

April 5, 2022

Gretchen Milliken, Planning Director
Park City Municipal Corporation
Marsac Avenue, PO Box 1480
Park City, UT 84060

Via email: gretchen.milliken@parkcity.org

Hello Gretchen,

The following text is included as a brief summary of the work performed during the last couple of weeks.

What is CCC

CCC is a number that describes the comfortable daily carrying capacity of the ski lifts at a ski area, expressed in the unit "skiers per day". This unit is used so that we can easily compare all the different facets of the operation of a ski area; i.e., lift capacity, trail capacity, restaurant capacity, ski school capacity, staging capacity (parking, transit and accommodation within comfortable skier walking distance), etc.

The CCC is calculated using the "lifting power" at a resort versus the amount of vertical that that skiers demand. The lifting power of a resort's lift system is the lift's rated hourly capacity x vertical rise x the hours of operation/day = Vertical Transport Feet/day) supplied. (Note that, contrary to many people's understanding, the rated capacity of a lift is only a factor in this calculation and not a comparable measure of a lift's actual size; i.e., a moving carpet with 1,200 pph and 10 feet of vertical is not the same as a double chair with 1,200 pph and 2,000 feet of vertical).

The amount of vertical feet that a guest skis in one day is the VTF demand. During our meeting, we also discussed the fact that the VTF demand on any lift is determined by the skill class of the terrain serviced by that lift and therefore the level of skier on that lift. Also discussed, a beginner skier will ski far less vertical in a day than an intermediate or expert skier.

Each lift's CCC (in skiers per day) is a simple calculation of VTF supplied in a day divided by average VTF demanded by each skier on that lift. Adjustments are then made to account for loading inefficiencies and lift stops (generally in the 5-15% range), as well as the use of that lift exclusively for transportation of skiers from one part of a mountain to the other (i.e., base area lifts moving large numbers of people out of the base area and into the central mountain).

Overview of Park City Mountain/SE's CCC Calculations

As mentioned in our discussions, both Ecosign and SE use similar methods to model and calculate the comfortable, daily lift capacity at a ski area. It should be noted that CCC (Comfortable Carrying Capacity), SCC (Skier Carrying Capacity) or SAOT (Skiers At One Time) are similar measures of the same thing used by different ski resort planning consultants. The CCC at a ski area is a number used to estimate the theoretical capacity of a ski area when all guests are receiving the experience they desire (i.e., getting the number of runs in that they desire and waiting in lift lines for an acceptable amount of time).

In the memo of 2022.02.28, PCM correctly states that the CCC..... *"is not a visitation metric or cap on the number of daily visitors."* As discussed with PCMC (Park City Municipal Corporation), the CCC, while sometimes related to the number of skiers that the ski area would like to allow on the mountain to maintain a good skier experience, does not determine the actual number of skiers on the mountain (i.e., business levels). For example, some ski areas regularly operate at levels well below their CCC in order to provide a superior ski experience and almost all ski areas operate at levels below their CCC during early season, late season, and midweek. Also as discussed, at Park City, as at some other large resorts, the business levels seem to be more determined by the capacity of the base areas (arrival by accommodation, parking, and transit) rather than the lift capacity on the mountain.

While the general methodology to calculate the CCC is quite similar between Ecosign and SE, the exact planning parameter numbers are slightly different and, therefore, the task set before us was to confirm for PCMC that the CCC calculations performed by SE were in general conformity to that methodology. Ecosign did this by examining the calculations, as shown in the 2 spreadsheets provided by PCMR (Park City Mountain Resort). This is assuming that all of the lift specifications were correct, but we more closely examined the adjustments for transportation and lift loading efficiencies, as well as the relative levels of VTF demand in each lift pod.

Analysis of PCMR/ SE CCC Calculations

As mentioned, Ecosign and SE use similar methods but slightly different planning parameters to model ski area capacity. According to the numbers on this table, it seems the planning parameters that SE is using for PCMR are the same or similar to the planning parameters they (or Ecosign) would use at similar resorts.

After closely examining the CCC tables of the current conditions, it appears that most of the numbers used match with the general skier circulation on the mountain and skier skill levels in each lift pod, therefore the CCC calculation for current conditions appears to be appropriate.

The CCC tables for the proposed conditions have identical numbers used for calculation of the CCC's except where lifts are replaced, upgraded or removed or affected by the upgrades (Eagle, Eaglet, Silverlode, Three Kings).

The new Silverlode lift will be located in the same position as the existing lift but with increased capacity, therefore, all of the numbers in the calculations would remain the same except for the rated hourly capacity, which results in a proportionate increase in CCC (as shown in the table submitted to PCMC).

PCMR proposes to install a new Eagle lift that generally goes from the existing bottom of Eagle to the ridge near the top of the Eaglet lift, with a mid station offload located near the top of the existing Three Kings lift. Both the existing Eagle and Eaglet lifts will be removed. According to the application memo, the new Eagle lift will function as a staging lift in the morning and for return cycle skiing on the trails currently served by the Three Kings lift (and assumably, as a return cycle skiing lift for trails coming off the ridge on the terrain spanning from Commitment to Men's & Ladies' SL). The CCC table shows a large adjustment for transportation functions, which makes sense. This is assuming that the lift is proposed largely for staging in the morning, and will run less than full during the rest of the day due to the fact the higher capacity has been chosen primarily to efficiently stage people out of the base area more quickly in the morning (to reduce lift lines at the base area). The one number that does seem to be out of place however, is the VTF demand assigned to this lift. As listed in the table, the VTF demand on this new Eagle lift is 19,087 Vertical Transport Feet/Day, which is appropriate for a lift that services black diamond terrain.

However, as described in the application memo, this new lift alignment now services a combination of black diamond, blue and green terrain, which means that the average VTF demand per skier on this lift should drop dramatically; our estimate is that the VTF demand on this lift would likely shift to the 12,000 to 13,000 Vertical Transport Feet/Day range based on the mix of trails serviced by the new Eagle lift. If we use the 13,000 Vertical Transport Feet/Day figure, then the calculated CCC of the new Eagle lift would be approximately 850 skiers per day (270 higher than the 580 calculated on the table included in the application).

In the application memo, PCMR/SE has argued that the combined CCC in this zone would increase by a total of approximately 120 skiers per day as a result of the installation of the new Eagle, the removal of the old Eagle, the removal of the Eaglet, and the reduced utilization of the Three Kings chair due to the attractiveness of using the bottom section of the new Eagle as a return cycle skiing lift on the Three Kings terrain.

The recalculation of the Eagle CCC using the adjusted VTF number as shown above would increase the mountain's total CCC by approximately 270; higher than the number provided in the application table (from 12,860 to 13,130 Vertical Transport Feet/Day). While we believe that a reduction in the CCC assigned to Three Kings makes sense due to the competition from this new high capacity and easier loading lift, we believe that the reduction may actually be understated. If the lower section of Eagle does in fact service exactly the same terrain as Three Kings (we assume so from descriptions from PCMC, as we have not received a plan showing its exact location) we could imagine a situation where the existing Three Kings lift would basically go unused during the bulk of the day, due to the attractiveness of the new Eagle lift. If this does happen, then we can imagine that the lift company would choose not to operate that lift (as it would be running empty) and therefore its CCC would effectively be zero. In that case, the overall Mountain CCC, with Eagle at 850 and Three Kings at 0, would be almost identical to that in the application table (12,850 vs 12,860).

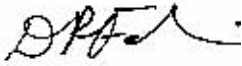
Effect of Increase of CCC over Current CCC

As discussed, the CCC calculation is simply a model that describes the theoretical capacity of the ski area that would provide a good skier experience. An increase in CCC does not directly cause an increase in business or in demand. If business levels remain the same, an increase in CCC will result in a better skier experience, with shorter lift lines and potentially marginally more skiing available for each skier due to less time waiting in the lift line.

Due to the maximized use of the current accommodation and parking inventory at the base areas, business levels (& base area throughput) are unlikely to rise in the short term unless measures are taken to increase the occupancy of the parked vehicles or increase transit/shuttle use to those base areas.

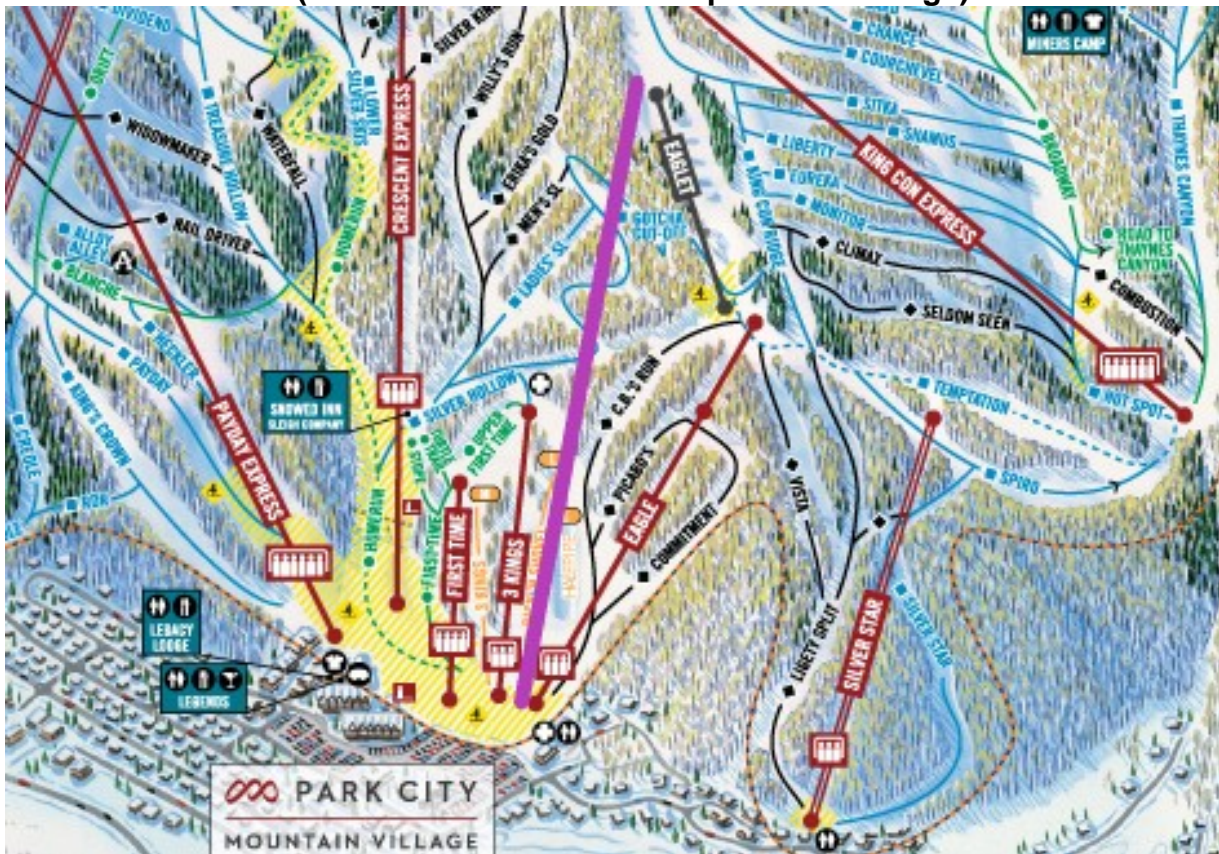
In summary, although there is not a direct effect on business levels due to an increase in CCC, that better skier experience will likely make skiing at the resort even more attractive, which could be a factor in putting more pressure on the base areas.

Respectfully submitted,



Dave Felius
Ecosign Resort Planners (2016) Ltd.

**Assumed Location of New Eagle lift (magenta Line)
(Mid-station unload near top of Three Kings)**



CCC Tables from PCMR/SE

PARK CITY MOUNTAIN - Existing Conditions
Comfortable Carrying Capacity

Map Ref.	Lift Name, Lift Type	Slope Length (ft.)	Vert. Rise (ft.)	Actual Capacity (persons/hr.)	Oper. Hours (hrs.)	Up-Mountain Access Role (%)	Misloading/ Lift Stoppages (%)	Adjusted Hrly. Cap. (persons/hr.)	VTF/Day (000)	Vertical Demand (ft./day)	CCC (guests)
Mountain Village Side											
A	Jupiter/C2	3,393	1,018	1,200	6.00	0	10	1,080	6,598	19,035	350
B	McConkey's/DC6	5,469	1,194	2,400	6.50	0	5	2,280	17,693	19,219	920
C	Pioneer/C3	3,932	970	1,800	6.50	0	10	1,620	10,218	15,638	650
D	Thaynes/C2	2,784	863	1,200	6.50	0	10	1,080	6,057	15,356	390
E	Motherload/DC4	5,251	1,275	2,400	7.00	0	5	2,280	20,349	18,226	1,120
F	Bonanza/DC6	5,426	1,115	2,700	7.00	0	5	2,565	20,022	13,198	1,520
G	Silverload/DC6	5,275	1,286	3,000	7.00	0	5	2,850	25,654	15,567	1,650
H	Quicksilver PC Side/G8	4,780	1,030	1,500	7.00	100	-	-	0	18,403	-
I	King Con/DC6	4,416	1,188	3,400	7.00	0	5	3,230	26,862	19,398	1,380
J	Crescent/DC4	7,255	1,752	2,400	7.00	30	5	1,560	19,135	16,323	1,170
K	Payday/DC6	5,803	1,265	2,734	7.00	20	5	2,051	18,159	13,196	1,380
L	Town Lift/C3	6,640	1,176	1,541	7.00	70	10	308	2,538	9,534	270
M	Eaglet/C3	1,265	236	605	7.00	50	10	242	399	8,473	50
N	Eagle/C3	3,698	1,150	1,105	7.00	70	10	221	1,780	19,533	90
O	SilverStar/C3	3,023	774	1,221	7.00	80	10	122	661	11,909	60
P	Three Kings/C3	2,201	436	1,788	7.00	0	10	1,609	4,907	8,457	580
Q	First Time/DC4	1,866	273	1,800	7.00	0	5	1,710	3,263	4,615	710
R	Mine Cart/Conveyor	151	12	600	7.00	0	5	570	46	567	80
S	Tommy Knocker/Conv.	196	16	600	7.00	0	5	570	63	688	90
T	Mule Trail/Conveyor	295	39	600	7.00	0	6	564	154	1,385	110
Mountain Village Sub-Total:		73,118		34,594				26,512	184,558		12,570

PARK CITY MOUNTAIN - Proposed Upgrades
Comfortable Carrying Capacity

Map Ref.	Lift Name, Lift Type	Slope Length (ft.)	Vert. Rise (ft.)	Actual Capacity (persons/hr.)	Oper. Hours (hrs.)	Up-Mountain Access Role (%)	Misloading/ Lift Stoppages (%)	Adjusted Hrly. Cap. (persons/hr.)	VTF/Day (000)	Vertical Demand (ft./day)	CCC (guests)
A	Jupiter/C2	3,393	1,018	1,200	6.00	0	10	1,080	6,598	19,035	350
B	McConkey's/DC6	5,469	1,194	2,400	6.50	0	5	2,280	17,693	19,219	920
C	Pioneer/C3	3,932	970	1,800	6.50	0	10	1,620	10,218	15,638	650
D	Thaynes/C2	2,784	863	1,200	6.50	0	10	1,080	6,057	15,356	390
E	Motherload/DC4	5,251	1,275	2,400	7.00	0	5	2,280	20,349	18,226	1,120
F	Bonanza/DC6	5,426	1,115	2,700	7.00	0	5	2,565	20,022	13,198	1,520
G	Silverload/DC8	5,275	1,286	3,600	7.00	0	5	3,420	30,785	16,934	1,820
H	Quicksilver PC Side/G8	4,780	1,030	1,500	7.00	100	-	-	0	18,403	-
I	King Con/DC6	4,416	1,188	3,400	7.00	0	5	3,230	26,862	19,398	1,380
J	Crescent/DC4	7,255	1,752	2,400	7.00	30	5	1,560	19,135	16,323	1,170
K	Payday/DC6	5,803	1,265	2,734	7.00	20	5	2,051	18,159	13,196	1,380
L	Town Lift/C3	6,640	1,176	1,541	7.00	70	10	308	2,538	9,534	270
O	SilverStar/C3	3,023	774	1,221	7.00	80	10	122	661	11,909	60
P	Three Kings/C3	2,201	436	1,788	7.00	50	10	715	2,181	8,457	260
Q	First Time/DC4	1,866	273	1,800	7.00	0	5	1,710	3,263	4,615	710
R	Mine Cart/Conveyor	151	12	600	7.00	0	5	570	46	567	80
S	Tommy Knocker/Conv.	196	16	600	7.00	0	5	570	63	688	90
T	Mule Trail/Conveyor	295	39	600	7.00	0	6	564	154	1,385	110
Q	Eagle Replacement	5,990	1,620	2,800	7.00	60	5	980	11,113	19,087	580
Total:		74,145		36,284				26,705	195,897		12,860