

To Whom It May Concern:

We are hereby voicing our objections to the proposed ski area expansion outlined in the Steamboat Ski Resort EIS 1.19.18, specifically the expansion into Pioneer Ridge.

As a community, we believe the EIS represents an improper overview of environmental impacts, a truncated review of alternatives; a lack of meaningful analysis on secondary and cumulative long-term impacts; substantial and potentially unacceptable impacts to the Burgess Creek drainage; and insufficient details on mitigation to compensate for unavoidable impacts on the environment.

As such, we have compiled a response to the SSRC EIS outlining the negative impact the proposed Pioneer expansion will have on the surrounding ecosystem and community as a whole. The expansion makes no sense to anyone who lives in the community. Expanding into an area which has multiple species threatened by any further development is clearly an act against sustainability.

Further, from a community standpoint, increasing human traffic deeper into the surrounding backcountry of the existing ski area will only lead to more rescues. This greatly impacts the resources of Search and Rescue, the NFS, and other community resources.

Based on the data supplied by the ski area, we are not convinced that SSRC cannot accomplish its growth goals within its existing footprint and should look to alternatives for any type of expansion to meet clientele needs.

We have identified several groups who will fight this expansion by legal means if necessary, money is no object. We hope the resort comes to it senses and looks at other ways of addressing clientele needs.

Sincerely,
The Collation for the Canyon

Objection to Steamboat Ski Area Improvements #48246

Prepared by-Collation to Save the Canyon

The following is a point-by-point rebuttal to the SSRC proposed expansion into Pioneer Ridge. Each point is marked with the corresponding page and paragraph/bullet number from the original SSRC EIS dated 1.19.18.

Points against expansion: (SSRC statement in black text, Rebuttals in red)

1. (EIS Page 6, bullet point 2)- Thirteen traditional, cleared ski trails, ski-ways, and gladed ski trails would be constructed, totaling 121 acres. A ski bridge over Burgess Creek would also be constructed.

Rebuttal-This only adds to the number of people in the area needing rescue, adding pressure to wildlife and harming the environment.

2. (EIS Page 6, bullet point 5)- Snowmaking coverage would be increased by 53 acres, resulting in approximately 36.8 acre-feet of additional water diverted from the Yampa River.

Rebuttal-The proposed location for the lift is an area that receives little natural snowfall and will need extensive snowmaking to ensure it could be used.

In a season like this, photos ("low snow, no snow, thick brush, etc. attached) showcase how little snow is naturally in this area. If you push more people into this zone, there we be ever more difficulties in trying to keep up with the needs of snowmaking acreage.

3. (EIS Page 6, bullet point 10)- Additional chairs would be added to the Pony Express chairlift to increase the design capacity from 1,200 pph to 1,800 pph. No ground disturbance would be required

This scenario diminishes what is great about the area. Right now, the wide-spaced chair configuration slows the impact to the zone from an ecology standpoint, yet the rider benefits from a quick ride to the top. This keeps

conditions in better shape as opposed to dumping 600pph more into an already congested zone.

4. (EIS Page 22, paragraph 1.5)- This letter is in the project file, and addresses a statement in the 2011 MDPa, that the Pioneer chairlift “**would not be needed in the “near future.” The letter updates and clarifies this statement as not describing the present needs and objectives for the Pioneer Ridge area, as SSRC has determined there is a need for the Pioneer chairlift and related elements that were not included in the 2011 MDPa**”. These elements include the Pioneer Pod, glading, hazard tree removal, and the Pony Express Patrol Hut and Restroom, and are further described in **Section 2.2**. Like those outlined in the 2011 MDPa, projects included in the subsequent letter from January 2017 would address existing constraints and conditions and further improve the skiing experience at Steamboat.

“The letter updates and clarifies this statement as not describing the present needs and objectives for the Pioneer Ridge area, as SSRC has determined there is a need for the Pioneer chairlift and related elements that were not included in the 2011 MDPa”-

Clearly, this statement showcases that the guests of Steamboat are not really looking for this type of expansion. As seen by the Table 3.1-1 the majority of skiers and snowboarders are beginner to intermediate (80%), with this proposal even stating that there is greater need for lower skill level of expansion as opposed to expert level expansion needs. In 2011, there was no need for this lift, nor is there today. The Steamboat clientele has not changed that dramatically, nor will it in the future. (photos, attached-“great terrain for intermediates, snarl, intermediates”)

Table 3.1-1: Lift-Served Terrain Distribution by Ability Level – Existing Conditions

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Skier/Rider Distribution (%)	Skier Market (%)
Beginner	5.1	154	1	5
Novice	191.0	3,437	26	15
Low Intermediate	154.0	2,155	16	25
Intermediate	412.5	4,125	31	35
Advanced Intermediate	374.0	2,618	20	15
Expert	225.3	676	5	5
Total	1,361.9	13,166	100	100

5. Source: SE Group 2017a

(EIS Page 22, bullet point 3)- **Provide additional lift-served terrain to meet guest expectations for diverse terrain offerings**

As seen in Table 3.1-1 the expansion into Pony/Pioneer does not suit guest expectations as opposed to something like Sunshine 2 (page 123, 2nd paragraph), which already exists in Steamboat's master plan. The overwhelming majority of clients Steamboat attracts will not use expanded Pony terrain more than a couple of days of year. The rest of the time, it will lie dormant and unused. Why ruin the ecosystem for such small gains?

It is common knowledge amongst locals that the ski area felt the original Pony expansion was a total flop. As they state in the EIS, the current lift is underutilized, hard to maintain, and difficult to open due to issues related to climate change. This will continue into the future, as seen with below average seasons experienced this decade. Expanding this area only makes this situation worse since it will greatly impact the zone due to construction and require massive water needs for snowmaking. This is highlighted in SSRC statements (underlined):

There is a need to widen and re-grade *the Crux* terrain, **install snowmaking throughout the Pony Pod,** increase the capacity of the Pony Express chairlift, reduce ski patrol response times by staffing ski patrollers within the Pony Pod, provide restroom facilities for staff and guests, and provide storage for patrol-related equipment. **Overall, the Pony Pod offers challenging terrain, but inconsistent early season snow conditions, limited chairlift capacity,** improvements within the Pony Express area, including substantial trail

improvements, construction of a patrol hut and restroom, and the addition of chairs to Pony Express chairlift; and development of the new Pioneer Ridge area, including glading and hazard tree removal, ski trail construction, and construction of the Pioneer Ridge chairlift. A non-significant project-specific amendment to the *1998 Routt National Forest Land and Resource Management Plan* is also proposed to amend *Threatened, Endangered, Sensitive Species, and Wildlife Standard 6*.*

6. (EIS Page 24, #3, 2nd paragraph)- Characterized by mixed forest with moderately spaced trees, this area of Pioneer Ridge is skied regularly by guests seeking off-piste conditions on powder days.¹⁰ These out-of-bounds skiers exit the operational boundary through established access points or, in some cases, by ducking boundary ropes. **The portion of the Pioneer Ridge area beyond the current operational boundary is primarily skied by expert skiers; however, non-expert skiers frequently need to be rescued from difficult terrain and cliffs.**

Building a lift only adds to this problem, by increasing the number of people who would likely venture into this area. The area proposed for expansion is not the problem area. There are very few cliffs on Pioneer Ridge and all of them can be easily skied around. The issue is with the surrounding Upper and Lower Fish Creek canyon, where massive cliffs, holes/tree wells, and other objective hazards exist. By building a bridge over Burgess Creek and adding a lift, it is foreseeable that the ski area will definitely add more users to Fish Creek canyon, due to the ease of ingress/egress facilitated by this addition. SSRC knows this and is not owning up to the fact that this will actually increase these issues outlined above, though they do state “By developing approximately 355 acres of backcountry terrain accessible from the existing Pony Express chairlift, **it is anticipated that backcountry use in the Upper and Lower Fish Creek Canyon as well as use in other areas within the Fish Creek Canyon drainage, adjacent to the proposed operational boundary would likely receive higher use.** (EIS Page 110, 2nd paragraph)” Why move into this territory when SSRC knows it will further complicate the problems listed?

7. (EIS Page 25, 1st paragraph)- Currently, skier use of the proposed new Pioneer Ridge area ranges between occasional to heavy use depending on the terrain, presence and density of forested areas, and snow coverage. The upper portion

of the area receives the greatest concentration of skiing; following large snowfall events, several hundred guests may ski the area and moguls will develop. The majority of these skiers traverse the upper portion of the area to return to the ski area; other skiers continue to ski the treed terrain until reaching Burgess Creek. From Burgess Creek, guests then side-step/hike up and out of the gully to *BC Skiway*, traverse *BC Skiway* to the base terminal of the Thunderhead Express chairlift, and then ski to the Pony Express chairlift. Skiers inexperienced with the terrain and exit routes often find themselves hiking considerable distances. On non-powder days, the area receives little use due to tree density as well as difficult access in and out of the terrain.

By building a lift or the proposed bridge, the amount of use for this zone actually diminishes. The reason people cherish this area currently, is the fact that it holds good snow for days with very few people. Increasing access and clearing trees will increase the initial usage on a powder day but leave it dormant most user days. The ecosystem gets destroyed for the enjoyment of low level skiers who generally would rather ski somewhere else.

For instance, if you look at Pony Express on any given day, you can ski right on the lift, any time, any day (holidays excluded). Just up the adjoining run, Storm Peak Express sees at least 3 to 4 times more traffic on a daily basis. This is a result of having a higher elevation exit point, where snow is consistently better, more options for terrain and better access to other ski area pods (80% of Steamboat skiers are intermediate or below-Table 3.1-1)

Adding the proposed Pioneer chair yields no better or higher access than the current chair, creates a huge issue for snowmaking at the lower terminal due to a high melt rate and does not help circulation of riders, since they are largely self-contained in the Pony pod.

This lift will get used for 2 hours on a powder day, then as it is tracked out, will be largely underutilized (or not in operation). The current configuration is what keeps people using the terrain as it is since it limits the amount of people able to access the area (all of this is for the better). Further, the inconsistencies with snow mean that this lift will be activated for four weeks on a low snow year, perhaps eight on a good year. What a waste of resources. Is the Forest Service prepared to pay to remove it when climate change makes this zone un-skiable?

8. (EIS Page 26, 1st paragraph)- Proposed improvements within the Pony Pod include enhancements to trail corridors through vegetation removal, grading, and rock blasting; increased capacity of the Pony Express chairlift by adding carriers to the existing chairlift; installation of winch cat anchors; construction of a ski-way from the junction of *Lower Middle Rib* and *Chaps* ski trails to the Storm Peak Express chairlift (Trail E); and construction of a patrol hut and restroom building at the top terminal of Pony Express.

This is prime elk, moose, and raptor habitat and also infringes on many natural springs, creeks, etc., which are critical to the survival of many species. Given that this will not benefit the majority of Steamboat skiers, why develop it? Photo ("mooseproblem", attached)

9. (EIS Page 28-1.9.1.1, 4th bullet point)- Quantification (acres) of existing and proposed terrain distribution in the Project Area and the ski area by ability level, in relation to the skier market and Steamboat's specific client niche

Table 3.1-1 (EIS page 100) shows this is not the case. The ski area is already divided in this way but is short on terrain clientele actually needs, (beginner and intermediate, Table 3.1-1). The proposed Sunshine 2 lift (page 123, 2nd paragraph) and accompanying area in combination with the proposed Rough Rider enhancements is where the dollars for improvement should be spent, if at all.

10. (EIS Page 28-1.9.1.1, 7th bullet point)- Analysis of minimum number of safety employees to adequately manage the proposed area or ski area as a whole, which draws on other resort experience. Analysis that identifies whether the Proposed Action Alternative includes adequate safety measures and egress for emergency

The current Pony Express lift can barely open as it is due to snow conditions. The proposed new reconfiguration will only draw more heavily on natural resources to support its function (i.e. snowmaking, impacts to Burgess Creek, etc.). Further, the ski area has experienced major staffing issues this decade, so given that this will require more employees who need housing, transportation, etc. and will only be used for a portion of the season, (since this pod is only utilized Jan-early March most years), where will the resort find these employees?

11. (EIS Page 45-2.4.3)- The Pony Pod, located on NFS lands, offers challenging terrain but is often underutilized due to inconsistent early season snow conditions, expert trails with complex fall lines and rock outcroppings, and the need for substantial trail improvements such as grading and tree thinning to increase use. Proposed improvements within the Pony Pod include: enhancements to trail corridors through vegetation removal, grading, and rock blasting; increased capacity of the Pony Express chairlift by adding carriers to the existing chairlift; installation of winch cat anchors; construction of a ski-way from the junction of *Lower Middle Rib* and *Chaps* ski trails to the Storm Peak Express chairlift (Trail E); and construction of a patrol hut and restroom building at the top terminal of Pony Express. **The proposed trail enhancements and the addition of snowmaking would allow for better designed and more reliable trail conditions, improved operational efficiency, increased skier utilization, and improved skier experience.** Details of these proposed projects are provided in the subsections below. Proposed snowmaking is discussed in **Section 2.4.5**. The proposed Pony Pod projects are depicted in **Figure 2-2b**.

The negative impact on natural resources will far outweigh the gains for this project. Snowmaking for this zone alone will need to be quite intensive to enable consistent use. Further, this will put pressure on the local ecosystem since human-made snow is denser and thus, will put a harsh impact on the area from an ecology standpoint. The EIS identifies many species in this area and the harm this will likely do to their habitat.

12. (EIS Page 47, paragraph 2)- To meet the needs and expectations of Steamboat's guests and provide a more broadly accessible and safer skiing experience in Pioneer Ridge, SSRC proposes to expand the operational boundary by approximately 355 acres to encompass additional terrain within Pioneer Ridge; construct a new fixed- grip or detachable quad chairlift (Pioneer chairlift); create 95 acres of gladed skiing; conduct 40 acres of hazard tree removal and vegetation management; install a bridge over Burgess Creek and construct an associated collector ski-way (Trail F); and define multiple gladed trails and egress routes to connect with existing and proposed terrain and facilities. SSRC is not proposing snowmaking within the new Pioneer Ridge area as part of this Proposed Action Alternative. Details of these proposed projects are provided below.

The ski area already has a difficult time meeting the needs of its clients in this respect. The proposed additions only tax resources in a way that Steamboat would be lucky to see a return on investment. If this fails, then what? Now there's a 100' bridge steel bridge, a useless lift with concrete pilings, and miles of rotting pipes. This seems totally at odds with the sustainability direction that the average skiing guest is now looking for in a resort.

2.4.4.4 Burgess Creek Bridge

13. (EIS Page 48, 2.4.4.4)- The Burgess Creek Bridge is proposed to provide a much less arduous, safer, and more efficient egress out of the expanded Pioneer Ridge terrain by exiting onto the existing BC Skiway. The bridge would be designed at a height to span Burgess Creek and at a width to accommodate slope maintenance vehicles such as snowcats, anticipated to be approximately 30 feet wide. All construction activity and bridge components, such as piers and abutments, would be sited outside of the ordinary high-water mark of the creek. The bridge would require the construction of an access road originating north of the proposed Pioneer chairlift lower terminal and access road, and proceeding to the proposed bridge abutment on the north side of Burgess Creek.

The neighborhood of Burgess Creek, the community, and tourist all enjoy the serenity of the Creekside trail. Imagine a 100' high bridge, with steel posts intruding on this zone. That will look ridiculous and ruin this beautiful area, not to mention the ecological impact. Won't it be nice to have rusty posts in Burgess Creek?

2.4.5 SNOWMAKING

14. (EIS Page 48, 2.4.5)- New and upgraded snowmaking infrastructure would be installed in existing and proposed terrain within the Rough Rider, Bashor Bowl, and Pony Pod areas. Snowmaking within the proposed Pioneer Ridge terrain is not anticipated at this time. **New trails outside of the new Pioneer Ridge area would require snowmaking coverage and new infrastructure.** Existing trails that receive high skier traffic and wind wear impacts, or are underutilized due to insufficient snow, would also require new snowmaking coverage and infrastructure. Finally, antiquated snowmaking equipment originally installed in 1981 would be replaced by new and more efficient equipment and snowmaking techniques.

In total, approximately 53 acres of new snowmaking coverage are proposed. Snowmaking would occur between October and January, and would depend on

suitable and stable temperatures as well as the season's needs. Water for snowmaking is obtained from an existing diversion point on the Yampa River approximately 4,000 feet from the base area. Approximately 36.8 acre-feet of water is anticipated to be required in order to provide the proposed new snowmaking coverage and approximately 1.9 acre-feet of water is anticipated to be required for the proposed Bashor Children's Facility and Restaurant and Pony

Within the Rough Rider Learning Center and Bashor Bowl, new areas requiring snowmaking would include the new teaching areas and trails, areas surrounding the Rough Rider chairlift and surface lifts, the new bypass connecting *Boulevard* to the Rough Rider Learning Center, and existing *Short Cut* trail. **Within the Pony Pod, installation of snowmaking infrastructure would occur to provide coverage to Upper and Lower Middle Rib, the Crux, Upper and Lower Longhorn, Lower Pony Express chairlift line, Upper and Lower Storm Peak Express Connectors, BC Skiway, and Chaps.**

Snowmaking pipeline installation would require the excavation of a trench approximately 3 to 5 feet wide and 3 feet deep to contain the main pipeline. Where possible, the trench would be located within previously disturbed areas of a ski trail or road. The pipeline and associated trench would be located within a 50-foot-wide corridor that would allow for access, pipe storage, and excavation material stockpile. In addition to snowmaking pipeline, valve blockhouses may be required. Typical valve blockhouse dimensions are approximately 12 feet by 12 feet; actual blockhouse dimensions would be identified during the final design stage of the project.

Snowmaking is terrible way of propping up an already troubled scenario. It is evident to the reader that the ski area is well aware that this area already has issues with snow retention. This concern will continue into the future in their proposal, SSRC acknowledges in this document (Item 37/EIS Page 176, 1st paragraph)- that by 2050, the temperature will rise by 5 degrees, rendering this area unskialbe most of the season, every season. Consider how much more snowmaking water will be needed to facilitate this area.

2.6.1 RAPTOR NEST PROTECTION ALTERNATIVE

15. An alternative was considered that would remove the requirement for a Forest Plan amendment to *Threatened, Endangered, Sensitive Species, and Wildlife Standard*

6. Key components of this alternative include constructing the Pioneer pod without the Pioneer chairlift and utilizing raptor nesting deterrent methods for identified raptor nests. This alternative would also commit to a no-disturbance buffer around all active raptor nest sites from nest-site selection to fledgling, generally March through July.

Specific raptor nesting deterrent methods and technologies need to be specified. Deterrent methods range from invasive (physical nest removal and mechanical perch-deterrent device installation) to unselective and broadly destructive (Zena Cones, Bird Spiders, and Bird Spikes). Although some perch deterrents appear to be effective in limited applications, the best available science is inconclusive overall, with no data available comparing the relative effectiveness of various recently developed perch deterrents (Dwyer and Doloughan 2014, Oles 2007, Slater and Smith 2008).

Dwyer, J. F. and K. W. Doloughan. 2014. Testing systems of avian perch deterrents on electric power distribution poles in sage-brush habitat. *Human–Wildlife Interactions* 8(1):39–55, Spring.

Oles. 2007. “Effectiveness of Raptor Perch-Deterrent Devices on Power Poles for Reducing Secondary Effects on Prey Species.” Resource Note No. 84: 1–2. March 23.

Slater, S. J., and J. P. Smith. 2008. Effectiveness of raptor perch deterrents on an electrical transmission line of southwestern Wyoming. Final report prepared for U. S. Department of Interior, Bureau of Land Management, Kemmerer Field Office. Hawkwatch International, Inc., Salt Lake City, Utah.

Several modifications to the Proposed Action Alternative would be necessary to remain consistent with *Threatened, Endangered, Sensitive Species, and Wildlife Standard 6*.

To avoid impacts to known and unknown raptor nests within the new addition to the Pioneer Ridge area, the area would be constructed without the Pioneer chairlift and would remove the associated gladed terrain east of the proposed ski-way beginning at the junction of Upper *Middle Rib* and the Pony Express chairlift.

Raptors are sensitive to both direct and indirect habitat disturbance. Direct and indirect impacts to raptor habitat and nesting success. Direct impacts may include, but are not limited to: loss of foraging habitat from the project footprint, direct mortality of raptors (e.g., due to collisions with vehicles, electrocution on power lines), and loss of nest sites or winter roost sites. Indirect impacts may

include, but are not limited to: noise disturbance, degradation of habitat adjacent to the project area, habitat fragmentation, contamination of food sources, and reduction or changes in available prey species.

Pioneer chairlift construction, operation, and maintenance represent a long-term, persistent, and acute *direct impact* to raptor habitat. The proposal to remove “associated gladed terrain east of the proposed ski-way” (i.e., selection logging) introduces a chronic, *indirect impact* to raptor habitat. Logging of adjacent glades will lead to reduction in timber stand density, and likely result in: reduced stand-structural complexity; degraded sub-canopy and subnivean raptor prey habitat; and marked shifts in raptor microclimate habitat suitability (e.g., shifting wind and temperature regimes). Raptor nest site-selection and nesting success are highly susceptible to small-scale shifts in prey habitat and nest site microclimate (Bakermans et al. 2012)

Bakermans, M.H., A.D. Rodewald, and A.C. Vitz. 2012. Influence of forest structure on density and nest success of mature forest birds in managed landscapes. *Journal of Wildlife Management* 76: 1225-1234.

16. (EIS Page 63, 1st paragraph)- Proposed Action Alternative. In addition, summertime maintenance activities associated with the Pioneer chairlift, such as chairlift servicing, would not occur and would, therefore, not conflict with raptors present in the area. Access to the terrain for each run would be more involved, requiring traverses and two chairlift rides to return to the Pioneer area. ***Without the Pioneer chairlift, skiers wishing to return to the Pioneer Pod would be required to traverse BC Skiway to the base terminal of Thunderhead Express, and then ski from the top terminal of Thunderhead Express through Lower Storm Peak Express Connector to the Pony Express chairlift.***

The requirement for skiers to traverse BC Skiway is positive for snow habitat and species conservation. The traverse naturally limits how many people can access the area on any given day and slows the “rush” of traffic on a busy powder day. Again, the reason people like to use this area is to enjoy getting away from the “resort” experience, SSRC states this as true in the EIS. If you put a lift in or make the access easier, you will naturally push people further into the backcountry, creating bigger rescue issues. Keeping this zone as is allows for the “slackcountry” experience in a low-consequence area, all of which is better for the community, ecosystem, and the ski area’s resources.

Proposed construction of Pioneer chairlift will shift Pioneer area skier recreation-impacts on wildlife from limited (“slackcountry”) to intensive (winter resort use and summertime maintenance). On-piste skier disturbance and associated ski-trail maintenance have significantly more impact on wildlife than limited off-piste skier disturbance (Arlettaz et al. 2014, Braunisch et al. 2011). Resort infrastructure has been shown to increase stress response, (acute and chronic nutritional stress), alter activity budgets, and disrupt seasonal refugia.

Arlettaz, R. et al. 2014. Disturbance of wildlife by outdoor winter recreation: allostatic stress response and altered activity–energy budgets. – Ecol. Appl. 25: 1197–1212.

Braunisch, V., Patthey, P., Arlettaz, R., 2011. Spatially explicit modeling of conflict zones between wildlife and snow sports: prioritizing areas for winter refuges. Ecol. Appl. 21, 955–967.

17. (EIS Page 63, 3rd bullet point)- Raptors that establish nests after construction activities commence, or during the operational phase of the project, would be considered acclimated to the activity and avoidance buffers would not apply. This would be in conformance with the standard, which states “[e]xceptions [to the standard] may occur when animals are adapted to human activity.”¹⁸ Raptor surveys following completion of the construction phase of the project would not be required. This alternative was considered but dismissed from detailed analysis due to several reasons, including:

2.6.2 PROPOSED ACTION ALTERNATIVE WITH ONE-YEAR SUSPENSION OF RAPTOR TIMING RESTRICTIONS

18. (EIS Page 63, 3rd bullet point)- This alternative would contain all proposed project components of the Proposed Action Alternative and would incorporate a project- and timeframe-specific Forest Plan amendment to *Threatened, Endangered, Sensitive Species, and Wildlife Standard 6*. The amendment would remove the applicability of this standard for this project for one year to allow for the construction of the most time-intensive project components, such as construction of the Pioneer chairlift.

2.6.3 ALTERNATE PIONEER BOTTOM TERMINAL AND OPERATIONAL BOUNDARY LOCATION

19. (EIS Page 64, 2.6.3)- Under this alternative, the operational boundary and bottom terminal of the Pioneer chairlift would be situated approximately two-thirds from the top of the Pioneer chairlift as compared to the Proposed Action Alternative. The bottom terminal would be located where a skier egress is currently proposed. The proposed Burgess Creek Bridge would not be constructed, nor would the proposed access road that would access the bridge or the original bottom terminal location. Skiers who, illegally, exit the operational boundary to access the lower portion of the Pioneer area to the west would still be required to hike the “hundred steps” over Burgess Creek to re-enter the ski area. This alternative would not meet the Purpose and Need for the project as described in **Chapter 1**.

In the base area of Steamboat, skier circulation and lift use is hindered by the ingress and egress of guests combined with simultaneous use of this area as teaching terrain. The base area of Steamboat is the single staging portal for the ski area and wait limits would continue to frequently approach or exceed guest’s approximately 20-minute wait tolerance. Additionally, egress from the popular Pioneer Ridge backcountry terrain back into the Pony Pod is done via the “100 steps,” which leads users back to lift-served terrain within the operational boundary. **Without clearly defined ingress into the Pony Pod, this is time consuming and challenging for many users who are unfamiliar with the terrain the Pioneer Ridge backcountry terrain and would continue to create circulation issues in the existing Pony Pod.**

As stated, this is a good thing to slow the traffic in this area down, reduce the overall impact on the ecosystem and mitigate users in the area. Very few people get lost compared to the daily traffic on the mountain (<1%).

The following EIS statement (page 63, 3rd bullet point) is unsupported by the scientific literature: “Raptors that establish nests after construction activities commence, or during the operational phase of the project, would be considered acclimated to the activity.” Raptor tolerance levels to construction activity are site- and species-specific, and there is no scientific consensus regarding suitable “buffer zone” distances less than 0.5 miles from active nesting sites. Raptor ability to acclimate (habituate) to construction activity is highly uncertain. Disturbance to any of a number of key physiographic features can lead to nest failure or territory abandonment, including availability of preferred habitat (elevation, slope, and aspect), habitat diversity, prey availability, nest height, and nest substrate. Lastly, there is ample research showing that “post-operational phase impacts” can be

equally destructive to long-term population viability, raptors which successfully nest during a disturbance may abandon the nesting territory the year following the disturbance (Fyfe and Olendorff 1976, Platt 1977, White and Thurow 1985).

Fyfe, R.W. and R.R. Olendorff. 1976. Minimizing the dangers of studies to raptors and other sensitive species. Occas. Pap. No. 23. Can. Wildl. Serv., Ottawa.

Platt, J.B. 1977. The breeding behavior of wild and captive gyrfalcons in relation to their environment and human disturbance. Ph.D. Thesis. Cornell Univ., Ithaca, N.Y. 164p.

White, C.M. and T.L. Thurow. 1985. Reproduction of ferruginous hawks exposed to controlled disturbance. Condor 87:14-22.

20. (EIS Page 69, Table 1, Alternative 2) The majority of terrain previously accessed as backcountry adjacent to the Pony Pod in the Pioneer Ridge Area, would be incorporated into Steamboat's operational boundary. This would not encapsulate all the terrain one could access from the existing Pony Express chairlift; however, the 355-acre operational boundary increase would include the popular Golf Course Fields and Outer Outlaw. The Upper and Lower Fish Creek Canyon areas would remain as backcountry beyond the proposed operational boundary. New access points would be constructed to provide backcountry users with entry to this area; however, the number of access points and locations would be determined in the ski area's winter operating plan.

Ridiculous. The SSRC proposal acknowledges the growth in this type of user behavior, so how can they not acknowledge that by making access easier, signed, and patrolled, usage would be similar? If anything, they will double or triple the amount of people going into areas that 80-90% of users shouldn't be going into, which result in more issues for the resort, Search and Rescue and other community resources.

21. (EIS Page 70, Table 2-3) **Visitation to Steamboat and the City of Steamboat Springs would not be expected to change from its current trend, which is relatively flat.** Visitation during the summer months is expected to continue increasing more rapidly, anywhere from 3% to 18% based on recent trends. These trends in both the summer and winter months are expected to be reflected in the City of Steamboat Springs. It is assumed that there is a natural increase of visitation in both the summer and winter months occurring at Steamboat and the surrounding areas independent of an action alternative being selected.

If Visitation is believed to remain at current levels (flat), why invest in this potentially costly and harmful expansion? If the resort will not be able to build more profitability as a result of the expansion, then why put the ecosystem at risk? This makes no business sense, let alone sustainability.

22. (EIS Page 72, Table 2-3) Housing availability in the Yampa Valley and the City of Steamboat Springs is an ongoing issue. Studies led by the Yampa Valley Housing Authority identified a housing shortage in certain areas of the county that was more impactful to different groups, particularly the low to middle income workforce. Steamboat currently provide 442 beds in its employee housing units at The Ponds, accommodating approximately 26% of the winter seasonal workforce. The workforce housing currently available at Steamboat would not accommodate any additional employees and Steamboat would need to provide additional employee housing options in the near future.

How does the resort plan to staff this new expansion, knowing full well that the area will not be utilized throughout the entire season? This year they barely were able to open Pony Express due to labor shortages. With the trend in climate change to make this zone more difficult to open, what will the ski area due to retain these employees?

3.1.3.1 Pioneer Ridge Backcountry Terrain

23. (EIS Page 97, 3.1.3.1) Backcountry skiing has become increasingly popular in the last decade as a result of various technological advances in equipment, including safety equipment, and a growing interest in the unique experience.²⁸

The backcountry offers a sense of adventure, solitude, and self-awareness that simply cannot be experienced when skiing inbounds at a developed ski area and is attractive to advanced and expert ability level skiers that visit Steamboat. Additionally, backcountry terrain that is in close proximity to the operational boundary of a ski area can often attract skiers looking for untouched snow during a storm, or in the days immediately following a storm.²⁹

Exactly, why would the expansion help grow interest in this respect? If the goal is to have solitude and self-awareness that cannot be experienced within the ski area, how does opening this terrain accomplish this need? It is completely contradictory to this concept.

Existing Backcountry Terrain (For definition)

24. (EIS Page 97, 3.1.3.1 2nd paragraph) In its existing state, there is an area adjacent to the existing inbounds terrain served by the Pony Express chairlift (Pony Pod) that is relevant to the Proposed Action Alternative and has become a popular backcountry area due to its proximity and accessibility from the infrastructure associated with Steamboat's winter operations. The area encompassing the existing Pony Pod and the entire ridgeline to the north is referred to as "Pioneer Ridge." Pioneer Ridge includes both the area skiable inside the operational boundary from the Pony Express chairlift and the adjacent area being utilized as backcountry terrain that is currently inside Steamboat's SUP boundary but outside the operational boundary. As it extends from the northern-most border of the existing operational boundary to the northern-most border of Steamboat's existing SUP boundary, Pioneer Ridge encompasses an area just over 600 acres. In its existing state, Pioneer Ridge is popular among a number of advanced and expert ability skiers who choose to leave the current operational boundary through two established access points and disperse into NFS lands surrounding Steamboat's operational boundary.

Within this 600-acre area that currently exists as backcountry terrain, there is an approximately 355-acre area that is closest to Steamboat's existing operational boundary and is most popular among backcountry users. The area closest to the existing operational boundary that skis directly back to the Pony Express chairlift includes what are referred to as the *Golf Course Fields* and *Outer Outlaw*. Beyond this area are the areas known as *Upper and Lower Fish Creek Canyon*. *Upper and Lower Fish Creek Canyon* includes an area skiable outside of the operational boundary and beyond the immediate backcountry (i.e., *Golf Course Fields* and *Outer Outlaw*) extending to the northern-most border of the existing SUP boundary. Skiing *Upper and Lower Fish Creek Canyon* typically places skiers further into the Fish Creek drainage and requires users to hike back up into the ski area. This hike is usually done via a trail called "100 steps" which leads users back to lift-served terrain within the operational boundary.

Existing Use of Backcountry Terrain

On any given day, the backcountry area of Pioneer Ridge adjacent to the existing Pony Pod will be skied by **50 to 500** skiers that are assumed to be **evenly split between the immediate backcountry** (i.e., *Golf Course Fields* and *Outer Outlaw*) and *Upper and Lower Fish Creek Canyon*.³⁰ All users are assumed to access these backcountry areas via the Pony Express chairlift. The Recreation

Technical Report contains graphical depiction of the existing backcountry terrain in the Pioneer Ridge Area.

The *Upper and Lower Fish Creek Canyon* receives less use overall, as use is more likely to fluctuate with snow conditions. On the day of a storm when powder conditions exist, use of *Upper and Lower Fish Creek Canyon* is at its highest on the high side of the 50 to 500 range with approximately 100 of these skiers making multiple laps.³¹ A day or two after a powder day, less than 400 people use this area, and during periods of no snow, use of this area declines to 25 to 150 people.³² Use of the *Upper and Lower Fish Creek Canyon* area declines on days without new snow due to tree density as well as difficult access in and out of Pioneer Ridge. Most of the use in *Upper and Lower Fish Creek Canyon* involves two hiking climbs; the first up and over *Whoopie Ridge*, and the second up “100 steps” up to the existing *BC Skiway*. A much smaller group, about 10 percent, ski *Mahogany Ridge* staying left or south and west of *Whoopie Ridge* and hiking only up “100 steps.” Due to its proximity to the existing operational boundary, access in and out of this adjacent backcountry area is much easier than the travel associated with *Upper and Lower Fish Creek Canyon*. Thus, the immediate backcountry (i.e., *Golf Course Fields* and *Outer Outlaw*) receives greater overall use that is less likely to be affected by snow conditions.³³

There are existing challenges associated with the Pioneer Ridge area, as is it is easily accessible from Steamboat’s operational boundary and provides desirable terrain that attracts many users. As this area currently exists beyond the existing operational boundary, it is not managed or maintained to provide a recreation experience that one would expect find within Steamboat’s lift-served terrain network. While this is largely what draws users into this area in the first place, it also can be problematic for users who enter this area without adequate knowledge of the terrain or potential threats associated with backcountry skiing. Skiers inexperienced with the terrain and egress routes often find themselves hiking considerable distances to return to Steamboat’s inbounds terrain network, or in areas of large cliff bands that may be beyond their skiing ability level (or not skiable at all). In addition, ski patrol rescue access and egress paths are insufficient, hindering ski patrol response. Steamboat ski patrol has identified the need for improved ski area boundary management, adequate ingress and egress paths, and return routes to other mountain lifts. Existing challenges associated with ski patrol’s ability to manage the Pioneer Ridge area are further discussed in the following sections.

#Table 3.1-1: Lift-Served Terrain Distribution by Ability Level – Existing Conditions

25.

Table 3.1-1: Lift-Served Terrain Distribution by Ability Level – Existing Conditions

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Skier/Rider Distribution (%)	Skier Market (%)
Beginner	5.1	154	1	5
Novice	191.0	3,437	26	15
Low Intermediate	154.0	2,155	16	25
Intermediate	412.5	4,125	31	35
Advanced Intermediate	374.0	2,618	20	15
Expert	225.3	676	5	5
Total	1,361.9	13,166	100	100

Source: SE Group 2017a

Table 3.1-1 indicates that 5 percent of the skier market is within the beginner ability level, 25 percent of the skier market is within the low intermediate ability level, and 35 percent are within the intermediate ability level.³⁵ **However, the current terrain capacities fall short of adequately accommodating these guests as Steamboat only has terrain distribution of 1 percent for beginner ability level skiers, 16 percent for low intermediate ability level skiers, and 31 percent for intermediate ability level skiers, resulting in an imbalance between current terrain and Steamboat's skier/rider market.**³⁶ **The biggest deficiencies at Steamboat are in beginner and low intermediate terrain,** which can pose a challenge for Steamboat in maintaining its appeal as a family-oriented resort and facilitating a comfortable learning progression for lower ability level guests.

Clearly, this shows that the expansion into Pioneer is not in the best interest of the resort. By their own forecast, they expect growth to be flat (page 105, 3.13.5) and they currently have roughly 5% of their current clientele that would be utilizing this new expansion area, who likely already do and prefer it in its current form. (Table 3.1-1)

Further, in the above paragraph, they acknowledge the greatest need for growth is in the lower levels of beginner and intermediate terrain. This is where expansion plans should focus, to alleviate the issues currently in place. Why expand into terrain not demanded by clients and hurt the environment?

25. (EIS Page 102, 2nd paragraph)- Another area that has low skier densities but observed skier circulation issues is the Pony Pod. Overall, the Pony Pod offers challenging terrain, **but inconsistent early season snow conditions**, limited lift capacity, insufficient ski patrol facilities, and limited connection to nearby pods. As previously mentioned, egress from the popular Pioneer Ridge backcountry terrain back into the Pony Pod is done via the “100 steps,” which leads users back to lift-served terrain within the operational boundary. This constrains circulation throughout the area as it is time consuming and challenging for many users who are unfamiliar with the terrain. Without clearly defined ingress into the Pony Pod, the Pioneer Ridge backcountry terrain would continue to create circulation issues in the existing Pony Pod. This issue is compounded by the **lack of snowmaking on the BC Skiway, an important egress from the “100 steps” and out of the Pony Pod**. Beyond circulation within the Pony Pod, skiers wishing to move to the adjacent Four Points Pod must exit the Pony Pod through BC Skiway to the base terminal of Thunderhead Express chairlift, and then ski from the top terminal of Thunderhead Express to Four Points chairlift or Storm Peak Express chairlift. **Skier utilization is reduced in early season due to variable natural snow, absence of snowmaking**, and unfinished trail and lift improvements that were not completed at the time the Pony Pod was originally developed. Similar to the existing issues of the BC Skiway that are caused by the lack of snowmaking, the Crux is a major collector for the Pony Pod yet is very narrow and experiences inconsistent early and late season snow conditions.⁴² These factors contribute to the underutilization of the Pony Pod, which if addressed would better disperse skiers across Steamboat’s operational boundary and would improve the overall circulation of the mountain.

The resort makes the point of acknowledging that even in the best years, this area is snowmaking dependent. With the average temperature set to rise (page 186, 2nd paragraph), this is a “hope” strategy at best as to whether this pod would be utilized in the next decades.

26. (EIS Page 105, 3.1.3.5)- Steamboat attracts guests in all seasons of the year; however, visitation is generally broken out into the two main seasons, which are winter and summer. Winter visitation is much higher than summer averaging 926,307 annual visits compared to 52,233 annual visits over the last five years.⁴⁸ **Over the past ten years, visitation during the winter months has fluctuated considerably. The last ten years include growth as high as 12 percent from one season to next; and declines in visitation as high as 13 percent from one year to the next.**⁴⁹

This is largely due to the amount of natural snow received. As seen during the 2017/18 season, Steamboat has good snow compared to other resorts in

Colorado. As a result, Steamboat is experiencing a good year relative to I-70 counterparts. Even with that, by their statement, the growth of 12% is negated or even diminished by the fact that they lose 13% visitation the next year. Why expand if the trend shows that visitations is at best flat or perhaps even declining?

27. (EIS Page 109, 3.1.4.2 2nd paragraph)- To serve the proposed Pioneer Ridge area, Steamboat would construct a new fixed-grip or detachable quad chairlift (Pioneer chairlift); create 95 acres of gladed skiing; conduct 40 acres of hazard tree removal and vegetation management; install a bridge over Burgess Creek and construct an associated collector ski-way (Trail F); and define multiple gladed trails and egress routes to connect with existing and proposed terrain and facilities. The skier experience in the proposed Pioneer Ridge Area would be designed to resemble a backcountry skiing experience through the use of glading and **natural corridors to create an expert ability level area. However, the proposed Pioneer Ridge area would reflect a controlled and maintained skiing experience as is provided in other parts of Steamboat's operational boundary and would no longer exist as backcountry.**

This contradicts the SSRC, statement earlier (page, 97-3.1.3.1), where the current demand from expert skiers/snowboarders is for solitude and self-awareness that cannot be experienced within the ski area, how does opening this terrain accomplish this need?

28. (EIS Page 110, 2nd paragraph)- By developing approximately 355 acres of backcountry terrain accessible from the existing Pony Express chairlift, **it is anticipated that backcountry use in the Upper and Lower Fish Creek Canyon as well as use in other areas within the Fish Creek Canyon drainage, adjacent to the proposed operational boundary would likely receive higher use.** Approximately 25 to 250 backcountry skiers per day would be displaced by the incorporation of the proposed Pioneer Ridge Area into Steamboat's operational boundary, based on the existing use of the Pioneer Ridge backcountry. **This is anticipated to contribute to higher use of the Upper and Lower Fish Creek Canyon and other areas within the Fish Creek Canyon drainage as users, who would presumably be looking for a similar backcountry experience (e.g., ease of access, proximity to lift-served terrain), would move into this new area immediately adjacent to the**

proposed operational boundary. As previously mentioned, backcountry access to this area would be provided, along the new border of the proposed operational boundary. While portions of *Upper and Lower Fish Creek Canyon* would become more accessible, this terrain and terrain beyond this area (NFS lands outside of the existing SUP boundary), are not anticipated to replace the loss of the existing immediate backcountry (i.e., *Golf Course Fields* and *Outer Outlaw*).

It is obvious to anyone that the addition of a lift and bridge which eliminates “100 steps” would only result in a net increase in visitation to Upper and Lower Fish Creek Canyon, the terrain is not the sole determining factor. The EIS states this **“it is anticipated that backcountry use in the Upper and Lower Fish Creek Canyon as well as use in other areas within the Fish Creek Canyon drainage, adjacent to the proposed operational boundary would likely receive higher use.”** (EIS Page 110, 2nd paragraph)”

The snow quality, solitude, and escapism are what drives people to these areas. It is reflected in snow sport media and portrayed in snow sport films. By allowing easier access to more expert terrain, the ski area is putting more people at risk and will become dependent on resources like Search and Rescue for support. This is not a benefit to the NFS, the community or the ecosystem in this area.

29. (EIS Page 110, 2nd paragraph)-“To travel to certain portions of *Upper and Lower Fish Creek Canyon* and NFS lands beyond the SUP boundary, users would need additional over-snow travel equipment (e.g., climbing skins, snowshoes, etc.) and would be required to exert greater energy to reach these areas.”

This is largely nonsense. Only the furthest reaches require over-snow equipment and are already utilized today. The result of this lift/terrain expansion will be to push more people deeper into the backcountry, adding to the time for rescue response, more lost tourists, and a deeper impact on surrounding ecosystems.

(continued) This is a different experience than is currently provided by the adjacent Pioneer Ridge backcountry, as the majority of current users access this area without ever taking off their skis and only must hike when returning to lift-served terrain. **It is assumed that as a result of the Proposed Action Alternative, users would travel further into Upper and Lower Fish Creek Canyon and adjacent NFS lands; however, the adjacent terrain is not anticipated to accommodate all of the users displaced by inclusion of the proposed Pioneer Ridge area into the operational boundary, as terrain in this area requires greater skills, fitness, and equipment to be accessed.**

While the Proposed Action Alternative would address many of the existing issues with the most popular portion of the Pioneer Ridge backcountry area, similar issues may still exist under proposed conditions. *Ski patrol responses would likely be generated by increased skiing in the Upper and Lower Fish Creek Canyon area; however, adequate ski patrol egress would be provided.* Additionally, the location of backcountry access points and adequate return routes to the proposed Pioneer Ridge area are expected to reduce the number of issues related skiers being unable to navigate to the operational boundary or getting stranded in high consequence terrain.

SSRC clearly acknowledges that this change will increase usage in the surrounding areas, which rely on NFS and Search and Rescue for aid in rescues. Increasing ease of access only puts more people at risk and increases the problem.

Pioneer Ridge Glade Skiing

30. (EIS Page 112, 1st paragraph)-“The proposed operational boundary expansion into the Pioneer Ridge area would also have a positive impact to the terrain network at Steamboat, by providing additional lift-served terrain to meet **quest expectations for diverse terrain offerings**. Steamboat would expand its existing operational boundary by approximately 355 acres to encompass additional terrain within the Pioneer Ridge area that previously existed as backcountry terrain. The proposed new terrain within the Pioneer Ridge area of Steamboat is currently within the SUP area but outside the existing operational boundary. Included in this operational boundary expansion would be the creation of 95 acres of gladed skiing; installation of a bridge over Burgess Creek and construction of an associated collector ski-way (Trail F); and creation of multiple

As seen in Table 3.1-4, the majority of Steamboat market, (95%) will not be utilizing the expert Pony Pod and surrounding terrain on a daily, or even weekly basis. Again, if one looks at the current utilization of the Pony Express lift, it is largely vacant most days.

Further, the resort goes on to state in the next paragraph “**Although additional expert terrain is not needed from a terrain deficiency standpoint, the additional terrain is needed to meet quest expectations for diverse terrain offerings; a stated component of the Purpose and Need for the Proposed**

Action Alternative.” (page 113, 2nd paragraph)” This demonstrates that there is no perceived need for this expansion, just Steamboat’s ability to market more “expert” level glade skiing. This does not benefit anyone besides SSRC.

SSRC continues to contradict the perceived need of more expert terrain with the statement **“though Steamboat has existing terrain to meet the expert ability level skier market” (page 113, 2nd paragraph)”** proving this expansion is not needed, nor demanded by the clientele Steamboat largely markets to. This expansion is a cash/marketing grab on behalf of SSRC.

31. (EIS Page 113, 1st paragraph)-Glading corridors would be created within Pioneer Ridge to allow for functional skiing lines. Glade skiing is needed to provide guests with more terrain variety, as well as additional skiable acres. **Although additional expert terrain is not needed from a terrain deficiency standpoint, the additional terrain is needed to meet guest expectations for diverse terrain offerings; a stated component of the Purpose and Need for the Proposed Action Alternative.** More specifically, the proposed Pioneer Ridge Area would enhance the recreation experience for expert ability level skiing and riding guests and would provide a unique experience that is not currently available at Steamboat. There is a growing demand for backcountry style skiing, which has resulted in many skiers seeking terrain beyond the boundaries of ski areas in recent years.⁵² **Although incorporation of the proposed Pioneer Ridge area into the operational boundary would mean that this area would no longer exist as backcountry,** it would create an off-piste skiing opportunity that resembles backcountry skiing and is becoming an expected part of the experience for higher ability level guests visiting resorts in the western United States. The additional 90.4 acres of glade skiing and trails would be designed to retain the naturalness and character of the area, characteristics that are highly desirable in terms of guest expectations. **Adding variety in the form of undeveloped terrain for guests of these ability levels is important, as even though Steamboat has existing terrain to meet the expert ability level skier market, terrain diversity is what keeps higher ability level guests interested and is needed to address the Purpose and Need for additional lift served terrain capable of meeting guest expectations for diverse terrain offerings.**

Steamboat's statement that the terrain is not needed, only to "meet guest expectations" is difficult to find these clients on any given day. The last sentence regarding "keeping guests interested" is clearly not relevant when adding terrain which is suitable for 5% of the clientele. As noted, this is a short-lived marketing ploy, or perhaps an effort to one day control Fish Creek Canyon.

32. (EIS Page 118, 2nd paragraph)- To patrol the proposed Pioneer Ridge Area, it is anticipated that approximately one additional ski patrol supervisor and 10 additional ski patrollers would be added to Steamboat's staff.⁵³ (1)

1. Where would Steamboat find these additional patrollers when housing shortages are rampant in Steamboat? What will they do with the patrollers when this terrain is not open due to climate change delays?

(continued) This would result in approximately six to seven patrollers per day covering the proposed Pioneer Ridge area.⁵⁴ As the Pioneer Ridge area is not currently within the operational boundary, regular patrol would be a new addition to the area. Current avalanche safety procedures and avalanche control devices would be capable of addressing avalanche concerns associated with the additional terrain in the Pioneer Ridge area.⁵⁵ While inclusion of the heavily used Pioneer Ridge area into the operational boundary, and enhanced ski patrol operations in this area, are expected to greatly improve ski patrol response times and skier safety, many challenges associated with adjacent backcountry terrain would continue to exist. The proposed operational boundary would still be adjacent to backcountry terrain in the *Upper and Lower Fish Creek Canyon* areas, and access would still be provided through access gates. As such, ski patrol responses to incidents outside of the operational boundary would persist. Better signage, mapping, and measures such as monetary charges for people generating ski patrol responses outside the operational boundary have proven successful in reducing the number of incidents in the backcountry adjacent (2) Steamboat's operational boundary, and would continue to be implemented.⁵⁶ New access points that would be provided to adjacent backcountry from the proposed operational boundary would be strategically placed to steer skiers away from dangerous cliff bands and towards lines that ski more directly to the improved egress routes contained within Steamboats proposed terrain network. (3)

2. This is unproven. This policy just commenced in the prior season and any success can easily be accounted for less visitation due to lower snowfall compared to years prior. Years with higher natural snowfall have a much better chance of luring unsuspecting riders into dangerous terrain. This idea that this is strategy has been successful can easily be chalked up to low snow seasons since the strategies inception is so recent. A longer period of study would be necessary to draw any real conclusion.

3. The ski area already is using this strategy, which they have demonstrated throughout this proposal is clearly not working. How would this be different in the future? (spoiler alert-it will be worse, creating more headaches for NFS, S&R, etc.).

33. (EIS Page 123, 2nd paragraph)- This cumulative effects analysis analyzes the potential impacts of all projects in Steamboat Ski Area 2011 MDPA, including those that are not included in the Proposed Action Alternative. As these unimplemented projects are accepted in the Steamboat Ski Area 2011 MDPA but not approved under environmental review, they are considered here as reasonably foreseeable future projects. Included in the Steamboat Ski Area 2011 MDPA but not in the Proposed Action Alternative is one proposed lift and three upgrades to existing lifts: Sunshine II, a detachable quad chairlift, would be constructed; the Thunderhead Express and the Elkhead Express, both of which are currently detachable quad chairlifts would be upgraded to detachable six passenger chairlifts; and the South Peak chairlift, which is currently a fixed triple would be upgraded to a detachable quad chairlift.

The 2011 proposal is correct. There is little to no demand for a Pioneer expansion. The perceived needs are outlined in the next paragraph-

Associated with these additions to the lift network would be approximately 66.6 acres of novice and low intermediate ability level terrain, which would be primarily served by the future Sunshine II detachable quad chairlift. Table 3.1-7 highlights how the addition of novice and low intermediate ability level terrain would impact the terrain distribution at Steamboat.

Correct-The actual need for expansion to address the clientele of Steamboat is in the Sunshine and Rough Rider areas. This is the core audience, families with their kids learning to ski/ride in a friendly environment.

Table 3.1-7: Lift-Served Terrain Distribution by Ability Level – Reasonably Foreseeable Future Conditions

Table 3.1-7: Lift-Served Terrain Distribution by Ability Level – Reasonably Foreseeable Future Conditions

Skier/Rider Ability Level	Trail Area (acres)	Skier/Rider Capacity (guests)	Skier/Rider Distribution (%)	Steamboat Market (%)
Beginner	11.6	347	2	5
Novice	232.5	4,185	28	15
Low Intermediate	184.1	2,577	17	25
Intermediate	420.2	4,202	28	35
Advanced Intermediate	386.8	2,707	18	15
Expert	315.1	945	6	5
Total	1,550.3	14,963	100	100

Source: SE Group 2017a

As shown in **Table 3.1-7**, reasonably foreseeable future upgrades included in the **Steamboat Ski Area 2011 MDPA would increase the acreage of novice and low intermediate terrain, positively impacting the distribution of terrain for these ability levels.** The additional lifts and terrain, accepted in the Steamboat Ski Area 2011 MDPA but withheld from this environmental review, would also increase the existing CCC from 12,670 guests (14,420 guests under the Proposed Action Alternative) to 16,070. Steamboat's trail density is not anticipated to be measurably impacted by these reasonably foreseeable future projects.

Again, Correct-The actual need for expansion to address the clientele of Steamboat is in the Sunshine and Rough Rider areas

Visitation

34. (EIS Page 128, 3.2.3.1)- Steamboat is a four-season resort whose primary purpose is for winter recreation. Over the past ten years, Steamboat has experienced modest fluctuations in winter and summer visitation, and while visitation trends and amounts have been analyzed, specific visitation values are not disclosed in this document as they are deemed confidential business information. **Employment** As is true for most mountain resorts, Steamboat employs more workers in the winter than in the summer. Steamboat currently employs approximately 1,008 FTEs in the winter and approximately 473 FTEs in

the summer, including full-time positions.⁵⁹ These are *direct* resort jobs (i.e., employees of Steamboat) and are ongoing employment positions that are created each year in response to visitation to Steamboat. **Table 3.2-1** and **Table 3.2-2** summarize the existing employment at Steamboat.

Table 3.2-1: Steamboat Baseline Employment

Employment Type	FTEs
Year-Round Employment	333
Winter Seasonal Employment	675
Summer Seasonal Employment	141
Total Employment	1,149

Source: SSRC 2017a; annual employment 2017

Table 3.2-2: Steamboat Baseline Employment by Season

Winter FTEs	Summer FTEs
1,008	473

Source: SSRC 2017a; annual employment 2017

Both owners and renters comprise the workforce in Routt County and the City of Steamboat Springs. Many owners are workers with families or plans to have children, while the rental market is more likely to consist of single people that are in many cases short-term or seasonal employees.

Without balanced housing options, the workforce is particularly susceptible to the trends of a limited housing market that can make it hard to retain families and attract long-term workers to the county.

The 2008 Steamboat Springs Workforce Housing Demand Analysis determined that housing is negatively impacting the workforce as supply does not match demand.⁷¹ Finding an affordable single-family home in Routt County is a challenge that is particularly visible within the City of Steamboat Springs. Conversely, the vast majority of affordable condos for rent are located in the City of Steamboat Springs. These rental units are more affordable but are generally small (studios or one-bedrooms with less than 600 square feet) and difficult for larger households to occupy. Mobile homes are the other affordable alternative.

The City of Steamboat Springs' affordable housing stock is more oriented towards single people living with roommates or couples not planning to expand their household size.⁷² As such, affordable single family housing is limited to small rental units or mobile homes in the City of Steamboat Springs, or larger rental units and potentially older homes in other parts of the county (e.g., Oak Creek or Hayden).⁷³ **These conclusions were based off assumptions around a per capita income of \$38,376 in 2009 that has since decreased to \$36,472 in 2015, indicating that these conclusions are likely still valid if not exacerbated.**⁷⁴

As stated previously, how will adding terrain that will only be used part of the season (4-8 weeks) be addressed by SSRC with regard to the housing crisis and retaining employees? It's already difficult at best to hire and retain good employees so how will this be handled given a short operating window?

Visitation

35. (EIS Page 142, 3.2.4.3)- **Steamboat winter season visitation is expected to increase by 1.4 percent annually, or approximately 8 to 10 percent by 2028** (three years following project implementation and the completion of construction).

Based on hope? The earlier SSRC statement states that visitation for winter is essentially flat. This proposal doesn't reflect the actual demand for needs of the current clientele, SSRC's ability to staff the expansion, or community resources available.

Pony Express

36. (EIS Page 176, 2nd paragraph)- Several other projects would result in visual impacts to views originating from within the new Pioneer Ridge area, and include the Burgess Creek Bridge, Pioneer chairlift bottom terminal, and access roads. While these projects would not be visible from Critical Viewpoint 2, visual impacts from these projects are anticipated to be similar to those observed from Critical Viewpoint 2 in terms of form, line, color, and texture, but at a smaller scale due to periodic obstruction by topography and vegetation in the foreground view. **Burgess Creek Bridge is proposed to span Burgess Creek at a height of over 100 feet above water level. The bridge would be constructed of a**

combination of wood and steel materials, and the span height would allow native riparian and wetland vegetation to be avoided for much of the length of the stream crossing. Access roads would be constructed to provide

construction and maintenance access to Burgess Creek Bridge as well as the Pioneer chairlift, and would be visible in the non-skiing season. The Pioneer chairlift and Burgess Creek Bridge would conform with BEIG concepts and criteria, along with PDC identified in **Table 2-1**.

This would be a harmful impact on the surrounding environment, human enjoyment of the area and the “feel” or characteristics of the area. Why would anyone want to see 100’ bridge over Burgess creek? Further, if this fails, what happens to all those steel posts that have damaged the area? How will Burgess creek watershed be marred by this bridge addition?

37. (EIS Page 176, 1st paragraph)- Climate change and air quality are intricately related. Although climate change is a global issue, the spatial scope of this analysis is the mountainous regions of Colorado and adjacent areas in the north-central Rocky Mountains of Colorado with similar climate, ecology, wildlife, and plant species. This region is expected to experience similar effects from climate change, and represents the range of what may occur at Steamboat. The temporal scope of this analysis spans from the ski area’s inception in 1963 through 2050, the date climate change literature uses as a benchmark in discussion of climate change effects.¹⁶⁰

Additions in the Pioneer Ridge area only impact this further.

3.6.3.1 Climate Overview

The climate of Colorado is characterized by frequent sunshine, low humidity, and large temperature variations. The City of Steamboat Springs, located at an elevation of 6,732 feet amsl, receives an average of 25.6 inches of precipitation per year. The average winter temperature is about 18oF and the average summer temperature is about 64oF.¹⁶¹ Average winter snowfall is about 180 inches per year.¹⁶²

The effects of climate change have already been observed in both Colorado and the north-central region Colorado Rocky Mountains. In the last fifty years, the annual average temperature in Colorado has increased by 2.5oF.¹⁶³ The daily minimum temperatures have warmed more than the daily maximum temperatures, and temperature increases are observed in all seasons, with the

highest temperature increases recorded in the summer months. **In addition to these temperature increases, the timing of snowmelt and peak runoff has shifted earlier, between one to four weeks with year-to-year variability,** over the last thirty years. More frequent soil moisture drought conditions have also been observed in this timeframe, reflecting the warming trends and below average precipitation that have been observed since 2000. These warmer and drier conditions are projected to increase the frequency and intensity of drought, thereby increasing wildfire risk.¹⁶⁴ These changing conditions are part of the baseline of this chapter and related resources, such as water resources.

Again, a shorter season for a proposed lift which is located lower in elevation relative to other expansion choices higher on the mountain makes no sense. In 50 years this lift and expansion will be obsolete. Who will pay to remove and restore the ecosystem?

(continued) global change models predict a warming trend will continue into mid-century (2050) and beyond.¹⁶⁵ These models are complex, integrated computer simulations of earth's physical processes that projects how the global climate system will respond to increasing greenhouse gas concentrations. According to the Colorado Climate Change Vulnerability Study, completed in 2015, the statewide average annual temperature is projected to change **+2.5oF to +5.0oF** by 2050. Summers are projected to warm more than winters. The models diverge in the precipitation projections from -3 percent to +8 percent; however, there is general agreement that winter precipitation is expected to increase. In the Yampa River Valley region, models predict that summer temperatures will increase +4.0oF to +5.0oF in the period between 2035 to 2064, and precipitation will increase 10 percent to 20 percent between December and April, and decrease 5 percent to 10 percent in the summer.¹⁶⁶

As noted, the change in temperature will render this expansion obsolete before it can generate any ROI. Why the resort is pursuing this is beyond explanation since they clearly acknowledge climate change is real and the expansion will rely on snow making. How will they pay for this? What happens if skiing goes by the wayside sooner than predicted? Will they then want to build more mountain biking trails in this area?

(continued) A decrease in annual streamflow for rivers is predicted, due to the loss of moisture from warmer snowpack, soils, and vegetation. Dust-

on-snow events may cause peak snowmelt to occur between three and six weeks earlier than historic averages. Runoff is predicted to occur earlier, by one to three weeks, resulting in decreasing flows in later summer. These predicted patterns will likely increase the frequency and severity of heat waves, droughts, wildfires, and extreme precipitation events. ¹⁶⁷

This concept of dryer winters and faster runoff only furthers the point of avoiding this expansion. Why build in an area dependent on human-made resources which tax a depleted natural resource?

Aspen Stands

A mosaic of single- and two-storied aspen stands occupies the proposed project locations in the Pony Pod and Pioneer Ridge area. Small, widely scattered clumps and individual mature subalpine fir are present, and conifer seedlings and saplings are common but unevenly distributed throughout the understory. Generally, the dominant overstory is mature and size classes ranging from 5 to 12 inches in diameter are well represented. However, there are small pockets and larger expanses where the dominant trees are much smaller, and somewhat gnarly with poorly formed boles. Stocking varies between stands, and aspen sprouts are common where stocking is less dense and abundant along the outer stand perimeters where trees have been cleared to create open runs and there is full exposure to the sun. Evidence of fungal infection and fungal conks are evident on a few trees, but these pathogens are not affecting the stands as a whole. Some mortality has occurred within the smaller diameter understory trees from competition and suppression.

A lush, continuous layer of vegetation covers the forest floor. Tall clumps of Scouler willow (*Salix scouleriana*) and mountain maple (*Acer glabrum*) are interspersed among vetch (*Vicia americana*), meadowrue (*Thalictrum fendleri*), mountain ash (*Sorbus scopulina*), thimbleberry (*Rubus parviflorus*), serviceberry (*Amelanchier alnifolia*), bracken fern (*Pteridium aquilinum*) and a host of forbs. Gambel oak (*Quercus gambelii*) and sticky laurel (*Ceanothus velutinus*) often surround rock outcrops within aspen stands.

These stands are occupied by a complex mosaic of lodgepole pine, spruce, fir, and aspen. The aspen component takes the form of scattered clumps and individuals that are co-dominant with the conifers. Stand structure is an assortment of single and two stories where pine is the dominant component, and multiple stories, where pine, subalpine fir and Engelmann spruce tower over an abundant, but unevenly distributed

understory of seedlings saplings and smaller sawtimber. Stocking is fairly uniform and all size classes from 6 to 14 inches in diameter are well represented.

Generally, the spruce and fir display good bole form and crown development. Most of the understory trees appear robust with fully developed conical crowns. Roughly 90 percent of the mature pine has died due to Mountain Pine Beetle (MPB) attack. Some of the aspen appears to be dying back, probably from a combination of old age and the stress brought about by competition with the dominant conifers present. Fungal conks were noted on several mature aspen trees throughout these sites.

Lodgepole Pine Stands

Two dense stands of standing dead lodgepole pine occupy portions of the Pioneer Ridge area. Stand structure is a mosaic of both single and two stories, stocking is uniform and all size classes from 6 to 14 inches in diameter are well represented. Basal area averages over 170 square feet per acre. Recent mortality from mountain pine beetle attack is over 90 percent and regeneration is sparse to non-existent.

Down fuel loading is light, ranging from 2 to 20 tons per acre. Forest floor vegetation includes grouse whortleberry (*Vaccinium scoparium*), elk sedge (*Carex geyeri*), mountain ash, buffaloberry (*Shepherdia canadensis*), ferns, Engelmann aster (*Eucephalus engelmannii*), Oregon grape (*Mahonia repens*), serviceberry, wild rose (*Rosa acicularis*), and meadowrue.

Lodgepole Pine/Aspen Stands

One stand in the Pioneer Ridge area is composed of co-dominant lodgepole pine and aspen. Stocking is uniform with basal area approximately 175 square feet per acre, and all size classes from 6 to 16 inches in diameter are well represented. Very widely scattered spruce and subalpine fir seedlings and saplings are established across the forest floor. The aspen is mature, but still appears healthy with good bole form and full, rounded crowns. Over 90 percent of the pine component has died recently due to MPB attack. Forest floor vegetation includes vetch, golden aster (*Heterotheca villosa*), giant hyssop (*Agastache urticifolia*), chokecherry (*Prunus virginiana*), service berry, meadowrue, mountain ash, and thimbleberry.

Engelmann Spruce/Subalpine Fir Stands

Stands along the upper portion of the Pioneer Ridge area are uneven aged, multi-storied spruce and subalpine fir. Large diameter spruce and subalpine fir tower over an

abundant, but unevenly distributed understory of seedlings, saplings, and small sawtimber. Stocking is somewhat variable due to small, sparsely stocked openings (basal area ranges from 100 to well over 200 square feet per acre). All size classes from 4 to 18 inches in diameter are well represented, and the dominant trees are estimated to be between 120 and over 200 years old. Although trees are generally healthy and display good bole form and crown development, there are a few older individuals that have sparse rounded crowns and/or dead tops, an indication that they are beginning to die back. The root disease and bark beetle complex is causing a small amount of mortality in widely scattered pockets of subalpine fir. Grouse whortleberry, Engelmann aster, wild rose, cranesbills (*Geranium*), pine grass (*Calamagrostis rubescens*) and lovage (*Ligusticum porteri*) cover the forest floor.

Non-Forest

Small open subalpine meadows and shrublands are found intermittently throughout otherwise forested portions of the Pioneer Ridge area. Native, persistent emergent wetlands are present as narrow, long linear areas adjacent to the perennial and intermittent streams that dissect the landscape. Wetland vegetation occupying these sites includes willow (*Salix*), sedges (*Cyperaceae*), rushes (*Juncaceae*), bluejoint reed grass (*Calamagrostis canadensis*), reed canarygrass (*Phalaris arundinacea*), cow parsnip (*Heracleum maximum*), chiming bells (*Mertensia ciliata*), monkshood (*Aconitum columbianum*), and marsh marigold (*Caltha leptosepala*) (refer to **Section 3.12** for a discussion specific to wetlands and wetland impacts).

Plant SOLC are not designated sensitive and carry no legal status. However, they are a component of the biological diversity on the Forest, which is required to be maintained by the National Forest Management Act and Forest Service direction. Botanical surveys identified three SOLC, including broad-leaved twayblade (*Listera convallarioides*), white-veined wintergreen (*Pyrola picta*) and lady fern (*Athyrium filix-femina*). These plants occur in the Pioneer Ridge area, outside the current operational boundary of Steamboat but within the proposed operational boundary that would be extended into the Pioneer Ridge area. The lady fern and broad-leaved twayblade primarily occur along the North Fork of Burgess Creek, while the white-veined wintergreen occurs in the mixed coniferous forests northeast of the creek. **Table 3.7-3** describes the results of the 2016 field reconnaissance as it relates to the presence of SOLC in the Project Area.

Specific year-round management strategies for all three SOLC are required for Pioneer Ridge development. The three SOLC, broad-leaved twayblade (*Listera convallarioides*), white-veined wintergreen (*Pyrola picta*) and lady fern (*Athyrium filix-*

femina), are highly susceptible to soil compaction in summer and snow compaction in winter.

Winter snow compaction on-piste leads to decreased snow pack temperatures, increased rates of soil freezing, and reduction in soil microbial activity during the peak winter period and beginning of the growing season for all three SOLC (Banaš et al. 2010, Roux-Fouillet et al. 2011). Snow compaction also leads to mechanical and frost damage of SOLC, stunted growth and delayed germination. Early flowering species, those that develop buds under snow, suffer from delayed phenological development and restricted reproduction due to the decreased thermal insulation, colder soil temperatures under compacted snow, and longer snow duration associated with ski industry operations.

Summer soil compaction due to ski industry machine grading limits all three SOLC by: lowering soil moisture content; increasing soil density (by more than 50%); increasing pH and C/N ratio; and decreasing total nitrogen concentrations (Roux-Fouillet et al. 2011). Ski runs create dry and nutrient-poor habitats with low vegetation cover, and failed or protracted species recovery post-disturbance.

Banaš, M., Zeidler, M., Duchoslav, M. & Hošek, J. 2010: Growth of Alpine lady-fern (*Athyrium distentifolium*) and plant species composition on a ski piste in the Hrubý Jeseník Mts., Czech Repub- lic. — *Ann. Bot. Fennici* 47: 280–292.

Roux-Fouillet, P., Wipf, S., & Rixen, C. (2011). Long-term impacts of ski piste management on alpine vegetation and soils. *Journal of Applied Ecology*, 48(4), 906–915.

The weather prescription for pile burning at Steamboat can be difficult to meet, reducing the likelihood that all residual fuels could be removed; however, as indicated by *Landfire* data, fuel load reduction and/or fuel manipulation would need to be utilized in hazard tree areas, Trail F, lift lines, and road corridors areas, where vegetation removal would occur to meet *Fire and Fuels Standard 1*. This would be accomplished through pile burning, tree removal, and/or mastication and is anticipated to reduce fire intensity levels within three years after management activities cease

Upper Colorado River Endangered Fish

(EIS Page 220, 2nd paragraph)- The Upper Colorado River Basin is home to fourteen native fish species, including the endangered humpback chub, bonytail chub, Colorado pikeminnow, and razorback sucker. These endangered fish are found only in the Colorado River system.

The USFWS has determined that water depletions are among the current activities with the greatest impact on all four of these endangered fish. Activities resulting in water depletion in the Yampa River Basin may jeopardize the continued existence of the four endangered fish. **The proposed projects are expected to increase consumptive water use at Steamboat and create additional depletions to the Yampa River basin.** Therefore, the impacts of the project on the four big river fish are carried forward for analysis. Life history information for these four endangered fish is included in the BA in the project file.

Putting these ecosystems at risk for an area that will depend on snowmaking is a real threat to our environment and the species that reside in these areas. The need for water will only increase with climate change.

Greenback Cutthroat Trout

Until recently resource managers were under the assumption that CRCT were the only native trout subspecies present in the upper parts of the Colorado River watershed including the Yampa River. New genetic analyses have revealed genetic differentiation among native cutthroat trout populations on the Western Slope.¹⁹⁶ What is known is that a genetic signature associated with greenback cutthroat trout has been observed in a number of cutthroat trout collected on Colorado's western slope.¹⁹⁷ Populations having this genetic signature are sometimes called greenback-lineage or GB-lineage cutthroat trout. Cutthroat trout populations lacking the greenback genetic signature are called Colorado River-lineage or CR-lineage cutthroat trout.

Table 3.9-2: Summary of Yampa River Depletions at Steamboat – Existing Conditions (acre-feet)

Description	Diversions	Depletions	Return Flows
Snowmaking	313.1	71.9	241.2
Restaurants	10.7	0.5	10.1
Revegetation Projects	5.3	3.7	1.6
Total	329.1	76.1	252.9

Source: Western Bionomics 2017d

Lynx habitat is present within the majority of the Pioneer Ridge area, as well as in forested portions of the Bashor and Rough Rider areas. However, MPB mortality is high in lodgepole forests in all of these areas. As a result, lodgepole forests that were historically considered as lynx habitat are currently unsuitable for lynx,

as they no longer provide cover snowshoe hare, pine squirrel, or other lynx prey; nor do they provide cover for traveling lynx.

The following statement is false: “Lodgepole forests that were historically considered as lynx habitat are currently unsuitable for lynx, as they no longer provide cover snowshoe hare, pine squirrel, or other lynx prey; nor do they provide cover for traveling lynx.” Contrary to this claim, the increase in coarse wood and fir and spruce abundance will enhance Canada lynx (*Lynx canadensis*) habitat following MPB (Chan- McLeod, 2006), and protection of forest structure beneficial to lynx will conflict with fuel reduction priorities (Pelz et al. 2015). In addition, lynx prey populations are projected to increase post-MPB as lodgepole pine associated species mosaics regenerate. Harvested areas are projected to become important refugia for red squirrels and other conifer seed-dependent species in coming decades as regenerating conifer species matures to a point of sufficient cone production (Johnson et al. 2015).

Chan-McLeod, A.C.A., 2006. A review and synthesis of the effects of unsalvaged mountain-pine-beetle-attacked stands on wildlife and implications for forest management. BC J. Ecosyst. Manage. 7, 119–132.

Johnson, T.N., Buskirk, S.W., Hayward, G.D., Raphael, M.G., 2015. Timber harvest interacts with broad-scale forest mortality to affect site occupancy dynamics of a vertebrate seed predator. For. Ecol. Manage. 340, 95–102.

Pelz, K.A., Rhoades, C.C., Hubbard, R.M., Battaglia, M.A., Smith, F.W., 2015. Species composition influences management outcomes following mountain pine beetle in lodgepole pine-dominated forests. For. Ecol. Manage. 336, 11–20.

3.9.3.3 Raptors

The term “raptor” is a generic term referring to birds of prey that have sharp talons and a strong curved beak, both of which are used to prey upon a variety of animals for food. Raptors include eagles, osprey, kites, true hawks, buteos, harriers, vultures, falcons, and owls. Of these raptors, habitat exists in the Project Area for the following birds: northern goshawk, Coopers hawk, sharp-thinned hawk, red-tailed hawk, golden eagle, flammulated owl, great horned owl, northern pygmy owl, long-eared owl, boreal owl, and northern saw-whet owl.

Raptors that have been observed within the Project Area include red-tailed hawk, Coopers hawk, northern goshawk, and boreal owl.²⁰⁰ Of these, red-tailed hawk and Coopers hawk have been documented to have historically nested within the Project Area.²⁰¹ There are currently two known stick nests in existence within the Pioneer Ridge area that have been historically used by nesting raptors. Both of these nests were unoccupied in 2017 (refer to **Figure 3.9-1**).²⁰² Additional surveys for nesting raptors were conducted in 2017; no new nests, active or inactive, were located during these surveys.

3.9.3.5 Species of Local Concern

The Forest Service selected American elk and moose as a species that warrants individual analysis for this project due to public concern.

Elk

CPW estimates elk herd populations and sets management objectives at the scale of “Data Analysis Units” (DAUs). The Steamboat SUP area is located within DAU E-2 (Bears Ears Herd), which encompasses portions of Moffat and Routt counties and is bounded on the north by the state line, the west by the Little Snake River, the south by the Yampa River, Colorado Highway 318, and U.S. Highway 40, and on the east by the Continental Divide.²⁰⁵ The Bears Ears herd population increased steadily from 1975, when CPW (then Colorado Division of Wildlife [CDOW]) estimated approximately 10,000 animals, through 1999, at which point it peaked at approximately 37,000 animals. By 2008, the population was estimated at 32,000 animals. The most current post-hunt population data estimates the population within E-2 at 22,910, with a ratio of 18 bulls/100 cows.²⁰⁶ The population objective is 15,000 to 18,000 animals, thus the DAU is slightly above the population objective. The sex ratio objective is 20 to 25 bulls/100 cows. The cow-to-calf ratio has remained stable at 55 calves/100 cows since 1975.²⁰⁷

Evidence of elk utilization is apparent throughout the Pioneer Ridge area. The entire Project Area is mapped by CPW as elk summer range. The lower portions of the Pioneer Ridge area provide winter range, while the entire Bashor area is within CPW-mapped winter range and overlaps severe winter range. During the early portion of the ski season, generally between Thanksgiving and Christmas, elk tracks are readily apparent along the lower mountain, below Christie Peak. During the early winter and the early spring portion of the ski area’s winter operating period, elk are commonly

observed on the south-facing slopes of the Burgess Creek drainage immediately below the Pioneer Ridge area.

While there are no portions of the Project Area mapped as elk production range, it is likely that some elk utilize the Pioneer Ridge area during parturition, depending on snow conditions. **In general, elk calve at the point where climatic factors have made an area accessible at the time of parturition, typically mid- May to mid-June. This, in turn, is related directly to the receding snowline and plant phenology.**

While there is little evidence of annually repeated use of calving areas by specific cows beyond the normal happenstance of a herd being at about the same locality during migration in successive years.²⁰⁸ There are exceptions that suggest habitual use of calving areas by certain elk cows.²⁰⁹ In fact, cow elk normally calve on transitional spring ranges at about the same locations, but in years of abnormal weather conditions, they may calve above or below this range. It is, therefore, likely that in springs that follow winters with heavy snowfall, elk calve lower. During springs following winters with light snow, they likely calve higher.

Typical calving habitat includes hiding cover that is within easy reach of each cow if she does not actually calve within that cover type. Sagebrush is generally preferred calving habitat, where available. Most calving occurs in the vicinity of the edge between rather open foraging areas and adjacent forest escape cover. Free water is important, and calving areas are usually located within 1,300 feet of a water source. Calving areas are often located on gentle slopes (20 to 30 percent) with southerly exposures that offer ground cover concealment in the form of broken terrain, shrubs or down logs, and other coarse debris.

(EIS page 231, 2nd paragraph) Private land development related to growing human populations in Routt County takes place to a great extent in transitional and wintering areas used by elk. Since much of the Bears Ears DAU is interspersed with large tracts of private land, management of elk winter and transition range is a challenge.²¹⁰ **The fat deposited during the 4- to 6-week period that elk are utilizing fall transition range is important to winter survival. Fall transition range is, therefore, also important habitat for the Bears Ears herd.**

How does building a bridge, lift and glading impact this positively? This is prime elk and moose territory and SSRC is not addressing the long-term effect on these species.

In general, winter range may be the most limiting habitat factor for the Bears Ears herd, especially during winters with deep snow. In the vicinity of the Steamboat, wintering grounds extend roughly along the Gambel oak/mountain shrub zone from Harrison Creek to Copper Ridge, and thence up the Elk River Valley. Previous aerial surveys conducted by Western Bionomics in the vicinity of the Steamboat have revealed up to 300 elk wintering along the “Steamboat Front” area between the ski area and Harrison Creek.²¹¹

Moose

Historical records dating back to the 1850s indicate that moose occasionally wandered into northern Colorado from Wyoming, but were transient and never established a stable breeding population. In 1978 Colorado wildlife managers arranged for the first transplant of 12 moose to North Park near Walden. These initial moose came from Utah, and, in 1979 another dozen from Wyoming were released in the same region, in the Illinois River drainage. This early population reproduced quickly, and some began to move into the Laramie River Valley. In 1987 a transplant of 12 moose from Wyoming helped establish a strong population in that valley as well.

Before long, North Park’s moose population was doing so well that some were moved to the upper Rio Grande drainage. Between 1991 and 1992 about 100 moose from Wyoming, Utah, and North Park were released in southern Colorado near Creede.

Since the transplants, moose have thrived and expanded their range into suitable habitat. Colorado’s moose population is currently estimated at 2,550 animals statewide.

Moose prefer habitat near lakes, rivers or wetlands, where they feed on young plants including shrubs, aquatic plants, grasses, mosses, willow, and aspen. The moose in Colorado and throughout the Rocky Mountains in the United States belong to the *Shiras* subspecies, which are smaller than the *Gigas* and *Andersoni* subspecies found in Alaska and Canada. Similar to other game animals, CPW estimates moose herd populations and sets management objectives at the scale of DAUs. The Steamboat SUP area is located within DAU M-3 (the “Gore Moose” unit).²¹² This DAU encompasses Game Management Units 14 and 15 in Routt County, all of Grand and Summit Counties, and a portion of Eagle County.²¹³ The extensive area within this DAU does not lend itself to management in the context of the current much expanded moose population in Northwest Colorado. There are now twelve distinct moose populations in the state and soon each will have its own DAU designation.²¹⁴ The 2014 post-hunt population estimate for DAU M-3 is 370.²¹⁵

(EIS page 232, 2nd paragraph) **Evidence of moose utilization is apparent throughout the Pioneer Ridge area, and several moose (bulls, cows, & calves) were observed during field surveys.** The entire ski area is located within a large area mapped by CPW as moose summer range. The lower portions of the Pioneer Ridge area provide winter range, while the entire Bashor area is within CPW-mapped winter range. During the early spring portion of the ski area's winter operating period, **moose are commonly observed on the south-facing slopes of the Burgess Creek** drainage immediately below the Pioneer Ridge area. In the past few years, moose have begun to regularly wander onto ski trails during the winter operating period, creating safety concerns for the recreating public.

CPW, in collaboration with the Forest Service and Steamboat, is in the early stages of preparing a plan to manage moose in the vicinity of Steamboat.

The resort already has a huge moose issue within the confines of the resort as it stands. Increasing utilization of this area will negatively impact the moose population.

3.9.3.6 Management Indicator Species The National Forest Management Act (16 U.S.C. § 1600) directs the Forest Service to select certain plant communities and/or vertebrate or invertebrate species to monitor as indicators of maintenance, improvement, or decline in habitat for numerous species. The Routt National Forest list of MIS is included in **Table 3.9-5**.

Greenback Cutthroat Trout

The Proposed Action Alternative includes PDC to disconnect existing connected disturbed areas and provides a range of PDC to be implemented for projects within the watershed influence zone, including the requirement to prepare a grading plan and erosion control plan prior to project implementation. There are currently no GB-lineage cutthroats in the Burgess Creek drainage; nor are they known from anywhere in the Yampa River watershed. However, Burgess Creek may provide suitable habitat for these GB-lineage fish. With the PDC, the proposed projects would not affect trout habitat in Burgess Creek.

The results of the hydrology analysis, in combination with the fact that GB-lineage trout are absent from the Yampa River drainage, leads to a finding that the Proposed Action Alternative would have no effect on greenback cutthroat trout.

The following statement is false: "Results of the hydrology analysis, in combination with the fact that GB-lineage trout are absent from the Yampa River drainage, leads to a

finding that the Proposed Action Alternative would have no effect on greenback cutthroat trout.” The increasing need to make artificial snow to combat warming climate will continue to negatively impact GB and BG-lineage fish habitat in Burgess Creek. Links between man-made snow pollution (endocrine-disrupting chemical constituents), fish species, and watershed health are being examined by land management agencies across U.S. ski resort locations this year, including the Forest Service in Colorado, summer 2018

Canada Lynx

The Proposed Action Alternative would have the following effects on lynx:

Convert 55 acres of suitable and currently unsuitable lynx habitat to non-habitat within the Mount Werner LAU. The effectiveness of this habitat has been diminished with tree skiing since inception of the ski area. Decreased effectiveness would continue with expansion of the operational boundary.

Reduce the effectiveness, via glading, of 92 acres of snowshoe hare winter habitat in the Pioneer Ridge Area. This entire winter habitat area has already been diminished in effectiveness as a result of several decades of side country tree skiing. Decreased effectiveness would continue with expansion of the operational boundary.

Increase skier numbers on 408 acres of suitable and 24 acres currently unsuitable lynx habitat in Pioneer Ridge and Fish Creek Canyon. Again, this habitat is of low effectiveness since it is already heavily skied, and would continue to offer impaired habitat effectiveness with approval of the project.

This habitat is not unsuitable lynx habitat. Following MPB, the increase in coarse wood and fir and spruce abundance will enhance Canada lynx habitat (Pelz et al. 2015, Chan- McLeod, 2006).

Increase traffic by 3 percent on Highway 40 through lynx habitat on Rabbit Ears Pass and within the Muddy Pass Lynx Linkage Area. Traffic volume would remain below the threshold of 3,000 to 5,000 AADT thought to impair lynx habitat. **Steamboat Ski Resort Draft Environmental Impact**

(EIS page 236, 1st paragraph) In large part because lynx are known to remain on the periphery of the operational boundary of ski areas during the winter, and do not utilize habitat within Colorado ski area boundaries, but also because tree skiing reduces the effectiveness of snowshoe hare habitat, the effectiveness of habitat within the currently managed ski area and within the proposed operational boundary expansion has been compromised. The proposed projects on their own would have mostly insignificant and/or discountable effects on lynx. **However, taken together, these projects would directly reduce the availability of lynx habitat,** and would continue to indirectly impair lynx habitat that would not be directly impacted. The projects would not compromise the ability of the Mount Werner LAU to support foraging, denning, or traveling lynx. As a consequence, the proposed project may affect, but is not likely to adversely affect, the Canada lynx.

So why continue forward with this proposal? If SSRC acknowledges that the lynx, moose, and elk are all at risk, shouldn't we as a community say enough is enough? The expansion doesn't suit the current clientele, so why push for an expansion into an area that SSRC acknowledges will cause harm to the ecosystem?

Region 2 Sensitive Species

The Proposed Action Alternative would impact seven species on the Regional Forester's sensitive species list, but would not be likely to result in a loss of viability on the Planning Area (Routt National Forest), nor cause a trend to federal listing or a loss of species viability rangewide. The seven impacted species are: American marten, hoary bat, pygmy shrew, northern goshawk, boreal owl, olive-sided flycatcher, and flammulated owl. For all other species, there would be no impact. A summary of these determinations is included in **Table 3.9-7**.

The seven Region 2 sensitive species with potential impacts are addressed in the following discussion.

American Marten

(EIS page 239 1st paragraph) Several sightings of martens have been documented within the Steamboat SUP area, and it is assumed that martens are present in suitable spruce/fir and lodgepole pine habitat throughout the ski area. Project components would directly impact 87.70 acres of potential marten habitat. **Furthermore, the indirect impact of increased skier presence within Pioneer Ridge and Fish Creek Canyon**

during the winter would impair the functionality of habitat such that during the winter martens may avoid Pioneer Ridge, and perhaps the skiable portions of Fish Creek Canyon, upon implementation of the operational boundary expansion and construction of the Pioneer chairlift.

Snow compaction that would result from increased skiing within the entirety of the 360-acre Pioneer Ridge area, as well as within the 279-acre Fish Creek Canyon, may eliminate the presence of subnivean spaces upon which marten depend during the winter. While these impacts would not likely lead to direct impacts on survival of martens, natality and/or fecundity may be impacted as the carrying capacity of the Project Area for martens may be reduced. The proposed projects would add to cumulative impacts to the species rangewide. As a result, the proposed project may impact individuals, but is not likely to result in a lack of viability in the Planning Area, nor cause a trend towards federal listing or a loss of species viability rangewide.

Where will the Marten go? If the expansion pushes them into other areas, there are likely other Martens in the area and the forest can only support so many species as it is.

Hoary Bat

The proposed project would convert 87.70 acres of forested hoary bat habitat to non-habitat. While it is not known whether hoary bats exist within the Project Area, it is possible that individual bats could be killed if roosting in trees that are cleared during the construction period. The response of hoary bats to recreational disturbance is not known; however, they are the most common bat species killed by wind turbines. Consequently, since roosting individuals could be killed during tree clearing, Forest Service approval of the Proposed Action Alternative may impact individuals but is not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species viability rangewide.

Pygmy Shrew

It is likely that pygmy shrews exist in suitable habitat within the Steamboat SUP area, including within the current Project Area. Proposed projects would impact 127.43 acres of habitat that could be occupied by pygmy shrews. Where suitable moist, boreal environments are present, suitable habitat for shrews is available. Should shrews inhabit any portions of the Project Area, it is possible that construction equipment and activities could crush or otherwise kill individual shrews. Upon termination of construction activities, shrew habitat would still be present in gladed areas. Therefore, the proposed activity may impact individuals, but is not likely to result in a lack of

viability in the Planning Area, nor cause a trend towards federal listing or a loss of species viability rangewide.

Northern Goshawk

The Proposed Action Alternative would impact 184.56 acres of conifer and aspen forests that provide potentially suitable goshawk habitat. The impacts would vary from thinning trees in goshawk habitat to 100 percent clearing of trees, building roads, and installing chairlifts. All these areas would still provide goshawk foraging habitat following implementation. However, potential nest habitat would be eliminated on 36.42 acres of suitable habitat where forest is permanently converted to non-forest habitat. Gladed areas and hazard tree removal sites in spruce/fir and aspen would retain potentially suitable forage and nest habitat.

There are two raptor nests currently identified in the Pioneer Ridge area. Since Forest Service monitoring began in 1994, these nests have not been used by goshawks. Hazard tree removal, glading, road construction, and ski trail construction projects are proposed in close proximity to all two of these nests. The Forest Plan prescribes standards for Threatened, Endangered, Sensitive Species, and Wildlife, which includes the goshawk. Specifically, *Threatened, Endangered, Sensitive Species, and Wildlife Standard 8* and PDC that are incorporated into this project require wildlife surveys at known raptor nests prior to implementation of any projects. If goshawks are found to be nesting at these sites, appropriate protections will be implemented to minimize viability concerns and protect important breeding, nesting, or young rearing areas.

Although direct and cumulative effects are anticipated, northern goshawk populations have declined across the planning unit and would likely return to stable in 80 to 200 years as the lodgepole pine community returns to late seral or mature forest conditions.

Therefore, implementation of the Proposed Action Alternative may impact individuals, but is not likely to result in a lack of viability in the Planning Area, nor cause a trend towards federal listing or a loss of species viability rangewide.

Boreal Owl

Boreal owls have been located calling from roost trees during surveys conducted previously within the Steamboat SUP area. Responses from boreal owls were heard in the vicinity of the lower Pony Express/Pioneer Ridge area, and in the Morningside area of the mountain. The location of nest trees used by these birds was not discovered.

Project components within the Proposed Action Alternative would be implemented in 87.70 acres of potentially suitable boreal owl habitat; many projects would take place in the vicinity of the location where boreal owls have responded to surveys. Construction activities associated with the proposed projects during the nesting season (April 15–July 31 in Colorado) could disturb nesting adults, if nests occur within the zone of influence of the project.²¹⁷ If the disturbance occurs prior to fledging of the nestlings, it may result in abandonment of the nest by the adults, and subsequent mortality of nestlings.

Hazard tree removal operations would target standing dead trees that provide nest habitat for boreal owls. **This component of the project would likely remove all potential nest trees for boreal owls in the polygons in which they occur.**

As a consequence of the foregoing information, the Proposed Action Alternative may impact individuals, but is not likely to result in a lack of viability in the Planning Area, nor cause a trend towards federal listing or a loss of species viability rangewide.

The near-complete overlap between construction activity and existing Boreal owl habitat, and the systematic removal of nest trees will result in loss of species viability in the Pioneer Ridge area. In combination with degraded rodent habitat (winter snow compaction and summer soil compaction), Pioneer Ridge construction will result in rapid and catastrophic Boreal owl population decline due to nest abandonment and habitat destruction.

Colorado River Cutthroat Trout

CRCT exist within Burgess Creek. Proposed activities have the potential to increase turbidity and water yield within Burgess Creek, both of which would impact CRCT. However, PDCto disconnect existing connected disturbed areas and reduce erosion are intending to compensate for soil disturbances or avoid new impacts to stream health and water quality. Severe weather events could still temporarily impact stream health; therefore, implementation of the Proposed Action Alternative may impact individuals but is not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species viability rangewide.

Raptors

Activities proposed under the Proposed Action Alternative would impact 184.56 acres of conifer and aspen forests that provide potentially suitable raptor nesting habitat. The

impacts would vary from thinning trees to 100 percent clearing of trees, building roads, and installing chairlifts. All these areas would still provide raptor foraging habitat following implementation. However, potential nest habitat would be eliminated on 36.42 acres of suitable habitat where forest is permanently converted to non- forest habitat. Gladed areas and hazard tree removal sites in spruce/fir and aspen would retain potentially suitable forage and nest habitat.

A raptor survey was conducted in the Project Area during the nesting period in 2017. The survey did not discover new active or inactive raptor nests; however, two historically active nests are known to exist in the Pioneer Ridge area (refer to **Figure 3.9-1**). The project has been designed, to the extent practicable, to minimize raptor impacts at these nests, if active during construction. However, the Proposed Action Alternative includes a Forest Plan amendment to allow construction-related disturbances at known active and/or inactive raptor nests.²¹⁹ Species-specific no-disturbance buffers and timing restrictions would remain in place during the maintenance and operation phase of the project.

If construction and/or tree clearing activities are conducted adjacent to an active raptor nest, habitat effectiveness would likely be impaired during construction. It is likely that during construction, affected nesting raptors would experience reduced recruitment (young being added to the population). Such impacts would be temporary in scope and limited to a low number of individual birds. Over the long term, non-cleared and thinned forest would continue to provide habitat for nesting raptors; the proposed projects would not measurably affect long-term raptor abundance or community composition in the Steamboat SUP area. The Forest Plan amendment would not allow active or inactive raptor nest trees to be removed; therefore, direct mortality of raptors is not anticipated with the Proposed Action Alternative. Additionally, raptor nest surveys would be conducted at known raptor nests between June 15 and July 31 of each year of construction to identify active nest sites. Project-related construction activities are permitted prior to the beginning of the June 15 survey window, unless active goshawk nest sites were previously identified within 0.25 mile of the construction activity.

Migratory Birds

There would be 228.39 acres of vegetation removal and grading within potential forest, shrubland, and grassland nest habitat for migratory birds. PDC requires nest surveys to be conducted prior to construction. The project has been designed, to the extent practicable, to minimize incidental take during construction through the implementation

of this PDC. Construction may occur within the nesting period if surveys show no active bird nests present, or as otherwise approved by the Forest Service.

This Forest Plan amendment would not apply to Forest Service sensitive species, including northern goshawk, flammulated owl, and boreal owl. These three raptors are subject to additional Forest Plan Standards that protect sensitive species and their habitat.

However, it is possible that undetected active nests of migratory birds could occur in the Project Area during tree removal, possibly resulting in the incidental take of eggs, nestlings, or adults. Furthermore, the Proposed Action Alternative includes a component to complete a Forest Plan amendment to allow disturbance within the nest period of forest raptors.

Avian nesting and foraging effectiveness could be impaired adjacent to the gladed areas, the Pioneer Ridge lift line, and other areas of tree removal. While some affected birds could experience reduced recruitment, such potential effects would be limited to a low number of individual birds and would not measurably affect bird abundance or community composition in the Steamboat SUP area.

The Proposed Action Alternative would be consistent with the Forest Service/USFWS Migratory Bird MOU because of the requirements of PDC intended to avoid the incidental take of migratory birds.

Species of Local Concern

Elk

All of the proposed activities have the potential to impact seasonal elk habitat, primarily summer and spring/fall transition ranges. Because of the existing level of development, projects in the Bashor area would have the least impact, **while projects in the Pioneer Ridge area would have the greatest impacts due to their location in the currently secluded area outside the managed operational boundary. Yearly operations and maintenance activities in the Pioneer Ridge area may disturb elk using the area during calving season, adversely affecting fecundity, natality, and calf recruitment, and it may lead to elk avoidance of the area.** PDC require elk

surveys of the Project Area prior to project implementation to ascertain the level of elk use during the calving period. If large numbers of elk are calving in Pioneer Ridge, Forest Service personnel, in consultation with CPW, will develop mitigation measures to minimize impacts. It should be noted that the population of the Bears Ears elk herd is

currently above the stated CPW objective, it is not likely that reduced calving habitat would be detectable at the scale of the Bears Ears DAU.

Moose

Direct impacts to moose habitat would arise from activities that remove cover, such as glading (tree thinning) and some forest clearing. Both would likely increase understory shrubs (e.g., lower portions of Pioneer Ridge). Because moose forage on shrubby twigs, these activities would increase the forage base over time. The direct impact of clearing forest vegetation would likely have little impact on moose in the long term.

Greater impacts would be indirect, such as construction activities temporarily displacing moose from certain areas. Similarly, summer operations may compel moose to avoid certain areas.

So, if the resort already has a moose problem, how will displacing them make this situation better?

Species of Local Concern

Designation of the Mount Zirkel Wilderness provided conservation of summer range for elk, and has provided a summertime refuge for the Bears Ears elk herd.

Road construction and reconstruction has increased the amount of habitat fragmentation, conversion, and loss in Routt County. Residential and commercial development associated with road construction has reduced potentially suitable habitat for elk. Such activities add to the fragmentation habitats found within region.

Approval of the Proposed Action Alternative would add to the cumulative impact of human-induced direct habitat fragmentation and disturbance within Moose DAU M-3. However, based on the rapid moose population growth rate in this DAU since the original introduction in 1979, moose have not adversely impacted by habitat fragmentation in Northwest Colorado.

The more important cumulative impact relates to the potential for adverse moose/human interactions, as the two species increase their presence in habitats occupied by the other. Several individuals within or near to the Steamboat Springs City Limit have been injured by moose in the past few years. Development of the ski school facility at Bashor/Rough Rider would have an additive impact of increasing the potential for adverse moose/human interactions.

If the resort is facing more “adverse moose/human interactions and the expansion moves more people into moose habitat, then what? Why does the moose suffer for an expansion that is acknowledge as being not really needed nor demanded by Steamboat clientele?

Migratory Birds

The temporal and spatial bounds for this migratory bird analysis are the same as that described above for sensitive species. Projects identified by the Forest Service and listed as reasonably foreseeable in **Appendix A** with relevance to wildlife are included in the cumulative effects analysis. Some of those projects are also reasonably certain. There are no reasonably foreseeable projects that would have effects on migratory bird habitat.

Large numbers of birds are killed due to collisions with human structures and equipment, poisoning by pesticides and contaminants, and attacks by cats and other introduced predators. Diseases such as botulism, avian cholera, salmonellosis, and emerging West Nile virus can also have significant population impacts. Human activities, such as overuse of pesticides (enhancing the survival of pesticide-resistant mosquitoes), for example, can help spread certain diseases. The greatest threat to birds, and all wildlife, continues to be loss and/or degradation of habitat due to human development and disturbance. For migratory birds and other species that require multiple areas for wintering, breeding, and stopover points, the effects of habitat loss can be complex and far-reaching. Added to deaths from natural causes, such as adverse weather, predation, or starvation, human-related bird deaths may result in greater mortality than a population can withstand.

While the impact of the current project may not result in detectable impacts at the scale of the SUP area or the Forest, the impacts inherent within the Proposed Action Alternative are additive to the sum of all cumulative effects on migratory birds nation-

wide.

Pony Express Area		
<i>The Crux</i> Enhancement	High	High erosion and compaction potential, high mass movement potential
<i>Middle Rib</i> Enhancement	Moderate	High erosion and compaction potential, moderate mass movement potential
<i>Longhorn</i> Enhancement	Moderate	High erosion and compaction potential, moderate mass movement potential
Pony Express Patrol Hut and Restroom	Moderate	High erosion and compaction potential, low mass movement potential
<i>The Crux</i> to <i>Dropout</i> Ski-way (Trail E)	Moderate	High erosion and compaction potential, low mass movement potential

- **Table 3.10-6: Qualitative Mass Movement Potential Risk by Projects with Grading**

Table 3.10-6: Qualitative Mass Movement Potential Risk by Projects with Grading

Project	Risk	Limitations
Pioneer Ridge Area		
Pioneer Chairlift	Moderate	High erosion and compaction potential, low mass movement potential
Trail G	Moderate	High erosion and compaction potential, moderate mass movement potential
Trail F	Moderate	High erosion and compaction potential, moderate mass movement potential
Burgess Creek Bridge	High	High erosion and compaction potential, high mass movement potential.
Snowmaking Pipelines		
Pipeline above Bashor Chairlift Relocation, Section at South End of Lower <i>Upper Storm Peak Express Connector</i> , Section Near <i>Boulevard/Trail A</i> , and Section Below <i>Upper Middle Rib</i>	High	High erosion and compaction potential, high mass movement potential
Other Snowmaking Pipelines	Moderate	High erosion and compaction potential, low to moderate mass movement potential

Source: Buscher Soil & Environmental Consulting, Inc and Western Ecological Resource 2017

Wetland Dewatering

- A wetland supported by groundwater, such as *the Crux* wetland, could be affected if there are changes in the pattern of groundwater flow into and through the wetland, or a reduction in the groundwater recharge area for a wetland. Changes to a wetland's hydrology could potentially reduce the size of the wetland, change its species composition, or lead to a conversion to another wetland type or to upland habitat. As disclosed in **Table 3.13-4**, the proposed regrading of *the Crux* terrain would result in 0.1 acre of direct wetland impact. There would also be an indirect impact as the proposed regrading would result in a cut slope that could potentially drain the subsurface hydrology that supports another system of wetlands (<0.1 acre) adjacent to and upslope of this location. **Additionally, Trail E would be located directly upslope of a small spring-fed wetland. If grading associated with this trail intercepts and diverts the subsurface hydrological flows, this wetland (<0.1 acre) may be adversely affected.**

Again, why expand and put these precious zones at risk for such a small population of human benefit?

The installation of underground pipeline trenches for snowmaking through or adjacent to wetlands may intercept the high groundwater table, which would potentially result in the dewatering of a wetland so that it no longer is in a functioning condition. Preliminary estimates based on a 100-foot-wide effect zone show that this could impact another 1.1 acres of wetlands in the Bashor Bowl and Rough Rider areas and 0.2 acre in the Pony Pod. Although there is potential to drain additional wetlands through alterations in subsurface hydrology, groundwater patterns throughout the entire **Steamboat SUP area are unknown at this time and the estimates provided above may not be accurate**. Any adverse effects to wetlands through alterations of groundwater flow, if they were to occur, may require additional actions to comply with the Forest Plan. In addition, the potential adverse effects would be mitigated by a recommended site-specific PDC contained in **Table 2-1**. Specifically, the PDC states that clay-cut off walls would be installed in any trench where high groundwater is encountered within or adjacent to any wetland resource. The installation of the clay cutoff walls in any snowmaking or utility pipeline trench would ensure that no dewatering would occur to adjacent wetland resources.

It would be in the best interest of the community for SSRC to have estimates that are accurate before anyone could move forward with such a project.

Snow Compaction

Snow compaction may also lead to changes in wetland function. Snow compaction would be greatest along any groomed ski trails or over-the-snow skid trails used during logging operations. Regular use by skiers may also compact snow. **At the Pioneer Ridge area, there are numerous spring/seep complexes that support organic rich soils, and thus there could be potential effects of snow compaction. These effects would be variable depending on whether the area is an intensively groomed ski trail or an off-trail ski glade.** Most of the Pioneer Ridge area would be gladed and grooming would be limited to a few ski trails away from sensitive wetland habitats. In addition, the high interannual variability in mountain snowpack would likely be greater than any anthropogenic effects from snow compaction, except in areas receiving early, frequent, and intense use.²⁵⁴

Given the large amount of snowmaking required to support this year, this statement alone shows the many reasons why this project is a non-starter.