STUDY AREA



# AGENDA



- 1. EXISTING SITUATION SUMMARY (FACILITIES BALANCE)**
- 2. TECHNICAL ASSESSMENT**
- 3. INVENTORY**
- 4. EXISTING PARKING & STAGING ANALYSIS**
- 5. MOUNTAIN CONCEPTS A-B, C & D**
- 6. BASE AREA CONCEPTS A, B, C & D**
- 7. PROPOSED PARKING & STAGING ANALYSIS**



## KEY PLANNING TERMS



### 1. MOUNTAIN CAPACITY

- Ability to provide a comfortable skier experience at peak times, measured in skier's at one time which considers those skiing, waiting in lift lines, and attending to their service needs.

### 2. SKIER SERVICE CAPACITY

- Ability to adequately service the requirements of skiers (rentals, ski school, food service)
- Provide suitable space for Mountain Ops

### 3. STAGING CAPACITY

- Ability to get Visitors & Skiers to the Mountain (Parking and Drop-off etc.)





### 1. MOUNTAIN CAPACITY

- Ability to provide a comfortable skier experience at peak times

**1,980 skiers on Ski Terrain, 1,130 skiers on lifts**

**(1,900 future ski terrain potential)**

### 2. SKIER SERVICE CAPACITY

- Ability to adequately service the requirements of skiers (rentals, ski school, food service etc.) built for 75% of Peak (1,300 skiers)
- Provide suitable space for Mountain Ops

**Current Skier Service Capacity for 861 skiers**

### 3. STAGING CAPACITY

- Ability to get Visitors & Skiers to the Mountain (Parking and Drop-off etc.)

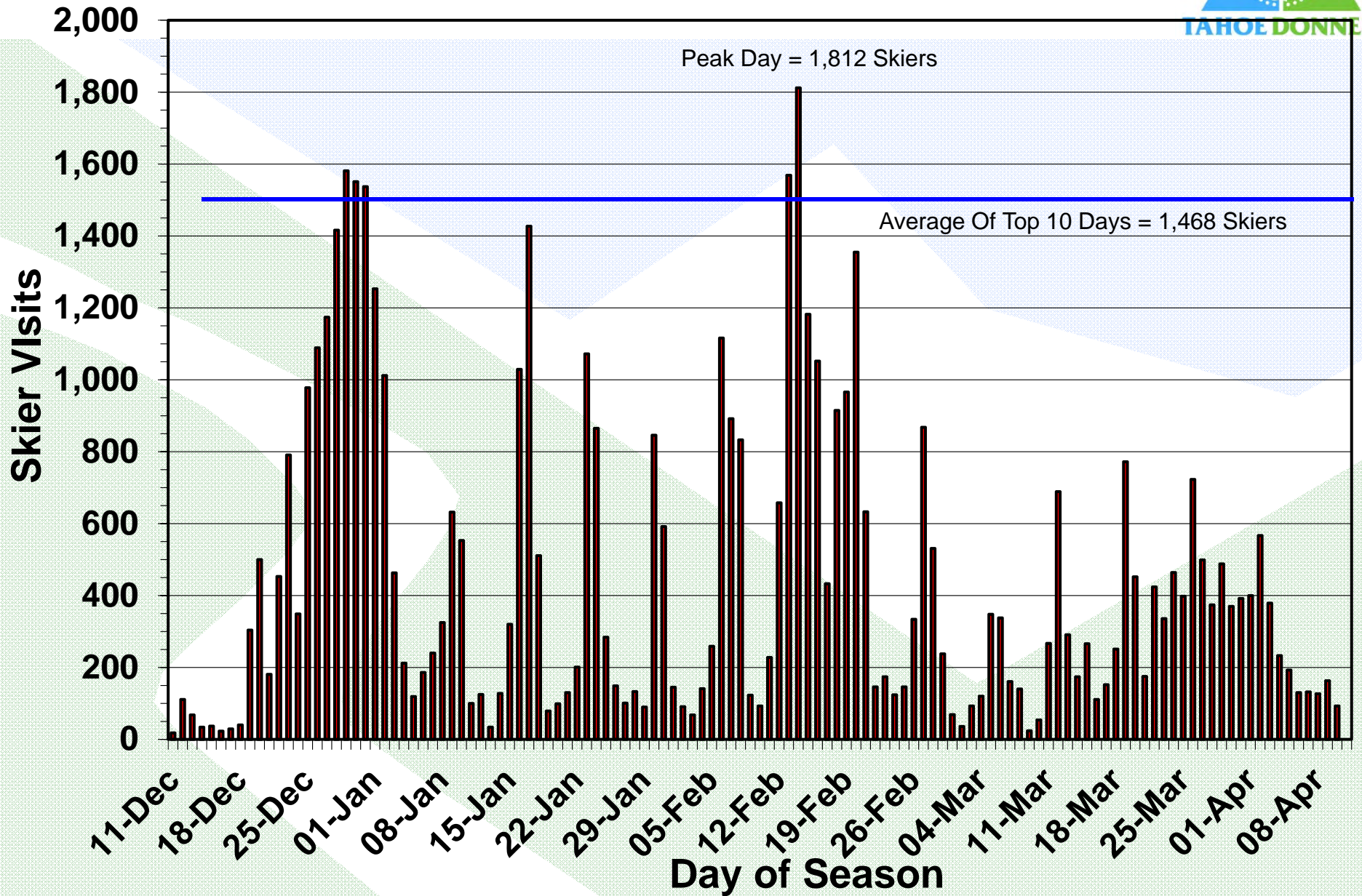
**Current Staging Capacity for 1,053 skiers**



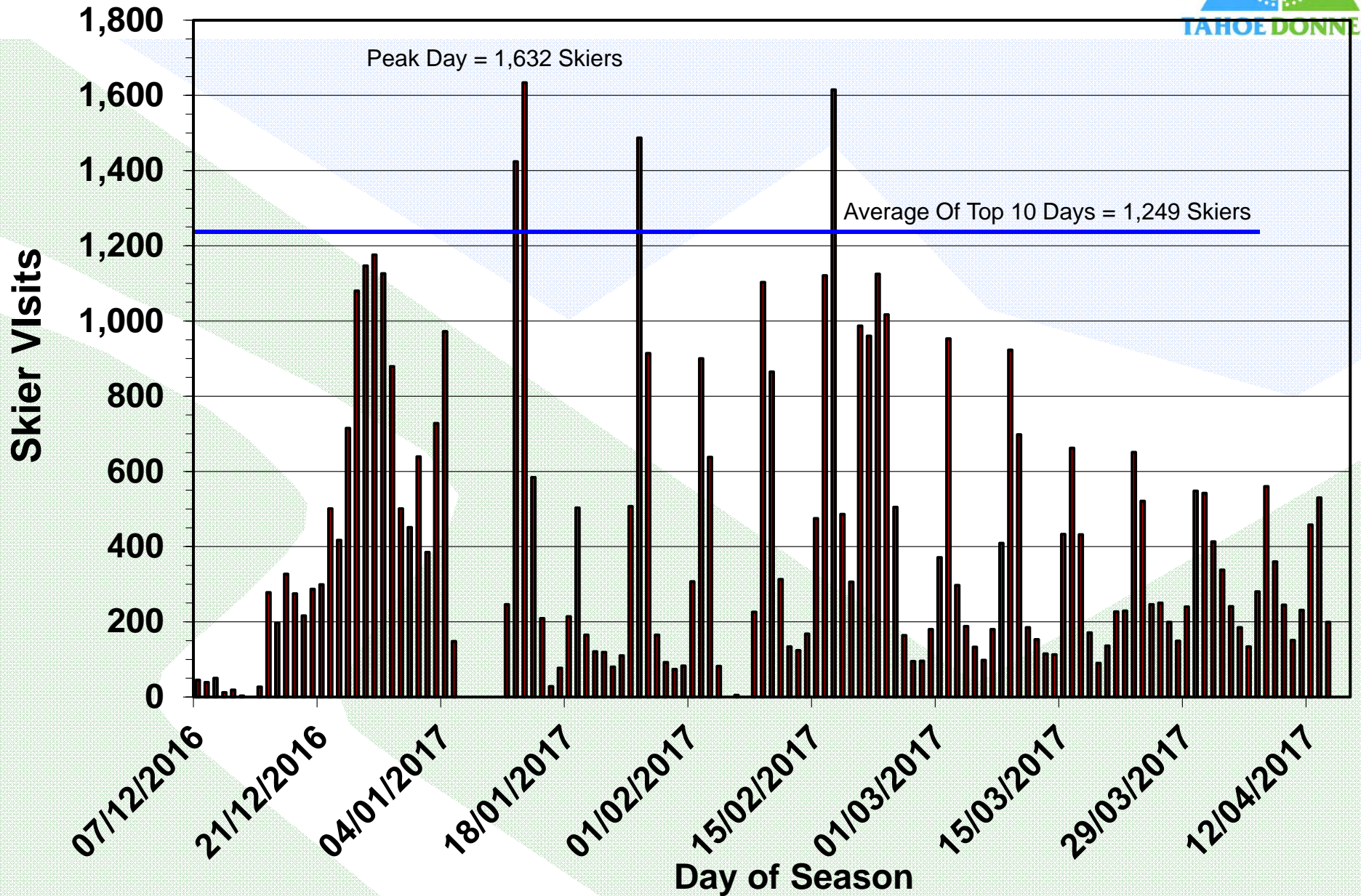
# EXISTING BUSINESS LEVELS



# 2015/16 SKIER VISITS



# 2016/17 SKIER VISITS





## VISITS AND ASSUMPTIONS FOR CALCULATIONS



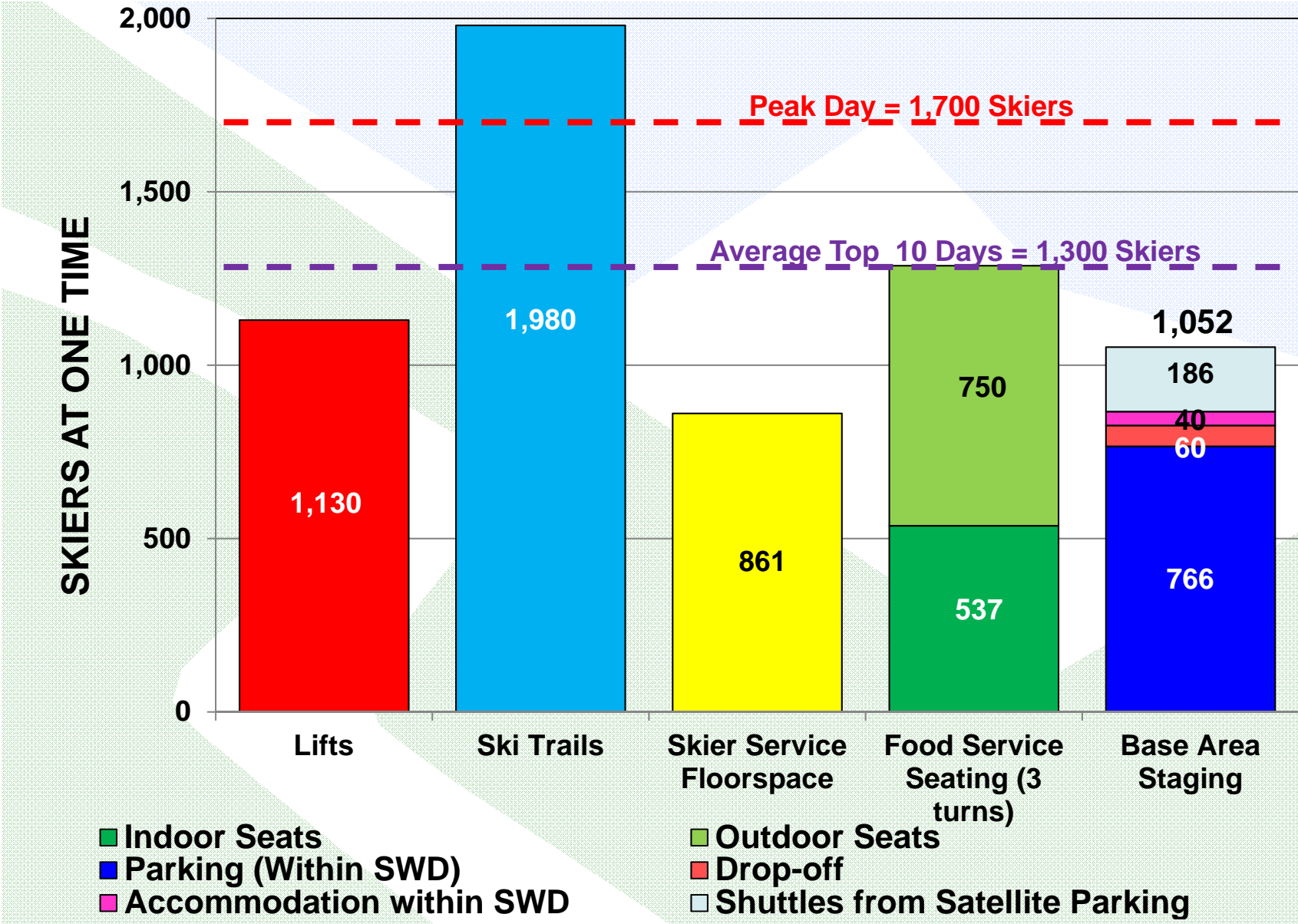
- ❖ 2016/17 Average Top 10 days = 1,249      Peak day = 1,632
- ❖ 2015/16 Average Top 10 Days = 1,468      Peak day = 1,812
- ❖ 2014/15 Average Top 10 Days = <1,000
- ❖ 2013/14 Average Top 10 Days = <500
- ❖ 2012/13 Average Top 10 Days = 1,567

### PLANNING ASSUMPTIONS FOR EXISTING SKIER SERVICE ANALYSIS

- ❖ **Top peak day = 1,700**
- ❖ **For purposes of estimating Space Use for Skier Services we have used the average top 10 day of 1,300 skiers (representing approximately 75% of Peak Day)**



# EXISTING FACILITIES BALANCE



- Indoor Seats
- Parking (Within SWD)
- Accommodation within SWD

- Outdoor Seats
- Drop-off
- Shuttles from Satellite Parking

## 2. TECHNICAL ASSESSMENT

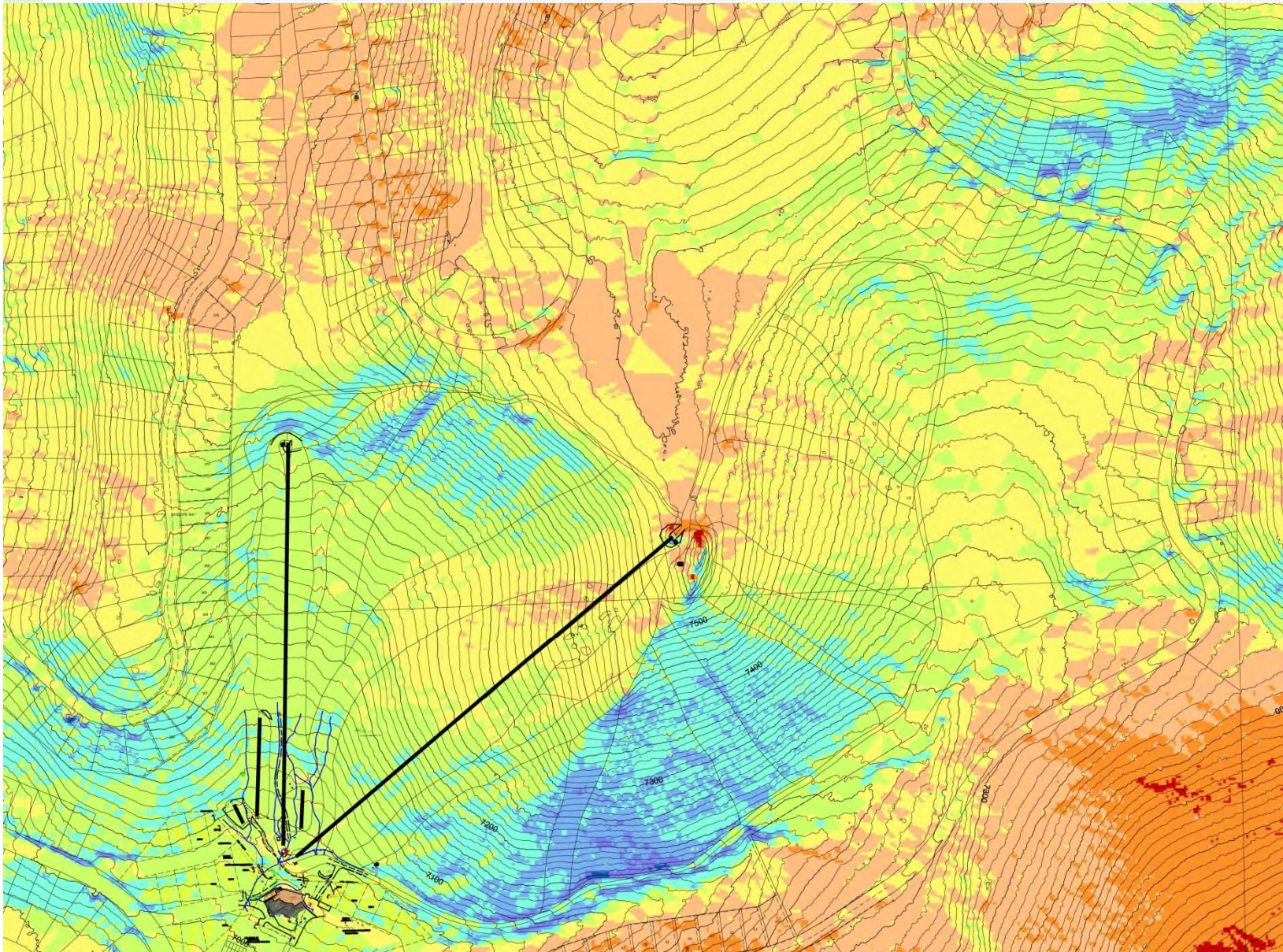


# STUDY AREA



# SOLAR RADIATION – WINTER SEASON

## Composite - December – March



Contours: 10ft Date: 08/2017  
 0ft 200 400 600 800

**NOTES:**

**PERIOD OF CALCULATION:**  
 Daily  
 Dec 1, 2016 to Mar 31, 2017

**DAILY EXTENTS OF CALCULATION:**  
 03:00 hrs - 22:00 hrs

**INTERVAL OF CALCULATION:**  
 15 minutes

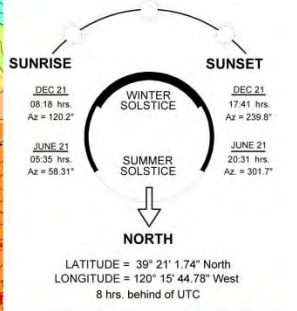
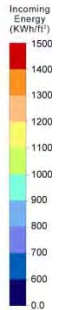
**NUMBER OF DAYS ANALYZED:**  
 121 days

**AVERAGE NUMBER OF DAYLIGHT HRS:**  
 10.09 hours/day

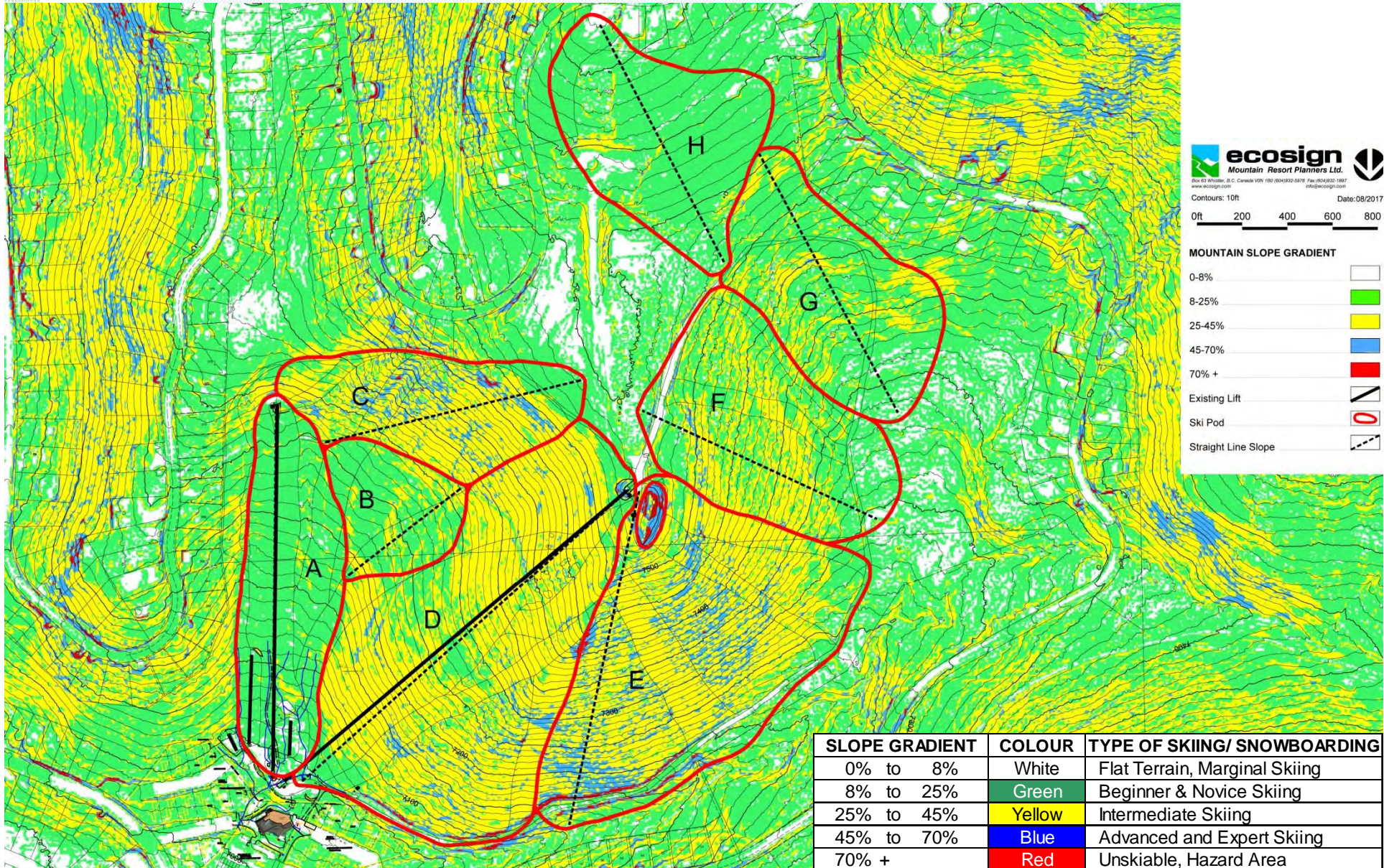
**MINIMUM INCOMING ENERGY:**  
 214.2 KWh/ft2

**MAXIMUM INCOMING ENERGY:**  
 1592.2 KWh/ft2

**AVERAGE INCOMING ENERGY:**  
 1057.2 KWh/ft2



# MOUNTAIN SLOPE & TERRAIN CAPACITY ANALYSIS



Contours: 10ft Date: 08/2017  
 0ft 200 400 600 800

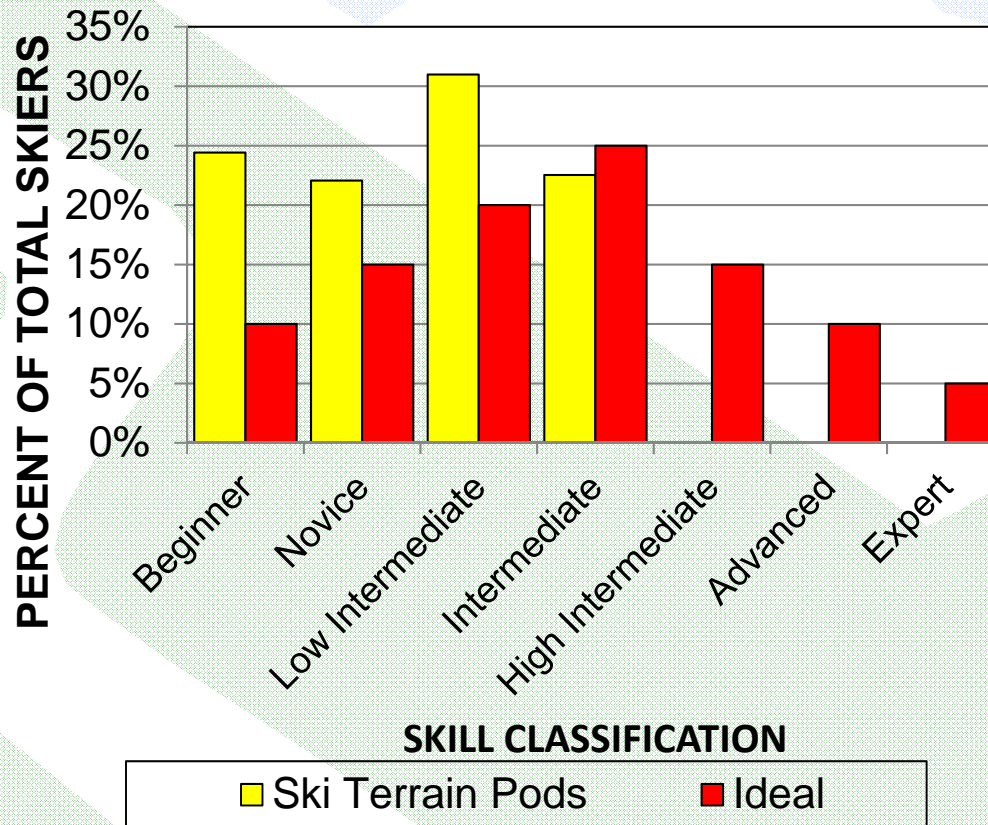
**MOUNTAIN SLOPE GRADIENT**

0-8%	
8-25%	
25-45%	
45-70%	
70% +	
Existing Lift	
Ski Pod	
Straight Line Slope	

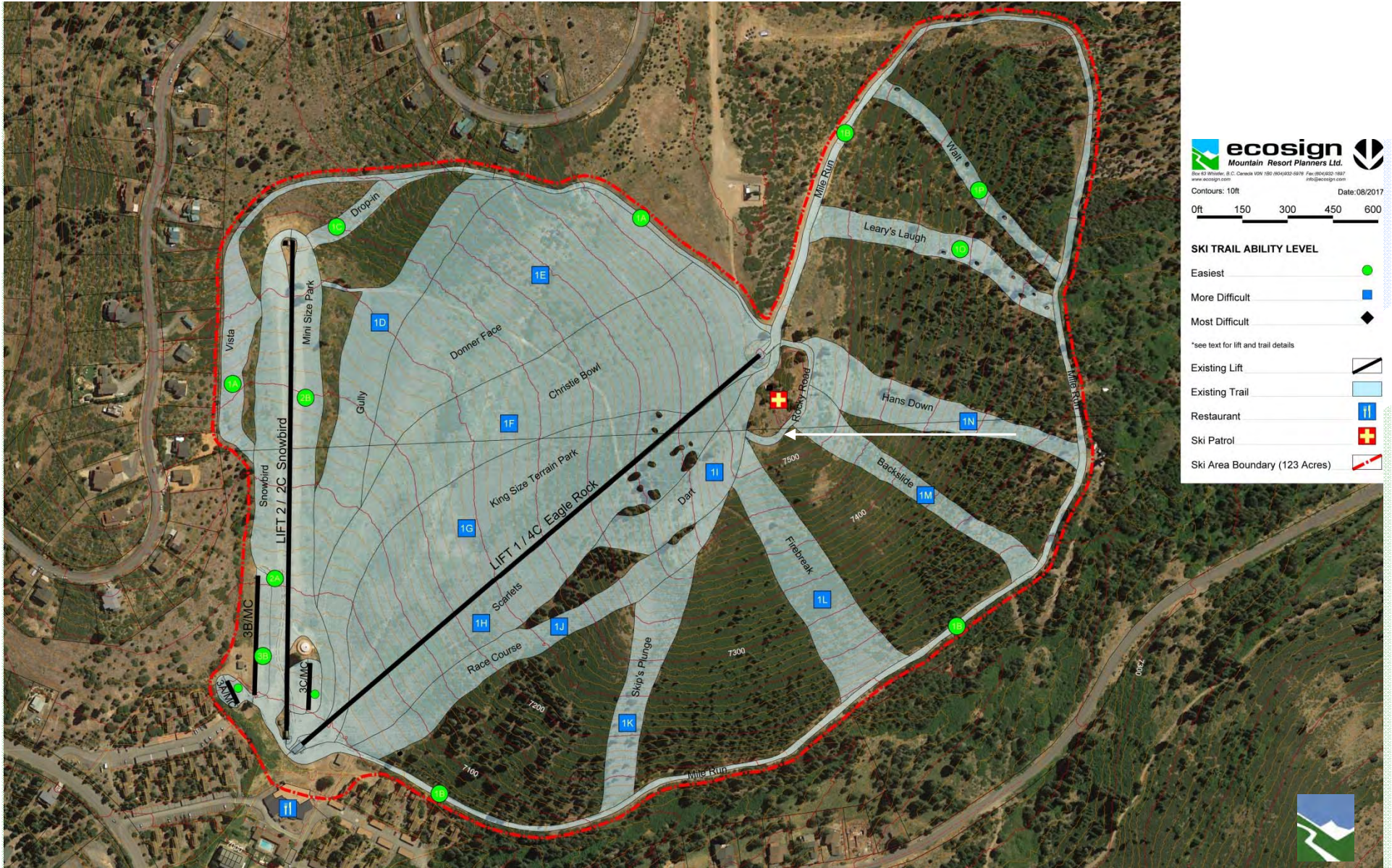
# MOUNTAIN TERRAIN CAPACITY ANALYSIS



Terrain Pod	A	B	C	D	E	F	G	H	TOTAL
Skill Class	1	2	4	3	4	2	2	1	
Total Area Ac.	13.9	6.4	12.3	36.8	30.0	17.7	15.5	15.2	147.8
% Ski Terrain Developable	90%	90%	90%	75%	30%	30%	30%	30%	
Available Ski Terrain	12.5	5.8	11.1	27.6	8.8	5.3	4.7	4.6	80.4
<b>Total Skiers</b>	<b>380</b>	<b>170</b>	<b>270</b>	<b>660</b>	<b>210</b>	<b>160</b>	<b>140</b>	<b>140</b>	<b>2,130</b>



# EXISTING MOUNTAIN FACILITIES



**ecosign**  
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www.ecosign.com info@ecosign.com

Contours: 10ft Date: 08/2017

0ft 150 300 450 600

**SKI TRAIL ABILITY LEVEL**

- Easiest ●
- More Difficult ■
- Most Difficult ◆

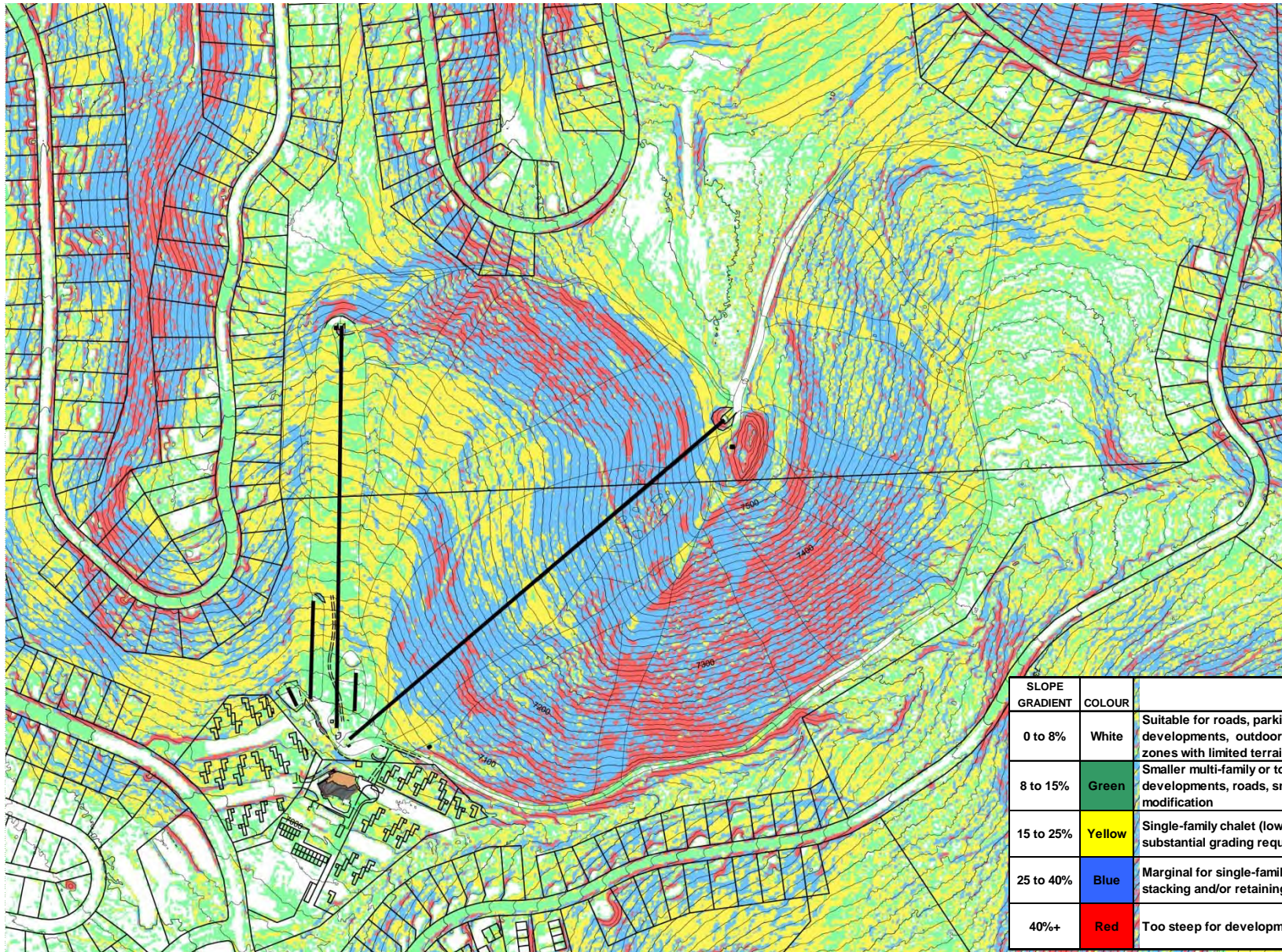
\*see text for lift and trail details

- Existing Lift
- Existing Trail
- Restaurant
- Ski Patrol
- Ski Area Boundary (123 Acres)





# RESORT BASE AREA SLOPE AND DESIGN ANALYSIS



Contours: 10ft Date: 08/2017  
0ft 200 400 600 800

## BASE SLOPE GRADIENT

0-8%	
8-15%	
15-25%	
25-40%	
40% +	
Existing Lift	

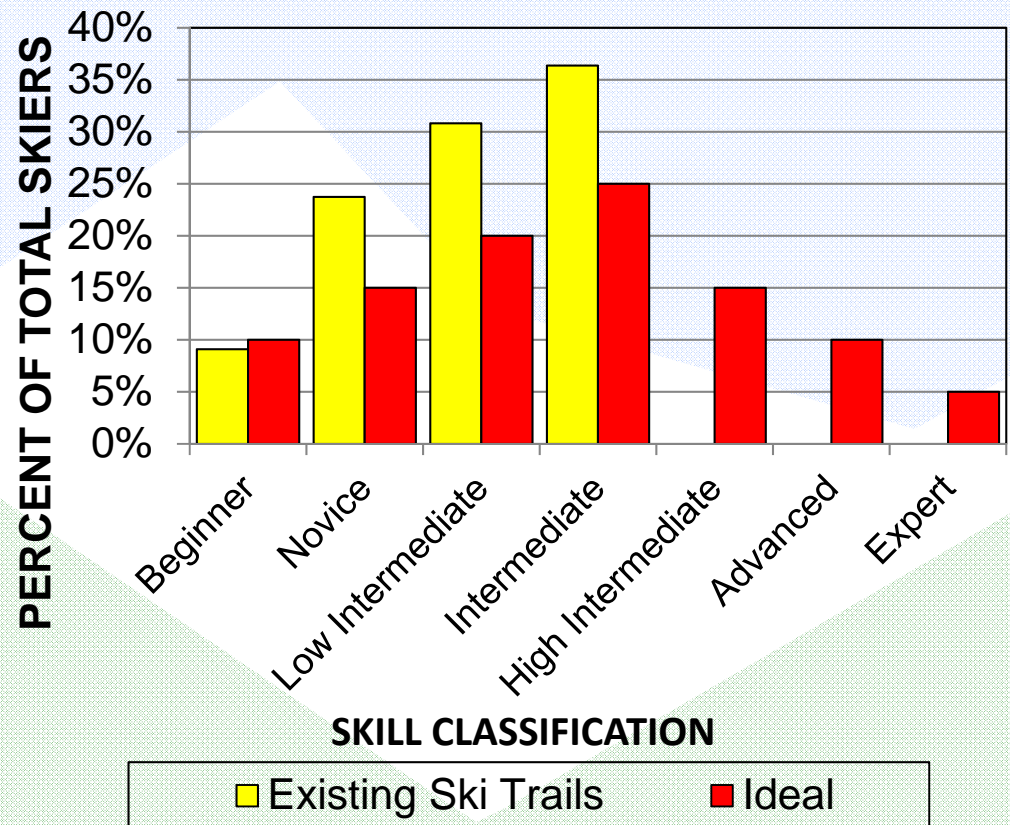
SLOPE GRADIENT	COLOUR	DEVELOPMENT SUITABILITY
0 to 8%	White	Suitable for roads, parking, high density village style developments, outdoor and indoor recreation and snow play zones with limited terrain modification
8 to 15%	Green	Smaller multi-family or townhouse (medium density) developments, roads,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

## EXISTING MOUNTAIN FACILITIES



### Ski Terrain

- ❖ Ski Terrain- 123 acre ski area boundary, 26 ski runs, 6.0 miles long, 76 acres of groomable terrain which comfortably supports **1,980** skiers at one time.
- ❖ Skier skill class weighted to lower ability levels- no high intermediate, advanced, or expert ski terrain.
- ❖ Ample Novice terrain, however access from existing base area is poor as guests must ski out and around “Mile One” for each lap



# MOUNTAIN ANALYSIS CONCLUSIONS

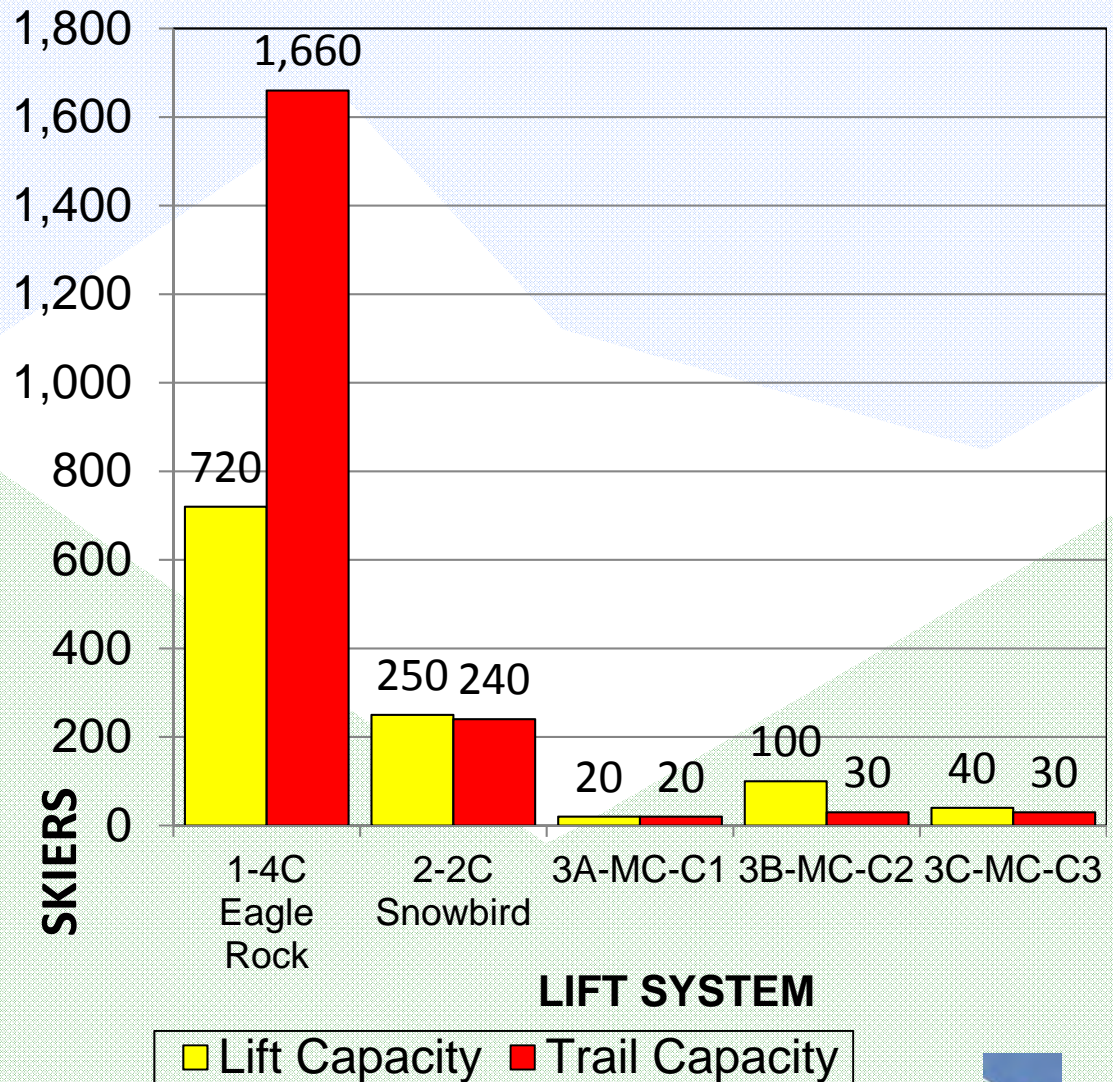


## Existing Facilities

- ❖ 2 chairlifts, 3 moving carpets-  
Snowbird Chairlift 46 years old
- ❖ Combined Lift Capacity  
calculated at **1,130** skiers at one  
time

## Lift / ski trail capacity balance

- ❖ Eaglerock - 720 skiers on lifts  
vs 1,660 skiers per day on  
terrain
- ❖ Snowbird - 250 skiers on lifts vs  
240 skiers per day on terrain



## EXISTING MOUNTAIN FACILITIES – GENERAL OBSERVATIONS



- ❖ Both the existing chairlifts are operated at 75% of their rated capacities to avoid misloads/ stoppages. For Eaglerock, this means that the uphill lift capacity is only 43% of the ski trail capacity. For Snowbird, due to the limited amount of terrain, the uphill lift capacity and downhill ski trail capacity is balanced.
- ❖ The “Mile RUn” ski trail is not a good experience for first time users of Eaglerock chair as it contains 3 long sections of trail which are well below the minimum 8% slope needed for downhill sliding and boarding. Currently, there is a need to improve the “easiest way down” from Eaglerock Chair.
- ❖ While somewhat constrained in space and farther from the daylodge than ideal, the three moving carpets function well and provide a graduated learning experience



## CURRENT / FUTURE VISITOR BREAKDOWN



Percentage of Visitors to Tahoe Donner Ski Area	Current Skier Origin	# of Skiers during Current Peak (1,700 Skiers)	5yr Target Skier Origin	# of Skiers during Theoretical Peak (1,900)
Public Use (arrive by car for the day)	68%	1,156	71%	1,349
Members in HOA	22%	374	20%	380
Guests of Members	10%	170	9%	171
<b>TOTAL</b>	<b>100%</b>	<b>1,700</b>	<b>100%</b>	<b>1,900</b>

- ❖ Growth coming primarily from an Increase in Public Use

# 3. INVENTORY



## PROCESS



- ❖ **INVENTORY** - Understand and document all spaces used as “Skier Service” space
- ❖ **ANALYSIS** – Create new TD Planning Standard (derived from Regional, Local Competition, USFS Standards)
- ❖ **ANALYSIS** - Comparative Analysis between existing situation and new TD Planning Standard to discover Excess/Deficit in Skier Service Space
- ❖ **SCENARIO’s** – Comparative Analysis between Existing Skier Service Space and different Skier Demand Periods (Cost Impact)



# EXISTING SKIER SERVICE INVENTORY



Guest Service Function	Existing Skier Service Floorspace (Main Daylodge) (ft <sup>2</sup> )	Existing Skier Service Floorspace (Yurt) (ft <sup>2</sup> )	Total Existing Skier Service Space (ft <sup>2</sup> )
<b>Staging Facilities</b>			
Ticket Sales	304		<b>304</b>
Public Lockers	200		<b>200</b>
Equipment Rental & Repair	2,065		<b>2,065</b>
Guest Services / Ski School/ Adaptive	260	170	<b>430</b>
Children's Programs/Day Care	585	170	<b>755</b>
<b>Staging Subtotal</b>	<b>3,414</b>	<b>340</b>	<b>3,754</b>
<b>Commercial Facilities</b>			
Food & Beverage Seating	2,180	350	<b>2,530</b>
Kitchen & Scramble, Bar	800		<b>800</b>
Bar/Lounge	-		<b>-</b>
Restrooms	930		<b>930</b>
Accessory Retail	160		<b>160</b>
<b>Commercial Subtotal</b>	<b>4,070</b>	<b>350</b>	<b>4,420</b>
<b>Operational Facilities</b>			
Administration	917		<b>917</b>
Employee Facilities	1,046		<b>1,046</b>
First Aid & Mountain Patrol	486		<b>486</b>
<b>Operational Subtotal</b>	<b>2,449</b>	<b>-</b>	<b>2,449</b>
<b>TOTAL FUNCTIONAL SPACE</b>	<b>9,933</b>	<b>690</b>	<b>10,623</b>
Storage	2,915		<b>2,915</b>
Mechanical, Circulation/Walls/Waste*	2,280	20	<b>2,300</b>
<b>GROSS BUILDING AREA</b>	<b>15,128</b>	<b>710</b>	<b>15,838</b>





# EXISTING SKIER SPACE USE PLANNING STANDARDS FOR TAHOE DONNER



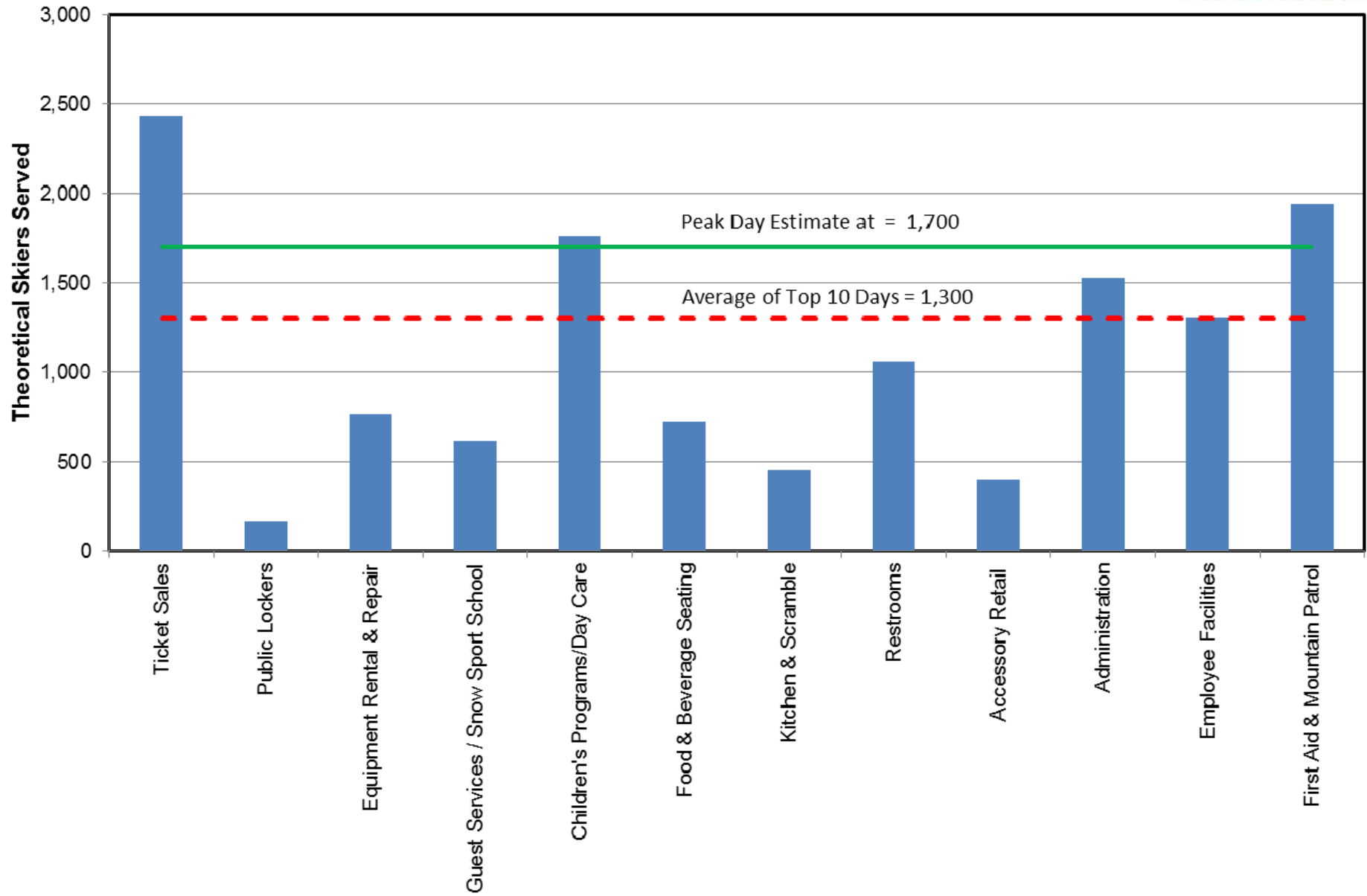
Guest Service Function	Day Ski Area ft <sup>2</sup> /skier	Average ft <sup>2</sup> /skier	Resort Area ft <sup>2</sup> /skier	Ecosign Recomm. area / Skier for Tahoe Donner (DRAFT) ft <sup>2</sup> /skier	NOTES
<b>Staging Facilities</b>	-	-	-	-	
Ticket Sales	0.10	0.13	0.15	0.13	Use average ticket sales
Public Lockers	0.70	0.95	1.20	1.20	Used higher end due to beginners renting. Do you want extra for Homeowners?
Equipment Rental & Repair	0.80	0.90	1.00	2.70	3 X the average standard based on regional analysis and competition
Guest Services / Ski School/ Adaptive	0.25	0.38	0.50	0.70	2 X the average standard based on ski school utilization / regional analysis and competition
Children's Programs/Day Care	0.35	0.43	0.50	0.43	Use average space
<b>Staging Subtotal</b>	<b>2.20</b>	<b>2.78</b>	<b>3.35</b>	<b>5.16</b>	
<b>Commercial Facilities</b>	-	-	-	-	
Food & Beverage Seating	3.25	3.50	4.00	3.50	Use average as slight increase due to watchers using seating
Kitchen & Scramble, Bar	1.75	2.50	3.00	1.75	Use kitchen as half seating space
Bar/Lounge	0.30	0.40	0.50	0.30	Use Day Ski Area standard
Restrooms	0.75	0.88	1.00	0.88	Use average standard
Accessory Retail	0.40	0.57	0.75	0.40	Use Day Ski Area standard
<b>Commercial Subtotal</b>	<b>6.45</b>	<b>7.85</b>	<b>9.25</b>	<b>6.83</b>	
<b>Operational Facilities</b>	-	-	-	-	
Administration	0.60	0.80	1.00	0.60	Use Day Ski Area standard
Employee Facilities	0.30	0.40	0.50	0.80	2 X the average standard based on ski school utilization / regional analysis and competition
First Aid & Mountain Patrol	0.25	0.30	0.35	0.25	Use Day Ski Area standard
<b>Operational Subtotal</b>	<b>1.15</b>	<b>1.50</b>	<b>1.85</b>	<b>1.65</b>	
<b>TOTAL FUNCTIONAL SPACE</b>	<b>9.80</b>	<b>12.13</b>	<b>14.45</b>	<b>13.64</b>	
Storage	0.98	1.21	1.45	1.36	Calculated as 10% of Total Functional Space
Mechanical, Circulation/Walls/Waste*	2.45	3.03	3.61	3.41	Calculated as 25% of Total Functional Space
<b>GROSS FLOOR AREA</b>	<b>13.23</b>	<b>16.37</b>	<b>19.51</b>	<b>18.40</b>	
<b>Food Service Seating</b>	-	-	-	-	
Turns/Indoor Seat (Cafeteria)	4.00	3.50	3.00	3.00	use low turnover (indicated guests stay longer in seating area)
Turns/Indoor Seat (Table Service)	3.00	2.50	2.00	2.50	use average (indicated guests stay longer in seating area)
Indoor Seats/ Skier	0.25	0.29	0.33	0.25	use average
Outdoor Seats/Skier	0.13	0.15	0.17	0.15	use average
Square Feet/ Indoor Food Service Seat	12.00	12.00	12.00	12.00	use standard

# TAHOE DONNER SPACE USE ANALYSIS BASED ON AVERAGE TOP 10 DAYS = 1,300



Guest Service Function	Total Existing Skier Service Space (ft <sup>2</sup> )	Existing Skier Service Space per Skier ft <sup>2</sup> /skier	Ecosign Recomm. area / Skier for Tahoe Donner (DRAFT) ft <sup>2</sup> /skier	Recomm. Floorspace (ft <sup>2</sup> )	Percent of Recomm. Floorspace	Theoretical Skiers Served
<b>Staging Facilities</b>						
Ticket Sales	304	0.23	0.13	163	187%	2,432
Public Lockers	200	0.15	1.20	1,560	13%	167
Equipment Rental & Repair	2,065	1.59	2.70	3,510	59%	765
Guest Services / Ski School/ Adaptive	430	0.33	0.70	910	47%	614
Children's Programs/Day Care	755	0.58	0.43	559	135%	1,756
<b>Staging Subtotal</b>	<b>3,754</b>	<b>2.89</b>	<b>5.16</b>	<b>6,702</b>	<b>56%</b>	<b>728</b>
<b>Commercial Facilities</b>						
Food & Beverage Seating	2,530	1.95	3.50	4,550	56%	723
Kitchen & Scramble, Bar	800	0.62	1.75	2,275	35%	457
Bar/Lounge	-	-	0.30	390	0%	-
Restrooms	930	0.72	0.88	1,144	81%	1,057
Accessory Retail	160	0.12	0.40	520	31%	400
<b>Commercial Subtotal</b>	<b>4,420</b>	<b>3.40</b>	<b>6.83</b>	<b>8,879</b>	<b>50%</b>	<b>647</b>
<b>Operational Facilities</b>						
Administration	917	0.71	0.60	780	118%	1,528
Employee Facilities	1,046	0.80	0.80	1,040	101%	1,308
First Aid & Mountain Patrol	486	0.37	0.25	325	150%	1,944
<b>Operational Subtotal</b>	<b>2,449</b>	<b>1.88</b>	<b>1.65</b>	<b>2,145</b>	<b>114%</b>	<b>1,484</b>
<b>TOTAL FUNCTIONAL SPACE</b>	<b>10,623</b>	<b>8.17</b>	<b>13.64</b>	<b>17,726</b>	<b>60%</b>	<b>779</b>
Storage	2,915	2.24	1.36	1,768	165%	2,143
Mechanical, Circulation/Walls/Waste*	2,300	1.77	3.41	4,431	52%	675
<b>GROSS FLOOR AREA</b>	<b>15,838</b>	<b>12.18</b>	<b>18.40</b>	<b>23,925</b>	<b>66%</b>	<b>861</b>

# EXISTING SKIER SERVICE - SPACE USE ANALYSIS



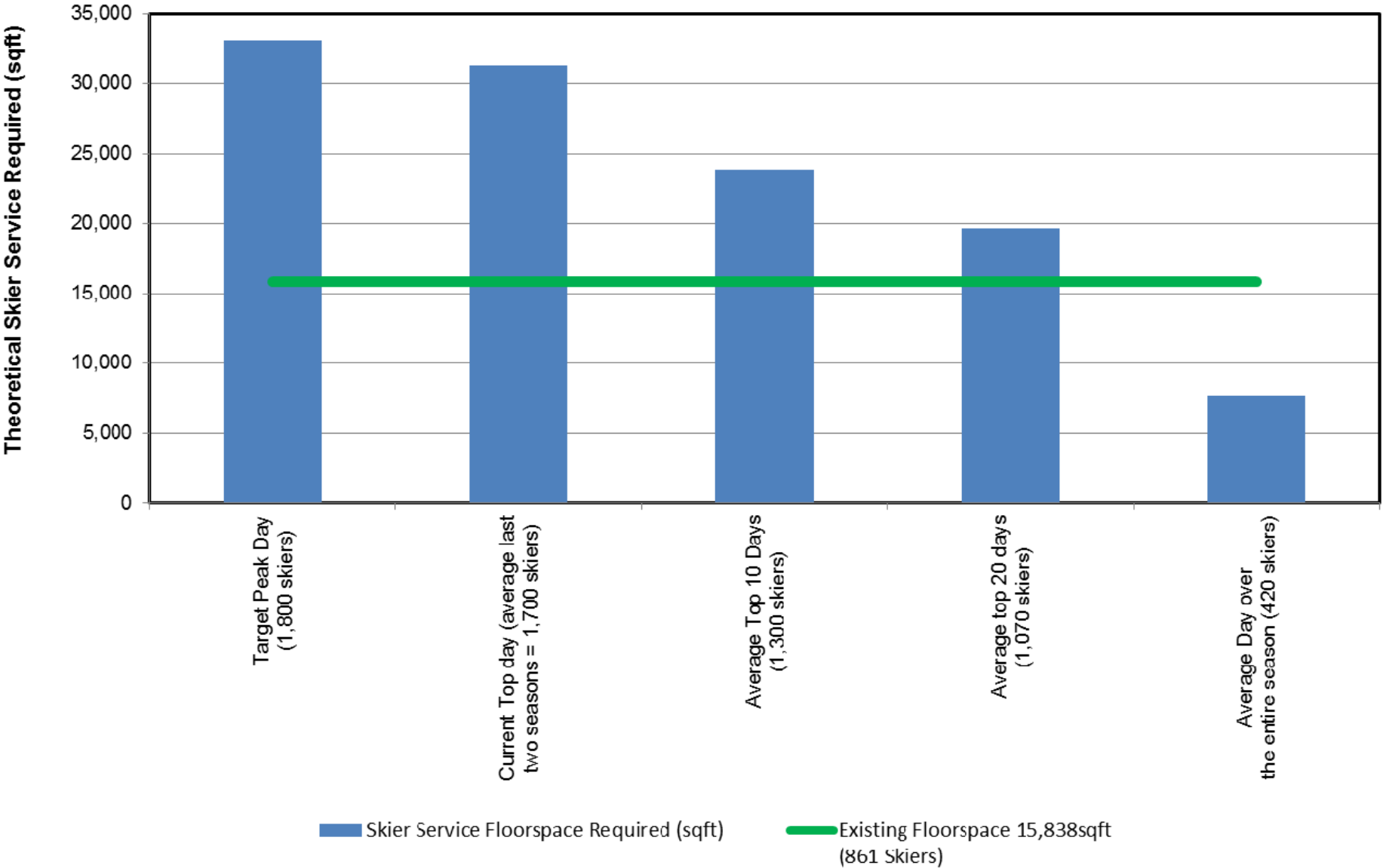
## EXISTING FOOD SERVICE SEATING ANALYSIS



Building/Restaurant	Indoor Seats			Outdoor Seats			Total Seats	
	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Guests Served
Daylodge	150	3.0	450	220	3.0	660	370	1,110
Children's Yurt Buidling	29	3.0	87	30	3.0	90	59	177
<b>TOTAL</b>	<b>179</b>		<b>537</b>	<b>250</b>		<b>750</b>	<b>429</b>	<b>1,287</b>

- ❖ Existing seating has inefficient layout of space, current number of indoor seats at 179. (incl. Daylodge and Yurt *estimated*.)
- ❖ During good weather there should be enough seating to satisfy 1,287 guests (with 3.0 turns per seat) both inside and outside.
- ❖ Current ratio is that indoor seats represent 42% of total seats (indoor & outdoor)
- ❖ Lunch is based from 11:30 to 2:00pm (At 3 turns this equates to a 50 minute lunch)

# POTENTIAL SKIER TARGET VS SKIER SERVICE SPACE



# PRELIMINARY COST ESTIMATE



Peak Day Demand	Design Day (75% of Peak)	Skier Service Floorspace Required (sqft)	Estimated Cost (incl. Hard & Soft) @\$600USD/sqft	Notes:
2,000 skiers	1,500	27,600	\$ 16,560,000	Theoretical SCC for Future Ski Area Development *yet to be finalized*
1,700 skiers	1,275	23,500	\$ 14,100,000	Peak day average of the last 2 seasons (design day +/- average of top 10 days 1,300)
1,400 skiers	1,050	19,300	\$ 11,580,000	Peak day if designing to the average of the the top 20 days = 1,070 (2009/2013)
1,150 skiers	863	15,900	\$ 9,540,000	To match the existing floorspace area.

- ❖ Based on \$600USD / sq ft. (as directed by client)
- ❖ Not including underground parking (if required, potential for 20+ stalls)
- ❖ GFA based on 18.40 sq ft./skier as per assumptions

# EXISTING BASE AREA SITE PLAN



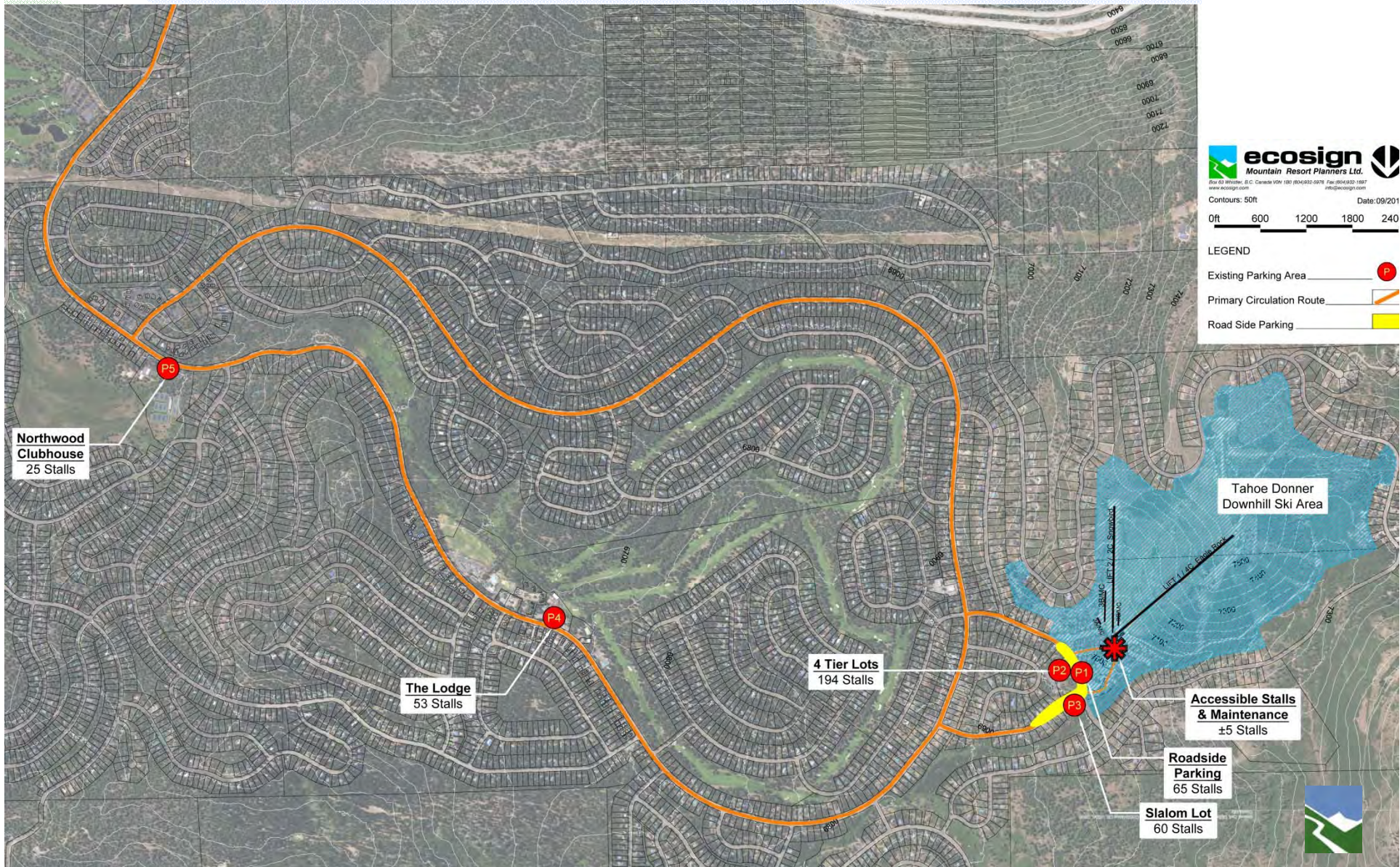
Contours: 2ft  
0ft 25 50 75 100  
Date: 08/2017

# EXISTING PARKING





# EXISTING PARKING CONCEPT



## EXISTING PARKING



Lot Number	Lot Name	Number of Cars	% Total Within/ Outside SWD	AVERAGE Number of Visitors 2.6 pp/car	PEAK Number of Visitors 3.0 pp/car	PEAK Number of Skiers at 80% Participation
<b>Tahoe Donner</b>						
Within SWD						
P1	Roadside - Snowpeak Way & Slalom Way	65		169	195	156
P2	4 tier lots (60% take shuttle / 40% walk)	194		504	582	466
P3	Slalom lot	60		156	180	144
<b>Subtotal Within SWD</b>		<b>319</b>	<b>80%</b>	<b>829</b>	<b>957</b>	<b>766</b>
Outside SWD						
P4	The Lodge (Golf Course Parking, half used for XC)	53		137	158	126
P5	Northwoods Clubhouse Parking	25		65	75	60
<b>Subtotal Outside SWD</b>		<b>78</b>	<b>20%</b>	<b>202</b>	<b>233</b>	<b>186</b>
<b>Total Tahoe Donner</b>		<b>397</b>	<b>100%</b>	<b>1,031</b>	<b>1,190</b>	<b>952</b>

- ❖ Currently allowance for employee parking is tentative in condo development, may be removed. How many employee stalls required?

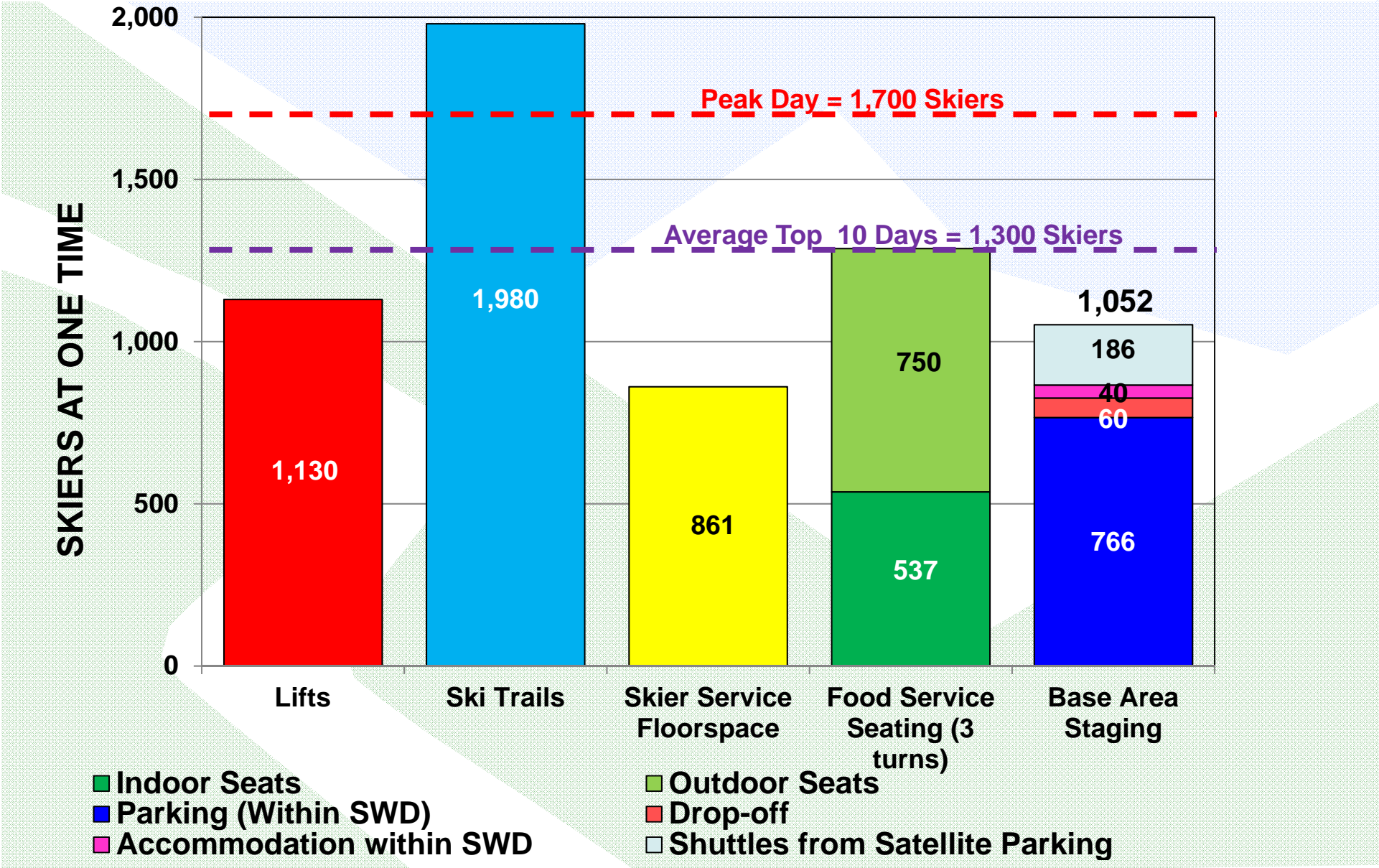
# EXISTING STAGING ANALYSIS



	During Peak Times (1,700 skiers)	
	Number of Visitors	Number of Skiers
<b>Tahoe Donner Within SWD</b>		
From Pillows (Walking)	50	40
From Parking (Walking)	957	766
Charter Bus, Private Drop Off from surrounding homes (8%)	77	61
<b>Subtotal Within SWD</b>	<b>1,084</b>	<b>867</b>
<b>Outside SWD</b>		
From Parking (Arrive by Shuttle)	233	186
<b>Total Tahoe Donner</b>	<b>1,317</b>	<b>1,053</b>



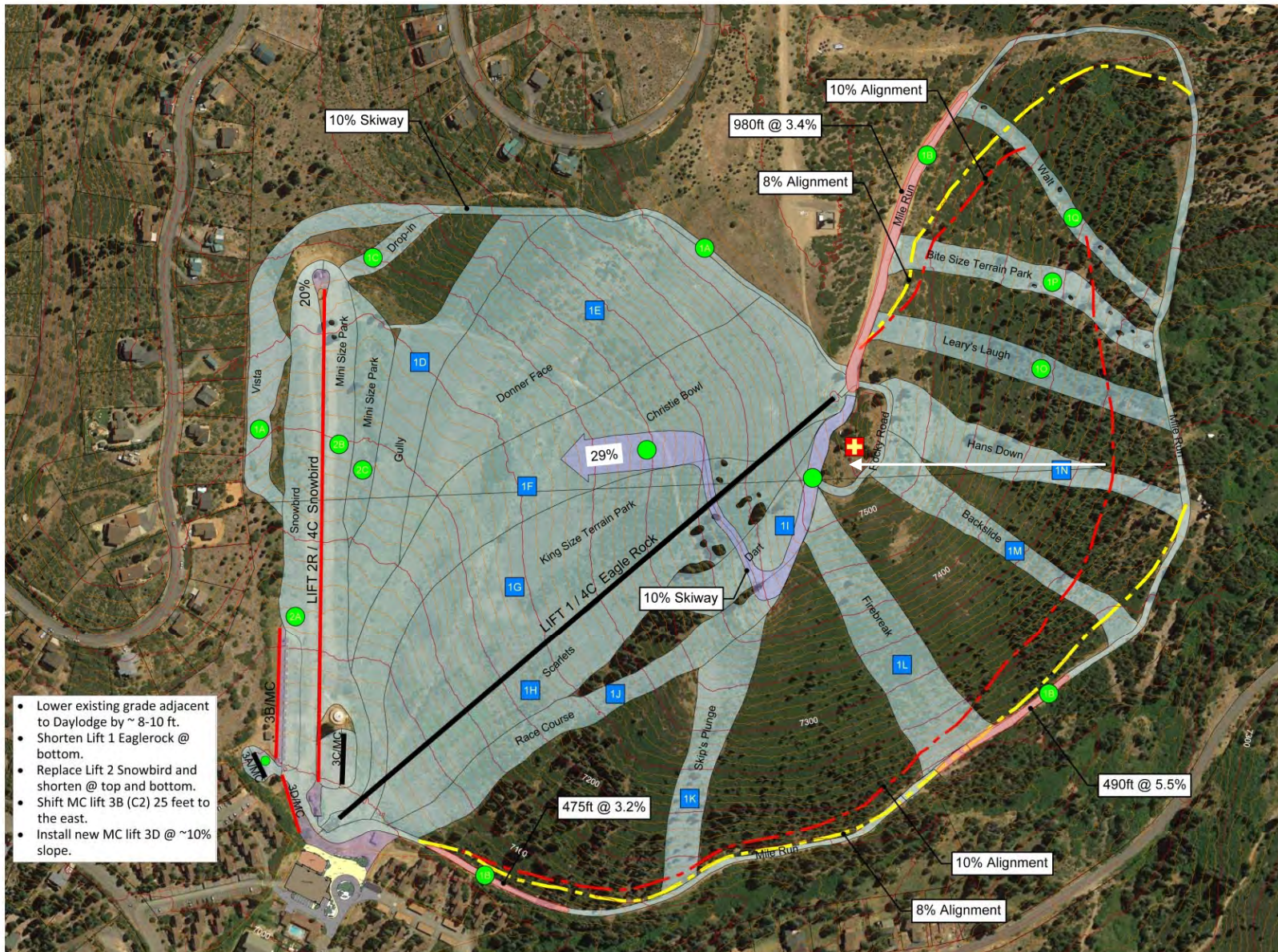
# EXISTING FACILITIES BALANCE



## 5. MOUNTAIN CONCEPTS A, B, C & D



# MOUNTAIN CONCEPT A & B



- Lower existing grade adjacent to Daylodge by ~ 8-10 ft.
- Shorten Lift 1 Eaglerock @ bottom.
- Replace Lift 2 Snowbird and shorten @ top and bottom.
- Shift MC lift 3B (C2) 25 feet to the east.
- Install new MC lift 3D @ ~10% slope.



Contours: 10ft Date: 09/2017  
 0ft 150 300 450 600

### SKI TRAIL ABILITY LEVEL

- Easiest ●
- More Difficult ■
- Most Difficult ◆

- \*see text for lift and trail details
- Existing Lift
  - Lift to be Removed
  - Proposed Lift
  - Existing Trail
  - Proposed Trail
  - 8% Skiway
  - 10% Skiway
  - Areas too Flat for Downhill Skiing and Snowboarding
  - Restaurant
  - Ski Patrol



## MOUNTAIN CONCEPT A & B - SUMMARY



- ❖ Mountain Concept A/B (to match base area concepts) provide a Buildout SCC of 1700 skiers at one time to match existing business levels. Eaglerock is upgraded (replaced if necessary) to provide 2400 pph (up from current 1970 pph rated / 1478 operated)
- ❖ Snowbird is replaced by a 4 passenger fixed-grip lift with 1200 pph capacity, the lift is shortened top and bottom to improve skier circulation.
- ❖ A Novice route down Christie Bowl is illustrated to provide a high quality “novice” ski route down Eaglerock.
- ❖ Mile Run is improved- an 8% alignment (minimum) is illustrated, as well as an “ideal” 10% alignment for reference

**Pros-** Minimal changes from existing, lowest cost.

**Cons-** ski back route for all west facing Eaglerock ski trails is very long & although improved, uphill lift capacity does not balance with downhill ski trail capacity.



# MOUNTAIN CONCEPT C



Contours: 10ft Date: 09/2017

0ft 200 400 600 800

### SKI TRAIL ABILITY LEVEL

Easiest ●

More Difficult ■

Most Difficult ◆

\*see text for lift and trail details

Existing Lift

Lift to be Removed

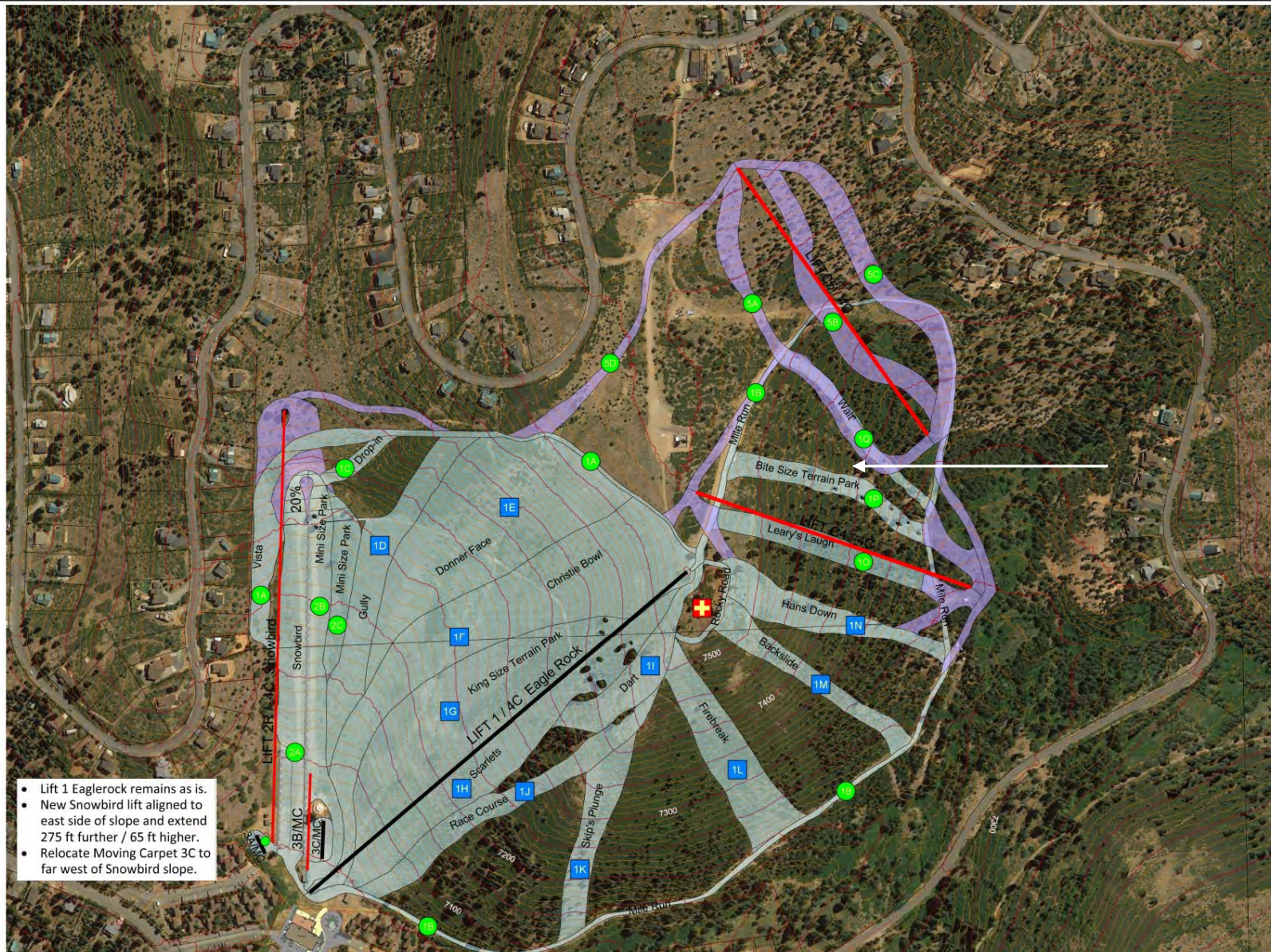
Proposed Lift

Existing Trail

Proposed Trail

Restaurant

Ski Patrol



- Lift 1 Eaglerock remains as is.
- New Snowbird lift aligned to east side of slope and extend 275 ft further / 65 ft higher.
- Relocate Moving Carpet 3C to far west of Snowbird slope.





## MOUNTAIN CONCEPT C - SUMMARY



- ❖ Mountain Concept C provides a Buildout SCC of ~1900 to 2000 skiers at one time to maximize the natural terrain. Eaglerock is upgraded to provide 2400 pph and two new 4 passenger fixed-grip lifts are envisioned.
- ❖ Snowbird is replaced and realigned and extended.
- ❖ Moving Carpet 3B is aligned to west side of snowbird.
- ❖ Lift C4 is aligned skiers left down Leary's laugh. The top terminal allows for an 8% skiway above the upper Mile Run flat section.
- ❖ Lift C5 extends high enough to allow skiback 5D to connect to 1A. This lift services novice (class 2) ski terrain

**Pros-** Maximizes class 2 ski & extends Snowbird into otherwise unused terrain.

**Cons-** Snowbird steepest slope increases from 16% to 20% and is longer meaning slightly more difficult than existing. Backside and Firebreak still have a long return ski on Eaglerock.



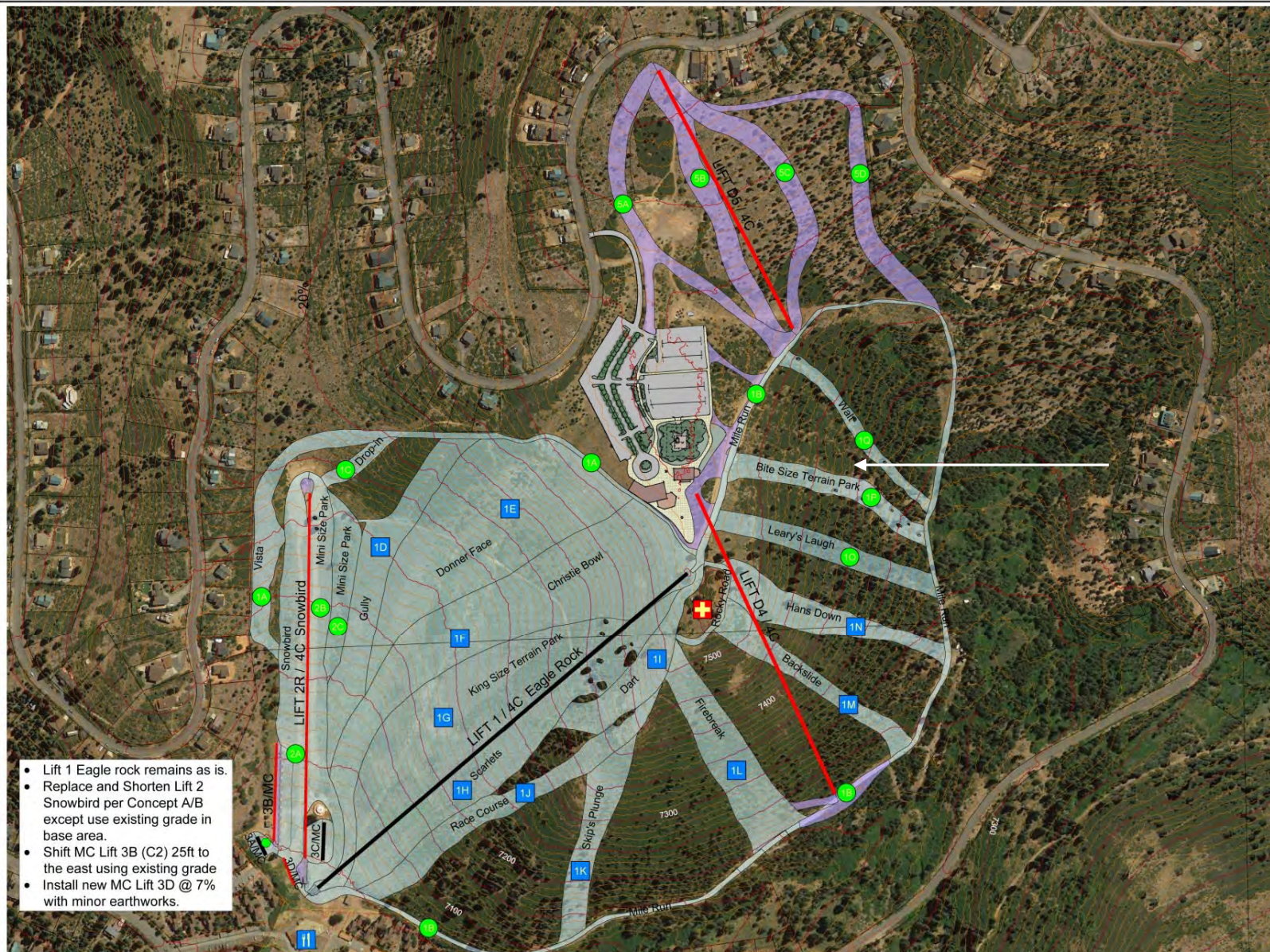
# MOUNTAIN CONCEPT D



Contours: 10ft Date: 09/2017  
 0ft 200 400 600 800

### SKI TRAIL ABILITY LEVEL

- Easiest ●
  - More Difficult ■
  - Most Difficult ◆
- \*see text for lift and trail details
- Existing Lift
  - Lift to be Removed
  - Proposed Lift
  - Existing Trail
  - Proposed Trail
  - Restaurant
  - Ski Patrol



- Lift 1 Eagle rock remains as is.
- Replace and Shorten Lift 2 Snowbird per Concept A/B except use existing grade in base area.
- Shift MC Lift 3B (C2) 25ft to the east using existing grade
- Install new MC Lift 3D @ 7% with minor earthworks.



## MOUNTAIN CONCEPT D - SUMMARY



- ❖ Mountain Concept D provides a Buildout SCC of ~1900 to 2000 skiers at one time. Eaglerock is upgraded to provide 2400 pph and two new 4 passenger fixed-grip lifts are envisioned.
- ❖ Snowbird is replaced on existing alignment per Concept A/B.
- ❖ Lift C4 is aligned to allow skiers from Backside and Firebreak to return cycle.
- ❖ Lift C5 extends to the top of the mountain adjacent to Topshop.
- ❖ Concept D considers a mountain top skier staging area.

**Pros-** Maximizes class 1 ski terrain on Lift C5 and provides additional ski-in-ski-out access to homesites.

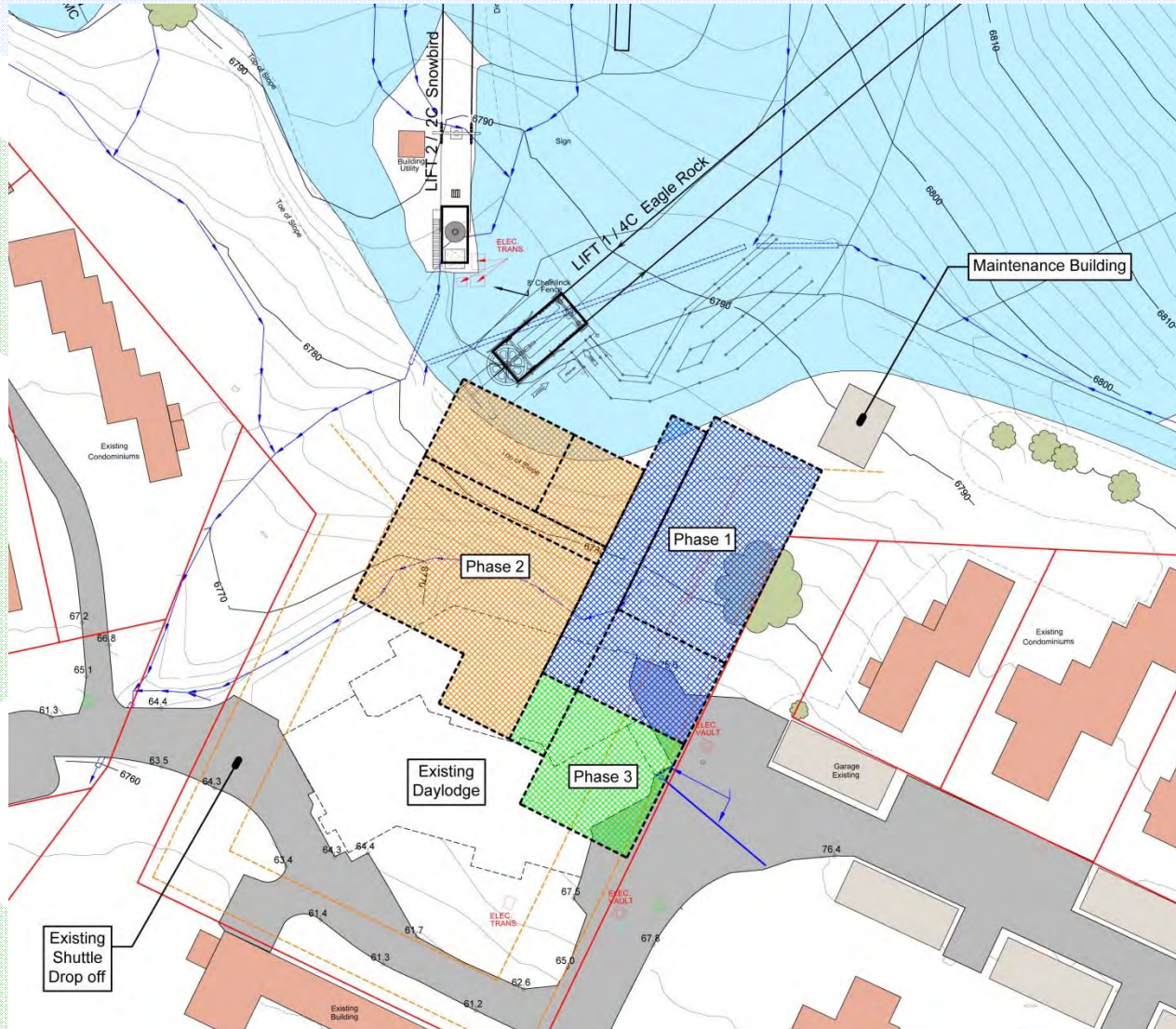
**Cons-** Requires new skier staging area to be located adjacent to new Class 1 beginner ski terrain – otherwise the terrain serviced by Lift C5 is too far from the existing base area.



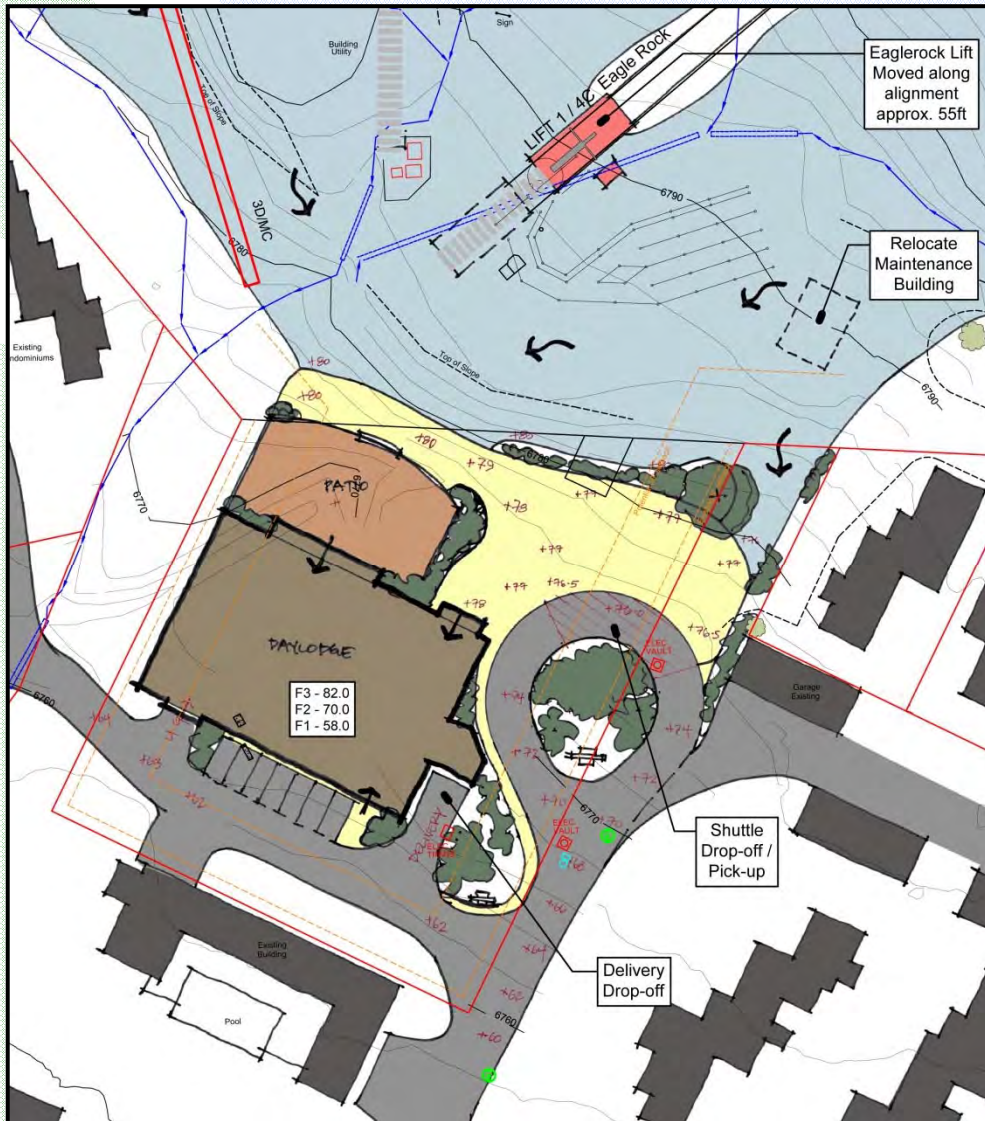
## 6. BASE AREA CONCEPTS A, B, C & D



# ORIGINAL CONCEPT



# BASE CONCEPT A – NO PHASING

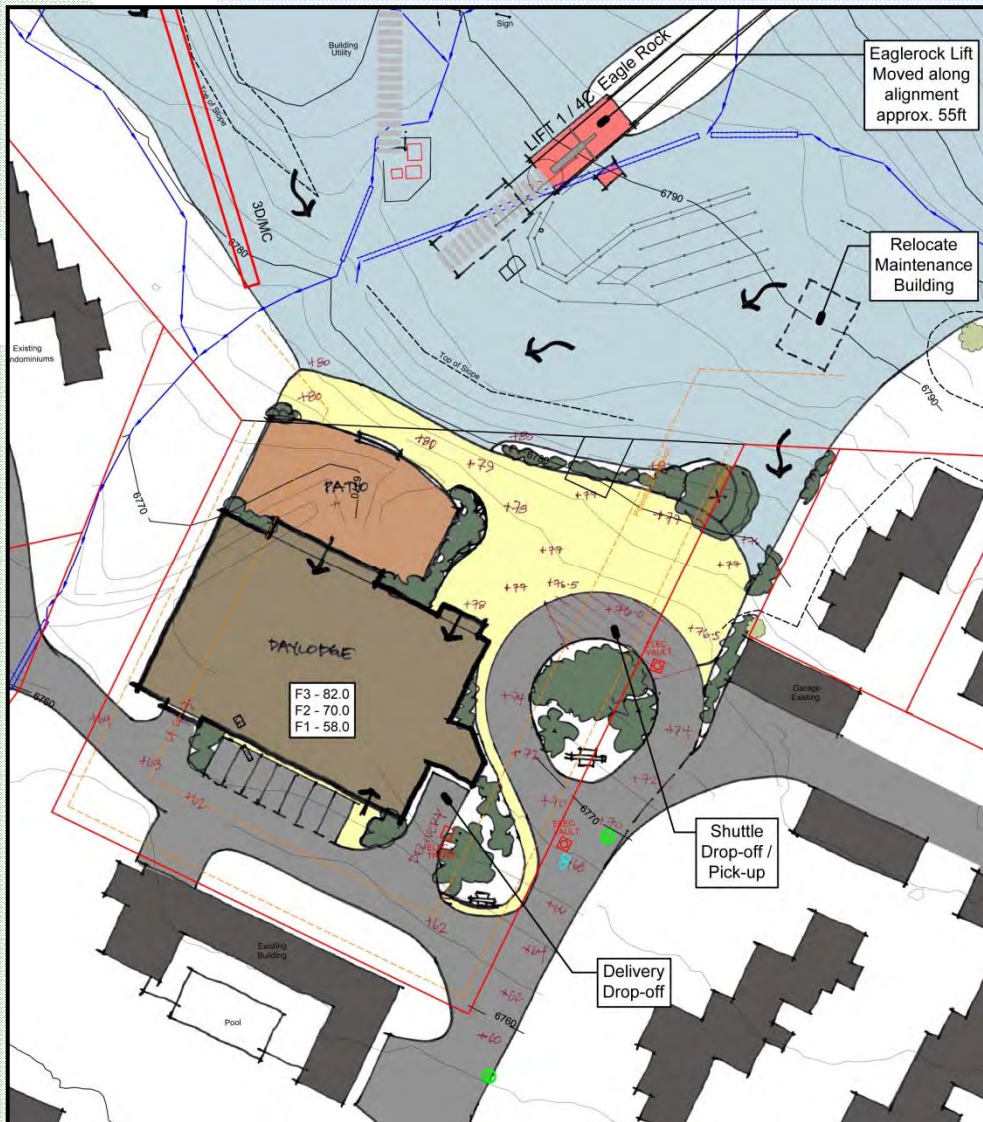


Concept A	GFA	Theoretical Skiers Served (75% of Peak)
<b>PHASE 1</b>		
TEMP ATCO Trailer for staff (14' X 40')	1,500	82
TEMP ATCO Trailer for Staging Facilities (14' X 40')	15,000	815
Demolish Existing Daylodge	-	-
Keep Yurt	754	41
<b>TOTAL PH1</b>	<b>17,254</b>	<b>938</b>
<b>PHASE 2</b>		
Keep Yurt	754	41
Build New Daylodge (over 2 summers)	25,500	1,386
<b>TOTAL PH2</b>	<b>26,254</b>	<b>1,427</b>

\*Phase 2 - ATCO Trailers (3 staff, 27 for Staging)

Daylodge Building Program - CONCEPT A			
Elevation	Level	Description	GFA
6782.0	L3	Restaurant & Patio	10,200
6770.0	L2	Daylodge General Space	10,200
6758.0	L1	Drop Off Level & UG Parking	5,100
<b>TOTAL</b>			<b>25,500</b>

## BASE CONCEPT A - SUMMARY



### PROS:

- ❖ Single development area.
- ❖ Perhaps more efficient to construct (single building)
- ❖ Lowered the lift to load at +78 improves vertical connection to drop off.
- ❖ Building is lower – can have higher floor to ceiling heights,
- ❖ 18 Stalls UG (not included in GFA) + 7 short term stalls

### CONS:

- ❖ Difficult (or impossible to phase construction)
- ❖ Will need to rely on temporary building if built over two summers – ATCO trailers. (3 for Staff, 27 for Staging)
- ❖ Recommend shifting Lift terminal up alignment

# BASE CONCEPT B - PHASE 1



Phase 1



## CONCEPTUAL PHASING:

Concept B	GFA	Theoretical Skiers Served (75% of Peak)
<b>PHASE 1</b>		
Keep existing Daylodge	15,128	822
Operate new PH1 Building	6,600	359
Modify Drop-off		
Keep Yurt	754	41
<b>TOTAL PH1</b>	<b>22,482</b>	<b>1,222</b>
<b>PHASE 2</b>		
TEMP ATCO Trailer for staff (14' X 40')	1,500	82
TEMP ATCO Trailer for Staging Facilities (14' X 40')	10,000	543
Demolish Existing Daylodge		
Operate new PH1 Building	6,600	359
<b>TOTAL PH2</b>	<b>18,100</b>	<b>983</b>
<b>PHASE 3</b>		
Keep Yurt	754	41
Operate PH1 Daylodge	6,600	359
Operate PH2 Daylodge	19,800	1,076
<b>TOTAL PH3</b>	<b>27,154</b>	<b>1,475</b>

\*Phase 2 - ATCO Trailers (3 staff, 18 for Staging)



# BASE CONCEPT B - BUILDOUT



## Daylodge Building Program - CONCEPT B

Phase	Elevation	Level	Description	GFA
P1	6782.0	L3	Restaurant & Patio	3,300
P1	6770.0	L2	Daylodge General Space	3,300
<b>TOTAL PH1</b>				<b>6,600</b>
PH2	6782.0	L3	Restaurant & Patio	8,000
PH2	6770.0	L2	Daylodge General Space	8,000
PH2	6758.0	L1	Drop Off Level & UG Parking	3,800
<b>TOTAL PH2</b>				<b>19,800</b>
<b>TOTAL BUILDING</b>				<b>26,400</b>

## BASE CONCEPT B - SUMMARY



### PROS:

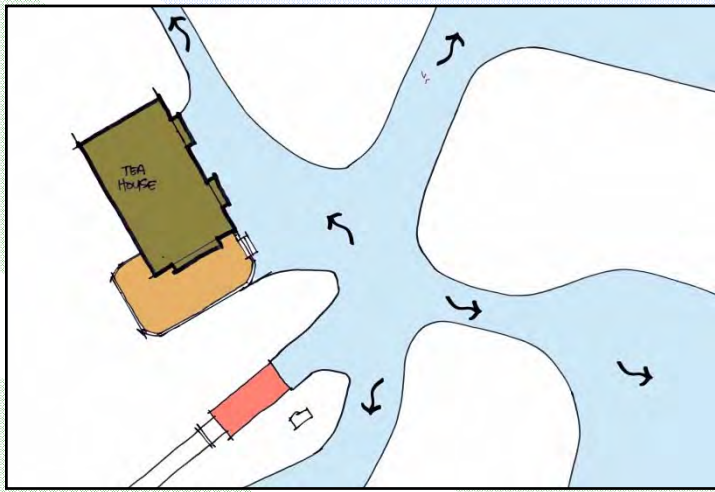
- ❖ Allows for Phasing. (PH1 6600sqft, PH2 19,800sqft)
- ❖ Lowered the lift to load at +78 improves vertical connection to drop off.
- ❖ Building is lower – can have higher floor to ceiling heights,
- ❖ 18 Stalls UG (not included in GFA) + 7 short term stalls

### CONS:

- ❖ Pushes further into the snowfront and limits available circulation. In Ecosign recommendation, this option will require the moving of the Eagle Rock Lift to 55ft up the existing alignment
- ❖ Need Temp buildings (3 staff, 18 for Staging)



# BASE CONCEPT C - PHASE 1



PHASE 1:



## CONCEPTUAL PHASING:

Concept C	GFA	Theoretical Skiers Served (75% of Peak)
<b>PHASE 1</b>		
Build New Mountain Top Tea House	4,000	217
Keep existing Daylodge (possible reconfig.)	15,128	822
Keep Yurt (possible relocate)	754	41
Construct Drop-off		
<b>TOTAL PH1</b>	<b>19,882</b>	<b>1,080</b>
<b>PHASE 2</b>		
Demolish Existing Daylodge		
Operate Yurt	754	41
Operate Mountain Top Tea House	4,000	217
TEMP ATCO Trailer for staff (14' X 40')	1,485	81
TEMP ATCO Trailer for Staging Facilities (14' X 40')	8,941	486
<b>TOTAL PH2</b>	<b>15,180</b>	<b>825</b>
<b>PHASE 3</b>		
Keep Yurt	754	41
Operate New Daylodge	21,500	1,168
Operate Mountain Top Tea House	4,000	217
<b>TOTAL PH3 (with tea house open)</b>	<b>26,254</b>	<b>1,427</b>
<b>Mid week usage (tea house closed)</b>	<b>22,254</b>	<b>1,209</b>

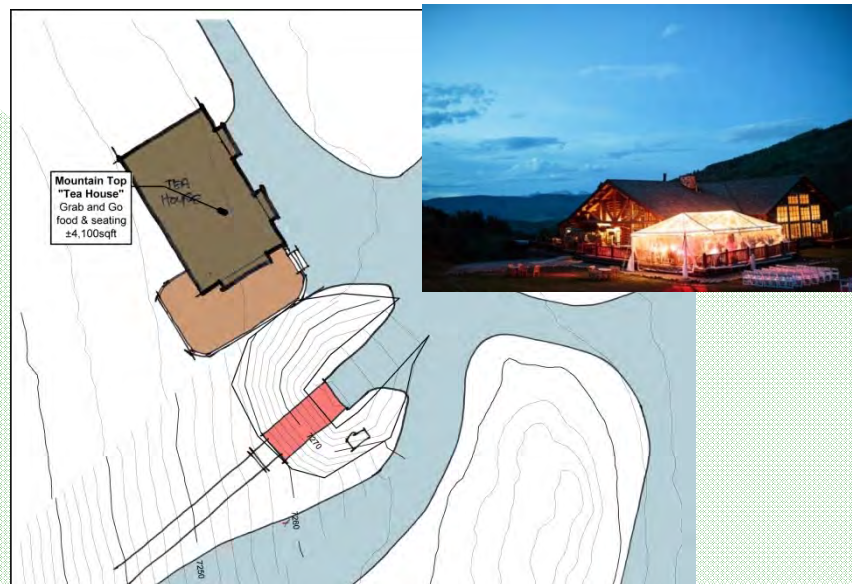
\*Phase 2 - ATCO Trailers (3 staff, 16 for Staging)

# BASE CONCEPT C - BUILDOUT



## Daylodge Building Program - CONCEPT C

Phase	Elevation	Level	Description	GFA
P1	Detailed Mapping Req.	L2	Restaurant	2,000
P1	Detailed Mapping Req.	L1	Restaurant & Patio, Patrol	2,000
<b>TOTAL PH1</b>				<b>4,000</b>
PH2	6790.0	L3	Restaurant & Patio	7,000
PH2	6776.0	L2	Daylodge General Space	10,500
PH2	6764.0	L1	Drop Off Level & UG Parking	4,000
<b>TOTAL PH2</b>				<b>21,500</b>
<b>TOTAL BUILDING</b>				<b>25,500</b>



# BASE CONCEPT C - SUMMARY



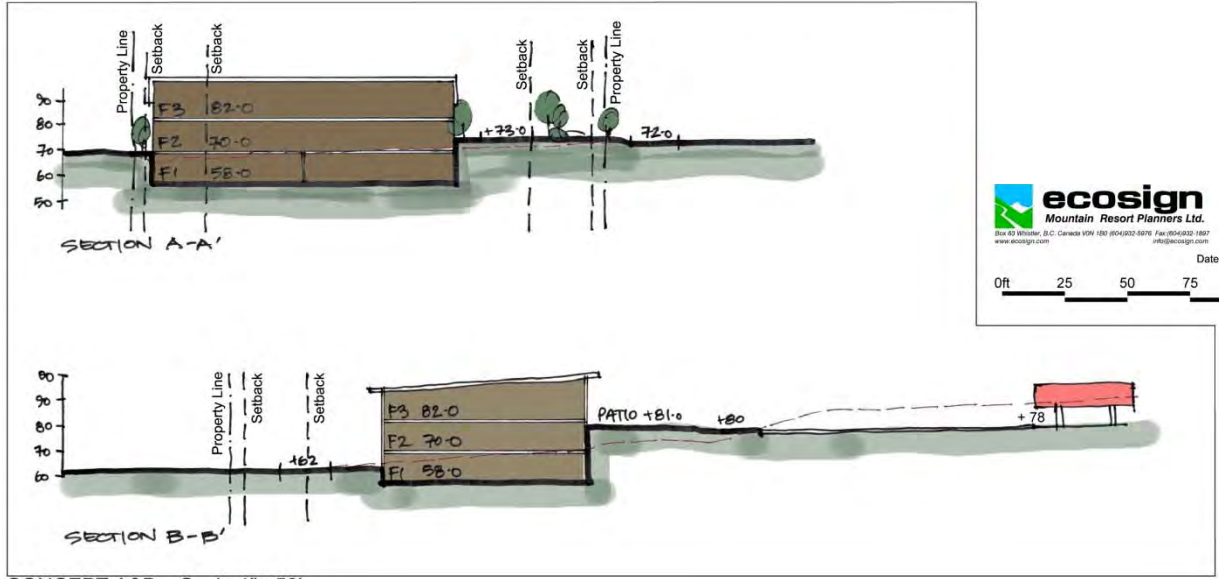
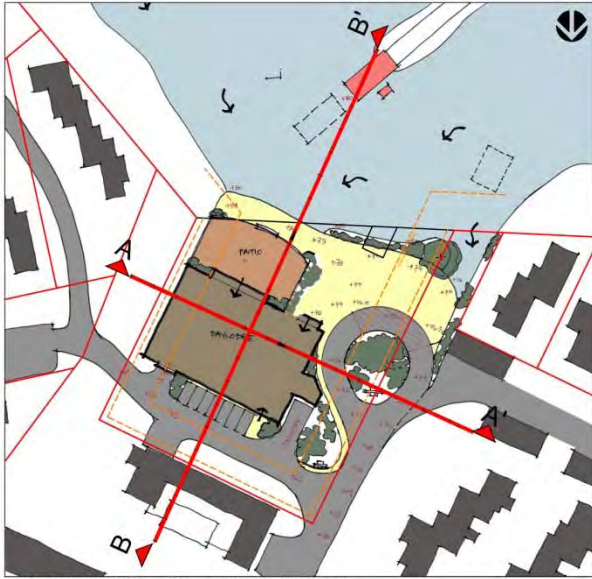
## PROS:

- ❖ Shuttle Drop-off is located much closer to the existing snowfront elevation of +88/+86. About 18 steps.
- ❖ Respected the 30' setbacks (except for the delivery area.)
- ❖ Possibility for underground parking (24 stalls) plus 10 short term/ADA outside building
- ❖ Ability to close the 4,000sqft mountain top restaurant mid-week.
- ❖ Mountain Top building could be iconic building at DSA, event space, recreation use in summer.
- ❖ Option to maintain the existing Eagle Rock terminal location

## CONS:

- ❖ Phasing requires the use of temporary structures. ATCO trailers Can be leased for 1 year. 3 for Staff and 16 for Staging based on 14' X 40'.
- ❖ Building is hitting the 35' height limit. Would improve the floor to ceiling heights if this could be raised.

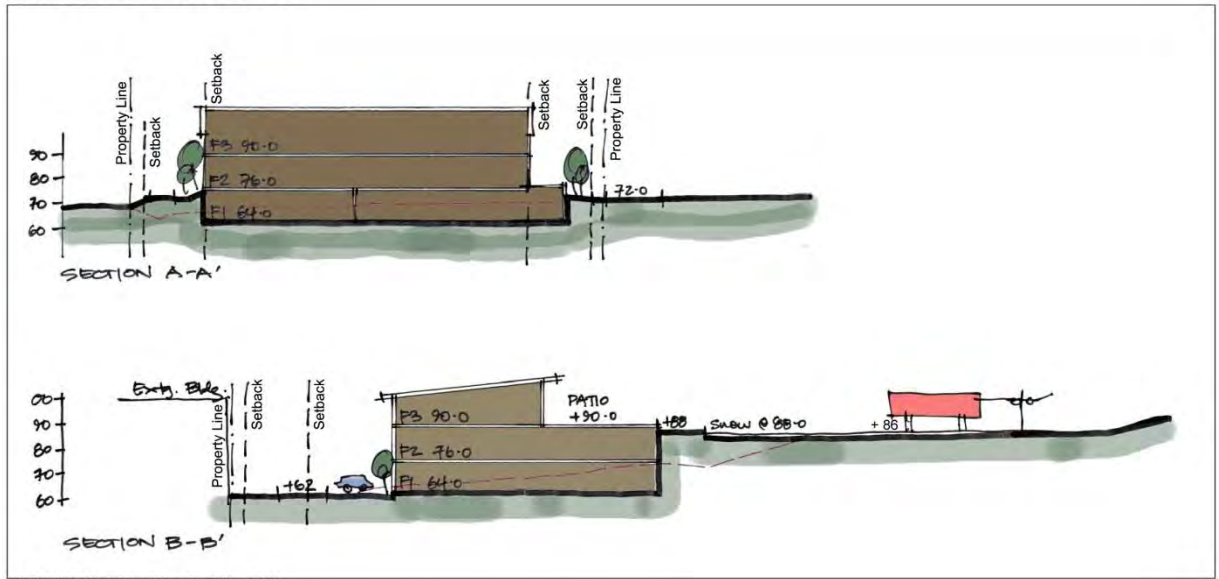
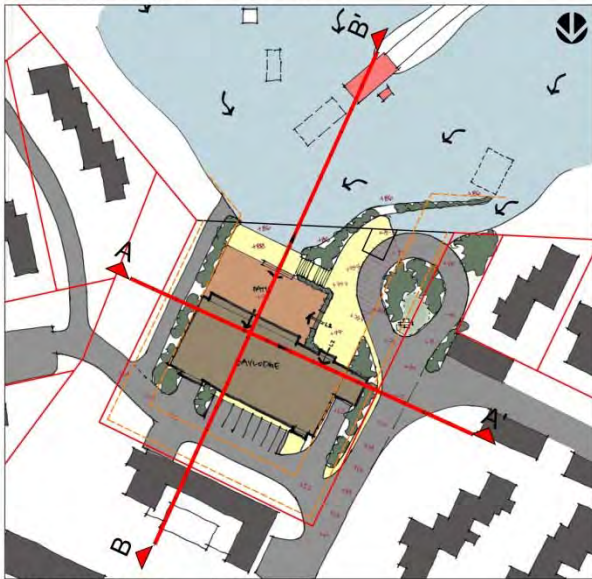
# BASE CONCEPT A, B & C - SECTIONS



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Date: 09/2017

0ft 25 50 75 100



## BASE CONCEPT A, B & C PROPOSED FOOD SERVICE SEATING ANALYSIS



### CONCEPT A&B

Building/Restaurant	Indoor Seats			Outdoor Seats			Total Seats	
	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Guests Served
New Base Daylodge	416	3.5	1,456	200	3.0	600	616	2,056

### CONCEPT C

Building/Restaurant	Indoor Seats			Outdoor Seats			Total Seats	
	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Turns per Seat	Guests Served	Number of Seats	Guests Served
New Daylodge	300	3.5	1,050	140	3.0	420	440	1,470
Mountain Top Tea House	142	3.5	497	40	3.0	120	182	617
Children's Yurt Building	-	3.0	-	-	3.5	-	-	-
<b>TOTAL</b>	<b>442</b>		<b>1,547</b>	<b>180</b>		<b>540</b>	<b>622</b>	<b>2,087</b>

- ❖ Lunch is based from 11:30 to 2:00pm (At 3.5 turns this equates to a 42 minute lunch)
- ❖ Designed to 75% of Peak Day (1,425 skiers), there are enough seats to have everyone seated inside comfortably (based on 3.5 turns per seat)
- ❖ Approximately 70% of Total seats are indoor.

## CONCPET A, B & C – OPTIONS DURING CONSTRUCTION

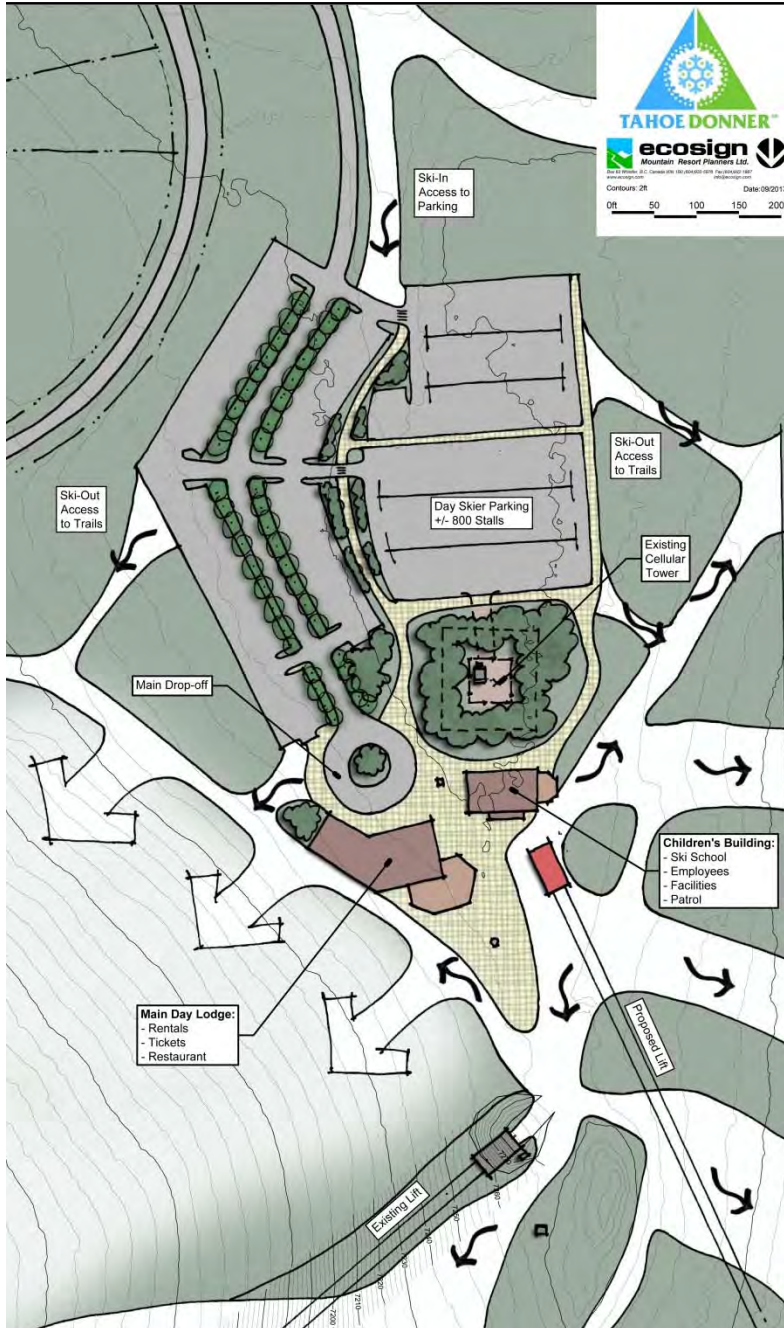


Temporary ATCO type Trailers:

- ❖ Lease instead of purchase







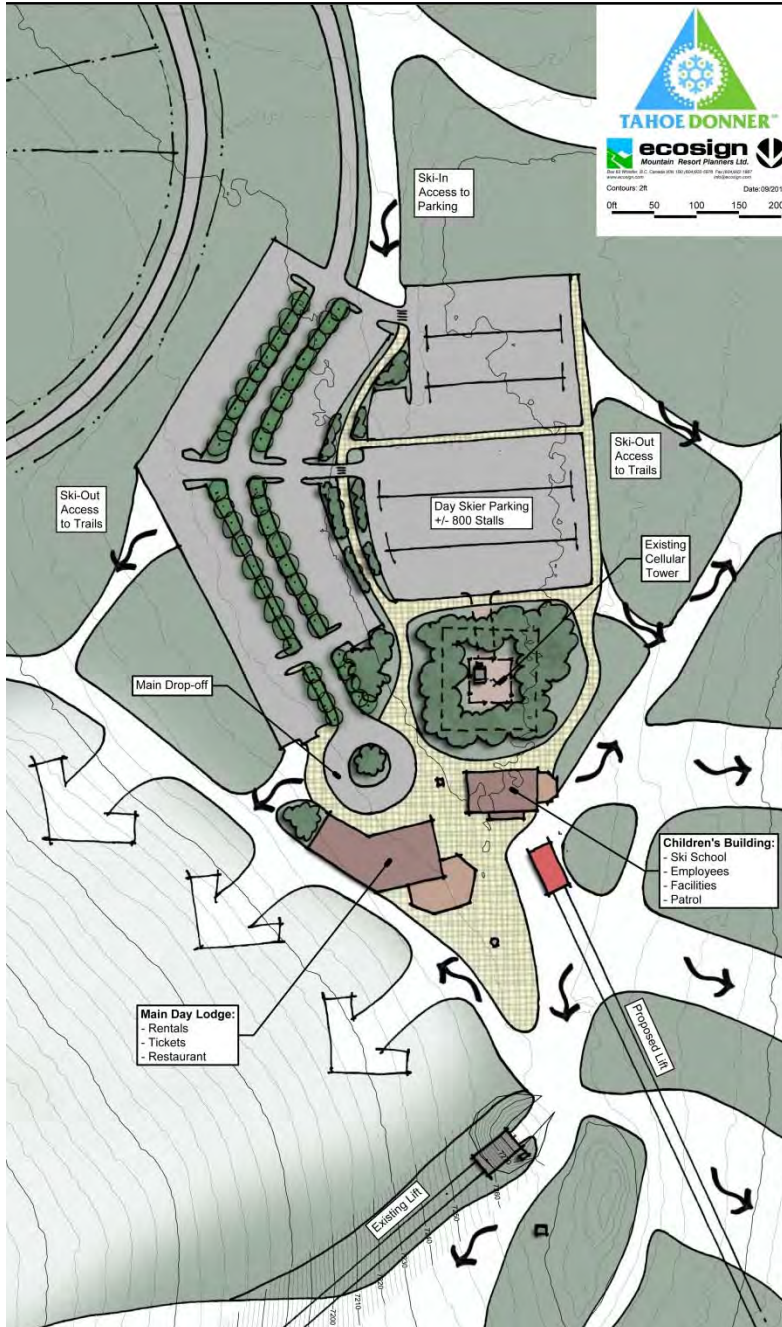
## BASE CONCEPT D



Concept D	GFA	Theoretical Skiers Served
<b>PHASE 1</b>		
Operate Existing Daylodge	15,128	822
Build Full Facilities at top of Mountain over multiple seasons		
Keep Yurt	754	41
<b>TOTAL PH1</b>	<b>15,882</b>	<b>863</b>
<b>PHASE 2</b>		
Demolish Existing Daylodge		
Operate Mountain Top Facilities - Building 1	18,000	978
Operate Mountain Top Facilities - Building 2	9,000	
Build Accommodation Buidling at Existing Base?		
<b>TOTAL PH2</b>	<b>27,000</b>	<b>1,467</b>
<b>Mid week usage (one building closed)</b>	<b>18,000</b>	<b>978</b>

Daylodge Building Program - CONCEPT D				
Phase	Elevation	Level	Description	GFA
PH2	Detailed Mapping Req.	L2	Restaurant	9,000
PH2	Detailed Mapping Req.	L1	Staging Facil. Restaurant & Patio	9,000
<b>TOTAL BUILDING 1</b>				<b>18,000</b>
PH2	Detailed Mapping Req.	L2	Childrens Facil. Employee	4,500
PH2	Detailed Mapping Req.	L1	Childrens Facil. Employee	4,500
<b>TOTAL BUILDING 2</b>				<b>9,000</b>
<b>TOTAL GFA</b>				<b>27,000</b>

## BASE CONCEPT D - SUMMARY



### PROS:

- ❖ Very easy to phase construction, Can run the existing base while fully constructing the top development. Can break the Mtn top development into multiple phases as desired.
- ❖ No temporary buildings required.
- ❖ Potential to construct new development at existing base area site to offset costs. (Private real estate/ hostel/ Rental Accom./ Condos etc.)
- ❖ More flexibility for potential design, (less implications of prop boundaries, less existing services issues.)
- ❖ Close connection to ski area – no uphill walking required. All parking is within walking distance to lifts / trails. No Shuttle Busses required
- ❖ Overall improvement in visitor experience. Arrival Experience.  
Increased views & sun exposure

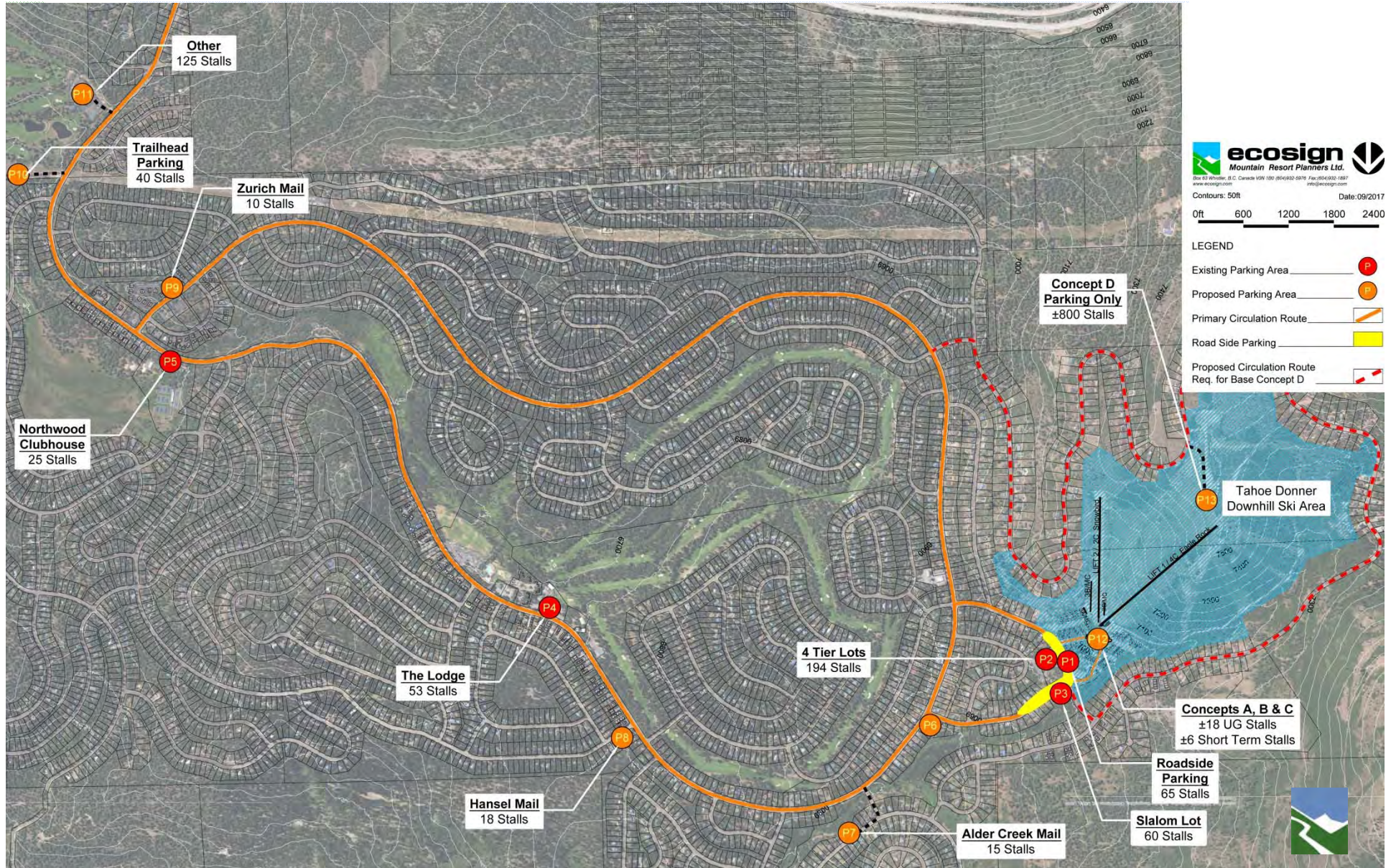
### CONS:

- ❖ Road access – some parts of road go to 12% Unlikely to be able to re-align road to decrease steep sections.
- ❖ Potential negative response from homeowners with increased traffic on road
- ❖ Existing cellphone tower

## 7. PROPOSED PARKING & STAGING ANALYSIS



# PROPOSED PARKING – CONCEPTS A, B, C & D



# PROPOSED PARKING



Lot Number	Lot Name	Number of Cars	% Total Within/ Outside SWD	AVERAGE Number of Visitors 2.6 pp/car	PEAK Number of Visitors 3.0 pp/car	PEAK Number of Skiers at 80% Participation
<b>Tahoe Donner Within SWD</b>						
P1	Roadside - Snowpeak Way & Slalom Way	65		169	195	156
P2	4 tier lots (60% take shuttle / 40% walk)	194		504	582	466
P3	Slalom lot	60		156	180	144
P12	Base Area Concepts A, B & C - UG and Short Term Stalls	24		62	72	58
<b>Subtotal Within SWD</b>		<b>343</b>	<b>51%</b>	<b>891</b>	<b>1,029</b>	<b>824</b>
<b>Outside SWD</b>						
P4	The Lodge (Golf Course Parking, half used for XC)	53		137	158	126
P5	Northwoods Clubhouse Parking	25		65	75	60
P6	Corner Lot	45		117	135	108
P7	Alder Creek Mail*	15		39	45	36
P8	Hansel Mail*	18		47	54	43
P9	Zurich Mail*	10		26	30	24
P10	Tahoe Donner Trailhead Parking incl. roadside parallel**	40		104	120	96
P11	Potential Lot***	125		325	375	300
<b>Subtotal Outside SWD</b>		<b>331</b>	<b>49%</b>	<b>860</b>	<b>992</b>	<b>793</b>
<b>Total Tahoe Donner</b>		<b>674</b>	<b>100%</b>	<b>1,751</b>	<b>2,021</b>	<b>1,617</b>

\*Ecosign estimate based on 140 cars per acre

\*\*Consider this area for staff parking

\*\*\*Potential lot near Coyote Moon

Lot Number	Lot Name	Number of Cars	% Total Within/ Outside SWD	AVERAGE Number of Visitors 2.6 pp/car	PEAK Number of Visitors 3.0 pp/car	PEAK Number of Skiers at 80% Participation
P13	Base Area Concepts D - Surface Parking	800	100%	2,080	2,400	1,920



## PROPOSED STAGING ANALYSIS A, B, C & D



CONCEPT A, B & C	Target Peak Times (1,900 skiers)	
	Number of Visitors	Number of Skiers
<b>Tahoe Donner Within SWD</b>		
From Pillows (Walking)	50	40
From Parking (Walking)	1,029	824
Charter Bus, Private Drop Off from surrounding homes (8%)	82	66
<b>Subtotal Within SWD</b>	<b>1,161</b>	<b>930</b>
<b>Outside SWD</b>		
From Parking (Arrive by Shuttle)	992	793
<b>Total Tahoe Donner</b>	<b>2,153</b>	<b>1,723</b>

❖ Note: Concept A, B & C does not currently meet the required number of skiers. Approx. additional 75 stalls required.

CONCEPT D	Target Peak Times (1,900 skiers)	
	Number of Visitors	Number of Skiers
<b>Tahoe Donner Within SWD</b>		
From Pillows (Walking)	40	30
From Parking (Walking)	2,400	1,920
Charter Bus, Private Drop Off from surrounding homes (8%)	192	154
<b>Subtotal Within SWD</b>	<b>2,632</b>	<b>2,104</b>



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