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White River National Forest
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Glenwood Springs, CO 81601

December 8, 2018

Submitted to: <https://cara.ecosystem-management.org/Public/CommentInput?Project=54909>

RE: Proposed 2019 Copper Mountain Snowmaking and Summer Uses Projects

Dear Mr. Fitzwilliams,

The following are comments regarding the Copper Mountain Resort (POWDR Corporation) proposal, *“to improve available recreation opportunities at CMR... The snowmaking component of the project would ensure timely opening of the resort as well as adequate snow coverage on all trails where snowmaking infrastructure is installed. The summer trails and summer programming components of the project would widen the variety of adventure-based recreation opportunities available to people of all ability levels and during all seasons of the year. There is a need to implement these projects to improve upon existing and to provide additional recreation opportunities for the public at CMR, which would ultimately ensure the availability of high quality recreation opportunities on the WRNF.”*

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Scoping for Snowmaking, Summer Trails, and Other Actions

I appreciate receiving notice as an Interested Party of the proposed actions. Though, this project was not identified in the current Schedule of Proposed Actions and needs to be listed in the next update of the SOPA notice with the comment period extended through Friday, January 30, 2019 (36 CFR 220.4(d)). The scoping notice should be supplemented to address issues discussed in the initial comments that the Forest Service receives on this proposed action. I also recommend that in mid-January the District Office host a technical workshop to review in detail the design standards to be applied to the proposed bike trails.

Continental Divide National Scenic Trail

Prior to or concurrent with the analysis of the proposed action, the Forest Service needs to amend the White River Forest Plan and update the CMR Master Development Plan to address changed conditions and new information regarding protecting Continental Divide National Scenic Trail (CDNST) values and to address changed CMR development strategies, climate change, and forest health.

The congressionally designated CDNST includes the travel route which is a terra trail and the selected rights-of-way that is addressed in planning through providing for a protected trail corridor. The National Trails System Act states that, “national scenic trails, established as provided in section 5 of this Act, which will be extended trails so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass (16 U.S.C. 1242(a)(2); and that comprehensive planning will describe specific objectives and practices to be observed in the management of the trail, including the identification of all significant natural, historical, and cultural resources to be preserved...(16 U.S.C. 1244(f)).”

The revised scoping notice should specifically seek public comments on the proposed action to expand the Corn Lot in 2019. The 2008 CMR Tenmile Creek Facilities Improvements and Restoration Project EA decision fails to recognize and protect the *nature and purposes*¹ of the CDNST. An updated Master Development Plan, and current and future NEPA processes, must recognize the significance of the CDNST as it passes through the CMR Special Use Permit area. I am specifically concerned with scenery effects of the Far East Parking Lot (aka Corn Lot) on CDNST values. The effects on CDNST values of the Restoration Project EA decision of 2008 should be mitigated by applying visual screening best management practices. Further development of the Far East Lot should be suspended and no permit issued or operating plan

¹ The nature and purposes of the CDNST are to provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the CDNST corridor.”

approved for expansion of the lot until the CMR Master Development Plan is amended and the 2006 CMR Trails and Facilities Improvement EIS and the 2008 CMR Tenmile Creek Facilities Improvements and Restoration Project EA are supplemented to address the requirements of the National Trails System Act as implemented through the direction in the 2009 CDNST Comprehensive Plan, FSM 2353.4, FSH 1909.12 part 24.43, and Federal Register Notice of final amendments to the CDNST Comprehensive Plan and final directive (74 FR 51116). The CDNST Comprehensive Plan is attached for reference (**Attachment A**).



Far East Lot as currently developed adjacent to the CDNST travel route

The FR Notice of final amendments to the CDNST Comprehensive Plan and final directives states, *“The final amendments to the CDNST Comprehensive Plan and corresponding directives will provide guidance to agency officials implementing the National Trails System Act. The final amendments are consistent with the nature and purposes of the CDNST identified in the 1976 CDNST Study Report and 1977 CDNST Final Environmental Impact Statement adopted by the Forest Service in 1981 (40 FR 150). The final amendments and directives will be applied through land management planning and project decisions following requisite environmental analysis”* (Federal Register, October 5, 2009 (74 FR 51116)). A CDNST Planning Handbook is attached for reference presents NEPA considerations for National Scenic Trail planning in Chapter V (**Attachment B**).

Solitude Station

In addition to actions described in the November notice, the Forest Service should ensure that the proposed Solitude Station facility is consistent with the direction in FSM 2380 and the following Forest Service adopted criteria for Copper Mountain facilities:

- Concordance with the scenic environment through appropriate siting of buildings and the use of low impact materials and colors (e.g.,



- indigenous construction materials, such as stone and wood, as well as non-reflective glass and roofing materials)
- Low-level structures, designed for efficient energy use
- Remain in context with the landscape (i .e. rustic, craftsman, and country lodge styles).

Design deviation from any of these principles should result in the Forest Service seeking additional public input on the Solitude Station proposed architectural design.

A-Lift Neighborhood

CMR has submitted plans to Summit County for an eastside development, which is described as the A-Lift Neighborhood. CMR is exploring the possibility of constructing a ski-back access road to allow skiers downhill access to this new development. All of the reasonable ski-back access roads would require utilization of NFS lands and be subject to NEPA processes. CMR should be consulted to determine if the development of a new ski-back access road is a reasonable action that should be included in the January SOPA.

Purpose and Need for Action

The purpose and need for action describes that, *“The WRNF Land and Resource Management Plan (Forest Plan) allocated the CMR special use permit (SUP) area as Management Area 8.25 – Ski Areas (Existing and Potential)... The Proposed Action has been reviewed for consistency with all relevant management direction provided by the Forest Plan.”*

The 2002 Forest Plan is now over 15 years old and should be revised to address change conditions and new information (NFMA, Section 6(f)(5)(A)). Relevant to this proposal, the current Forest Plan fails to address the requirements of the National Trails System Act to provide for the appropriate management of the Continental Divide National Scenic Trail (CDNST) corridor as implemented through direction found in the 2009 CDNST Comprehensive Plan, FSM 2353.4, FSH 1909.12 24.43, and Federal Register Notice of final amendments to the CDNST Comprehensive Plan and final directive (74 FR 51116).

The purpose of the project is described as, *“to provide a variety of year-round recreation opportunities for the public at CMR, ultimately encouraging new guests to visit and experience the WRNF and CMR in a safe and well-managed context. The snowmaking component of the project would ensure timely opening of the resort as well as adequate snow coverage on all trails where snowmaking infrastructure is installed, to enhance the reliability and consistency of the skiing surface in response to site-specific operational concerns, guest expectations, and increased variability in climatic conditions like precipitation and temperature. The snowmaking component of the project is fundamental in ensuring a predictable opening date and adequate snow coverage throughout the season. The summer trails and summer programming*

components of the project would expand the variety of nature-based recreation opportunities available at CMR to people of all ability levels and during all seasons of the year."

The purpose statement could be supplemented to describe that snowmaking is needed to ensure that the estimated Comfortable Skiing Capacity slope capacity component is obtainable. In the attached paper titled, *"How To Measure Trail Capacity,"* by Beat vonAllmen and Stefan Salzmann describes that the, *"more people enjoy the technological evolution of highly groomed ski trails today; however, we must determine at what level of use trail density becomes unacceptable. Recent research on the subject suggests that acceptable traffic flow range between 18 and 40 persons per hour per meter trail width (p/h/m). This is significantly higher than for formerly less groomed trails where overall traffic flow may average approximately 10 p/h/m. Well-groomed trails allow the transfer rates to be more than double that of less groomed trails."*

The scoping notice describes that, *"there is a need to improve upon existing and to provide additional recreation opportunities for the public at CMR, ultimately ensuring year-round high quality recreation opportunities on the WRNF."* The statement should be supplemented to address the need to provide for the *nature and purposes* of the CDNST, including ensuring that carrying capacity of this National Scenic Trail is not exceeded. I agree that there is a need to improve some recreation opportunities including the actions of realigning, adding tread hardening structures, and restoration of sections of existing trails, including the recently constructed connector between the Fat Marmot trail and the base area. However, there is no demonstrable need to increase bicycle use on the CDNST, which would result from the proposed action as an indirect effect of having an increased number of mountain bikes at Copper Mountain.

The scoping notice should be amended to describe that the proposal includes a site-specific amendment to the Forest Plan and supplements the 2006 EIS and 2008 EA to address the CDNST, snowmaking, and summer uses.

Proposed Action

The proposed action describes, *"To continue providing a recreation experience consistent with guest expectations, CMR proposes to...install additional snowmaking coverage on 86 acres of existing ski trails within the SUP area."* In general, the Copper Mountain Master Plan should be amended and associated EIS supplemented to provide for a summer recreation management plan for the resort area.

Snowmaking

I support additional snowmaking; however, if water-rights is limiting, I recommend that

snowmaking on all of Collage² and The Moz be addressed as a higher priority than snowmaking on Treble Cliff, Mine Dump, and the yet to be developed Race Arena runs. A revised scoping notice should discuss the addition of these two ski runs and the future possible action of constructing the N-Lift.³ I believe for racer circulation purposes that the Race Arena runs should be constructed in conjunction with adding the N-Lift and not built beforehand.

The Timber Express pod is very popular with immediate level skiers. I feel that CMR and the Forest Service should further study the Pod to ensure that the area is being effectively managed and confirm that current plans provide for a desired balance of mountain services addressing lift, restaurant, snowmaking, and ski run desired conditions and capacities.

Hiking Trails

The proposed action describes, *“Construct approximately...14 miles of additional hiking trails.”* I recently hiked to Copper Mountain summit and did not find a need for a defined trail route once I reached the elevation of the Solitude Station. It is also my sense that the proposed Solitude Station based hiking trails would receive minimal use except for the occasional CMR sponsored event. In contrast, I feel that designed and managed pedestrian/hiking trails connecting to Copper Mountain Center Village and East Village would be highly desirable for many visitors. Pedestrian trails that provide loops at lower elevations could provide the opportunity to hike to special scenic backdrops, enjoy wildflowers and pick huckleberries with a lower lightning risk during the monsoon season than high elevation trails.

Regarding the current proposal, a specific hiking trail recommendation is to eliminate proposed trails F and J. Instead, any new trail to replace J could be constructed to the north of the Copper Mountain summit without connecting to the base of Spaulding Bowl. A replacement trail for F could be designed along the ridgeline break with Spaulding Bowl, which would likely be the preferred route for the users in any case. I would also recommend that any hiking trails be constructed following hiker/pedestrian trail class 2 design parameters **(Attachment C)**.

² I wasn't able to ascertain with certainty from the scoping notice the status of snowmaking on the Collage ski run.

³ The 2011 Copper Mountain Master Development Plan describes a new lift: *“Construct a West to East connector lift between American Flyer and American Eagle to access new terrain and improve circulation (N-lift)”* (MDP at 1-5). The Master Development Plan discusses the N-Lift: *“From a skier/rider circulation perspective, a shortcoming of CMR is that traveling from the west side of the mountain (Timberline, American Flyer, Sierra, etc.) to the east side of the mountain (American Eagle, Excelsior, Super Bee, etc.) involves a seemingly roundabout and tedious trip including an extended ski-out to the Center Village and a relatively long ride on American Eagle or Super Bee. In order to facilitate the west-to-east transfer, a new lift will be installed from lower Carefree trail to near the top terminal of American Eagle. In addition to improving cross-mountain circulation, this detachable chairlift will also provide direct access to proposed Intermediate and Advanced ski runs, the Bittersweet Alpine ski racing venue, and the improved and expanded Sail Away Glades.”*

A reasonable alternative or addition to the proposed action would involve developing an interpretive loop pedestrian/hiking trail that is associated with the Solitude Station. I would encourage CMR to explore a loop trail that accesses the boulder field and ridgeline in the vicinity of lower Hallelujah. I would also like for CMR to consider hosting a summer season Environmental Education Center at Solitude Station to be staffed by volunteers.

Bike Trails

The proposed action describes, “*Construct approximately 24 miles of additional mountain biking trails....*” The proposal is not ripe for a decision, since the Forest Service and CMR has failed to demonstrate the ability to construct and maintain sustainable mountain bike trails that were approved in previous decisions. Actions are considered “ripe for decision” when the agency has identified a proposal it is prepared to make a decision on and the effects can be meaningfully analyzed.

Following adaptive management principles, future trails should learn from the design and construction practices used for the trails that are currently established within the permitted area. The proposal to construct additional trails should be placed on hold until after existing trails are reconstructed and/or completed to address soil erosion issues.

If additional trails are to be approved for construction at this time, the proposal should be reduced in scope and only approve a subset of the proposed routes including possibly trails 15, 18, 32, 36, 4, and 7. Monitoring the condition these routes over a several year period could lead to another proposal to add additional routes to the bike system if the new routes prove to be sustainable. I believe that this is a reasonable alternative to be considered in detail.

Providing for optimized and gravity downhill mountain bike trails continue to be controversial due to the challenges of protecting soil and water resources. To help ensure the sustainability of constructed routes, designs and surveys of proposed routes should be certified by a civil-engineer, soil scientist, and hydrologist. Furthermore, actual construction of approved trail plans need to be performed by highly skilled construction crews and equipment operators.

Mountain Access Road

The proposed action describes, “Extend a 370-foot segment of the existing “A-1” mountain access road.” The discussion about the potential for a future restaurant is remote for there are many locations on the mountain better suited for such a facility. Would this road provide for a desirable egress grade from Spaulding Bowl to Slot-Car-Track? Would the existing road be reclaimed? I would support this action if the new route provides for continuous downhill egress from Spaulding bowl.

Preliminary Issues and Effects to Consider

The scoping notice describes that, *“The analysis within the EA will focus on impacts to NFS lands. The EA will address the effects of the Proposed Action on the following resources: recreation, wildlife, vegetation, wetlands, watershed resources, soils and geotechnical, and cultural resources (including Native American resources).”* In addition to these items, the effects analyses discussion needs to be expanded in a revised scoping notice to mention potential impacts to the CDNST, including the impacts of the 2019 proposed expansion of the Corn Lot.

Vegetation: The density of the proposed mountain trails will result in stress to the trees adjacent to the constructed areas. As such, forest effects of the proposed expansion of the mountain bike trail system should be assessed by a silviculturist.

Visual Resource: Following Scenery Management System processes, the NEPA document should assess the visual impacts of the proposed bike trails from key viewpoints.

Soils and Watershed: The proposed mountain bike trail routes will degrade soil and water resources. Snowmelt and intense rain events that affect the trail surface will lead to degrading recreational experiences, soil, and water resources. Current CMR trail building practices do not adequately address prevention of this resource degradation issue.

Recreation: Effects of the proposed action (and expansion of the Corn Lot) has a high likelihood of degrading the recreational purposes of the CDNST. The scoping notice describes, *“Hiking and mountain biking trails associated with the Proposed Action would not affect the Colorado Trail/CDNST. While proposed hiking and mountain biking trails would overlap portion of the Colorado Trail/CDNST in various locations among the lower elevations of CMR (proximate to the base terminals of American Eagle and American Flyer), conflicts between user groups may be reduced in the project area; by creating additional trails for specific user groups within the CMR SUP area, hikers and mountain bikers utilizing the trails associated with the Proposed Action may avoid the Colorado Trail/CDNST altogether. Signage would be utilized to prevent e-bikes from entering the Colorado Trail/CDNST. Reconstruction on approximately 0.1 mile of the Colorado Trail/CDNST would occur near the base area to improve interface with proposed trails; however, no other alterations to the Colorado Trail/CDNST are proposed.”*

The Forest Supervisor is responsible for identifying a carrying capacity for the CDNST (16 U.S.C. 1244(f), CDNST Comprehensive Plan Chapter IV.B.9, FSM 2353.04(i), FSM 2353.44b(2)). Establishing a CDNST carrying capacity prior to or in conjunction with this project would help ensure that CDNST values are not degraded by the proposed summer bike trail actions.

The proposed bike trails may alter skier/snowboarding use patterns, which should be discussed in the NEPA document.

CDNST Conservation Purposes: The proposed action may degrade the conservation purposes of the CDNST, especially if inadequate design and trail construction methods are allowed to continue within the permit area. Expansion of the Corn Lot as currently planned would not protect CDNST values. Management actions must not substantially interfere with the nature and purposes of this National Scenic Trail.

Trail Design Criteria

In general, any trail constructed should follow the trail parameter guidance provided by the Forest Service for Hiker/Pedestrian and Bicycling trails (**Attachment D**). If design parameters exceed recommendations, the trail surface should be hardened and drainage plans carefully formulated. Initial construction practices are critical to the maintenance of the trail riding surface. Increased maintenance will not mitigate for soil loss created from a poorly designed and constructed travelway that allows for trail tread fines to erode off-site.

The following additional design criteria should be considered by the IDT's recreation planner, civil engineer, soil scientist, and hydrologist as required design criteria for the purpose of providing for sustainable mountain biking opportunities, while protecting soil and water resources:

The Half Rule: A trail tread grade shouldn't exceed half the grade of the hillside or sideslope that the trail is traversing. If the grade does exceed half the sideslope, it's considered a fall-line trail. Water will flow down the trail rather than sheet across it. Measure the sideslope, then keep the trail tread grade under half of that figure to ensure good drainage. There is a limit to this half rule: A trail cannot be indefinitely steep. There can be short, steep sections, but try to limit the maximum tread grade to 15 percent. This depends on a number of factors, including soil integrity, rainfall, trail flow and number of users. Earthen sections to be fortified or armored to prevent soil loosening and erosion.



The 10 Percent Rule: Generally, an overall trail grade of 10 percent or less is sustainable. However, there may be steep places where this grade can't be achieved. Trail tread grades can be as high as 15 percent as long as the trail's overall grade doesn't exceed 10 percent.

Outslope in Contour Trail Design: As the trail contours across a hillside, the tread should tilt slightly away from the high side. This tilt, called outslope, ensures that water will sheet across the trail. Outslope is a major reason why contour trails work.

Grade Reversals: A well-built trail has gentle trail grades, an outsloped trail tread and grade reversals. As the trail snakes across a hillside, a subtle left or right turn creates rolls or undulations – grade reversals that help divert water off the trail. A contour trail on a steep slope may need grade reversals every 20 to 50 feet, depending on soil type and rainfall. The steeper the grade, the more grade reversals you should have. Water-bars and check-dams should rarely if ever be needed for a properly designed constructed route.

Out-Slope to In-Slope: This design technique can provide for a fun riding experience, but will result in the water collecting and pooling and eventually gathering and draining across the hillside. It is not apparent how this design approach is better for protecting soil resources than maintained out-sloped tread to allow water to sheet off the surface. The IDT's recreation planner, civil engineer, soil scientist, and hydrologist, as part of the NEPA process, should jointly identify trail construction and maintenance construction and maintenance practices that will minimize soil loss, especially during spring snow melt and monsoon thunderstorm seasons.

Maintainable or Sustainable: An IMBA publication describes that, *"There's no doubt that bike-optimized trails featuring in-sloped tread, abundant rollers and high berms are a hoot to ride. When a new gravity or flow trail opens to the public, the response is usually rampant enthusiasm and a big increase in bike traffic—with all ability levels taking to the trail to experience something new and different. This often leads to erosion, particularly because inexperienced riders need to refine their braking, cornering and jumping techniques... "There's nothing inherently more or less sustainable about lifted and tilted trails compared to traditional singletrack... But if a trail gets super popular because it's so fun to ride, and at the same time riders are sliding through turns and constantly hitting their brakes, there's definitely going to be some significant soil loss. I tell local groups to expect this, especially in the first few seasons, and to be prepared to perform a relatively high volume of maintenance, including patching berms and smoothing out the trail tread." In this sense, bike-optimized trails can be thought of as maintainable, rather than self-sustaining... But the trade-offs are often well worth the increased load on...maintenance crews."*

I agree that it is right to expect significant soil loss. In addition, it is important to recognize once the soil is displaced "downstream," that soil reservoirs for restoration purposes may not be readily available. Heavy maintenance is not the answer to soil erosion created from trail design parameters that are not engineered to minimize soil movement. I

recommend that Out-Slope to In-Slope design practices not be used within the project area unless hardened base materials (e.g., concrete pavers, native rock) are used for durability and to reduced soil displacement/erosion purposes. Trail hardening practices should be included as mitigation for the proposed action and/or as part of an alternative that is considered in detail.

The following is a summary of a few design practices that reduce the discharge of pollutants to surface waters:

- a. Design and space trail drainage structures to remove storm runoff from the trail surface before it concentrates enough to initiate rilling.
- b. Design trails to dissipate intercepted water by rolling the grade.
- c. Where trails cannot be effectively drained by rolling the grade or using reverse grades, provide trail drainage using rolling dips.
- d. Wherever possible, incorporate sediment basins at rolling dip outlets instead of lead off ditches.
- e. Where sediment basins cannot be installed, provide energy dissipaters at rolling dip outlets.
- f. Incorporate design elements that discourage off-route use (for example, taking shortcuts, cutting new lines).
- g. Extend drainage outlets beyond the toe of fill or side-cast.
- h. Install aggregate, paver blocks, or other surfacing treatment on tread segments that are steep, erodible, or heavily traveled.

NEPA Considerations

NEPA considerations are reviewed in the attached CDNST Planning Handbook. Following are a few NEPA considerations that are important to this project.

The determination of effects on the CDNST must be consistent with the CEQ methodology and scientific accuracy requirements (40 CFR 1502.24) and recognize that the CDNST is managed, “for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass.”

NEPA requires that direct, indirect, and cumulative environmental effects of the alternatives be disclosed. A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). A cumulative analysis should describe the incremental contribution of the proposal to cumulative effects.

NEPA requires federal agencies to include alternatives to the proposed action. The alternatives analysis is the heart of a NEPA document, and NEPA's implementing regulations direct agencies to "rigorously explore and objectively evaluate all reasonable alternatives," including appropriate mitigation measures to reduce the potential impacts of the action on the environment (40 CFR 1502.14). Reasonable alternatives are those that substantially meet the agency's purpose and need. If the agency is considering an application for a permit or other federal approval, the agency must still consider all reasonable alternatives. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. Agencies are obligated to evaluate all reasonable alternatives or a range of reasonable alternatives in enough detail so that a reader can compare and contrast the environmental effects of the various alternatives.

As a rule of thumb, if the proposal has not yet been implemented, or if the EIS concerns an ongoing program, EISs that are more than five years old should be carefully reexamined to determine if the criteria in Section 40 CFR 1502.9 compel preparation of an EIS/EA supplement (Forty Questions, Council on Environmental Quality). A Supplemental Information Report if prepared would find that the Forest Plan EIS and 2008 EA decision are not consistent with the 2009 CDNST Comprehensive and subsequent policy direction.

Please keep me informed as to proposed projects that may affect the CDNST corridor and permitted ski resorts on the White River National [Forest—NSTrail@comcast.net](mailto:Forest-NSTrail@comcast.net). I am looking forward to participating in any workshops that may be offered to gain additional public input on the 2019 CMR development plans.

Thank you for considering these comments.

Greg Warren

Attachments

- A – CDNST Comprehensive Plan
- B – CDNST Planning Handbook
- C – How to Measure [Skier] Trail Capacity
- D – Forest Service Trail Design Parameters