

**USGS Crater Lake Communications Tower
Environmental Assessment
Revised May 2011**



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PURPOSE AND NEED

Introduction

Crater Lake National Park is located in southwestern Oregon on the divide of the Cascade Range. It lies in an area with a long history of volcanic and glacial activity, extending from Lassen Peak in northern California northward into Canada. Crater Lake occupies the collapsed caldera of the once majestic Mount Mazama.

The basic purpose of the park is defined by the congressional act, signed by President Theodore Roosevelt on May 22, 1902 (32 Stat. 202), which established Crater Lake National Park:

"... an area of two hundred and forty-nine square miles ... dedicated and set apart forever as a public (park) or pleasure ground for the benefit of the people of the United States, to be known as "Crater Lake National Park."

The act further states:

"That the reservation established by this act shall be under the control of the Secretary of the Interior, whose duty it shall be to establish rules and regulations and cause adequate measures to be taken for the preservation of the natural objects within said park,...."

The act requires that adequate measures shall be taken for

"... the preservation of the natural objects ... the protection of the timber ... the preservation of all kinds of game and fish..." and "that said reservation shall be open...to all... scientists, excursionists, and pleasure seekers."

Subsequent legislation, including the National Park Service (NPS) Organic Act of 1916 and the Redwood Act, emphasize the protection, preservation and interpretation of the natural and historic objects, scenery, and wild life of all national parks including Crater Lake. In meeting such mandates, park resources are to be managed in such a way as to maintain them in an unimpaired condition for the enjoyment of present and future generations.

The U.S. Geological Survey Cascades Volcano Observatory (USGS/CVO) proposes to construct a communications tower within Crater Lake National Park. The proposed site development includes a communications tower to establish a telemetry link to relay data from existing volcanic monitoring equipment within the park to an internet connection outside of the park. The telemetry tower would allow the USGS/CVO to continuously manage and operate a real time volcanic monitoring system in Crater Lake National Park.

This environmental assessment was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations the Council of Environmental Quality (CEQ) (40 CFR 1508.9), and the National Park Service Director's Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

Background

The proposed location was determined to be optimal by USGS Staff to improve the telemetry of volcanic monitoring data out of the park on a wireless Ethernet connection to an established telemetry node and internet connection located outside of the park. This location was chosen based on several factors including the site is not located on the rim of the caldera, is located in an area not frequented by the public, is not visible from the Crater Lake Lodge and is located in a previously disturbed non-historic area of the park. The proposed site has available access and electrical power.

The proposed installation would consist of a 60 foot tall monopole tower that would contain 1 antenna. The tower would consist of a single 4 foot round panel digital antenna weighing no more than 85 pounds at the top of the pole pointing to the south towards the Klamath Basin. A run of 7/8" coax cable would be attached to the antenna and enclosed within the hollow tower. The digital radio equipment would consist of one outdoor metal electrical equipment cabinet located at the base of the antenna with enough space to accommodate up to 3 additional radios. One digital radio and a standard 4 port Ethernet router would be located in the cabinet. The USGS antenna configuration would be sufficient to accomplish the USGS/CVO goals and allows for additional antennas to be installed on the tower for NPS park telecommunications and emergency operational needs if desired. In addition to meeting the technical needs for wireless communications, suitable sites would generally minimize impacts to natural and cultural resources, be located outside of existing historic districts, be generally hidden from public view and accessible for construction equipment and electrical power.

Purpose and Need

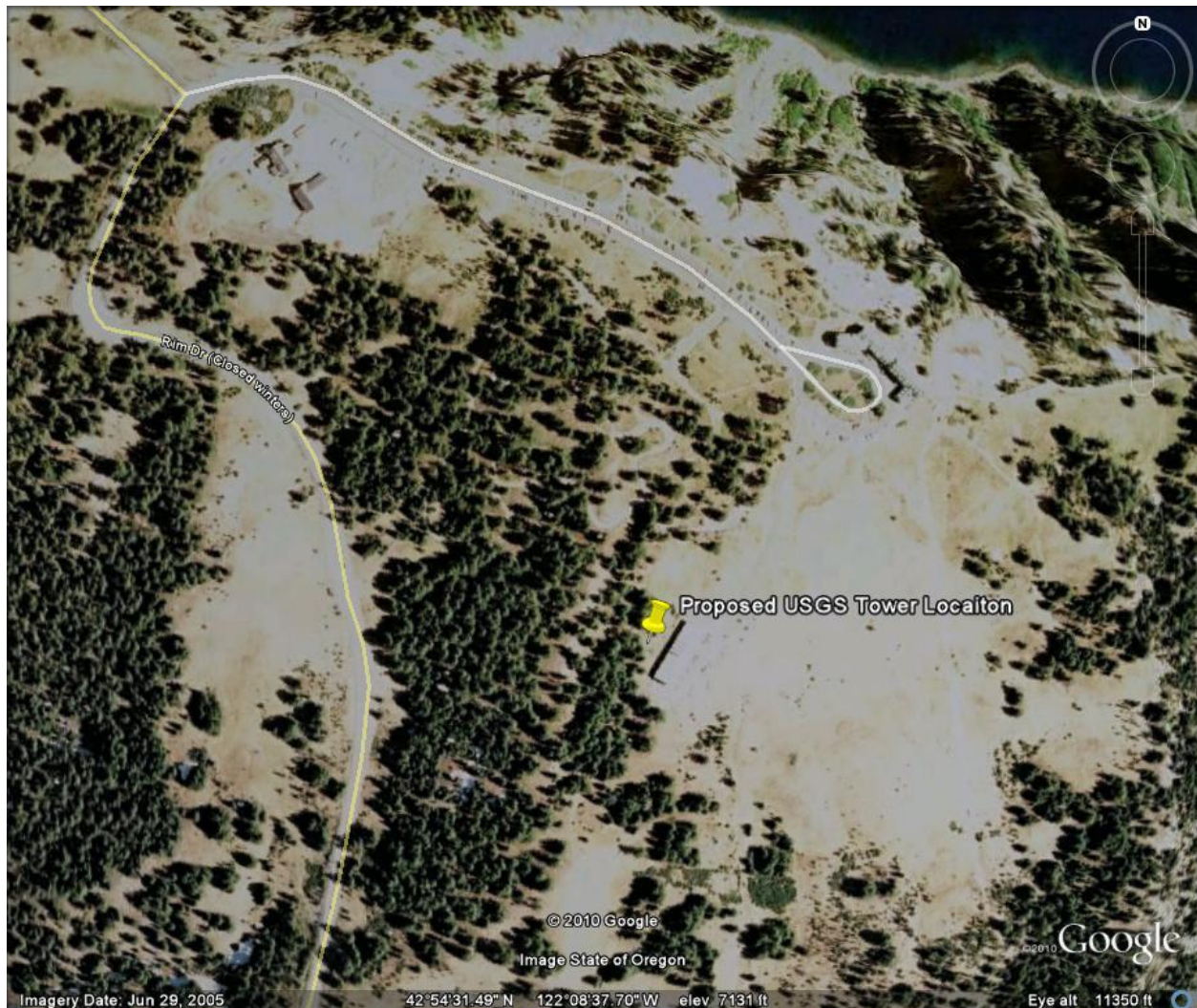
Crater Lake is a potentially active volcano. Before volcanoes erupt they provide warning signs including swarms of small earthquakes, release of volcanic gases, and swelling of the volcanic edifice. Such warning signs are often subtle and the period of warning can be as short as days before eruptive activity commences. Monitoring volcanoes requires sensitive instruments to be placed on the volcano, data from which need to be transmitted to a volcano observatory for scientific analysis. Currently the USGS operates three seismic and four continuously recording GPS (CGPS) stations in the Park. Typically, monitoring data are transmitted via radios, phone lines, and Internet from instruments installed on a volcano to scientific facilities for processing and analysis. Unfortunately, the park's data communication infrastructure cannot support the additional requirements needed to telemeter the volcanic monitoring data out of the Park to the USGS/CVO in Vancouver, Wash. Thus all data are stored on a computer in the Park and must be manually downloaded by USGS/CVO staff once every three to six months.

Construction of a tower to support wireless communications would provide reliable and robust telemetry to transmit digital data in real time from existing USGS volcanic monitoring stations within Crater Lake National Park to an internet connection south of the volcano and south of the park's boundaries. Currently, the USGS operates and maintains 3 permanent seismic stations and 4 permanent Continuous Global Positioning Systems (CGPS) stations within Crater Lake National Park. Data from these stations is transmitted via both analog and digital radios to radios connected to a computer located in the utility closet on the top floor of the Rim Café building in the Crater Rim Village. Currently, all data is stored on the computer and is manually downloaded by CVO staff twice a year as there is no reliable method to route this data through the Park's internet back to the USGS/CVO Vancouver office in real time. This inability to transmit monitoring data in real time prevents staff at CVO from performing its critical function to monitor and assess volcanic hazards at Crater Lake. Furthermore, the limited bandwidth on the current NPS CLNP Ethernet connection prohibits the transfer of seismic and deformation in real time, thus hampering the ability to detect, analyze and interpret seismic events that occur within Crater Lake National Park. The USGS proposes to install and maintain this tower in order to enhance monitoring capabilities at Crater Lake National Park to better detect the onset of any volcanic activity and to more accurately assess the likelihood of an eruption when seismic activity occurs within the park.

Project Location

The proposed project area is located entirely within Crater Lake National Park boundaries and does not lie within the Park's 1974 wilderness designation proposal. The project area (Figure 1) is located adjacent to the park's Rim Dormitory southwest of the Crater Lake Lodge at the Park's Rim Village.

Figure 1: Project Location



Scoping

NPS Policy requires that all proposed projects be screened for potential impacts against a list of natural and cultural resource categories. Park management used an interdisciplinary review process to determine which resources could be affected by this project.

In addition, on April 4, 2011 the park solicited potentially interested parties for any additional concerns about this project. Letters were sent to the Klamath County Library, Jackson County Library, Fremont/Winema National Forests, Rogue River National Forest, Umpqua National Forest, U.S. Fish and Wildlife Service, Klamath County Commissioners, Jackson County Commissioners, Oregon Department of Fish and Wildlife, Klamath Tribes, Crater Lake National Park Trust, Crater Lake Natural History

Association, Friends of Crater Lake, the Pacific Crest Trail Association and the Environmental Protection Agency.

Impact topics are dismissed from further evaluation in this EA if:

- they do not exist in the analysis area, or
- they would not be affected by the proposal, or the likelihood of impacts are not reasonably expected, or
- through the application of mitigation measures, there would be negligible effects from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Due to there being no effect or negligible effects, there would either be no contribution towards cumulative effects or the contribution would be low. For each issue or topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct and indirect, and cumulative effects is presented. There is no impairment analysis included in the limited evaluations for the dismissed topics because the NPS's threshold for considering whether there could be an impairment is based on "major" effects.

Impact topics for this project have been identified on the basis of federal laws, regulations, and orders; 2006 *Management Policies*; and National Park Service knowledge of resources at Crater Lake National Park. Impact topics that are carried forward for further analysis in this environmental assessment are listed below along with the reasons why the impact topic is further analyzed. For each of these topics, the following text also describes the existing setting or baseline conditions (i.e. affected environment) within the project area. This information will be used to analyze impacts against the current conditions of the project area in the *Environmental Consequences* chapter.

Impact Topics Retained For Further Analysis

Topography, Geology, Soils

The proposed construction of a telemetry tower would be in an area that does not contain significant topographic or geologic features. Furthermore, the proposed location for the tower is previously disturbed by past construction of utilities and buildings. Soils in the area are classified as Cleetwood-Sunnotch-Castlecrest complex found at high elevations meadows and whitebark pine forests at an elevation of 7,000 to 8,000 feet. Given that the proposed activity would be expected to have a minor impact on the topography and soils at the proposed location, this topic has been carried forward for further analysis.

Air Quality

Construction activities such as hauling materials and operating heavy equipment could result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Overall, the project could result in a degradation of local air quality. Because there would likely be an increase in vehicle exhausts from construction equipment and temporary suspension of dust particles in the general vicinity of the construction, this topic has been carried forward for further analysis.

Soundscapes

During construction, human-caused sounds would likely increase due to construction activities, equipment, vehicular traffic, and construction crews. Because the construction will have potential impacts on the soundscapes due to the construction activities, this topic has been carried forward for further analysis.

Visitor Experience

Providing for visitor enjoyment is one of the primary purposes of the national Park Service, according to the 1916 Organic Act and NPS Management Policies. Furthermore, The Create Lake National Park's enabling legislation stipulates that visitors should have opportunities to enjoy the park in ways that leave

park resources unimpaired for future generations. The area is in close proximity to the Hemlock and Raven Ski trails and may be visible by snowshoe hikers participating in Ranger Led hikes therefore this topic is considered for further evaluation.

Impact Topics Dismissed from Further Analysis

Historic Structures, Ethnographic Resources, Cultural Landscapes

The proposed location of the wireless tower is outside of the Rim Village Historic District and does not affect any historic building. The tower may be visible from a small portion of the Historic District, however the visual intrusion is considered negligible. Past cultural resources surveys indicate that no cultural resources were located in the vicinity of the proposed location. As a result, the project would not result in any direct impacts and only negligible impacts to the viewshed so this topic has been dismissed from further analysis in this document.

Paleontological Resources

No paleontological resources were found in the vicinity of the project area. As a result, the project would not result in any impacts so this topic has been dismissed from further analysis in this document.

Vegetation

Removal and/or disturbance of limited vegetation in the project area would be expected. The impacts are expected to be negligible and short term. Native vegetation is expected to quickly recolonize the area and as a result, this topic is dismissed from further analysis in this document. The installation would not result in additional removal of trees due to the potential for tree failures.

Wildlife

The location of the proposed telecommunications tower is in a previously disturbed area that contains no water, minimal vegetation, and is generally flat with no major geologic features. No sensitive wildlife species are found in the area and those common wildlife species that are found in the area are mobile and are expected to avoid the area during construction and return at the completion of the project. Therefore this topic is dismissed from further analysis in this document.

Threatened or Endangered Species

The U.S. Fish and Wildlife Service has identified species within Crater Lake National Park that are classified and federally listed as either threatened or endangered, or proposed candidates for such listing. There are no endangered species present within Crater Lake National Park. Threatened species within the Park include the Canada lynx (*Lynx canadensis*), Northern spotted owl (*Strix occidentalis caurina*), and bull trout (*Salvelinus confluentus*), and the only candidate species for listing is the Fisher (*Martes pennanti*). There are no federally listed plant species within the boundaries of Crater Lake National Park.

The Northern spotted owl is an old-growth forest dependent species and potential suitable habitat is found in patches throughout the park, with a majority of the patches occurring southwest of a diagonal line running from the northwest to the southeast corners of the park. There are 17 identified spotted owl activity centers within Crater Lake National Park. Most of these were discovered when the entire potential suitable owl habitat was delineated and surveyed in 1995 and 1996. Potential suitable owl habitat is found in patches throughout the project area. There is no suitable habitat within 400 meters of the proposed tower location. There are no known spotted owl activity centers near the site and the site is located at a higher elevation of any known spotted owl making it very unlikely that spotted owls are present in the area.

Bull trout are found in two streams at the park. However, they do not occur at, or within a reasonable distance downstream of, the project area.

Extensive surveys for Canada lynx within Crater Lake National Park in 2000-01 turned up no evidence of the species. As a result, biologists have concluded that it is unlikely that a viable population of Canada lynx resides in or near the park.

There are two known population of Fishers (*Martes pennanti*) in Oregon, one in the Southern Cascades southwest of Crater Lake National Park, and one in the Siskiyou mountains. The data indicates that fishers have utilized low elevation Douglas-fir (west side) and ponderosa pine (east side) stands on the fringes of the Park. The project area is near the center of the Park, at a much higher elevation, and is comprised primarily of mountain hemlock and lodgepole pine stands, making it very unlikely that this species or associated habitat occurs within the project area.

It has been determined that this project will have no effect on federally listed threatened and endangered species.

Water Resources

The proposed project area does not contain surface waters, and is mostly dry, except for periodic runoff during storm events. Because water quality, water quantity, and drinking water are not expected to be affected by the project, this topic is dismissed from further analysis in this document.

Wetlands

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

The USGS/CVO reviewed the US Fish and Wildlife Service's National Wetlands Inventory Map and the USGS topographic map to determine if the project would have an impact on any wetlands or required significant amounts of fill or grading. The site is not located in a recognized National Wetland area. Because there are no wetlands in the proposed project area and because there would be no unacceptable impacts, this topic is dismissed from further analysis in this document.

Floodplains

No floodplains would be affected by actions proposed in this Environmental Assessment. Because the proposed location of the tower is not proposed within floodplains and the construction would not result in any impacts on floodplains, this topic is dismissed from further analysis in this document.

Lightscape Management

The proposed tower will not utilize exterior lighting, or have a beacon light attached to it and therefore would have no effects on the existing outside lighting or natural night sky of the area. This topic is dismissed from further analysis in this document.

Socioeconomics

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Any increase in workforce and revenue would be temporary and negligible, lasting only as long as construction. Because the impacts to the socioeconomic environment would be negligible, this topic is dismissed.

Prime and Unique Farmlands

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. The proposed project area does not contain prime or unique farmlands. Because there would be no effects on prime and unique farmlands, this topic is dismissed from further analysis in this document.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by the Department of Interior agencies be explicitly addressed in environmental documents. There are no Indian trust resources at Crater Lake National Park. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Because there are no Indian trust resources located in the proposed construction area and there would be no impacts on Indian Trust Resources, this topic is dismissed from further analysis in this document.

Environmental Justice

Executive Order 12898 General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the volcanic monitoring data transmitted by the tower would be available for use by all park staff and visitors regardless of race or income, and the construction workforces would not be hired based on their race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities. Because there would be no disproportionate effects, this topic is dismissed from further analysis in this document.

Climate Change and Sustainability

Although climatologists are unsure about the long-term results of global climate change, it is clear that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. Currently, there is no evidence that construction of a telecommunications tower has potential to impact climate change. The effects of future climate changes are not discussed further.

ALTERNATIVES

During May of 2009, November of 2010 and March of 2011, the USGS/CVO worked with staff from Crater Lake National Park and Day Wireless to develop project alternatives. This resulted in the definition of project objectives as described the *Purpose and Need*, and a list of alternatives that could potentially meet these objectives. A total of one action alternative and the no-action alternative were originally identified for this project. The action alternative and the no-action alternative are carried forward for further evaluation in the environmental assessment. A summary table comparing alternate components is presented at the end of this chapter.

Alternatives Carried Forward

Alternative A - No-Action

Under this alternative, the telemetry tower would not be constructed. The USGS/CVO objective to establish and maintain reliable telemetry of real time volcanic monitoring data from Crater Lake would not be met. This would prevent staff at the USGS from quickly analysis and interpret seismic activity that occurs at beneath Crater Lake. If the tower is not built, data from each remote monitoring station will continue to be transmitted to on stored on to a computer located in the Rim Café and staff from the USGS will be required to visit the park and manually download the data off of the computer.

Figure 2: Alternative A, No Action



Area of proposed tower installation. The red arrow and circle in the photo shows the proposed installation site.

Alternative B - Tower Installation

This alternative consists of construction a telemetry tower behind the Xanterra Bunkhouse. The general area has been previously disturbed by the construction of the building and the installation of the electrical power transformer. The following text further describes the components of alternative B.

- **Building Features** – The tower would consist of a single 4 foot diameter round flat panel digital antenna weighing no more than 85 pounds at the top of the pole pointing to the south towards the Klamath Basin. A run of 7/8" coax cable would be attached to the antenna and enclosed within the hollow tower. The digital radio equipment will consist of 1 outdoor metal electrical

equipment cabinet to be located at the base of the antenna with enough space to accommodate up to 3 additional radios. One digital radio and a standard 4 or 8 port Ethernet router will be located in the cabinet.

- **Use/Operation of the Facility** – The tower would be primarily used by the USGS/CVO to telemeter volcanic monitoring data collected in the park at the 4 existing monitoring stations to a robust internet connection outside of the park.
- **Utilities** - The tower would be served by existing electrical utilities near the site. All electrical cables to be installed and run from the existing utilities to the electrical cabinet at the base of the tower will be enclosed in conduit and buried in the ground according to standard local and federal electrical codes.
- **Access** – Access to the tower would be existing paved roads in front of the Xanterra Dormitory and other paved roads within the park. Machinery needed to complete all drilling and excavation will access the proposed site via the parking lot to the east of the Xanterra bunkhouse and will be driven around the south side of the building.
- **Parking**- A temporary parking area will be necessary for the construction of the tower. This will include storage of work vehicles and trailers during construction. The parking area will be located adjacent to the east and south sides of the Xanterra Dormitory.
- **Revegetation** – The property and surrounding area of the proposed site consists of mostly bare soil, mature Mountain Hemlock trees and some understory grasses and shrubs. The immediate area close to the proposed location is bare soil with no exposed sections of bedrock. Minimal vegetation will be disturbed during construction of the tower.
- **Construction Staging** – To implement this alternative, an area near the tower would be used for construction staging, material stockpiling, and equipment storage. This area will be sited in a previously disturbed area, away from visitor use areas. This alternative is based on preliminary designs and best information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are only estimates and could change during final site design. Prior to installation of the tower, staff from the USGS and NPS will verify the site with the contractor. If changes during the final site design are inconsistent with the intent and effects of the selected alternative, then additional compliance would be completed, as appropriate.

Figure 3: Alternative B, Tower Installation



Figure 3. A mockup of a photo showing the lower portion of a 60 foot single antenna mast proposed for Crater Lake. Site is as seen from SW corner of Xanterra employee bunkhouse.

Figure 4: Alternative B, Tower Installation



Figure 4.) Mockup photo of the proposed tower as it would be seen from the NW side of the Xanterra bunkhouse.

Mitigation Measures

The following mitigation measures were developed to minimize the degree and/or severity of adverse effects and would be implemented during construction of the action alternative, as needed:

- To minimize the amount of ground disturbance, staging and stockpiling areas would be in previously disturbed sites, away from visitor use areas to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.
- Construction zones would be identified and fenced with construction tape, snow fencing, or some similar material prior to any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the construction zone as defined by the construction zone fencing.
- Fugitive dust generated by construction would be controlled by spraying water on the construction site, if necessary.
- To reduce noise and emissions, construction equipment would not be permitted to idle for long periods of time.
- To minimize possible petrochemical leaks from construction equipment, the contractor would regularly monitor and check construction equipment to identify and repair any leaks.
- Construction workers and supervisors would be informed about special status species. Contract provisions would require the cessation of construction activities if a species were discovered in the project area, until park staff re-evaluates the project. This would allow modification of the contract for any protection measures determined necessary to protect the discovery.
- Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of any discovery and the recreation area would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- The National Park Service would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction.
- According to 2006 *Management Policies*, the National Park Service would strive to construct facilities with sustainable designs and systems to minimize potential environmental impacts. Development would not compete with or dominate the recreation area's features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity associated with wetlands. To the extent possible, the design and management of facilities would emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources.
- The tower will be painted with a non-reflective paint in a color that will blend as much as possible with the native surroundings to minimize its visibility.

Alternatives Considered and Dismissed

The following alternatives were considered for project implementation, but were ultimately dismissed from further analysis. Reasons for their dismissal are provided in the following alternative descriptions.

- **Utilizing Other Existing Space** - No other wireless towers exist in the park. Therefore, utilizing an existing space was dismissed.
- **Alternative Locations for a Telemetry Tower in the Park** - The USGS/CVO considered one other location on the south rim of the crater. This site was not pursued because such a structure on the rim would be visible to the public and would consist of new construction in the Rim Village Historic Area.
- **Alternative Locations for a Telemetry Tower outside the Park** - The Crater Lake National Park encompasses a large area. No privately owned land is in the area that could be considered as a viable alternative location. Additionally, no one location outside of the park could be found that had line of site and was able to receive the signals transmitted by the radios at each of the remote monitoring sites within the park.

Table 1: Summary of Alternatives and How Each Alternative Meets Project Objectives

Alternative Elements	Alternative A - No Action	Alternative B - Install New Tower
New Telemetry Tower	The telemetry tower would not be completed, and therefore telemetry of volcanic monitoring data out of the park to a robust internet connection would not be possible.	The telemetry tower would be constructed, providing robust telemetry of volcanic monitoring data to the USGS. This would allow staff at the USGS/CVO to quickly analysis and interpret any seismic and deformational changes observed at the volcano.
Access/Parking	The existing access road to the Xanterra bunkhouse would continue to be used with no change.	The existing access road to the Xanterra bunkhouse would continue to be used with no change.
Utilities/Construction Staging	New utility connects and construction staging would not be needed.	Some excavation would be required to route existing utilities from the AC transformer to the tower.
Project Objectives	Meets Project Objectives?	Meets Project Objectives?
Provide the infrastructure platform for the USGS to support 24/7 volcanic monitoring of Crater Lake National Park	No. A telemetry tower or an acceptable data telemetry path does not currently exist at this site.	Yes. A telemetry tower would provide the capabilities to route all seismic monitoring data to the USGS/CVO Vancouver office in real time.
Identify a location that minimizes impacts to park resources and will not result in impairment or unacceptable impacts to these resources.	Yes. There is currently no tower at this site. Therefore, the Property is not currently impacted.	Yes. The location of the telemetry tower would be in an area that is already improved by a non-historic park building and an electrical transformer and is in an area of Crater Lake National Park that is not frequented by visitors.

Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which guides the Council on Environmental Quality (CEQ). The CEQ provides direction that the environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA's §101:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative A, No-Action Alternative, only minimally meets the above six evaluation factors because the area designated for the telecommunications tower is in a remote area and that area has already been disturbed by the addition of the non-historic structure and supporting buried utilities adjacent to the proposed construction area.

Alternative B is the environmentally preferred alternative because it best addresses these six evaluation factors. Alternative B, Installation of the Communications Tower, would provide the USGS/CVO the infrastructure to perform real time monitoring of volcanic activity at Crater Lake and quickly provide park staff with interpretation and analysis of seismic events that occur at Crater Lake National Park. Additionally, the tower provides infrastructure that could potentially be utilized by the park for back up emergency radio and telecommunication systems. Furthermore, the USGS has worked very closely with staff from the park and Day wireless to identify and design a tower that will not impede visitor experiences in the park, be visible from the crater rim and the Crater Rim Lodge, and disturb any previously undisturbed areas within the park.

No new information came forward from public scoping or consultation with other agencies and park specialists to necessitate the development of any new alternatives, other than those described and evaluated in this document. Because it meets the purpose and need for the project, the project objectives, and is the environmentally preferred alternative, alternative B is also recommended as the National Park Service preferred alternative. For the remainder of the document, alternative B will be referred to as the preferred alternative.

ENVIRONMENTAL CONSEQUENCES

Cumulative Impact Scenario

The Council on Environmental Quality (CEQ) regulations, which implemented the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), requires 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 both the no-action and preferred alternative.

Topography, Geology soils

Affected Environment

The proposed tower would occur in an area that does not contain significant topographic or geologic features. However, construction of the tower will result in a very local disturbance of soils and the topography in the immediate vicinity of the proposed tower location and a very minor modification of the soils would be required to provide a level surface on which to construct the tower. The tower construction would also require excavation, which would displace and disturb soils. Soils may also be disturbed and compacted on a temporary basis in the locations used to access the construction site until construction of the tower is complete.

Intensity Level Definitions

- Negligible - an impact that would cause small changes that is not measurable or would be at the lower levels of detection.
- Minor – an impact that would be detectable and could affect the abundance or distribution of individuals in a localized area with few measurable consequences for the overall community.
- Moderate – an impact that would be clearly detectable and could have an appreciable effect on the resource.
- Major – an impact that results in a substantial adverse or beneficial change to a biotic community.

Impacts of Alternative A (No-Action Alternative)

The no-action alternative would result in no impacts to the topography or soils in the area because no construction activities would be conducted.

Cumulative Effects: There are currently no ongoing projects that affect the geologic, topographic and soil properties at the proposed location. Because there is no effect to the soil, the no-action alternative would result in no cumulative effects on the proposed area.

Conclusion: The no-action alternative would result in no effects to the soils and local topography, geology and soils in the immediate vicinity of the proposed tower location. All biotic communities would remain unchanged because no communications tower would be constructed.

Impacts of Alternative B (Preferred Alternative)

Under the Preferred Alternative, minor short term impacts on the soils in the immediate vicinity of the proposed tower would occur. Approximately 400 square feet of soil would be disturbed during construction and excavation of the soil to establish a level surface for the base of the tower. After construction is complete, the area around the base of the tower would be graded to match the pre-construction conditions. Additionally, trenching would be required to bury all electrical cables according to industry standard and NPS requirements. Once all cables are placed in the trench, the trench would be back filled and graded to its preconstruction conditions.

Cumulative Effects: The proposed action from the tower installation would contribute a negligible and extremely localized increment to the total cumulative past, present and reasonable foreseeable future construction activities in the park. While soil in the immediate vicinity of the proposed location of the tower would be disturbed by excavation, drilling for the foundation of the tower and trenching for electrical wires, the area would be graded to pre-construction conditions upon completion of the tower installation. The incremental contribution to soil disturbance from past development and foreseen development is negligible for preferred alternative.

Conclusion: There would be short term minor impacts to the topography and soils during construction. Long term impacts from the construction of the tower would be minimal or non-existent. Construction of the tower would not result in impairment of the topography, geology and soils of the immediate area adjacent to the proposed tower.

Air Quality

Affected Environment

The 1977 amendments to the Clean Air Act declared Crater Lake National Park a mandatory Class 1 area and charged the Park Superintendent with a responsibility to protect air quality related values, including visibility. The quality of air plays a vital role in visitor enjoyment, in the preservation of cultural resources, and in the perpetuation of natural systems. Crater Lake National Park is known for its clean air and spectacular vistas. Visitors standing on the summits of Mt. Scott, Watchman and Llao rock can see south to Mt. Shasta in California and north to the summits of the Three Sisters and beyond.

Intensity Level Definitions

- Negligible – an impact would be at the lower levels of detection or not measurable.
- Minor – an impact would have a slight, localized effect on air quality or visibility.
- Moderate – an impact would have clearly detectable effects on air quality or visibility over a more widespread area of the park.
- Major – an impact would have severely adverse or exceptionally beneficial effects on air quality or visibility and potentially would affect the regional air shed.

Impacts of Alternative A (No-Action Alternative)

The no action alternative would have no impact on the air quality of Crater Lake National Park because under this alternative, the tower would not be constructed.

Cumulative Effects: Under this alternative, the tower would not be built and there would be no cumulative effects on the air quality in Crater Lake National Park.

Conclusion: The no-action alternative would have no effect on park air quality at Crater Lake National Park. The telemetry tower would not be build and this would have no impact on park air quality when considered with other past, present and reasonably foreseeable future actions.

Impacts of Alternative B (Preferred Alternative)

Under the preferred alternative, construction work would temporarily contribute negligible amounts of fugitive dust emissions in the immediate vicinity of the construction area. Dust will be minimized by wetting construction surfaces during particularly dry or windy conditions. It is unlikely that any fugitive dust would impact park operations or visitors experience as work will be conducted in an area not typically used by park visitors.

Cumulative Effects: The proposed tower installation would contribute a negligible increment to the total cumulative past, present and reasonable foreseeable future air pollution in the park. While fugitive dust will be generated in the immediate vicinity of the proposed location, it will be limited in duration and will not continue after construction of the tower is completed. Thus, the preferred alternative will temporarily contribute negligible amounts of fugitive dust emissions.

Conclusion: The preferred alternative would have a minor and temporary impact on air quality in the immediate vicinity of the construction zone in the short term and there would be no impairment to the park's air quality in the long term.

Soundscapes

Affected Environment

Natural soundscapes in parks are often taken for granted and until recently sound impacts were evaluated in a wilderness context of a human need for quiet and solitude. Research in acoustics and natural sound demonstrate that natural sound is an important ecological attribute. Impacts to natural sound not only affect the human environment but can threaten the underpinnings of park ecology.

Intensity Level Definitions

- Negligible – an impact would be at the lower levels of detection or not measurable.

- Minor – an impact would have a slight, localized effect on the ambient acoustic environment.
- Moderate – an impact would have clearly detectable effects on the ambient acoustic environment over a more widespread area of the park.
- Major – an impact would have severely adverse or exceptionally beneficial effects on the ambient acoustic environment and potentially would have a long term affect.

Impacts of Alternative A (No-Action Alternative)

The no action alternative would have no impact on the natural soundscapes in Crater Lake National Park.

Cumulative Effects: Under this alternative, the tower would not be built and there would be no cumulative effects on park soundscapes.

Conclusion: The no-action alternative would have no effect on park soundscapes at Crater Lake National Park. The telemetry tower would not be built and this would have no impact on park soundscapes when considered with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative B (Preferred Alternative)

Under the Preferred Alternative, a slight increase in ambient noise would occur during the installation of the tower. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds and would have a negligible impact on the park soundscapes limited to the immediate vicinity of the proposed area of construction. Additionally, there would be no backup generators or other motorized devices installed and operated to provide auxiliary power to the radio equipment in the event there is a power interruption.

Cumulative Effects: The proposed tower installation would contribute a negligible and extremely localized increment to the total cumulative past, present and reasonable foreseeable future soundscapes in the park. While noises will be generated in the immediate vicinity of the proposed location of the tower during construction, any sounds would last only as long as the construction and will cease after the tower after installation is completed. Additionally, once completed, the tower will not generate any noise. Thus, the preferred impact will temporarily contribute negligible minor noise impacts.

Conclusion: The Preferred Alternative would have a minor and temporary impact on the natural soundscapes in the immediate vicinity of the project area during the construction; however, there would be no impairment to the park's natural soundscapes in the long term.

Visitor Experience

Affected Environment

Crater Lake was set aside as a public park or "pleasure ground" for the benefit of the people of the United States. The Park attracts approximately 500,000 visitors per year who come primarily to view Crater Lake. Most of this visitation occurs during the summer months from June to September and is concentrated in the developed front country zones of the park. While most of the Rim Drive is closed due to heavy snow in the winter, the Park maintains road access to Rim Village throughout the year. Winter use in the park had increased in recent years.

The proposed location for wireless tower is in an area zoned as "developed" in the Park's General Management Plan. In this zone signs of human activity would be fairly obvious. The zoning provides for a variety of visitor, administrative and maintenance facilities.

Intensity Level Definitions

- Negligible - could have an small effect on visitor experience that would not be measurable and/or would affect few people
- Minor – could have a slight and localized effect on visitor experience with few measurable results and/or would affect some people
- Moderate – would affect visitor use in a readily apparent beneficial or adverse change and/or would affect a large number of people.

- Major – would have a substantial adverse or beneficial effect on visitor experience and/or affect the large majority of people.

Impacts of Alternative A (No Action Alternative)

Since there would be no installation of a wireless tower, the no action alternative would not affect the visitor use and enjoyment of Crater Lake National Park.

Cumulative Effects: Under this alternative, the tower would not be built and there would be no cumulative effects to visitor use and enjoyment of the park.

Conclusion: The no-action alternative would have no effect on visitor use and enjoyment of Crater Lake National Park. The telemetry tower would not be built and therefore would not affect park visitors or their enjoyment of the park when considered with other past, present, and reasonably foreseeable future actions.

Impacts of Alternative B (Preferred Alternative)

The proposed location of the wireless tower is in a developed zone next to the Rim Dormitory building and near Rim Village. The tower would not be located within a high visitor use area and would be generally hidden from view of most visitors particularly during the summer months. During the winter, roads to the site are closed, however, cross country ski trails pass close to the proposed site. The tower would be visible to visitors using these ski trails and participating in some park led snowshoe walks.

Cumulative Impacts: Considering that some visitors would view additional infrastructure negatively, the proposed tower would add incrementally to the number of built facilities in the park and particularly to the infrastructure of the Rim Village area. The Park's General Management Plan currently precludes new construction of buildings including housing and administrative offices. Park management has been approached by wireless communication vendors regarding possible cellular telephone tower in the park, however there are no current proposals. The construction of the proposed tower is expected to add slightly to the current infrastructure footprint.

Conclusions: The proposed tower is located in a developed zone of the park where visitors would expect to see signs of human activity and park infrastructure. The proposed tower would add to the footprint of park infrastructure and would be visible at times to a limited number of visitors in the park. The overall impact to visitor enjoyment is minor.

CONSULTATION AND COORDINATION

Internal Scoping

Internal scoping was conducted by the U.S. Geological Survey/Cascades Volcano Observatory and Crater Lake National Park. An Environmental Screening Form (ESF) was completed by Crater Lake National Park, discusses the purpose and need for the project:

External Scoping

External scoping was conducted to inform the public about the proposal to construct a new communications tower in Crater Lake National Park and to generate input on the preparation of this environmental assessment. External scoping was initiated by direct mailing of a scoping letter (Appendix A) sent to State Federal and Local agencies and area public libraries. The notice was also posted on the NPS Project Evaluation and Public Comment (PEPC) public website to inform the preparation of this environmental assessment. The notice was dated April 13th, 2011.

During the 30-day scoping period, one public response was received.

The response expressed concern of site visibility of the tower by participants taking park of Ranger Led snowshoe hikes and cross country skiers who utilize the Hemlock and Raven ski trails that pass within close proximity of the proposed site. This issue was addressed in the Visitor Experience section of this EA within the Topics Dismissed from Further Analysis section. Further questions posed in the comment from the same individual questioned if the USGS was dissatisfied with the quality of the data from the current monitoring stations with the park and whether the current manual download collection trips were inconvenient, as well as what were the long term maintenance needs for the for the tower. These issues were addressed in the Purpose and Need section of this EA.

Native American Consultation

The Native American Klamath Tribe was contacted at the beginning of this project to determine if there were any ethnographic resources in the project area and if they wanted to be involved in the environmental compliance process. There was no response from the Klamath Tribe.

Environmental Assessment Review and Lists of Recipients

The EA was distributed to the following recipients and posted on the National Park System Planning, Environment and Public Comment (PEPC) website and the Crater Lake National Park's website.

Klamath County Library
Klamath Falls Branch
126 Third Street
Klamath Falls, Oregon 97601

Jackson County Library
Medford Branch
ATTN: Reference Library
413 W. Main Street
Medford, Oregon 97501

Fremont-Winema National Forest
2819 Dahlia Street
Klamath Falls, Oregon 97601

Rogue River National Forest
333 W. Eighth Street
Medford, Oregon 97501

Umpqua National Forest
P.O. Box 1008
Roseburg, Oregon 97479

US Fish and Wildlife Service
6610 Washburn Way
Klamath Falls, Oregon 97603

Klamath County Commissioners
305 Main Street
Klamath Falls, Oregon 97601

Jackson County Commissioners
10 S. Oakdale, Room 200
Medford, Oregon 97501

Oregon Department of Fish and Wildlife
District Office
1495 E. Gregory Road
Central Point, Oregon 97502

Klamath Tribes
P.O. Box 274
Chiloquin, Oregon 97624
Perry Chocktoot, Director Cultural and Heritage
Department

Pacific Crest Trail Association
Program Director
5325 Elkhorn Blvd, PMB 256
Sacramento, California 95842-2526

Crater Lake Natural History Association
P.O. Box 157
Crater Lake, Oregon 97604

Friends of Crater Lake National Park
P.O. Box 88
Crater Lake, Oregon 97604

Crater Lake National Park Trust
P.O. Box 62
Crater Lake, Oregon 97604

List of Consultant(s) and Coordinator(s)

The following organizations were consulted during the preparation of this environmental assessment:

Klamath Tribes

National Park Service/Crater Lake National Park

U.S. Geological Survey/Cascades Volcanic Observatory

REFERENCES

- | | |
|---------------|--|
| OFR 2005-1164 | An Assessment of Volcanic Threat and Monitoring Capabilities in the United States: Framework for a National Volcano Early Warning System (NVEWS) |
| SIR 2008-5114 | Instrumentation Recommendations for Volcano Monitoring at U.S. Volcanoes under the National Volcano Early Warning System |
| NPS 2006 | <i>Management Policies</i> , National Park Service, U.S. Department of the Interior, December 2006. |
| NPS 2001 | Executive Order #13186 - Responsibilities of Federal Agencies to Protect Migratory Birds, 2001 |
| NPS 2000 | <i>NPS Director's Order, Special Park Uses</i> , National Park Service, U.S. Department of the Interior, 2000 |
| NPS 1998 | National Parks Omnibus Management Act of 1998 and NPS Organic Act |
| NPS 1973 | Endangered Species Act, 1973, as amended |
| USFWS 2000 | <i>Guidelines on Siting Telecommunications Facilities</i> , 2000 |

APPENDENIX A

Scoping Letter

April 13, 2011

Project Proposal for New Wireless Tower

The U.S. Geological Survey Cascades Volcano Observatory (USGS/CVO) is proposing to install a new wireless tower in the vicinity of the non-historic building that serves as the Xanterra employee bunkhouse within Crater Lake National Park. The project requires an Environmental Assessment, and the USGS is seeking input as we begin this process. We are seeking general comments and concerns about issues that should be considered regarding the potential impacts of this project. We welcome comments during the time period of April 13, 2011, through May 13, 2011. A map showing the proposed location is included with this letter.

Crater Lake is a potentially active volcano. Before volcanoes erupt they provide warning signs including swarms of small earthquakes, release of volcanic gases, and swelling of the volcanic edifice. Such warning signs are often subtle and the period of warning can be as short as days before eruptive activity commences. Monitoring volcanoes requires sensitive instruments to be placed on the volcano, data from which need to be transmitted to a volcano observatory for scientific analysis. Currently the USGS operates three seismic and four continuously recording GPS (CGPS) stations in the Park. Typically, monitoring data are transmitted via radios, phone lines, and Internet from instruments installed on a volcano to scientific facilities for processing and analysis. Unfortunately, the park's data communication infrastructure cannot support the additional requirements needed to telemeter the volcanic monitoring data out of the Park to the USGS/CVO in Vancouver, Wash. Thus all data are stored on a computer in the Park and must be manually downloaded by USGS/CVO staff once every three to six months.

The installation and operation of the tower will provide the necessary infrastructure to enable scientists from the USGS/CVO to remotely monitor, analyze and interpret all seismic activity within the Park from USGS/CVO in real time on a 24 hours, 7 days a week basis. Additionally the tower will permit all data to be routed out of the Park through a reliable and secure data communications link independent of the Park's limited communications link.

The tower will be located approximately 50 feet west of the non-historic park service building that currently serves as the Xanterra employee bunkhouse. The site is located in a previously disturbed area with existing utilities nearby and is outside of the historic Rim Village Area. The USGS has worked with the Park to identify a location where the tower will not be visible from the rim of the caldera or from the historic Crater Lake Lodge. The tower will be a 60-foot tall monopole and painted brown to blend in with the surrounding trees. It will support a three foot diameter enclosed fiberglass antenna that will transmit all monitoring data out of the park.

We appreciate any comments or suggestions you have as we begin the environmental assessment process. Please send comments to:

Benjamin Pauk

U.S. Geological Survey, Cascades Volcano Observatory

1300 SE Cardinal Court, Suite 100

Vancouver, WA 98683

Comments and specific project questions should be directed to the Benjamin Pauk at (360) 993-8992 or bpauk@usgs.gov. Additionally, you may review project information and submit comments at the Planning, Environment, and Public Comment website at <http://parkplanning.nps.gov>.

John Ewert

Scientist in Charge

U.S. Geological Survey, Cascades Volcano Observatory

1300 SE Cardinal Court, Suite 100

Vancouver, WA 98683

APPENDIX B

Other Applicable Guiding Laws, Regulations and Policies

Telecommunications Act of 1996, P.L. No. 104-104, 110 Stat. 56 § 704(c), 47 USCA § 332 note:

The Telecommunications Act of 1996 was enacted "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies" [Public Law No. 104-104, 110 Stat. 56 (1996)]. Section 704(c) of the Telecommunications Act of 1996 and its regulations make federal property, including parkland, available for placement of telecommunications equipment by duly authorized providers absent unavoidable conflicts with the department or agency's mission, or the current or planned use of the property, or access to that property.

Presidential Memorandum: Facilitating Access to Federal Property for the Siting of Mobile Service Antennas (1995), 60 FR 42023, 40 USC § 581, note, 1995 The Presidential Memorandum of August 10, 1995, "Facilitating Access to Federal Property for the Siting of Mobile Services Antennas," directs the heads of all departments and agencies to facilitate appropriate access to federal property for the purpose of siting mobile services antennas, as long as such siting is in accordance with federal, state, and local laws and regulations, environmental and aesthetic concerns, preservation of historic buildings and monuments, and protection of natural and cultural resources.

Agencies are authorized to charge reasonable fees for antenna sites on federal property and they should be based on fair market value.

GSA Bulletin FMR 2007-B2, Placement of Commercial Antennas on Federal Property, 72 FR 11881, March 14, 2007

FMR 2007-B2 is the General Services Administration (GSA)-issued government-wide procedures for the placement of commercial antennas on federal property in order to implement the 1995 Presidential Memorandum and Section 704(c) of the Telecommunications Act of 1996. This 2007 bulletin replaces FPMR-242. The bulletin directs federal agencies to evaluate siting requests and determine if there would be unavoidable conflicts with the department's or agency's mission, or current or planned use of the property or access to that property. In evaluating siting requests, agencies should include consideration of the requirements of the federal agency managing the facility. Actions to be taken by federal agencies under these guidelines include determining the impact to their properties, review of internal agency rules, dissemination of antenna guidelines, timely response to siting requests, maintaining open communications, and establishing points of contact. These guidelines also direct federal agencies to take into consideration environmental and historic preservation issues during siting, that should include, but not be limited to the following:

- Public health and safety;
- Aesthetics;
- Effects of historic districts, sites, buildings, monuments, structures, or other objects pursuant to the NHPA and implementing regulations;
- Protection of natural and cultural resources;
- Compliance with the appropriate level of review and documentation as necessary

under NEPA and implementing regulations or each federal department and agency responsible for antenna siting; and

- Compliance with the FCC guidelines for radiofrequency exposure.

When looking at siting requests, the GSA bulletin requires the following:

- Requests for the use of property, rights-of-way, and easements by duly authorized telecommunication service providers should be granted unless there are unavoidable conflicts with the department's or agency's mission or current or planned use of the property or access to the property. A denial of a siting request based on these criteria should be fully explained in writing.
- Executive departments and agencies shall retain discretion to reject inappropriate siting requests and assure adequate protection of public property.
- All procedures and mechanisms adopted by executive departments and agencies regarding access to federal property should be clear and simple to facilitate the efficient build out of the national wireless communications infrastructure.
- The telecommunications service provider is responsible for any reasonable costs to federal agencies associated with providing access to antenna sites.

Executive departments and agencies will make antenna sites available on a fair, reasonable, and nondiscriminatory basis. Co-location of antennas should be encouraged where there are multiple antenna siting requests for the same location. In cases where this is not feasible and space availability precludes accommodating all antenna siting applicants, competitive procedures may be used.

- The siting of telecommunication service provider antennas should not be given priority over other authorized uses of federal building or lands.

16 USC § 5, Rights of Way and 36 CFR Part 14, Rights of Way

These sections of the United States Code and the Code of Federal Regulations address the management of right-of-way permits on NPS lands. These are revocable permits, and not leases or any other estate or interest in land. These regulations contain terms and conditions for rights-of-way on NPS lands such as:

- Compliance with state and federal laws applicable to the project for which the right-of-way was approved.
- To clear and to keep clear the lands within the right-of-way to the extent and in the manner directed by the Superintendent; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project in such manner as to decrease the fire hazard.
- Take soil and resource conservation and protection measures including weed control.
- Build and repair roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the right-of-way.
- Payment to the United States for the full value for all damages to the land or other property arising from the occupancy or use of lands under the right-of-way.

- Upon revocation or termination of the right-of-way permit, unless the requirement is waived in writing, so far as it is reasonably possible to do so, restore the land to its original condition to the entire satisfaction of the Superintendent.
- The allowance of the right-of-way shall be subject to the express condition that it will not unduly interfere with the management and administration of these lands by the United States.

NPS Management Policies 2006

This is the basic NPS-wide policy document, adherence to which is mandatory unless specifically waived or modified by the NPS Director or certain Departmental officials, including the Secretary. Several sections from the NPS Management Policies 2006 (NPS 2006) are particularly relevant to processing applications for wireless telecommunications facilities. Some of these provisions that are contained in the following NPS policy documents echo those contained in the Telecommunications Act of 1996, the 1995 Presidential Memorandum, and the GSA-issued government-wide procedures. Actions under this EA are in part guided by Section 8.6.4.3 of the NPS Management Policies 2006, which directs parks to consider requests to site non-NPS telecommunication facilities on NPS lands in accordance with the Telecommunications Act of 1996. The policy notes that this act authorized, but does not mandate a presumption that such requests will be granted absent an unavoidable conflict with the agency mission, or the current or planned use of the property or access to that property (This presumption is instead contained in the government wide procedures). The NPS policies require that: Superintendents will accept an application for a telecommunication site only from a

FCC licensee or from an agency regulated by the Department of Commerce through the National Telecommunications and Information Administration.

- The manner in which the park will manage the technology and related facilities should be addressed in an appropriate NEPA document.
- When considering whether to approve, deny, or renew permits, the Superintendent will:
 - Hold preliminary meetings with telecommunication facility applicants to discuss pending applications and policy and procedural issues (such as the application process, impact analysis, estimated cost recovery charges and fees) and other NPS concerns. Similar meetings should be held during the decision-making process, as necessary, particularly if the superintendent is considering denying the application;
 - Conduct NEPA analysis expeditiously and consistent with all applicable statutes and Director's Order #12, and within timetables established pursuant to Director's Order #53;
 - Consider the potential benefit of having telephone access to emergency law enforcement and public safety services; and
 - Consider whether the proposal would cause unavoidable conflict with the park's mission, in which case the permit will be denied.
- Superintendents will evaluate the entire footprint of the new facilities when considering applications (e.g., all utilities related to the facility).
- Superintendents will avoid or minimize potential impacts of current and future telecommunication facilities by ensuring that the facilities and their supporting infrastructure:
 - Are located where they would have the least impact on park resources and values;
 - Are not located in the scenic, historic, and/or sensitive areas integral to the park's mission; and

- Include maximum potential for future co-location.
- Superintendents will require the best technology available.
- Superintendents should consider making use of available interpretive media to caution park users of the limited or nonexistent cellular service and their personal responsibility to plan accordingly.
- When construction of telecommunication facilities on non-park land might adversely impact park resources and values, superintendents will actively participate in the applicable planning and regulatory process and seek to prevent or mitigate the adverse impacts.

NPS Director's Order #53 (2000)

This director's order, entitled Special Park Uses, establishes that a special park use is a short-term activity that takes place in a park area and (1) provides a benefit to an individual, group or organization, rather than the public at large; (2) requires written authorization and some degree of management control from the NPS in order to protect park resources and the public interest; (3) is not prohibited by law or regulation; and (4) is neither initiated, sponsored, nor conducted by the NPS. In relation to applications for WTF in NPS park units, Director's Order #53 directs the NPS to comply with the Telecommunications Act of 1996 as follows:

- Encourage preliminary meetings with telecommunications industry companies [PCS providers] who wish to discuss pending or proposed applications for sites in the park to explain park concerns and understand industry timeframes.
- Encourage meetings with the applicants during the post application decision process as necessary, but especially if the manager is considering denying the application. Such meetings should take place prior to written notification of denial.
- Consider the safety of the visiting public when reviewing telecommunications site applications, including the potential benefit of having telephone access to emergency law enforcement and public safety services.
- Ensure that, when an application is submitted, the park replies in writing within 10 business days with an initial response on the application, and that response will be 'yes' (probably a known categorical exclusion requiring very minor additional information to be submitted), 'no' (with reasons in writing), or 'maybe' (with additional information to be submitted).
- Ensure that, to the extent possible, the timeline and detailed steps enumerated in RM-53 are followed and the permit is issued or denied.
- Ensure that compliance actions and reviews will be conducted expeditiously and consistent with all applicable statutes.

The NPS general authority to issue right-of-way permits for uses such as WTF is found in 16 USC § 5, and NPS regulations at 36 CFR Part 14. RM-53 provides the NPS process for consideration and placement of these facilities on park land.

U.S. Fish and Wildlife Service Guidelines on Siting Telecommunications Facilities (2000)

These guidelines, released by the USFWS in 2000, address the potential for significant impacts on migratory birds from the construction of WTF. The USFWS guidelines are applicable to the review of proposed tower siting and/or the evaluation of towers on migratory birds. Although drafted by the USFWS, the following guidelines are also considered in NPS decisions on WTF right-of-way permits. These guidelines include:

1. Encourage co-location where possible.
2. If co-location is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (e.g., use a lattice structure, self-supporting steel structure, etc.). Such towers should be unlighted if Federal Aviation Administration (FAA) regulations permit.
3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.
4. If at all possible, new towers should be sited within existing "antenna farms" (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or federal refuges, staging areas, and rookeries) in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.
5. If taller towers (greater than 199 feet AGL) requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.
6. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species.
7. Towers and associated facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.
8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternative site should be recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.
9. New towers should structurally and electrically accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.

10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.
11. If tower is constructed or proposed for construction, service personnel or researchers from the Communications Tower Working Group should be allowed access to the site to evaluate bird use.
12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

Other Applicable Federal Laws, Executive Orders, Regulations and Policies

The NPS is also required to comply with the following laws, executive orders, regulations, and policies in developing this WTF plan/EA.

Endangered Species Act of 1973, as Amended

This act requires all federal agencies to consult with the Secretary of the Interior on all projects and proposals with the potential to impact federally endangered or threatened plants and animals.

Executive Order #13186 - Responsibilities of Federal Agencies to Protect Migratory Birds (2001)

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of Americans who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. Such conventions include the Convention for the Protection of Migratory Birds with Great Britain on behalf of Canada 1916, the Convention for the Protection of Migratory Birds and Game Mammals-Mexico 1936, the Convention for the Protection of Birds and Their Environment-Japan 1972, and the Convention for the Conservation of Migratory Birds and Their Environment-Union of Soviet Socialist Republics 1978. These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the Migratory Bird Treaty Act, the United States has implemented these migratory bird conventions with respect to the United States. This executive order directs executive departments and agencies to take certain actions to further implement the act. The EA will consider this executive order and the potential impacts of the alternatives to migratory birds.

National Historic Preservation Act of 1966, as Amended

Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register. All actions affecting the park's cultural resources must comply with this law, which is implemented through 36 CFR Part 800.

Qualities of historic properties, such as historic structures and cultural landscapes, which contribute to their listing or eligibility are protected in accordance with the Secretary of the Interior's standards unless it is determined through formal processes that disturbance or natural deterioration is unavoidable.