

4 ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential environmental consequences, or impacts, that would occur as a result of implementing the proposed project. Topics analyzed in this chapter include air quality, soil and geologic resources, water quality, ecologically critical areas, special status species, vegetation, wildlife, ethnographic resources, park operations, visitor use and experience, soundscape, visual resources and environmental justice. Direct, indirect, and cumulative effects, as well as impairment are analyzed for each resource topic carried forward. Potential impacts are described in terms of type, context, duration, and intensity. General definitions of impact thresholds are defined as follows:

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:
 - Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
 - Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
 - Direct: An effect that is caused by an action and occurs in the same time and place.
 - Indirect: An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.
- **Context** describes the area or location in which the impact will occur. Are the effects site-specific, local, regional, or even broader?
- **Duration** describes the length of time an effect will occur, either short-term or long-term:
 - Short-term impacts are generally immediate changes to the resource where the effects last one year (season).
 - Long-term impacts are generally immediate changes to the resource where the effects last more than one year.
- **Intensity** describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major.
 - Negligible: Imperceptible or undetectable impacts.
 - Minor: Slightly perceptible and limited in extent. Without further impacts, most adverse impacts reverse and the resource would recover.
 - Moderate: Readily apparent but limited in extent. Without further impacts, most adverse impacts would eventually reverse and the resource would recover. The impacts are localized in scale.
 - Major: Substantial, highly noticeable, and affecting a large area. Changes would not reverse without active management. The impacts are landscape-level in scale.

Impairment: NPS *Management Policies 2006* require analysis of potential effects to determine whether or not actions would impair park resources (NPS 2006). The fundamental purpose of the National Park

System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values.

Although Congress has given the NPS the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values. An impact to any park resource or value may constitute impairment, but an impact would be more likely to constitute impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park; or
- Identified as a goal in the park's master plan or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. A determination on impairment is made in the Conclusion section under each Alternative for each of the resource topics carried forward in this chapter.

Unacceptable Impacts: The impact threshold at which impairment occurs is not always readily apparent. Therefore, the NPS applies a standard that offers greater assurance that impairment will not occur by avoiding unacceptable impacts. These are impacts that fall short of impairment, but are still not acceptable within a particular park's environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

Virtually every form of human activity that takes place within a park has some degree of effect on park resources or values, but that does not mean the impact is unacceptable or that a particular use must be disallowed. Therefore, for the purposes of NPS *Management Policies 2006*, unacceptable impacts are impacts that, individually or cumulatively, would:

- Be inconsistent with a park's purposes or values;
- Impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process;
- Create an unsafe or unhealthful environment for visitors or employees;
- Diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values; or
- Unreasonably interfere with:
 - Park programs or activities,
 - An appropriate use,
 - The atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park, or

- NPS concessionaire or contractor operations or services. (NPS 2006).

In accordance with *Management Policies 2006*, park managers must not allow uses that would cause unacceptable impacts to park resources. To determine if unacceptable impact could occur to the resources and values of Whiskeytown NRA, the impacts of proposed actions in this environmental assessment were evaluated based on the above criteria. A determination on unacceptable impacts is made in the Conclusion section for each of the topics carried forward in this chapter.

Cumulative Impacts: The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are 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 (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for each alternative, including both the No Action and Preferred Alternatives.

Cumulative impacts were determined by combining the impacts of the alternatives with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at Whiskeytown NRA and, if applicable, the surrounding region. The geographic scope for this analysis includes elements within Whiskeytown NRA's boundaries, while the temporal scope includes projects within a range of approximately 10 years. Given this, the following project was identified for the purpose of conducting the cumulative impacts analysis, listed from past to future:

- **Fire Management Plan.** The primary goals of the Fire Management Program at Whiskeytown are to protect people, property and resources from large, high-intensity wildfires: reduce the build-up of forest fuels; and to bring fire back into the ecosystem. The Whiskeytown NRA Fire Management Plan focuses mainly on lower elevations along the park boundaries and the urban interface on the east side of the park. The Fire Management Plan will be updated in the next couple of years to include burn units on Shasta Bally.

Impacts to Cultural Resources and Section 106 of the National Historic Preservation Act: In this Environmental Assessment, impacts to historic properties are described in terms of type, context, duration, and intensity, as described above, which is consistent with the regulations of the Council on Environmental Quality (CEQ) that implement the National Environmental Policy Act (NEPA). This Environmental Assessment is intended, however, to comply with the requirements of both NEPA and §106 of the National Historic Preservation Act (NHPA). To achieve this, a §106 summary is included under the Preferred Alternative for the cultural resource topic of ethnographic resources. The topic of archeological resources was dismissed from further consideration in Impacts Dismissed from Further Consideration because none were identified in the project area. The §106 summary is intended to meet the requirements of §106 and is an assessment of the effect of the undertaking (implementation of the alternative) on cultural resources, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations. A letter was sent April 28, 2009 to the State Historic Preservation Office (SHPO) informing them of using a combined document to meet §106 obligations.

Under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must be made for affected historic properties that are eligible for or listed on the National Register of Historic Places. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion in the National Register (e.g. diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association). *Adverse effects* also include reasonably foreseeable effects caused by an alternative that would occur later in time; be farther removed in distance; or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of *no adverse effect* means there maybe an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register of Historic Places.

CEQ regulations and the National Park Service's *Conservation Planning, Environmental Impact Analysis and Decision-Making* (DO #12) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g. reducing the intensity of an impact from major to moderate or minor). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined by §106 is similarly reduced. Although adverse effects under §106 may be mitigated, the effect remains adverse.

Physical Resources

Air Quality

Alternative A – No Action

The No Action Alternative would result in continued impacts to air quality, primarily due to dust generated from vehicle use of the Shasta Bally road. The majority of the road is covered with silt and fine sand. In dry conditions, this can result in significant particulate matter clouds even with the relatively little vehicle traffic use. Emissions from generators located at the communication site are minimal because they are for emergency back-up use only and are periodically used on occasion. Most particulate matter pollution is created during vehicle use on Shasta Bally road in dry conditions, therefore intermittent, and can negatively affect visibility, human health, and physical resources.

Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are minor, adverse, intermittent and long-term.

Cumulative Impact

The No Action Alternative has a negligible effect to the cumulative impact on air quality due to relatively little vehicle traffic on Shasta Bally road and the seldom used generators at the summit. Implementation of the fire management plan would have adverse, negligible to major, short to long-term effects to air quality. Cumulatively, the No Action Alternative would only have an inconsequential incremental change to air quality conditions when considered with the fire management plan.

Conclusion

Under this alternative, there would be minor, adverse, intermittent and long-term effects to air quality due to relatively little vehicle traffic use on the silty road and the generators are used for emergency back-up use only. This alternative would not contribute significantly to the cumulative effects on air quality when considered with the fire management plan. Considering these minor effects, this alternative would not impair air quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

This alternative, which would not increase the road traffic, proposes to grade and gravel the Shasta Bally Road. Shasta Bally road would be maintained by periodically grading and adding gravel to the road. Gravel would provide a hard surface to protect the road from vehicle's wheels, thereby reducing the amount of particulate matter being disturbed. The proposed road maintenance would reduce the Site's impacts to air quality. Regular road maintenance to grade and add gravel the road would be provided as long as telecommunications sites remain on the summit. As in Alternative A, generators located at the communication site are for emergency back-up use only and emissions would be minimal due to their seldom use.

Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally Road are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Alternative B would have a negligible effect to the cumulative effects on air quality due to relatively little vehicle traffic on Shasta Bally Road and the seldom used generators at the summit. Implementation of the fire management plan would have adverse, negligible to major, short to long-term effects to air quality. Cumulatively, Alternative B would only have an inconsequential incremental change to air quality conditions when considered with the fire management plan.

Conclusion

Under this alternative, there would be negligible, adverse, and long-term effects to air quality due to relatively little vehicle traffic use and due to the generators are used for emergency back-up use only. Alternative B would not contribute significantly to the cumulative effects on air quality when considered with the fire management plan. Considering these negligible effects, this alternative would not impair air quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative C – Long-Term Phase-Out

Alternative C would not increase the road traffic in the near future because no new entities would be located at the summit. Traffic would be reduced in 20 to 30 years when the operation of WCF end. In the interim, Shasta Bally Road would be maintained by periodically grading and adding gravel to the road. Gravel would provide a hard surface to protect the road from vehicle's wheels, thereby reducing the amount of particulate matter being disturbed. As in the previous alternatives, generators located at the communication site are for emergency back-up use only and emissions would be minimal due to their seldom use.

Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally Road are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Cumulative impacts of Alternative C on air quality are similar to those described in Alternative B.

Conclusion

Under this alternative, there would be negligible, adverse, and long-term effects to air quality due to relatively little vehicle traffic use and due to the generators are used for emergency back-up use only. Alternative C would not contribute significantly to the cumulative effects on air quality when considered with the fire management plan. Considering these negligible effects, this alternative would not impair air quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative D – Existing and New Permittees on Existing Infrastructure

Under Alternative D, traffic to the summit would increase slightly due to new entities located on the summit. Shasta Bally road would be maintained by periodically grading and adding gravel to the road. Gravel would provide a hard surface to protect the road from vehicle's wheels, thereby reducing the amount of particulate matter being disturbed. As in the other alternatives, generators located at the communication site are for emergency back-up use only and emissions would be minimal due to their seldom use.

Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Cumulative impacts of Alternative D on air quality are similar to those described in Alternative B.

Conclusion

Alternative D would have negligible, adverse, and long-term effects to air quality due to relatively little vehicle traffic use and due to the generators are used for emergency back-up use only. Alternative D would not contribute significantly to the cumulative effects on air quality when considered with the fire management plan. Considering these negligible effects, this alternative would not impair air quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative F – Expansion (Preferred Alternative)

Under Alternative F, traffic to the summit would increase slightly due to new entities and new infrastructure located on the summit. Increases in traffic to construct infrastructure would be limited to the time needed to complete the planned structures. Shasta Bally road would be maintained by periodically grading and adding gravel to the road. Gravel would provide a hard surface to protect the road from vehicle's wheels, thereby reducing the amount of particulate matter being disturbed. As in the other alternatives, generators located at the communication site are for emergency back-up use only and emissions would be minimal due to their seldom use.

Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Cumulative impacts of Alternative F on air quality are similar to those described in Alternative B.

Conclusion

Alternative F would have negligible, adverse, and long-term effects to air quality due to relatively little vehicle traffic use and due to the generators are used for emergency back-up use only. Short-term increases traffic on Shasta Bally road during construction of infrastructure. However, increases in traffic during construction would be minimal. Alternative F would not contribute significantly to the cumulative effects on air quality when considered with the fire management plan. Considering these negligible effects, this alternative would not impair air quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Soils and Geologic Resources

Alternative A – No Action

The greatest impact to geologic features and the soils is the grading of the Shasta Bally road, which not only removes the limited soil profile but also facilitates bedrock erosion. Currently the road is graded on an annual basis. The Shasta Bally road was constructed on deeply weathered rock with steep slopes, which experiences intense rain and snow melt. The road area experiences intense rain fall and snow melt. This has led to slope failure and debris flows and the continued use of this road on a frequent basis without restoration may lead to additional erosional problems and debris flows. Soil within the site where vegetation has been removed will continue to erode at a quicker rate than if vegetated.

Effects from grading Shasta Bally road and erosion in the area are anticipated to be moderate adverse, and long-term.

Cumulative Impacts

Shasta Bally road and the telecommunications site are established locations and have been used for many years. Continuation of existing conditions would have moderate effects on soils and geologic resources. Regionally, soil disturbance would have minor adverse effects due to soil erosion and visitor

use. Implementation of the fire management plan would have beneficial, major and long-term effects on soil. Cumulatively, the No Action Alternative would have minor adverse incremental change in existing soil and geologic resource conditions when considered with the fire management plan.

Conclusion

The No Action Alternative would continue annual road grading and no road restoration would be conducted. As such, this alternative would have moderate, adverse, and long-term effects on soil and geologic resources. The No Action Alternative would contribute a minor adverse increment to cumulative disturbance of soil and geologic resources when considered with the fire management plan. Considering the moderate effect, this alternative would not impair soil and geologic resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Under this alternative, the park would provide regular road maintenance on Shasta Bally road as long as the telecommunications site remains on the summit. Shasta Bally road would be graded and culverts would be repaired to reduce erosion along the road. The road surface would be leveled out removing the problematic ruts and a gravel base would be applied to the road surface, which would help reduce the erosion of the underlying soils and rock. By implementing BMPs, this alternative would also reduce the rate of erosion and help preserve soils and geologic resources. By spreading leaf litter and duff on the unused areas at the summit, the soils would be preserved and the erosion rate reduced. Additionally, a designated trail at the summit would have a beneficial effect on soils because it would direct visitors to walk on one trail instead of many informal trails.

Effects from regular maintenance on Shasta Bally road are anticipated to be minor, adverse, and long-term. Effects of spreading leaf litter and duff on the bare soil and the existence of a designated trail on the summit would have a beneficial effect on soils.

Cumulative Impacts

Shasta Bally road and the telecommunications site are established and have been used for many years. Under Alternative B, Shasta Bally road would have regular road maintenance and BMPs will be implemented to reduce erosion. On the summit, establishment of a designated trail and spreading leaf litter and duff on unused areas would have a beneficial effect by directing visitors not walk on informal trails. Therefore, the minimal disturbance by this alternative would limit the potential for contributing to regional soil perturbation. Regionally, soil disturbance would have minor adverse effects due to soil erosion and visitor use. Implementation of the fire management plan would have beneficial, major and long-term effects on soil. Cumulatively, Alternative B would have an inconsequential incremental change in existing soil and geologic resource conditions when considered with the fire management plan.

Conclusion

Under Alternative B, Shasta Bally road would be maintained on a regular basis, the leaf litter and duff would be spread on bare soil on the summit, and a designated trail would be established. As such, this alternative would have minor, adverse, and long-term effects on soil and geologic resources due to the existence of Shasta Bally road. Spreading leaf litter and duff on bare soil and an established designated

trail would have a beneficial effect. Alternative B would contribute a negligible, adverse increment to cumulative disturbance of soil and geologic resources when considered with the fire management plan. Considering the minor effect, this alternative would not impair soil and geologic resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on soils and geologic resources would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative C on soils and geologic resources would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on soils and geologic resources would be similar to those described for Alternative B.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on soils and geologic resources would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on soils and geologic resources would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on soils and geologic resources would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on soils and geologic resources would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative F on soils and geologic resources would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on soils and geologic resources would be similar to those described for Alternative B.

Water Quality

Alternative A – No Action

The No Action Alternative would have the most adverse effects on water quality resources of any of the alternatives. Shasta Bally road was constructed on highly weathered rock with steep slopes. Rainstorm events deposit large volumes of water on the road resulting in the transportation of loose sediments to nearby streams. Annual grading activities on the road that is covered with silt and fine sand increases the sediment load that is captured in rainwater runoff. Additionally, during rainstorm events, slope failure and debris flows occur along Shasta Bally road due to the steep slopes along the road. The sediments from the slope failures and debris flows are transported to nearby streams. Under this alternative, no road grading with gravel would be conducted and streams adjacent to the site would continue to experience increasing sediment loads during rain events, therefore the streams would be affected intermittently.

Effects from sediment loading during rain events to water quality are anticipated to be minor, adverse, intermittent, and long-term.

Cumulative Impacts

Shasta Bally road was constructed on highly weathered rock and has been in use for many years. Continuation of existing conditions would have minor effects on water resources. Regionally, water quality in the Brandy Creek watershed would have minor adverse effects due to soil erosion and visitor use. Implementation of the fire management plan would have beneficial, major, and long-term effects on water quality. Cumulatively, the No Action Alternative would have a negligible adverse incremental change in existing water quality conditions when considered with other past, present, and reasonably foreseeable future actions.

Conclusion

The No Action Alternative will continue annual road grading and no road improvement will be conducted. As such, this alternative would have minor, adverse, and long-term effects water quality. The No Action Alternative will contribute a negligible adverse increment to cumulative disturbance of water quality when considered with the fire management plan. Considering the minor effect, this alternative will not impair water quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

This alternative would improve water quality resources when compared to Alternative A by reducing the sediment erosion that is deposited into the watershed from runoff on Shasta Bally road. Under this alternative, regular road maintenance by grading and adding gravel to the road would be provided as long as telecommunications sites remain on the summit. The gravel on the road would act as a sediment trap

and filter soil and debris while allowing the water to infiltrate into the road surface without creating erosional features. Additionally, culverts would be maintained to assist in erosion control as they allow the water to flow under the roadway.

Effects from sediment loading during rain events to water quality are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Shasta Bally road was constructed on highly weathered rock and has been in use for many years. Under this alternative, regular road maintenance would reduce sediment loading during rain events, therefore there would be negligible, adverse, and long-term effects on water resources. Regionally, water quality in the Brandy Creek watershed would have minor adverse effects due to soil erosion and visitor use. Implementation of the fire management plan would have beneficial, major, and long-term effects to water quality. Cumulatively, Alternative B would have a negligible adverse incremental change in existing water quality conditions when considered with the fire management plan.

Conclusion

Under Alternative B, regular road maintenance to maintain culverts, grade, and add gravel to the road would be provided as long as telecommunications sites remain on the summit. As such, this alternative would have negligible, adverse, and long-term effects water quality. Alternative B would contribute a negligible adverse increment to cumulative disturbance of water quality when considered with the fire management plan. Considering the negligible effect, this alternative would not impair water quality.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on water quality would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative C on water quality would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on water quality would be similar to those described for Alternative B.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on water quality would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on water quality would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on water quality would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on water quality would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative F on water quality would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on water quality would be similar to those described for Alternative B.

Biological Resources

Ecologically Critical Areas

Alternative A – No Action

The No Action Alternative would keep the existing alignment of the PG&E powerline that transects two sections of old growth forest. Individual old growth trees were removed within the powerline corridor many years ago when the powerline was installed. Management of the powerline requires tree trimming and tree removal activities, which threatens the continuity and quality of the old growth stand. The interruption of the continuity of sensitive high elevation habitat, such as old growth forests could contribute to habitat fragmentation for some species that are restricted to large overstory trees. However, as long as some trees and shrubs are maintained under the powerlines (even without the old trees), this provides a linear patch across the landscape. Although unnatural and less than ideal, the treatments under the lines can provide an edge effect for some species and gaps in the canopy. In the absence of fire and fuels treatments, these gaps can potentially be beneficial for some species. Overall, species that flourish along edges and open canopies will benefit and species that are reliant on continuous canopies and old growth characteristics will be adversely affected.

Under Alternative A, the WCF will continue to be located on the summit. At present, the parking area on the summit does not adversely effect any known unique or sensitive high elevation habitat. Existing informal trails lead to the western end of Shasta Bally summit where there is a unique patch of bare soil that has a cryptobiotic-like crust with a brownish tint to it. Shards of broken glass, cans, and litter are evidences of visitor use in the area. Direct affects of people straying from the trail include trampling of understory species and disturbing sensitive high elevation habitat.

Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to ecologically critical areas are anticipated to be moderate, adverse, and long-term.

Cumulative Impacts

The summit area of Shasta Bally is unique, and characterized by extremes in weather and distinct vegetation. This sensitive high elevation habitat on Shasta Bally would be affected by the PG&E powerline that transects old growth forests and visitor use on the summit. Continuation of existing conditions would have moderate effects on ecologically critical areas. In addition, conservation biologists are concerned that climate change is a particular threat to sensitive high elevation habitat. Regionally, ecologically critical areas would have moderate adverse effects due to loss of habitat. Implementation of the fire management plan would have beneficial, major, and long-term effects on biological resources.

Cumulatively, the No Action Alternative would have a minor adverse incremental change in existing ecologically critical areas when considered with the fire management plan.

Conclusion

The No Action Alternative would continue with the location of the wireless telecommunications facilities and powerline on Shasta Bally. Currently the powerline alignment transects two sections of old growth forest. Existing informal trails do not discourage park visitors from avoiding sensitive high elevation habitat on the summit. As such, this alternative would have moderate, adverse, and long-term effects on ecologically critical areas. The No Action Alternative would contribute a minor adverse increment to cumulative disturbance of ecologically critical areas when considered with the fire management plan. Considering the moderate effect, this alternative would not impair ecologically critical areas.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Effects of Alternative B on ecologically critical areas would be similar to those described for Alternative A with the exception of the establishment of a defined trail on the summit. Way-side exhibits at the trail head will promote "Leave No Trace" ethics and educate visitors on the fragile nature of subalpine ecosystems. Designating the public parking area would guide visitors were to park and eliminate parking outside of the existing disturbed areas.

Effects from the powerline, facilities located on Shasta Bally summit, and visitor use to ecologically critical areas are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

The summit area of Shasta Bally is unique, and characterized by extremes in weather and distinct vegetation. This sensitive high elevation habitat on Shasta Bally would be affected by the PG&E powerline that transects an old growth forest and visitor use on the summit. Continuation of existing conditions would have minor effect on ecologically critical areas. In addition, conservation biologists are concerned that climate change is a particular threat to sensitive high elevation habitat. Regionally, ecologically critical areas would have moderate adverse effects due to loss of habitat. Implementation of the fire management plan would have beneficial, major, and long-term effects on biological resources. Cumulatively, the Alternative B would have negligible adverse incremental change in existing ecologically critical areas when considered with the fire management plan.

Conclusion

Alternative B would continue with the location of the WCF and powerline on Shasta Bally. Currently the powerline alignment transects an old growth forest and the old growth trees under the powerline were removed years ago. One defined trail with a way-side exhibit located at the trail head would discourage park visitors from going into sensitive high elevation habitat on the summit. As such, this alternative would have minor, adverse, and long-term effects on ecologically critical areas. Alternative B would contribute a negligible adverse increment to cumulative disturbance of ecologically critical areas when considered with the fire management plan. Considering the minor effect, this alternative would not impair ecologically critical areas.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on ecologically critical areas would be similar to those described for Alternative B over the next 20 to 30 years. After the Phase-out period the WCF and powerline would be removed and the area would be restored to a natural condition. Therefore, after the Phase-Out period there would be a beneficial effect to ecologically critical areas.

Cumulative Impacts

Cumulative impacts of Alternative C on ecologically critical areas would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on ecologically critical areas would be similar to those described for Alternative B over the next 20 to 30 years. Over time the summit will be restored to a natural condition after all structures are removed from the summit. Therefore, after the Phase-Out period there would be a beneficial effect to ecologically critical areas.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on ecologically critical areas would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on ecologically critical areas would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on ecologically critical areas would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on ecologically critical areas would be similar to those described for Alternative B. Expansion of facilities would remain within the recently disturbed site on the summit. Mitigation measures would be put in place to minimize effects to ecologically critical areas during construction.

Cumulative Impacts

Cumulative impacts of Alternative F on ecologically critical areas would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on ecologically critical areas would be similar to those described for Alternative B. Mitigation measures would be put in place to minimize effects to ecologically critical areas during expansion activities.

Special Status Species

Alternative A – No Action

The actions proposed under all alternatives have the potential to affect the northern spotted owl, the only Federally listed species. The area directly surrounding the WCF does not support dense forest and is unlikely to be utilized by the northern spotted owl. However, much of the area traversed by the powerline corridor is old growth forest and considered to provide suitable nesting, roosting, and foraging habitat. Much of this area has not been surveyed due to the difficulty of access. Portions of the area traversed by Shasta Bally road also contain suitable habitat for the northern spotted owl (Weatherbee 2009). The Pacific fisher is not Federally listed, but is a candidate species for listing. Although specific information on populations and distribution of the Pacific fisher is not available for the vicinity, several sightings have been reported within the Whiskeytown NRA. As with the Northern spotted owl, the presence of the powerline corridor presents a source of disturbance and fragmentation of the species' habitat for the Pacific fisher. The no action activities at the site would result in no more than negligible effects for all other Species of Concern animals.

Special status plant species have been identified to possibly occur in the vicinity of the project area. Shasta County arnica is confirmed to be present within road cuts of Shasta Bally road, which may be adversely effected by road maintenance and use. The presence of this species indicates that it can establish and survive in areas along the road, but it still may be impacted by vehicle traffic and maintenance activities. Clustered lady's slippers have been found on the northeast side of the summit and the Snow mountain penstemon has been confirmed on the west side of the summit, but neither of these has been reported within the defined project area. *Trieleia* is expected to occur within the old growth forest areas along the powerline. Additional surveys are needed to determine distribution and to identify new populations. The no action activities at the site would result in no more than negligible effects for all other Species of Concern plants.

Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to special status species are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

The No Action Alternative would have a minor, adverse, long term effect to special status species due to the powerline, vehicle traffic and park visitors in the area. Implementation of the fire management plan would have minor to moderate adverse effects in the short-term and long-term beneficial effects to special status species. Cumulatively, the No Action Alternative will only have a negligible adverse incremental change to special status species conditions when considered with the fire management plan.

Conclusion

Under this alternative, there will be minor, adverse, and long-term effects to special status species due to powerline and facilities on the summit along with visitor use. This alternative will have a negligible incremental change to the cumulative effects on special status species when considered with the fire management plan. Considering the minor effects, this alternative will not impair special status species.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of

Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Effects of Alternative B on special status species would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative B on special status species would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative B on special status species would be similar to those described for Alternative A.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on special status species would be similar to those described for Alternative A over the next 20 to 30 years. After the phase out of all WCF, the park would restore the summit of Shasta Bally to its natural condition and the powerline would be removed. Therefore, there would be a beneficial effect to special status species after the Phase-Out period.

Cumulative Impacts

Cumulative impacts of Alternative C on special status species would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative C on special status species would be similar to those described for Alternative A over the next 20 to 30 years. Over time the summit would be restored to its natural condition after the powerline and all structures are removed from the summit. Therefore, there would be a beneficial effect to special status species after the Phase-Out period.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on special status species would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative D on special status species would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative D on special status species would be similar to those described for Alternative A.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on special status species would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative F on special status species would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative F on special status species would be similar to those described for Alternative A.

Vegetation

Alternative A – No Action

The No Action Alternative would continue current patterns of vegetation disturbance around the wireless telecommunication site and along existing informal trails on the summit. The existing trails do not discourage park visitors from avoiding vegetation on the summit. Disturbance around the site would continue to degrade and impact the vegetation present on the summit. Maintenance of the powerline would continue to disturb the mixed conifer forest including sections of old growth forest during tree trimming activities.

Routine transport of materials, supplies, and equipment from the lower elevation has the potential to introduce non-native and invasive plant species that are tolerant of high elevation sites. Even if weed populations remain within the footprint of the existing road prism and facility area, a wide-spread and large scale disturbance event (such as wildfire or debris flow) could easily spread these infestations into pristine and un-infested areas, which then can pose a direct threat to rare plant communities. Non-native and invasive plant species pose a long-term adverse effect if not mitigated. The No Action Alternative would continue to introduce non-native species at the current rate to the areas disturbed by the wireless telecommunication site, trails, Shasta Bally road, and powerline.

Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to vegetation are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Shasta Bally summit area is unique and is characterized by extremes in weather and distinct vegetation. This alternative would continue current vegetation disturbance, which would result in negligible, adverse, long-term effects. The absence of additional disturbance by the No Action Alternative would limit the contribution to cumulative regional losses of vegetation. The park plans to initiate vegetation alteration in the area using fuel management methods described in the fire management plan. Regionally, vegetation disturbance would have minor adverse effects due to heavy visitor use, fire management, and construction activities. Implementation of the fire management plan would have adverse to beneficial, negligible to major, short to long-term effects on vegetation. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under this alternative, there would be minor, adverse, and long-term effects to vegetation due to the powerline and facilities on the summit along with visitor use. This alternative would have a negligible

incremental change to the cumulative effects on vegetation when considered with the fire management plan. Considering the minor effects, this alternative would not impair vegetation.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Alternative B would continue current patterns of vegetation disturbance around the wireless telecommunication site. As new technologies provide feasible options to relocate or remove the facilities and the users choose to leave, the site would be restored to a natural condition on a gradual basis. Maintenance of the powerline would continue to disturb the mixed conifer forest including sections of old growth forest during tree trimming activities. If at sometime in the future, the means to place the powerline along Shasta Bally road becomes available, the relocation of the powerline would have a beneficial effect on mixed conifer forest. Development of a designated trail to the rock outcrop and view area west of the parking lot would have a beneficial effect to vegetation on the summit. Improvements to the limited public parking area on the summit along with interpretive exhibit panels would have a beneficial effect on vegetation communities present on the west side of the summit. Additionally, maintaining Shasta Bally road with weed free gravel would reduce particulate matter in the air that settles out on vegetation along the road thereby improving the health of the vegetation communities.

The frequent use of Shasta Bally road by both the public and wireless telecommunication site users contributes to the spread of invasive non-native plant species. Seeds can be transported to the site on visitor clothing or footwear and on vehicle undercarriage or vehicle tires. As stated in Alternative A, even if weed populations remain within the footprint of the existing road prism and facility area, a wide-spread and large scale disturbance event (such as wildfire or debris flow) could easily spread these infestations into pristine and uninfected areas, which then can pose a direct threat to rare plant communities. Non-native and invasive plant species pose a long-term adverse effect if not mitigated. This alternative would continue to introduce non-native species to the areas disturbed by the wireless telecommunication site, designated trail, Shasta Bally road, and powerline.

Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to vegetation are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Shasta Bally summit area is unique and is characterized by extremes in weather and distinct vegetation. This alternative would continue current vegetation disturbance, which would result in minor, adverse, long-term effects. The absence of additional disturbance by the Alternative B would limit the contribution to cumulative regional losses of vegetation. The park plans to initiate vegetation alteration in the area using fuel management methods described in the fire management plan. Regionally, vegetation disturbance would have minor adverse effects due to heavy visitor use, fire management, and construction activities. Implementation of the fire management plan would have adverse to beneficial, negligible to major, short to long-term effects on vegetation. Cumulatively, this Alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under this alternative, there would be minor, adverse, and long-term effects to vegetation due visitor use, placement of the powerline and facilities on the summit. This alternative would have a negligible incremental change to the cumulative effects on vegetation when considered with the fire management plan. Considering the minor effects, this alternative would not impair vegetation.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on vegetation would be similar to those described for Alternative B over the next 20 to 30 years. After the phase out of all WCF, the park will restore the summit of Shasta Bally to its natural condition and the powerline would be removed.

Cumulative Impacts

Cumulative impacts of Alternative C on vegetation would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on vegetation would be similar to those described for Alternative B over the next 20 to 30 years. Over time the summit will be restored to its natural condition after the powerline and all structures are removed from the summit.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on vegetation would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on vegetation would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on vegetation would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on vegetation would be similar to those described for Alternative B. Under Alternative F, there would be the possibility of new WCF construction on the site. However, all construction would remain in the recently disturbed area and construction traffic would be minimal. Mitigation measures would be put in place to mitigate vegetation disturbance.

Cumulative Impacts

Cumulative impacts of Alternative F on vegetation would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on vegetation would be similar to those described for Alternative B.

Wildlife

Alternative A – No Action

The No Action Alternative would continue to affect wildlife in and around the Site. One of the primary effects includes habitat fragmentation due to the Shasta Bally road and the powerline corridor. An old growth forest is transected by the powerline on the northwest side of Shasta Bally. Such forests are vital habitat for numerous species, and are a rare resource which should to be protected. The corridor is occasionally cleared of vegetation and branches to keep them from encroaching on, or damaging the powerline. The powerline is also a potential electrocution hazard for larger birds, particularly since the structures use an armless configuration that decreases the distance between wires.

Other impacts to wildlife include the possibility for injury near the wireless telecommunication site due to debris, poorly covered trenches, and overall housekeeping practices. There is also a potential for bird strikes with the many antennas located at the wireless telecommunication site.

Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to wildlife and wildlife habitat are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

This alternative would continue current wildlife habitat disturbance, which would result in negligible, adverse, long-term effects. The park plans to initiate habitat alteration in the area using fuel management methods described in the fire management plan. Regionally, wildlife habitat disturbance would have minor adverse effects due to heavy visitor use, and construction activities. Implementation of the fire management plan would have minor, adverse, short-term to moderate, long-term, beneficial effects on wildlife. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under the No Action Alternative, existing conditions would continue and have negligible, adverse, long-term effects on wildlife and wildlife habitat. No changes would occur to the powerline corridor, WCF or visitor use. This alternative would have a negligible incremental change to the cumulative effects on wildlife when considered with the fire management plan. Considering the negligible effects, this alternative would not impair wildlife.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Effects of Alternative B on wildlife would be similar to those described for Alternative A. If at sometime in the future the means to place the powerline along Shasta Bally road becomes available, the relocation of the powerline would have a beneficial effect on wildlife.

Cumulative Impacts

Cumulative impacts of Alternative B on wildlife would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative B on wildlife would be similar to those described for Alternative A.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on wildlife would be similar to those described for Alternative A over the next 20 to 30 years. After the phase out of all WCF, the park will restore the summit of Shasta Bally to its natural condition and the powerline would be removed. Restoration of the summit would have a beneficial effect on wildlife.

Cumulative Impacts

Cumulative impacts of Alternative C on wildlife would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative C on wildlife would be similar to those described for Alternative A over the next 20 to 30 years. Over time the summit will be restored to its natural condition after the powerline and all structures are removed from the summit.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on wildlife would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative D on wildlife would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative D on wildlife would be similar to those described for Alternative A.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on wildlife would be similar to those described for Alternative A with the addition of increasing the number of WCF in the already impacted area on the summit.

Cumulative Impacts

Cumulative impacts of Alternative F on wildlife would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative F on wildlife would be similar to those described for Alternative A with additional WCF on Shasta Bally summit.

Cultural Resources

Ethnographic Resources

Alternative A – No Action

Under the No Action Alternative, there are no known ethnographic resources that would be disturbed on the WCF site on Shasta Bally. In general, Shasta Bally and the summit has always been a spiritual gathering place that has special fasting or vision quest areas. Additionally, there is a vision quest site located south of Shasta Bally on the South Fork mountain ridge. Continued use of the site as a WCF site along with visitor use would not impact any known ethnographic resources. Access to the summit would continue and the NPS would continue to preserve and protect all known cultural resources in the park.

Overall, there would be no effects to ethnographic resources under Alternative A.

Cumulative Impacts

Because Alternative A would have no effect on ethnographic resources, no cumulative impact analysis is required.

Conclusion

The No Action Alternative would continue current use patterns on Shasta Bally summit. As such this alternative would have no adverse, long-term effects to ethnographic resources. Considering that there are no effects, this alternative would not impair ethnographic resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Effects of Alternative B on ethnographic resources would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative B on ethnographic resources would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative B on ethnographic resources would be similar to those described for Alternative A.

Assessment of Effect under Section 106 of the National Historic Preservation Act

The park initiated consultation with the California State Historic Preservation Officer (SHPO) April 28, 2009 regarding the proposed undertaking of issuance of ROW permits by the park to the existing wireless telecommunication users on Shasta Bally summit. In addition, the park has consulted with the Wintu and

Redding Rancheria Tribes associated with the park. A letter dated February 15, 2009 from the Redding Rancheria Tribe was received by the park. The letter stated that Shasta Bally has a spiritual importance to the Native Peoples particularly the Wintu Tribes of the Northern California. Shasta Bally Mountain and its summit has always been a spiritual gathering place for fasting or vision quest. Access to the summit would not change under any alternative and the NPS would continue to preserve and protect all known cultural resources in the park. A copy of this EA will be sent to the California SHPO and to Tribes associated with the park during the public review of this document.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on ethnographic resources would be similar to those described for Alternative A over the next 20 to 30 years. After the phase out of all WCF, the park will restore the summit of Shasta Bally to its natural condition and the powerline would be removed.

Cumulative Impacts

Cumulative impacts of Alternative C on ethnographic resources would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative C on ethnographic resources would be similar to those described for Alternative A over the next 20 to 30 years. Over time the summit will be restored to its natural condition after the powerline and all structures are removed from the summit.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on ethnographic resources would be similar to those described for Alternative A.

Cumulative Impacts

Cumulative impacts of Alternative D on ethnographic resources would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative D on ethnographic resources would be similar to those described for Alternative A.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on ethnographic resources would be similar to those described for Alternative A. Under Alternative F, the expansion of the WCF would not be within areas where ethnographic resources are located.

Cumulative Impacts

Cumulative impacts of Alternative F on ethnographic resources would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative F on ethnographic resources would be similar to those described for Alternative A. The expansion of the WCF would not be within areas where ethnographic resources are located under Alternative F.

Human Environment

Park Operations

Alternative A – No Action

The No Action Alternative would not measurably change current park operations on Shasta Bally. Under this alternative, the park would continue to maintain Shasta Bally road by grading once a year and repairing culverts as needed. Currently, the road condition is a limiting factor for access during storms and emergencies. The current condition of Shasta Bally road would not change under this alternative.

The powerline represents a fire hazard due to the age of the poles, which contribute to the potential for the line falling down and fuel build up from tree-trimming activities. The facilities on the summit, including the diesel fuel, may act as an accelerant in the context of a fire. Various sources of ignition from all the electronic equipment and lightning strikes add additional fire hazards. There is a halon fire suppression system that would help prevent a fire from reaching the surrounding natural areas. The United States Environmental Protection Agency (EPA) mandated that the phase out of Halon 1301 production by December 31, 1993, due it being an ozone depleting chemical. Therefore, this fire system may be outdated.

Effects from the continued existence of the powerline and annual maintenance on Shasta Bally road to park operations are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Under Alternative A, existing WCF, powerline, and Shasta Bally road would continue their current functions and would have a negligible, adverse, and long-term effect on park operations. Any project that occurs in the park has an effect on park operations. One such project is the park's plan to initiate prescribed burns on Shasta Bally as described in the fire management plan. Regionally, park operations would have minor adverse effects due to law enforcement and maintenance activities. Implementation of the fire management plan would have negligible to major adverse short to long-term effects to park operations. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under the No Action Alternative, existing conditions would continue and have negligible, adverse, long-term effects on park operations. No changes would occur to the powerline corridor, WCF or maintenance on Shasta Bally road. This alternative would have a negligible incremental change to the cumulative effects on park operations when considered with the fire management plan. Considering the negligible effects, this alternative would not impair park operations.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Under Alternative B, the existing WCF along with an onsite manager remain on site. The presence of the onsite engineer and the facilities to support this person such as the septic system on the summit and the septic system would be an additional responsibility for park operations. The summit is presently

unsecured due to a fence that only encompasses half of the site. Continued operations and management practices at the site add additional responsibility to the law enforcement and fire management staff. The site on Shasta Bally summit would be restored to a natural condition as users choose to leave the site under this alternative. Restoration would increase the affect on park operations in the short-term but would be a beneficial effect in the long-term with reduced facilities on the summit.

The current halon fire suppression system that is on site to help prevent a fire from reaching the surrounding natural areas depletes ozone when expelled and may be out of date. A new fire system for the WCF may need to be installed at the WCF site. The current powerline represents a fire hazard due to the possibility of fallen power lines. If at some time it becomes feasible to relocation of the powerline to Shasta Bally road this would reduce the fire hazard associated with the powerline. The grading and gravelling of Shasta Bally road would improve access to the area and summit for emergency and fire crews. This alternative would change the type of maintenance required for Shasta Bally road. Annual grading would not be necessary, but upkeep of the gravel surface and culverts would require attention.

Effects from the existence of the powerline, road and site maintenance to park operations are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Under Alternative B, existing WCF, powerline, and Shasta Bally road would continue their current functions. Due to the increase in the park's responsibility to the site, there would be a minor, adverse, and long-term effect on park operations. Any project that occurs in the park has an effect on park operations. One such project is the park's plan to initiate prescribed burns on Shasta Bally as described in the fire management plan. Regionally, park operations would have minor adverse effects due to law enforcement and maintenance activities. Implementation of the fire management plan would have negligible to major adverse short to long-term effects to park operations. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Alternative B would increase park maintenance and law enforcement responsibilities at the site and have minor, adverse, long-term effects on park operations. No changes would occur to the powerline corridor and WCF. Maintenance on Shasta Bally road would increase and fire management would be similar to the No Action Alternative. This alternative would have a negligible incremental change to the cumulative effects on park operations when considered with the fire management plan. Considering the minor effects, this alternative would not impair park operations.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on park operations would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period (20 to 30 years) the existing WCF site and the powerline would be decommissioned and the site would be restored to natural conditions. After the Phase-Out period, the effects to park operations would be beneficial.

Cumulative Impacts

Cumulative impacts of Alternative C on park operations would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on park operations would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period the site would be restored to a natural site. After the Phase-Out period, the effects to park operations would be beneficial.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on park operations would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on park operations would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on park operations would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on park operation would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative F on park operation would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on park operation would be similar to those described for Alternative B.

Visitor Use and Experience

Alternative A – No Action

Under the No Action Alternative, the presence of the telecommunication site detracts from the overall outdoor experience at the summit of Shasta Bally. This is primarily due to the pronounced visual contrast and sound disturbances generated by the facility. The informal trail system on the summit does not efficiently guide the visitors to the rock outcrop or spectacular views visible west of the parking area.

The Shasta Bally road currently provides relatively easy access, which permits visitors to travel to the summit by vehicle. Shasta Bally road can also be used by hunters, mountain bikers, off-road enthusiasts, motorcyclists, hikers, and horseback riders. The majority of the road is covered with silt and fine sand and minimal road maintenance is performed annually. Therefore, the current condition of Shasta Bally road is a limiting factor for access during storms and emergencies.

Effects from the continued existence of the WCF, informal trail system, and limited annual maintenance on Shasta Bally road to visitor experience are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Under the No Action Alternative, existing WCF, informal trail, and Shasta Bally road maintenance would continue their current functions and would have a minor, adverse, long-term effect on visitor experience.

Visitors who come to the park have many opportunities to enjoy the many recreational options at Whiskeytown NRA including backpacking on Shasta Bally. Regionally, visitor experience would have beneficial effects due to the many recreational opportunities in the park. Implementation of the fire management plan would have minor adverse to beneficial long-term effects to visitor use and experience. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under the No Action Alternative, existing conditions would continue and have minor, adverse, long-term effects on visitor experience. No changes would occur to the WCF or to the maintenance on Shasta Bally road. This alternative would have a negligible incremental change to the cumulative effects on visitor experience when considered with the fire management plan. Considering the minor effects, this alternative would not impair visitor experience.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Alternative B would have the same effects as Alternative A with the exception of a designated trail on the summit and regular maintenance of Shasta Bally road. A designated trail to the rock outcrop and view area west of the parking lot would be developed. Improvements to the limited public parking area on the summit include using rock to define the parking area and the addition of interpretive exhibit panels. A designated trail, improvements to parking, and placement of interpretive exhibit panels at the summit would have a beneficial effect on visitor experience. The park would provide regular road maintenance on Shasta Bally road to repair culverts and grade and gravel the road as long as telecommunication sites remain on the summit. The road improvements may result in a higher visitation rate at the summit of Shasta Bally, as more vehicles will be able to travel the road.

Under this alternative no new entities would be permitted on the site. Through mitigation measures, a decrease in sound and visual impacts caused by the WCF would be recognized. This should result in a slightly improved outdoor experience for park visitors who venture to the summit of Shasta Bally. Additionally, it is anticipated that the WCF would terminate earlier under this alternative than other alternatives in the long-term. Therefore visitor experience would improve sooner because the area would be restored to a natural state sooner under Alternative B than under other alternatives.

Effects from the existence of the WCF and a gravel access road to visitor experience are anticipated to be minor, adverse, and long-term. The designated trail with interpretative exhibit panels at the trailhead would have a beneficial effect on visitor use.

Cumulative Impacts

Alternative B would allow the existing WCF to remain on site and Shasta Bally road would be a gravel road. Therefore, there would be minor, adverse, and long-term effect to visitor experience. The development of a designated trail with interpretive exhibit panels in the summit would have a beneficial effect. Visitors who come to the park have many opportunities to enjoy the many recreational options at Whiskeytown NRA including backpacking on Shasta Bally. Regionally, visitor experience would have beneficial effects due to the many recreational opportunities in the park. Implementation of the fire management plan would have minor adverse to beneficial long-term effects to visitor use and experience. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Implementation of Alternative B would have minor, adverse, long-term effects on visitor use due to the WCF located on the summit and gravel access road. There would be a beneficial effect on visitor use

due to road improvements, a designated trail, and interpretative exhibit panels in the designated public parking area. This alternative would have a negligible incremental change to the cumulative effects on visitor experience when considered with the fire management plan. Considering the minor effects, this alternative would not impair visitor use and experience.

Alternative C – Long-Term Phase-Out

Alternative C would have the same effects as Alternative B during the Phase-Out period. After the Phase-Out period this alternative would have the most beneficial long-term impact on public health and safety. The elimination of the summit facilities and onsite engineer and the powerline would substantially decrease the hazards and safety issues associated with the operations and maintenance of the communications site.

The removal of the two site components would result in both beneficial and adverse impacts to recreation in the area. Removing the powerline and telecommunication site and restoring the site to a natural state would return the site to a mostly primitive setting. This would provide park visitors with a more natural outdoor experience, which is consistent with management goals for lands administered by NPS. Opportunities for backcountry hiking and backpacking would be enhanced, and visitors would be able to enjoy the summit of Shasta Bally without the influence of the telecommunication site.

Effects during Phase-Out period to visitor experience are anticipated to be minor, adverse, and long-term. Additionally, the designated trail with interpretative exhibit panels at the trailhead would have a beneficial effect on visitor use. After the Phase-Out period the effects to visitor experience would be beneficial to visitors who would enjoy a backcountry hiking experiences.

Cumulative Impacts

Alternative C would have a minor, adverse, and long-term effect to visitor experience during the Phase-Out period due to exiting communication site and gravel road. The development of a designated trail with interpretive exhibit panels in the summit would have a beneficial effect. After the Phase-Out period there would be both beneficial and adverse effects to visitor use. Visitors who come to the park have many opportunities to enjoy the many recreational options at Whiskeytown NRA including backpacking on Shasta Bally. Regionally, visitor experience would have beneficial effects due to the many recreational opportunities in the park. Implementation of the fire management plan would have minor adverse to beneficial long-term effects to visitor use and experience. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Implementation of Alternative C would have minor, adverse, long-term effects on visitor use during the Phase-Out period due to the WCF located on the summit and gravel access road. There would be a beneficial effect on visitor use due to a designated trail with interpretative exhibit panels. After the Phase-Out period, there would be both beneficial and adverse effects to visitor use. This alternative would have a negligible incremental change to the cumulative effects on visitor use when considered with the fire management plan. Considering the minor effects, this alternative would not impair visitor use and experience.

Alternative D – Existing and New Permittees on Existing Infrastructure

Effects of Alternative D on visitor use and experience would be similar to those described for Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative D on visitor use and experience would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on visitor use and experience would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Effects of Alternative F on visitor use and experience would be similar to those described for Alternative B with the exception that the adverse effects would continue for a longer period of time compared to Alternative B as the WCF would remain on site longer in Alternative F. An increase in WCF infrastructure could also have a somewhat higher adverse effect on visitor use and experience compared to Alternative B.

Cumulative Impacts

Cumulative impacts of Alternative F on visitor use and experience would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative F on visitor use and experience would be similar to those described for Alternative B with the exception of adverse effects continuing longer. Increases in infrastructure could have a somewhat higher adverse effect on visitor use and experience compared to Alternative B.

Soundscape

Alternative A – No Action

Under the No Action Alternative, the soundscape would continue to be impacted near the site. The noise disturbances associated with the site components consists of vehicle traffic, visitor use of the public parking area and along informal trails on the summit, occasional maintenance activities, infrequent use of helicopters for site access, and equipment used at the telecommunications site.

Effects from the existence of the WCF, traffic, and informal trail system on the summit to natural soundscape are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Under the No Action Alternative, existing WCF, traffic, and informal trails use would have a minor, adverse, long-term effect on natural soundscapes. Regionally, natural soundscapes are affected by the many recreational opportunities for visitors in the park and park operations that increase noise above ambient levels, which have a moderate, adverse, long-term effect. Cumulatively, due to the summit's location, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under the No Action Alternative, existing conditions would continue and have minor, adverse, long-term effects on natural soundscapes. No changes would occur to the WCF, traffic access or to informal trail

use. This alternative would have a negligible incremental change to the cumulative effects on natural soundscapes when considered with the fire management plan. Considering the minor effects, this alternative would not impair natural soundscape.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Wireless services would continue at the WCF site, while no additional permittees would be allowed on the site. The operation of WCF would have a noticeable level of noise produced by associated cooling systems, generators, and other mechanisms. Noise from visitor use at the public parking area and designated trail would be above ambient noise levels. Additionally, maintenance and visitor vehicle traffic to the site would produce noticeable noise. Mitigation measures would be put in place to minimize noise from the WCF. Operation of WCF and motor vehicles would not exceed noise standards set in 36 CFR, mitigating much of the impact to natural soundscapes.

Operation of the WCF, vehicle traffic to the site, and visitor use at the public parking area and designated trail would result in minor, adverse, long-term effects to natural soundscapes.

Cumulative Impacts

Under Alternative B, existing WCF, traffic, and designated trail destination would have a minor, adverse, long-term effect on natural soundscapes. Regionally, natural soundscapes is affected by noise created by park operations and the many recreational opportunities for visitors in the park that increase noise above ambient levels, which have a moderate, adverse, long-term effect. Cumulatively, due to the summit's location, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Alternative B would have minor, adverse, long-term effects on natural soundscapes due to existing WCF operation, traffic, and designated trail destination. This alternative would have a negligible incremental change to the cumulative effects on natural soundscapes when considered with the fire management plan. Considering the minor effects, this alternative would not impair natural soundscape.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative C – Long-Term Phase-Out

Alternative C would have the same effects as Alternative B during the Phase-Out period. After the Phase-Out period this alternative would have the most beneficial long-term impact on natural soundscapes. The elimination of the WCF and powerline would reduce the effects to the area's natural

soundscapes. The noise associated with the WCF would be eliminated after the Phase-Out period. Road access to the summit would still be maintained after the Phase-Out period.

Effects during Phase-Out period to natural soundscapes are anticipated to be minor, adverse, and long-term. After the Phase-Out period the effects to natural soundscape would be beneficial to natural soundscapes.

Cumulative Impacts

Alternative C would have a minor, adverse, and long-term effect to natural soundscape during the Phase-Out period due to operation of the WCF site, site maintenance traffic, and designated trail system. After the Phase-Out period there would be beneficial effects to natural soundscapes. Regionally, natural soundscapes are affected by park operations and the many recreational opportunities for visitors in the park that increase noise above ambient noise levels, which have a moderate, adverse, long-term effect. Cumulatively, due to the summit's location, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Implementation of Alternative C would have minor, adverse, long-term effects on natural soundscapes during the Phase-Out period due to operation of the WCF on the summit, associated maintenance vehicle traffic, and designated trail system. After the Phase-Out period, there would be beneficial effects to natural soundscapes due to the elimination of the WCF site and powerline. This alternative would have a negligible incremental change to the cumulative effects on natural soundscapes when considered with the fire management plan. Considering the minor effects, this alternative would not impair natural soundscapes.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative D – Existing and New Permittees on Existing Infrastructure

Alternative D would have the same effects as Alternative B with the exception that new permittees could co-locate equipment on existing infrastructure. No new structures or increases to existing infrastructure would be allowed under this alternative. Therefore, there would not be an increase in noise level on the site. There could be an increase in maintenance traffic on Shasta Bally road to service the additional co-located equipment. As in Alternative B, mitigation measures would be implemented to minimize effects of noise created by existing cooling units and generators to natural soundscapes on the site.

Cumulative Impacts

Cumulative impacts of Alternative D on natural soundscapes would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative D on natural soundscape would be similar to those described for Alternative B.

Alternative F – Expansion (Preferred Alternative)

Alternative F would have the same effects as Alternative B with the exception that existing and new users would be allowed to install new infrastructure at the site in recently disturbed area not currently being utilized. The possibility of additional cooling units and generators at the site would increase the noise level on the site. Construction activities associated with the additional WCF at the summit would increase noise levels in the development zone including the potential use of helicopters for transport. Mitigation measures would be put in place to minimize the effect to the natural soundscape by the operation of the WCF, maintenance traffic to the site, and construction activities.

Effects from construction activities to natural soundscapes are anticipated to be moderate, adverse, and short-term. Effects from WCF, maintenance and visitor traffic, and visitor use on the summit to natural soundscapes are anticipated to be minor, adverse, and long-term to natural soundscapes.

Cumulative Impacts

Cumulative impacts of Alternative F on natural soundscapes would be similar to those described for Alternative B.

Conclusion

Alternative F would have moderate, adverse, short-term effects on natural soundscapes during construction activities. Day to day operation of the WCF, traffic, and public visitation on the summit would have minor, adverse, long-term effects to natural soundscapes. This alternative would have a negligible incremental change to the cumulative effects on natural soundscapes when considered with other past, present and reasonably foreseeable future actions. Considering the moderate and minor effects, this alternative would not impair natural soundscapes.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Visual Resources

Alternative A – No Action

The No Action Alternative would continue impacts to the visual resources of the Whiskeytown NRA because the existing WCF would remain in place. At a distance, the WCF site is not a dominant visual feature, but the buildings and antennas are noticeable from most vantage points in the vicinity. Shasta Bally summit is the tallest peak within the Whiskeytown NRA and in the immediate area. On a clear day, observers at the summit can see for hundreds of miles in all directions. Views from Shasta Bally summit are affected by the presence of the WCF on the north side of the peak. From this vantage point, the WCF site is in contrast to the natural setting, and deters from the overall visual experience. The Shasta Bally road and the powerline are mostly concealed from view, and pose a relatively small adverse impact to visual resources.

The night sky of Whiskeytown NRA is a valuable visual resource. The WCF, powerline and Shasta Bally road pose very little affect to the night sky, except for a floodlight that is used to illuminate the entrance to the WCF site. This light is highly visible from the Shasta Bally summit, and is discernible from certain distant vantage points.

Effects from the existence of the WCF and floodlight on the summit to visual resources are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Under the No Action Alternative, the existing WCF and floodlight would have a minor, adverse, long-term effect on visual resources. Whiskeytown NRA provides an abundance of scenic views to be enjoyed by park visitors. Regionally, visual resources are affected by development in the park, which has a moderate, adverse, long-term effect. Implementation of the fire management plan would have a moderate, beneficial, and long-term effect to visual resources. Cumulatively, due to the summit's location, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under the No Action Alternative, existing conditions would continue and have minor, adverse, long-term effects on visual resources. This alternative would have a negligible incremental change to the cumulative effects on visual resources when considered with the fire management plan. Considering the minor effects, this alternative would not impair visual resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies 2006*.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

During the time that WCF remain on Shasta Bally, effects of Alternative B on visual resources would be similar to those described for Alternative A with the exception that mitigation measures would be implemented to minimize the effect to visual resources on the summit. Even with mitigation measures, the WCF will affect visual resources. However, because it is anticipated that WCF would be removed under this alternative more quickly than the other alternatives, over the long-term, effects on visual resources would improve more rapidly under this alternative than the other action alternatives.

Cumulative Impacts

Cumulative impacts of Alternative B on visual resources would be similar to those described for Alternative A.

Conclusion

Conclusions for Alternative B on visual resources would be similar to those described for Alternative A with the exception that mitigation measures would be put in place to help mitigate effects of the WCF.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on visual resources would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period (20 to 30 years) the existing WCF site and powerline would be decommissioned and the site would be restore to a natural site. After the Phase-Out period, the effects to visual resources would be beneficial.

Cumulative Impacts

Cumulative impacts of Alternative C on visual resources would be similar to those described for Alternative B.

Conclusion

Conclusions for Alternative C on visual resources would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period the site would be restored to a natural site. After the Phase-Out period, the effects to visual resources would be beneficial.

Alternative D – Existing and New Permittees on Existing Infrastructure

Alternative D would have the same effects as Alternative B with the exception that new permittees could co-locate equipment on existing infrastructure. No new structures or increases to existing infrastructure would be allowed under this alternative. Therefore, there would be a small incremental affect to visual resource for visitors on the summit. The view of Shasta Bally summit from vantage points in the vicinity would not be affected because no new structures would be constructed. As in Alternative B, mitigation measures would be implemented to WCF to minimize effects on visual resources.

Effects from the existence of the WCF with additional co-located equipment on the summit to visual resources are anticipated to be minor, adverse, and long-term.

Cumulative Impacts

Cumulative impacts of Alternative D on visual resources would be similar to those described for Alternative B.

Conclusion

Alternative D would have minor, adverse, long-term effects on visual resources due to the existence of the WCF site on the summit of Shasta Bally. This alternative would have a negligible incremental change to the cumulative effects on visual resources when considered with other past, present and reasonably foreseeable future actions. Considering the minor effects, this alternative would not impair visual resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Alternative F – Expansion (Preferred Alternative)

Alternative F would have the same effects as Alternative B with the exception that existing and new users would be allowed to install new infrastructure at the site in recently disturbed area not currently being utilized. Construction activities associated with the additional WCF at the summit would affect visual resource for visitors on the summit during new structure construction. Therefore, there would be a small incremental affect to visual resource for visitors on the summit during construction. After construction, the affect to visual resources for visitors on the summit would be noticeable as there would be an increase in structures within the area already occupied by existing WCF. The view of Shasta Bally summit from

vantage points in the vicinity would be minimally affected because new structures would be visible within the current WCF site. As in Alternative B, mitigation measures would be put in place to minimize the effect to the visual resource by reducing the visibility of the structures on the WCF site.

Effects from construction activities to visual resources are anticipated to be moderate, adverse, and short-term. Effects from the expansion of WCF at the site are anticipated to be minor, adverse, and long-term to visual resources.

Cumulative Impacts

Cumulative impacts of Alternative F on visual resources would be similar to those described for Alternative B.

Conclusion

Alternative F would have moderate, adverse, short-term effects on visual resources during construction activities. Expansion of WCF facilities on the site would have minor, adverse, long-term effects to visual resources. This alternative would have a negligible incremental change to the cumulative effects on visual resources when considered with other past, present and reasonably foreseeable future actions. Considering the moderate and minor effects, this alternative would not impair visual resources.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Whiskeytown NRA; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there would be no impairment of the park's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of NPS *Management Policies* 2006.

Socioeconomic Considerations

Environmental Justice

Alternative A – No Action

Under the No Action Alternative, if the WCF were to continue operating as they have in the past, services provided to the surrounding areas would continue. Under this alternative television, radio, internet, and emergency services would remain the same as in past practices. Note: This analysis is for comparison purposes only as the park would not issue permits under this alternative.

No effects from the continue existence of WCF on the summit to environmental justice are anticipated.

Cumulative Impacts

Because Alternative A would have no effects on environmental justice, no cumulative impacts analysis is required.

Conclusion

Under the No Action Alternative, existing conditions would continue and have no effects on environmental justice. Considering that there are no effects, this alternative would not impair environmental justice.

Alternative B – Existing Permittees Remain (Environmentally Preferred)

Alternative B would continue with the current WCF operation on the summit of Shasta Bally and provide the surrounding area with television, radio, intranet, and emergency services. Some current end users are located in remote areas and services provided by the WCF on Shasta Bally are the only access they currently have to these services. There are two additional WCF sites in the area and they are located adjacent to the northeast boundary of the park. These two sites, one BLM operated and one privately operated, are located on South Fork Mountain. Both sites are currently accepting new wireless communication users.

Shasta Bally is currently used for some Northern California's communication needs, particularly public safety agencies. Radio broadcast signals for public safety telecommunications from Shasta Bally reach beyond the borders of Shasta County. The presence of private broadcasting entities assist public safety agencies as they currently provide a public service by broadcasting the Emergency Alert System during emergencies or critical incidents within Shasta, Siskiyou, Tehama, and Trinity Counties. Alternative B assumes that the WCF would remain until they are relocated to an alternative location at a time of their choosing. Under this alternative, there would be no increase or decrease in WCF services.

No effects from the continued existence of WCF on the summit to environmental justice are anticipated.

Cumulative Impacts

Because Alternative B would have no effects on environmental justice, no cumulative impacts analysis is required.

Conclusion

Under Alternative B, existing conditions would continue and have no effects on environmental justice. Considering that there are no effects, this alternative would not impair environmental justice.

Alternative C – Long-Term Phase-Out

Effects of Alternative C on environmental justice would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period (20 to 30 years) the existing WCF site and powerline would be decommissioned and the site would be restored to a natural site. After the Phase-Out period, it is expected that the surrounding communities would not lose wireless telecommunication services due to the advance notice to the wireless communication companies to investigate other options for their facilities and the anticipated increase in tower locations in the area. Therefore, over time advances in telecommunication technology would make some of the WCF obsolete and the remaining WCF could be located at other locations. Therefore, in 20 to 30 years the site at Shasta Bally would no longer be needed as a WCF site.

There would be no effects from the existence of the WCF site during the Phase-Out period to environmental justice. Effects after the Phase-Out period are anticipated to be negligible, adverse, and long-term.

Cumulative Impacts

Alternative C would have no effect to environmental justice during the Phase-Out period due to continued operation of the WCF. After the Phase-Out period there would be negligible, adverse, long-term effects with the elimination of the WCF. It is anticipated that future technology and the placement of some WCF at other sites would eliminate the need for the WCF site on Shasta Bally. Regionally, there would be a public benefit from local telecommunication sites that serve their telecommunication needs especially public safety notifications. Cumulatively, this alternative would only have an inconsequential incremental

change when considered with the fire management plan.

Conclusion

Under Alternative C, existing conditions would continue and have no effects on environmental justice during the Phase-Out period. Effects after the Phase-Out period are anticipated to be negligible, adverse, and long-term. This alternative would have a negligible incremental change to the cumulative effects on environmental justice when considered with the fire management plan. Considering that there are no effects to negligible effects, this alternative would not impair environmental justice.

Alternative D – Existing and New Permittees on Existing Infrastructure

Alternative D would have the same effects as Alternative B with the exception that new permittees could co-locate equipment on existing infrastructure. An increase in permittees could also increase the telecommunication services to the surrounding areas.

If new permittees co-locate on Shasta Bally, effects to environmental justice could be beneficial and long-term.

Cumulative Impacts

Alternative D could have a beneficial effect to environmental justice due to the increase in permittees on Shasta Bally. Regionally, there is a public benefit from local telecommunication sites that serve their telecommunication needs especially public safety notifications. Cumulatively, this alternative would only have an inconsequential incremental change when considered with the fire management plan.

Conclusion

Under Alternative D existing WCF would remain on Shasta Bally and new permittees would also be allowed to co-locate on existing infrastructure. Therefore, there could be beneficial effects on environmental justice. This alternative would have an inconsequential incremental change to the cumulative effects on environmental justice when considered with the fire management plan. Considering that there are beneficial effects, this alternative would not impair environmental justice.

Alternative F – Expansion (Preferred Alternative)

Alternative F would have the same effects as Alternative D.

Cumulative Impacts

Cumulative impacts of Alternative F on environmental justice would be similar to those described for Alternative D.

Conclusion

Conclusions for Alternative F on environmental justice would be similar to those described for Alternative D.

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Table 4. Comparative Summary of Environmental Impacts

Impact Topic	Alternative A – No Action	Alternative B – Existing Permittees Remain (Environmentally Preferred)	Alternative C – Long-Term Phase-out	Alternative D – Existing and New Permittees on Existing Infrastructure	Alternative F – Expansion (Preferred Alternative)
Physical Resources					
Air Quality	Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be minor, adverse, intermittent and long-term.	Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.	Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.	Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.	Effects from motor vehicle and generator emissions as well as particulate generated by vehicle traffic on Shasta Bally road are anticipated to be negligible, adverse, and long-term.
Soils and Geologic Resources	Effects from grading Shasta Bally road and erosion in the area are anticipated to be moderate adverse, and long-term.	Effects from regular maintenance on Shasta Bally road are anticipated to be minor, adverse, and long-term. Effects of spreading leaf litter and duff and a designated trail on the summit would have a beneficial effect on soils.	Effects of Alternative C on soils and geologic resources would be similar to those described for Alternative B.	Effects of Alternative D on soils and geologic resources would be similar to those described for Alternative B.	Effects of Alternative F on soils and geologic resources would be similar to those described for Alternative B.
Water Quality	Effects from sediment loading during rain events to water quality are anticipated to be minor, adverse, intermittent, and long-term.	Effects from sediment loading during rain events to water quality are anticipated to be negligible, adverse, and long-term.	Effects of Alternative C on water quality would be similar to those described for Alternative B.	Effects of Alternative D on water quality would be similar to those described for Alternative B.	Effects of Alternative F on water quality would be similar to those described for Alternative B.
Biological Resources					
Ecologically Critical Areas	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to ecologically critical areas are anticipated to be moderate, adverse, and long-term.	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to ecologically critical areas are anticipated to be minor, adverse, and long-term.	Effects of Alternative C on ecologically critical areas would be similar to those described for Alternative B over the next 20 to 30 years.	Effects of Alternative D on ecologically critical areas would be similar to those described for Alternative B.	Effects of Alternative F on ecologically critical areas would be similar to those described for Alternative B.

Impact Topic	Alternative A – No Action	Alternative B – Existing Permittees Remain (Environmentally Preferred)	Alternative C – Long-Term Phase-out	Alternative D – Existing and New Permittees on Existing Infrastructure	Alternative F – Expansion (Preferred Alternative)
Special Status Species	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to special status species are anticipated to be minor, adverse, and long-term.	Effects of Alternative B on special status species would be similar to those described for Alternative A.	Effects of Alternative C on special status species would be similar to those described for Alternative A over the next 20 to 30 years.	Effects of Alternative D on special status species would be similar to those described for Alternative A.	Effects of Alternative F on special status species would be similar to those described for Alternative A.
Vegetation	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to vegetation are anticipated to be minor, adverse, and long-term.	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to vegetation are anticipated to be minor, adverse, and long-term.	Effects of Alternative C on vegetation would be similar to those described for Alternative B over the next 20 to 30 years.	Effects of Alternative D on vegetation would be similar to those described for Alternative B.	Effects of Alternative F on vegetation would be similar to those described for Alternative B.
Wildlife	Effects from the powerline and facilities located on Shasta Bally summit along with visitor use to wildlife and wildlife habitat are anticipated to be negligible, adverse, and long-term.	Effects of Alternative B on wildlife would be similar to those described for Alternative A.	Effects of Alternative C on wildlife would be similar to those described for Alternative A over the next 20 to 30 years.	Effects of Alternative D on wildlife would be similar to those described for Alternative A.	Effects of Alternative F on wildlife would be similar to those described for Alternative A with the addition of increasing the number of WCF in the already impacted area on the summit.
Cultural Resources					
Ethnographic Resources	Under the No Action Alternative, there are no known ethnographic resources that would be disturbed on the WCF site on Shasta Bally.	Effects of Alternative B on ethnographic resources would be similar to those described for Alternative A.	Effects of Alternative C on ethnographic resources would be similar to those described for Alternative A over the next 20 to 30 years.	Effects of Alternative D on ethnographic resources would be similar to those described for Alternative A.	Effects of Alternative F on ethnographic resources would be similar to those described for Alternative A.

Impact Topic	Alternative A – No Action	Alternative B – Existing Permittees Remain (Environmentally Preferred)	Alternative C – Long-Term Phase-out	Alternative D – Existing and New Permittees on Existing Infrastructure	Alternative F – Expansion (Preferred Alternative)
Human Environment					
Park Maintenance	Effects from the continued existence of the powerline and annual maintenance on Shasta Bally road to park operations are anticipated to be negligible, adverse, and long-term.	Effects from the existence of the powerline, road and site maintenance to park operations are anticipated to be minor, adverse, and long-term.	Effects of Alternative C on park operations would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period (20 to 30 years) the existing WCF site and the powerline would be decommissioned and the site would be restored to natural conditions.	Effects of Alternative D on park operations would be similar to those described for Alternative B.	Effects of Alternative F on park operation would be similar to those described for Alternative B.
Visitor Use and Experience	Effects from the continued existence of the WCF, informal trail system, and limited annual maintenance on Shasta Bally road to visitor experience are anticipated to be minor, adverse, and long-term.	Effects from the existence of the WCF and a gravel access road to visitor experience are anticipated to be minor, adverse, and long-term. The designated trail with interpretative exhibit panels at the trailhead would have a beneficial effect on visitor use.	Effects during Phase-Out period to visitor experience are anticipated to be minor, adverse, and long-term. Designated trail would have a beneficial effect. After the Phase-Out period the effects would be beneficial	Effects of Alternative D on visitor use and experience would be similar to those described for Alternative B.	Effects of Alternative F on visitor use and experience would be similar to those described for Alternative B.
Soundscape	Effects from the existence of the WCF, traffic, and informal trail system on the summit to natural soundscape are anticipated to be minor, adverse, and long-term.	Alternative B would have minor, adverse, long-term effects on natural soundscapes due to existing WCF operation, traffic, and designated trail destination.	Effects during Phase-Out period to natural soundscapes are anticipated to be minor, adverse, and long-term. After the Phase-Out period the effects would be beneficial	Alternative D would have the same effects as Alternative B with the exception that new permittees could co-locate equipment on existing infrastructure.	Effects from construction activities to natural soundscapes are anticipated to be moderate, adverse, and short-term.

Impact Topic	Alternative A – No Action	Alternative B – Existing Permittees Remain (Environmentally Preferred)	Alternative C – Long-Term Phase-out	Alternative D – Existing and New Permittees on Existing Infrastructure	Alternative F – Expansion (Preferred Alternative)
Visual Resources	Effects from the existence of the WCF and floodlight on the summit to visual resources are anticipated to be minor, adverse, and long-term.	Effects of Alternative B on visual resources would be similar to those described for Alternative A with the exception that mitigation measures would be implemented to minimize the effect to visual resources on the summit.	Effects of Alternative C on visual resources would be similar to those described for Alternative B with the exception that at the end of the Phase-Out period (20 to 30 years) the existing WCF site and powerline would be decommissioned and the site would be restore to a natural site.	Effects from the existence of the WCF with additional co-located equipment on the summit to visual resources are anticipated to be minor, adverse, and long-term.	Effects from construction activities to visual resources are anticipated to be moderate, adverse, and short-term.
Socioeconomic Considerations					
Environmental Justice	No effects from the continue existence of WCF on the summit to environmental justice are anticipated.	No effects from the continue existence of WCF on the summit to environmental justice are anticipated.	There would be no effects from the existence of the WCF site during the Phase-Out period. Effects after the Phase-Out period are anticipated to be negligible, adverse, and long-term.	Effects from expanded permittees on Shasta Bally to environmental justice are anticipated to be beneficial and long-term.	Alternative F would have the same effects as Alternative D with the exception that existing and new users would be allowed to install new infrastructure at the site in recently disturbed area not currently being utilized.