



United States Department of the Interior

NATIONAL PARK SERVICE
PACIFIC WEST REGION
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IN REPLY REFER TO:

L7617 (PWRO-P)

FEB 28 2019

Memorandum

To: Superintendent, Sequoia and Kings Canyon National
Parks

From: Regional Director, Pacific West

Subject: Environmental Compliance for Wireless
Telecommunications Facility at Wuksachi Village

The *Finding of No Significant Impact* (FONSI) regarding installation of Verizon's telecommunications equipment in the Wuksachi area is approved.

To complete the conservation planning and environmental impact analysis phase of this project, upon announcement of the decision the FONSI should be made available to interested individuals, agencies, and organizations that received or commented on the supporting environmental assessment.

Stan Austin

Attachment

CC:
PWR-LP



**Sequoia and Kings Canyon National Parks
California**

Wuksachi Village Wireless Telecommunications Facility

FINDING OF NO SIGNIFICANT IMPACT

February 2019

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to select alternative B, the action alternative, as analyzed in the Wuksachi Village Wireless Telecommunications Facility Environmental Assessment (EA). This FONSI documents the NPS determination that no significant impacts to the quality of the human environment will occur from implementation of alternative B.

Under alternative B, the NPS will issue a right-of-way (ROW) permit to Verizon allowing the construction of a wireless communications facility (WCF), including a 138-foot tower and associated ground-based structures and equipment, to be constructed within a 40-foot by 40-foot lease area adjacent to a water storage facility, west of Wuksachi Village in Sequoia National Park, Tulare County, California (Figure 1). To connect the facility to power, approximately 1,436 linear feet of 15-foot ROW will be authorized for electrical cable installation, including 1,366 feet along an existing access road (Figure 2). A total of approximately 0.23 acre of land within the park will be affected by the project, including the trenched area adjacent to the access road (0.19 acre), and the communications facility (0.04 acre). After construction, the trenched area adjacent to the road will be restored and revegetated as necessary. Construction would take an estimated 6 to 10 weeks, and occur in the fall of 2019 or 2020.

The WCF will provide year-round wireless cellular service to NPS staff, resident, and visitors at the Wuksachi Village, Lodgepole, and Wolverton areas, portions of the Generals Highway, and nearby surrounding areas 24 hours per day (Figures 3 and 4). Cellular service will consist of Long Term Evolution (LTE; roaming internet access), initially transmitted over the 700 Megahertz (MHz) band, enabling voice and data capabilities at the site.

Wuksachi Village was constructed in 1999, 5 miles north of the Giant Forest, to replace the Giant Forest-Camp Kaweah development, which was found to be incompatible with the goal of naturally functioning giant sequoia groves. The visitor use area and staff residences at Wuksachi Village consists of four buildings: a restaurant/gift shop/conference center (commonly referred to as Wuksachi Lodge), and three lodging units for guest accommodations totaling 102 rooms, and a small development of approximately 30 cabins and trailers used for shared housing of concessioner employees. In 2017, there were 57,179 overnight stays at Wuksachi Lodge representing 86% of total concession lodging stays in Sequoia National Park.

This FONSI, its appendices, and the EA constitute the record of the environmental impact analysis and decision-making process, as required by NEPA. The FONSI is available on the NPS Planning, Environment, and Public Comment (PEPC) website at <https://parkplanning.nps.gov/WuksachiCellTower>.

PURPOSE AND NEED

The purpose and need is the NPS's required action to respond to wireless telecommunication applications in accordance with the Telecommunications Act of 1996. Verizon has applied for a permit to construct, operate, and maintain a wireless telecommunications facility providing cellular service within Sequoia National Park. The NPS action is responding to the application for a wireless telecommunication facility. The analysis needed to give consideration, consistent with NPS Management Policies, to the benefits of having wireless cell service for visitor communication, emergency law enforcement and public safety, and to give consideration, consistent with NPS Management Policies, as to whether the application is consistent with the park's purpose, significance, and fundamental resources and values as described in the 2007 General Management Plan and 2016 Foundation Document. In light of this legal requirement, the following were objectives in the environmental analysis:

- Consider the wireless telecommunication applications in accordance with the Telecommunications Act of 1996 (47 USC 332), which authorizes, but does not mandate, a presumption that such requests be granted;
- Analyze the environmental impacts of the proposed action to fully inform a decision as to whether to grant the ROW permit;
- Give consideration consistent with NPS Management Policies as to whether or not the proposal would cause unavoidable conflict with the parks' mission, in which case the permit would be denied;
- Give consideration consistent with NPS Management Policies to the potential benefit of the proposal for emergency law enforcement and public safety services;
- Give consideration to the proposed project's potential impacts to park resources and values; and
- Give consideration to existing telecommunication facilities, cumulative impacts, the potential for co-location, and future needs and capacity for Sequoia and Kings Canyon National Parks.

SELECTED ALTERNATIVE

Alternative B, as described in the EA, is the NPS's selected alternative for implementation. Under alternative B, a ROW will be granted to install, operate, and maintain a wireless telecommunications facility within a 40-foot by 40-foot lease area adjacent to two existing water tanks (40 feet in diameter and 12 feet high) at the terminus of an existing access road. The facility will include a 138-foot-tall replica pine tree-or monopine-tower, mounted on a 4- to 5-foot-diameter by 10-foot-deep mat foundation, a covered 28-foot by 13-foot steel equipment platform and contain a standby propane generator, downward facing work lights, outdoor equipment cabinets, wireless GPS antennas, and various utility equipment mounted on H-frames, and a 500-gallon propane tank mounted on a 5-foot by 10-foot, by 2- to 3-foot-thick concrete pad. Antennas mounted on the tower or steel platform will include:

- Nine wireless antennas (6 feet in diameter) and nine Remote Radio Head (RRH) units installed at 132 feet above ground level (AGL)

- A wireless surge protector (18 inches by 1 foot by 1 foot) installed at 128 feet AGL
- A wireless microwave dish (6 feet in diameter) and ice shield, installed at 120 feet AGL
- Proposed and future wireless microwave dishes and ice shields (6 feet in diameter), installed at between 44 and 111 feet AGL
- Two Verizon wireless GPS antennas mounted on an H-Frame on the steel equipment platform

In addition, the facility will support NPS telecommunications equipment, including two microwave dishes installed on the tower and a repeater cabinet for microwave dishes, installed adjacent to the equipment platform. Co-location will be permitted by other wireless providers; AT&T communications is interested in co-location on the tower.

The antenna height of 138 feet is the minimum height required to have line-of-sight view of the next nearest tower, and to provide coverage to target areas; particularly, the Lodgepole and Wuksachi Village areas where park and concessioner staff reside. To screen the tower and mounted antennas from view, branches will be installed on the constructed tower to simulate a pine tree; the branches will extend out from the tower center, making the simulated tree structure 25 feet in diameter at the base and about 143 feet tall. The tower steel will be painted brown and all antennas and mounted units will be painted flat green with needle socks installed.

To connect the WCF to power, approximately 1,436 linear feet of buried electrical cable will be installed in a trench, including 1,366 feet along an existing access road. The electrical cable will connect the WCF to an existing electric transformer, located within the turn-around loop southwest of Wuksachi Village. The electrical cable will extend from an electric meter on an existing building within the turn-around-loop, parallel the access road, enter the lease area from the north, and connect via underground power to a 200-amp electrical service mounted on the steel equipment platform within the lease area. Approximately 35 feet of underground propane supply will be installed between the propane tank and the steel equipment platform.

The WCF will provide cellular coverage along the Generals Highway in the west-central area of the park. Cellular coverage will target NPS and concessioner staff residences and visitor use areas at Wuksachi Village, Lodgepole and Wolverton, and extend south and west of these areas, toward the General Sherman Tree. Minimal outdoor coverage will be available at the Giant Forest Museum. At its greatest reach, outdoor cellular coverage (including minimal coverage) will extend approximately 6 miles west, south, and east from the tower, with spotty coverage in the intervening surrounding areas (Figure 4).

The project will implement resource protection measures and construction best management practices, described in the EA, to minimize the degree or severity of adverse effects on soils, vegetation, air and water quality, wildlife, soundscapes, and visitor experience and safety.

In addition to resource protection measures and construction best management practices described in the EA, implementation of the selected alternative is subject to the following stipulations:

- A public education program will be designed that addresses the expressed public concerns related to the use of cell phones in the Wuksachi Village and surrounding Lodgepole and Wolverton areas and will be initiated when cellular service is established. Elements of this action may

include signs, website messages, newsletters, and interpretive messaging. Messages will be incorporated into wilderness and wilderness information as well as front country messaging.

- The tower design and placement must meet the U.S. Fish and Wildlife Service (FWS) recommended guidelines to reduce impacts on wildlife and migratory birds (FWS 2018), and a determination provided by the FWS in writing, prior to construction.

OTHER ALTERNATIVES CONSIDERED IN THE EA

Under alternative A, identified in the EA as the No Action alternative, ROW permits would not be issued, and a WCF providing cellular service would not be installed at Wuksachi Village. Existing limited coverage would likely remain the same or increase, as opportunities for coverage extending to the Wuksachi Village area from outside the park are limited due to topography.

The following alternatives were considered but dismissed from full analysis in the EA:

During initial site visits, several alternative locations for the antenna were assessed, including use of the Wuksachi Lodge for mounting the antenna, and potential tower locations in the Lodgepole and Wolverton area. All of these preliminary options were dismissed due to the site topography (i.e., sites located in canyon area) and limited height of the building, which will not allow for adequate coverage, and/or lack of available electrical power. Alternative tower styles were also considered, including a lattice tower and a monopole (Attachment B). The monopine style replicating a pine tree has been selected as the best construction style, as it is slightly less visible from distance view. Seven comments were received during the public review process, and four were favorable of the monopine style tower.

DECISION REACHED AND RATIONALE

The NPS selected alternative B, Issue ROW Permits to Verizon Wireless (Verizon), to provide cellular service to Sequoia National Park in the Wuksachi Village and surrounding developed area, and intervening undeveloped areas, as described in the EA (Figure 4).

When reviewing NPS Management Policies, the parks' 2007 General Management Plan, and 2016 Foundation Document, park staff determined that the fundamental resources and values that could be affected by the installation of a telecommunications facility at Wuksachi Village include Scenic Landscapes, Wilderness Character, Protecting and Sharing of Human History (Cultural Resources), Promoting Continuous Learning and Innovation, and Opportunities for a Range of Experiences.

The project design effectively mitigates effects to the scenic resources viewed from Wuksachi Village and the Generals Highway by placing the facility within or adjacent to an existing utility corridor, and away from public view. The tower and mounted antennas will be masked from distance view by implementing a replica pine tree construction. The design and placement currently meets the FWS recommended guidelines to reduce impacts on wildlife and migratory birds. Construction will be timed to avoid effects to wildlife including birds, and maintenance impacts from the project are expected to be minimal and short-lived.

The NPS does not favor increased cellular coverage in wilderness areas where solitude and primitive and unconfined recreation are most available and expected. In these areas the NPS worked with cellular

providers to constrain the signal to the degree possible. Verizon has directed antennas away from wilderness areas, to the extent possible, as described in the EA (see Figure 4 and Figure 9).

The NPS has determined that the enhanced communications that would result from the placement of a cellular facility at Wuksachi Village would provide opportunities to share information about human history, promote continuous learning and innovation, and help the park provide a range of experiences for visitors.

The NPS has determined that the long-term health, safety, and communication benefits associated with enhanced communications, including the benefits to visitor and employee safety through facilitation of emergency and nonemergency reporting and response, outweighs the disruption some visitors may experience in response to other visitors' use of cell phones in public spaces. The facility will be placed within or adjacent to an existing utility corridor, with wireless coverage directed away from wilderness areas as much as feasible (see EA, Figures 9a and 9b). Further mitigation is detailed in the EA to protect resources and values of Sequoia National Park (see EA, pages 15 through 23).

The NPS determined that the action will not cause conflict with the park's mission, and that the provision of cellular service at the Wuksachi Village and surrounding areas will benefit the public by improving communication between visitors, and between the NPS and the public. Public and employee safety will be served by cellular signals at the Wuksachi Village and surrounding areas, where emergency responses occur regularly.

Sequoia National Park's position is that improved cellular service will provide opportunities to more easily and quickly communicate park conditions to visitors, including real-time information on parking, traffic, weather, and hazardous conditions. Cellular service will also assist the park in providing educational and interpretive materials to park visitors, information about events and activities, maps, and other services, which could enhance the visitor experience and help protect park resources. Many visitors and park staff will view the service as a welcome benefit for purposes of accessibility, coordination, communication, and safety. While other visitors may view cell phone service as an unwelcome intrusion, the NPS is committed to a public education program to promote considerate use of cell phones in shared public facilities and spaces.

Improved cellular service may enhance or detract from visitors' experience at the Wuksachi Village, Lodgepole, and Wolverton areas, and adjacent wilderness, depending on their personal expectations of a satisfactory outdoor experience. While some visitors use technology to learn and improve their experience, others prefer locations and experiences where technology is scarce. Public comments received during the review period identified this as both a benefit and a concern, reflecting support or opposition to the installation depending on individual perspective.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in Title 40, Code of Federal Regulations (40 CFR § 1508.27), significance is determined by examining the following criteria:

1. *Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.*

Implementation of alternative B will result in both beneficial and adverse impacts, none of which the NPS has found to be significant. Construction-related activities may have localized adverse effects on resources; however, the effects will be short-term and will be minimized or avoided through design and resource protection measures. Impacts to visual resources are not significant. Visual impacts are minimized by placement of the tower distant from public view, and screening of the tower and antennas with replica pine branches. According to a visual study of potential public viewpoints within 1 mile of the site, the six most visible public locations show only the very top portion of the tower; the tower's form, shape, line and color appear to blend in with the surrounding trees (EA Attachment B). The impacts of cellular service on visitor experience in the Wuksachi Village and surrounding areas is expected to be both beneficial and adverse, depending on visitor behavior and perception. The physical impacts on wilderness and non-wilderness resources are slight, because the facility will be installed within and adjacent to an existing utility facility, and the tower and mounted cellular equipment will be screened from view. No significant effects were identified in the environmental analysis.

2. *The degree to which the selected action affects public health or safety.*

The project is expected to have both beneficial and adverse effects on public health or safety. According to Federal Communications Commission (FCC) review (Attachment A), it has been determined that the facility is unlikely to exceed specific federal guidelines that protect the public from the effects of RF emissions. The WCF tower and mounted antennas will be free-standing (not mounted on a building), with no antennas below 10 meters (32.8 feet), and the service provided by the tower will conform to FCC regulations. An evaluation of categorical exclusion for the WCF is provided in the EA (Attachment A). Verizon will install required signage at the entrance to the lease area and in the vicinity of their equipment.

Cellular service in the Wuksachi Village and surrounding areas may improve service and communications, and visitors may be more readily informed of hazards in the park in real-time. Safety measures will minimize or prevent risk to the public from construction related activities. The installation of a WCF will provide service coverage where there currently is no coverage, and may affect visitor and employee safety (beneficial and adverse). Beneficial impacts may occur, by improving communication ability and shortening response time in case of emergencies. Adverse impacts to health and safety from cellular service may occur due to distracted driving along the Generals Highway; however, cell phone use while driving is illegal in the State of California, and within the boundaries of Sequoia National Park, and no significant impacts to health and safety are expected.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

No prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas will be affected by the selected action. The project will occur within the Wuksachi Village and surrounding areas. The California State Historic Preservation Office (SHPO) concurred with the NPS determination that the selected action will have no adverse effect on cultural and historic resources in the Wuksachi Village and surrounding areas. A cultural resources survey has been conducted, and no archaeological resources have been discovered. In accordance with mitigating measures established for the project, should previously unknown cultural, historic or prehistoric resources be unearthed during project implementation, work will be halted in the discovery area, the site secured, and Sequoia National Park's Cultural Resources Program Manager will be notified.

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

A total of 29 comments were received during the scoping phase of the project, and 42 comments were received during public review of the EA. Physical impacts on wilderness and the nonwilderness areas at the Wuksachi Village and surrounding areas, as a result of alternative B are expected to be slight. Accordingly, there is no substantial dispute as to the size and nature of the environmental consequences of alternative B.

Public comments received during public scoping and review of the EA revealed that those opposed to the proposal were primarily concerned about visitors' experience of solitude, self-reliance, natural soundscapes, and the ability to disconnect from technology, particularly in wilderness. Comments in support cited benefits to visitor health, safety, and convenience resulting from enhanced communication. Potential effects on visitor experience and other resources were identified and evaluated in the EA.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

The absence of cellular coverage within the Wuksachi Village and surrounding areas, and limited or spotty coverage as a result of the cellular facility located at Grant Grove in Kings Canyon National Park, or cellular facilities located outside the park, presents a risk to the human environment due to a lack of ability to communicate in the case of emergency, or to notify visitors of hazardous conditions. Isolated "hot spots" may be found along roads, in developed areas, and in the wilderness. The anticipated effects on the human environment of increased cell coverage, as analyzed in the EA, are not highly uncertain or unique, and do not involve unknown risks. Resource conditions in the project area are well known, and the anticipated physical impacts from implementing the selected action are understood. According to FCC review it has been determined that the facility is unlikely to exceed specific federal guidelines that protect the public from the effects of radio frequency (RF) emissions.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

The decision to grant ROW permits to Verizon for cellular service at the Wuksachi Village and surrounding areas does not establish a precedent for future actions with significant effects. Future applications for cellular service ROW permits within Sequoia National Park will require separate consideration by the NPS.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

The EA concluded that past, present, and future activities, when coupled with the impacts of the selected action, will have both beneficial and adverse cumulative effects. Potential impacts to scenic resources are considered inconsequential in nature primarily because new facilities will be screened from public view. Visitor experience may be temporarily degraded during construction, but these impacts will be slight due to the location of the site away from the visitor use area. There is no construction planned for the project area that would result in adverse cumulative impacts. An increase in cellular signals in the front country of Sequoia National Park near Wuksachi Village will add to coverage from the Grant Grove area in Kings Canyon National Park, to signals that spillover from outside of the Sequoia National Park, and to satellite signals that blanket the park. Potential effects are considered positive or negative depending on individual opinions of the presence of cellular service. Visitors who are affected by disruptions may see an increase in negative experiences in the Wuksachi Village and surrounding areas. While these impacts may add to impacts of existing cellular signals within the park, and cellular signals and satellite signals that have sources outside the park boundaries, potential impacts to wilderness character and visitor experience were not considered cumulatively significant in the EA.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*

The communication facility will be installed near the Generals Highway, which is considered eligible for listing on the National Register of Historic Places (Far Western 2018). The California SHPO concurred with the NPS determination that the selected action will have no adverse effect on the Generals Highway. A cultural resources survey has been conducted within the area of potential affects, and no historic properties were found within the project area. Due to mitigating measures listed on pages 21 and 22 of the EA, there will be no effects on highways, structures, or objects, or loss or destruction of significant scientific, cultural, or historical resources.

9. *The degree to which the action may adversely affect an endangered or threatened species or its habitat.*

There will be no effects to listed species. The design and placement of the WCF meets the FWS recommended guidelines to reduce impacts on wildlife and migratory birds.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The selected action does not threaten to violate any Federal, State, or local environmental protection laws.

PUBLIC INVOLVEMENT

The public was invited to participate in scoping the proposal between April 2, 2018, and May 4, 2018. An email notifying interested persons about the scoping period was distributed, a press release was issued, and information about the project was provided to the public via the NPS's online system (the NPS Planning, Environment, and Public Comment [PEPC] system). During the scoping period, a total of 29 pieces of correspondence were received; four commenters were favorable citing benefits to safety for park visitors and staff and to the public overall. Two comments were neutral, and 23 commenters were opposed to the project, expressing concerns related to health and safety, visual impacts, and detrimental effects on visitor experience and wilderness character due to wireless coverage and cell phone use. Public scoping comments are summarized in the EA, and were considered in selecting the issues to analyze and the analysis approach for the published EA.

The EA was published on the NPS PEPC website during a 32-day public review and comment period from October 24, 2018, through November 26, 2018. The EA was mailed to 90 individuals (members of the public and groups) between October 24 and October 26, 2018. Announcement of the review opportunity was made through news releases issued to news media outlets, and the NPS notified individuals, businesses, organizations, state, county, and local governments, federal agencies, and federally-recognized American Indian tribes via letter.

The NPS received 43 pieces of correspondence in response to the notification of the EA during the review period; the responses reiterated the range of comments submitted during scoping. No new substantive concerns were received. One organization provided comment: the National Parks Conservation Association. Of the total pieces of correspondence, 25 were supportive, 16 were not supportive, and 2 were neutral.

In general, public responses to the EA were similar thematically to those who commented during the public scoping period. Most commenters cited safety as the primary reason for desiring cell service in Sequoia National Park. Other supportive comments cited the need for the NPS to realize the expectation on the part of the public to be connected online, and several commenters welcomed the opportunity for coordination with other visitors and loved ones outside the park, for example, when plans changed. Park staff considered the cell tower and cell service a welcome increase in safety and quality of life.

Of the total 43 pieces of correspondence, 16 were opposed to the proposal to issue ROW permits to wireless carriers. Comments opposed to the issuance of the ROW permits emphasized the protection of National Parks and wilderness areas from electronic signals. Comments either focused on impacts to visitor experience in the wilderness, or at the Wuksachi Village and surrounding areas. One new issue was brought forward during the EA comment period: concerns related to the unknown and uncertain effects of electromagnetic frequency (EMF) exposure as a result of cell towers on biota, including birds, insects, reptiles, and mammals, as well as vegetation. The NPS has analyzed additional research articles on the topic of EMF exposure to biota, including additional research articles provided by the commenter,

and has determined that none of the materials reviewed establish a need to reanalyze the topic in the EA. While there are many published reports in the scientific literature concerning possible biological effects of RF-EMF exposure to biota, particularly insects and plants, much of the research into the effects of RF-EMF energy on wildlife and plants has been scattered in approach and uneven in quality, and in some cases different studies find contradictory results. The studies were overall inconclusive, unresolved, and/or established but incomplete. As a result, the literature provided by the commenter was determined to not be relevant in providing an understanding of the influence on EMFs on the environment from the Verizon cell tower.

Responses to questions and substantive comments are provided as Attachment C, errata.

AGENCY AND TRIBAL CONSULTATION

California State Historic Preservation Officer

Documents related to the National Historic Preservation Act, in accordance with the Advisory Council on Historic Preservation regulations implementing Section 106 (36 CFR Part 800) were completed and submitted to the California SHPO. The NPS has determined that the selected action will have no adverse effect on either the Wuksachi Village or surrounding areas, including the Generals Highway, and requested concurrence from the SHPO on December 14, 2018. The SHPO concurred with this determination in a letter dated January 14, 2019.

Native American Consultation

The NPS obtained the list of tribes from the Native American Heritage Commission (NAHC), and notified tribes and tribal organizations listed, in writing, about the proposed project before the initiation of the NEPA process on April 2, 2018. A list of tribes and tribal organizations notified in writing during the scoping period is attached (Attachment D). The scoping package and letters sent to the tribes before initiation of the NEPA process are in the project's decision file located at Sequoia and Kings Canyon National Parks. Project information was provided to the tribes in the form of a scoping package, enclosed with the letter, and on the NPS PEPC web site at <http://parkplanning.nps.gov/WuksachiCellTower>.

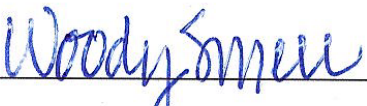
During the NEPA process, each tribe or tribal organization was sent written notice regarding the release of the EA and public comment period. Letters were sent on October 23, 2018. In addition, the EA was mailed to tribal chairpersons for federally recognized tribes, and federally recognized tribes were contacted by phone as a follow-up to the mailings.

Federally recognized tribes were invited to consult with the NPS, including: Big Pine Paiute Tribe of Owens Valley; Big Sandy Rancheria of Mono Indians; Bishop Paiute Tribe; Cold Springs Rancheria of Mono Indians; Fort Independence Community of Paiute; Fort Mojave Indian Tribe; Lone Pine Paiute-Shoshone Tribe; North Fork Rancheria of Mono Indians; Picayune Rancheria of the Chukchansi Indians; Santa Rosa Rancheria-Tachi Yokuts; Table Mountain Rancheria; Tejon Indian Tribe; and the Tule River Indian Tribe and Tribal Elders Committee.

CONCLUSION

Based on the planning and environmental impact analysis documented in the EA, with due consideration of the nature of the public comments and consultations with other agencies, and given the capability of the resource protection measures, construction best management practices, and design constraints to avoid, reduce, or eliminate impacts, the NPS has determined that the selected alternative does not constitute a federal action that normally requires preparation of an EIS. Adverse environmental impacts that could occur are localized and limited in context. The selected alternative will not have significant effect on the quality of the human environment or the park's cultural or natural resources. Execution of the permit will be undertaken as soon as practicable.

Recommended:

 _____  _____
Woody Smeck
Superintendent
Sequoia and Kings Canyon National Parks

Date

Approved:

 _____  _____
Stan Austin
Regional Director, Pacific West Region
National Park Service

Date

Attachment B – Best Management Practices and Resource Protection Measures

Sequoia and Kings Canyon National Parks Wuksachi Village Wireless Telecommunications Facility Environmental Assessment January 2018

To prevent and minimize potential adverse impacts associated with the installation, best management practices (BMPs) and mitigation measures will be implemented during the design approval, construction, and post-construction phases of the project.

Category	Mitigation/Best Practice	Responsibility
Geologic features	The extent of disturbance for facility foundation construction and for trenching in the project area will be kept to the minimum necessary for project completion.	NPS Project Manager
Water quality and aquatic ecosystems	- Water needed for construction and dust control will not be diverted from surface waters within the parks. Dependent on drought conditions, water may be available from existing developed water systems within the parks for a fee. Or, water may be trucked in from an approved source outside of the parks. - Any water source for dust suppression (other than a municipal source) from outside the park will need to be approved by the NPS. - Equipment cleaning will not be performed within the parks' boundaries. - Concrete will be mixed on-site within a self-contained mixing unit. Clean-out basins will be employed to catch any excess and removed from the park. - Fuel and other hazardous materials will be stored and transferred/used within a containment barrier constructed at least 100 feet from any waterbody or storm drain system. - A hazardous spill plan will be in place, stating what actions will be taken in the case of a spill; notification measures; and, preventive measures to be implemented such as the placement of refueling facilities, storage, and handling of hazardous materials, etc. - Hazardous spill clean-up materials will be on site at all times. - All equipment used for the project will be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fluids. All equipment will be checked daily. - Where appropriate and available, "environmentally friendly" grease, hydraulic oil, and bar and chain oil will be used. These lubricants are vegetable or mineral oil based, less toxic, and biodegradable. - Every day, prior to commencement of work, all machinery will be inspected for leaks, leaked material removed from	NPS Project Manager

Category	Mitigation/Best Practice	Responsibility
	the environment, and if a leak is found, the machinery will not be used until repaired. • Machinery maintenance involving potential contaminants will occur outside the parks.	
Air quality	• Any power tool or engine will not be permitted to idle for five or more minutes, and will adhere to the SEKI “no idling policy” whenever and wherever mechanically feasible. • California State vehicle idling regulations will be adhered to; e.g., five-minute limit for heavy diesel equipment. • Periodic water sprinkling will be used to control dust. • All haul trucks carrying construction materials or debris will be covered.	NPS Project Manager
Night sky	• All work will be conducted during daylight, and no night construction/lighting will be used. • Installed work lights for emergency use will be shielded and on a switch timer.	NPS Project Manager
Soundscape and visual resources	• Verizon will consider noise effects when scheduling project work. Construction will only occur between 8 am to 6 pm, Monday through Friday, excluding all Federal holidays, unless weather or schedule dictate that weekend work be authorized to complete the site. Exceptions will need to be requested and authorized through the SEKI Project Liaison, and will be considered on an emergency basis only by the park superintendent. • Verizon will use the quietest equipment to accomplish the task efficiently and safely. If required based on equipment, a Soundscape Protection Plan will be prepared for SEKI approval. • Quiet hours for trenching will be between 6 pm and 8 am, and on weekends and holidays. Trenching will occur over a one- to two-week period. • Verizon will adhere to the SEKI “no idling policy” whenever and wherever mechanically feasible, and not permit any power tool or engine to idle for 5 or more minutes. • Verizon and contractors will install and maintain mufflers and sound attenuation devices on all equipment and vehicles and use only well-maintained and properly functioning equipment and vehicles. • To protect the viewshed, the tower will be placed away from trails and amenities.	NPS Project Manager
Native wildlife	• All Verizon employees and contractors will attend park-led instruction on food storage requirements as part of the environmental briefing. Verizon will coordinate with the SEKI Project Liaison to schedule. • The contractor will install temporary animal-resistant containers that have been pre-approved by the NPS. All food will be stored in animal-resistant food storage containers except when it is being consumed. Food stored in vehicles will be in animal-resistant containers. Spilled food will be cleaned up immediately. Food-storage and garbage disposal requirements will be followed at all times. • Construction vehicles (interiors) will be kept clean and clear of food debris while on-site.	NPS Project Manager

Category	Mitigation/Best Practice	Responsibility
	• Verizon employees and contractors will notify the NPS Representative if a bear loiters in the area or if fisher (<i>Pekania pennanti</i>—a forest-dwelling member of the weasel and otter family) sightings occur. • Feeding or approaching wildlife is prohibited and will not occur. • Any wildlife collisions will be reported to park personnel. • Tree removal will occur outside of nesting season for migratory birds and raptors (after September 1, or in early spring). Clearing vegetation during the summer (prior to September 1) would need to be cleared with the SEKI senior wildlife biologist.	
Vegetation (non-native species)	• Straw products (i.e., “certified weed-free straw” and other straw products) are not authorized on project work sites due to the high risk of importing nonnative plants and seeds. Instead, use an excelsior (aspen fiber) or coir (coconut fiber) product for erosion control, sediment filtration, or other needs. • Topsoil will not be imported. • If fill is needed, Verizon will coordinate with the SEKI Project Liaison to ensure fill is obtained from a pre-approved quarry. • Equipment will be pressure washed to remove all dirt and plant parts before entering the park for the first time, paying special attention to undercarriage and grill/radiator; subsequent entries will not require pressure washing unless the vehicle shows signs of mud, plant material, or other substances. Project manager will inspect equipment for compliance prior to entry into the park and reject equipment that is not adequately clean. • Control of invasive nonnative vegetation in the project area is required for one to three years after project activities are completed. • Before moving vehicles or equipment to a new job site, vehicles or equipment will be visually inspected and cleaned (including the undercarriage) thoroughly to remove all mud, dirt, and plant parts. • Clothing, boots, tools and other equipment will be inspected so that invasive plant seed and plant parts are removed and disposed of. Disposal consists of removing the seed and plant parts from clothing and equipment at a spot near the infestation or bagging the seeds and plant parts and disposing in bagged garbage. • Any stockpiled fill will remain free of nonnative plants at all times. • If imported materials (fill) are needed, they will be obtained from an approved source for the purpose of preventing nonnative plant introductions. Consult with the SEKI Project Manager at least a month in advance of project work to be sure sources of fill are approved by the NPS. • On-site fill (mineral) materials will be used, when it can be extracted from the project site without causing additional adverse impacts to the native vegetation, soils, or hydrology.	NPS Project Manager

Category	Mitigation/Best Practice	Responsibility
Vegetation	• Verizon or contractor will contact the NPS for direction on managing slash before and during vegetation clearing. Debris and slash may be removed from site or mulched on site (unless this creates unwanted noise), lopped and scattered, or a combination. • Harm to native vegetation and soils will be minimized by designing and sequencing project work to protect or salvage native vegetation and topsoil, as appropriate. • Protective barriers will be installed around individual and groups of trees or other vegetation identified for protection at the canopy drip line or further away. • Construction will be limited to the mapped project area documented in the Environmental Assessment. No expansion of the planned footprint may occur. • Grade to natural contours. Salvaged topsoil will be spread in as near the original location as possible. • Litter and duff will be removed from project areas and stored for later replacement over topsoil. Surface will be returned to natural conditions (e.g., “duff” will be replaced over surface). • Mulch disturbed soils with wood chips, soil retention blankets, or native litter and duff. • Depending on the extent of topsoil and location of topsoil, topsoil will be removed from areas of construction, stored, and replaced at the end of the project.	NPS Project Manager
Cultural resources	• A cultural resources survey has been conducted within the area of potential affects, and no historic properties have been found within the project area. • Should previously unknown historic or prehistoric resources be unearthed during project implementation, work will be halted in the discovery area, the site secured, and SEKI’s Cultural Resources Program Manager will be notified. A qualified cultural resource management specialist will examine the area as soon as possible and will follow the procedures of 36 CFR Part 800.13[c]. • In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during project activities, the regulations implementing the Native American Graves Protection and Repatriation Act (43 CFR Part 10) will be followed. • Should construction activities or project work inadvertently unearth a cultural resource, work will stop in the area and the SEKI Cultural Resources Program Manager will be notified. Consultation with the CA State Historic Preservation Office (SHPO), tribes, and/or other interested parties will be conducted, as necessary and appropriate. • Verizon will ensure that all project workers are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties.	NPS Project Manager
Park visitor experience	• A communications plan will be developed for this project and approved by SEKI’s Public Affairs Office. • Verizon will consult with SEKI’s Public Affairs Office at a minimum of three weeks prior to project work to allow adequate time for public notification.	NPS Project Manager

Category	Mitigation/Best Practice	Responsibility
	• Verizon will consult with the SEKI Project Liaison for preferred staging area location and preferred point of entry for construction traffic at a minimum of three weeks prior to project work. • Verizon will consult with SEKI Project Liaison to identify the best route for vehicles to enter and exit the park at a minimum of three weeks prior to project work. Oversized equipment (such as a crane, needed to erect the tower) may be scheduled to enter the park in the early morning or late evening, to avoid traffic disruptions. • Impacts to wilderness as a result of wireless cellular coverage will be reduced by directing antennas away from wilderness areas as much as possible, and towards the target coverage areas including the Wuksachi Village, Lodgepole and Wolverton area. • Educational materials will be developed on wilderness ethics, which would include information on the importance of limiting cell phone use in wilderness. Overnight wilderness users will also be provided with information about wilderness ethics and limiting their use of cell phones as part of the wilderness permitting process.	
General measures	• Updated coordinates for the facility installation will be provided to the SEKI Project Liaison including any new or relocated non-NPS equipment and/or infrastructure on lands administered by the NPS (i.e., electrical panel, buried cable, and buried propane lines). The SEKI Project Liaison will provide the data to the GIS/Data Management Office upon project completion. • GPS coordinates of the perimeter of any ecological restoration site will be provided to the GIS/Data Management Office upon project completion. • A NPS Representative will be designated to conduct on-site inspections during construction operations and to provide information on resource-related concerns and other park information. • Contractors will develop a Safety Plan and a Safety Communications/Transportation Plan and share this with the National Park Service for comment and compliance with park health and safety regulations 30 days prior to any construction activities. • All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from NPS property upon project completion. • All construction debris will be removed from the project site and hauled outside of the parks to be disposed of properly at an appropriate disposal location. • A preconstruction survey with photo documentation will be conducted to document original road conditions. All road and off-road surfaces damaged due to work on the project will be repaired to original condition as much as is feasible. • A litter control program will be implemented during construction to eliminate the accumulation of trash. • An environmental briefing/orientation with construction supervisors and staff will occur prior to project	NPS Project Manager

Category	Mitigation/Best Practice	Responsibility
	implementation. This briefing will be led by the project proponent (Verizon) or designee, and will be attended by the SEKI Project Liaison and/or other NPS representatives, and the contractor/lead supervisor. The briefing will consist of reviewing all Mitigating Measures/BMPs listed as well as other relevant information contained in plans submitted to the NPS and the Environmental Assessment for the project.	

Attachment C – Errata

Sequoia and Kings Canyon National Parks Wuksachi Village Wireless Telecommunications Facility Environmental Assessment January 2018

The Wuksachi Village Wireless Telecommunications Facility Environmental Assessment (EA) was released for a 32-day public review period from October 24, 2018 until November 26, 2018. The park received comments from 43 entities during the EA public review period. The National Park Service (NPS) reviewed and considered comments and suggestions, and incorporated several slight modifications into the EA, as described in the Errata. None of the commenters provided additional, new, or substantive information that change the determination of effects in the EA. The Errata has two parts:

- Part 1 discusses changes to text in the EA.
- Part 2 is a summary of the substantive comments received during public review with NPS responses. Some of these comments resulted in slight modification of the document, such as additions to the mitigation measures table (EA pages 15 through 23).

ERRATA PART 1- CHANGES TO TEXT

In response to public and agency comments, several changes were made to the EA. In reference to the EA, the page number and topic heading are shown in bold text. Original text from the EA is identified first to allow for a comparison to the updated text. New information not included in the EA is identified as “additional text.”

Page 1, Introduction.

Original Text: The proposed cellular service at Wuksachi Village would consist of Long Term Evolution (LTE) (roaming internet access) transmitted over the 700 Megahertz (MHz) band. Both voice and data service would be available.

Updated Text: The proposed cellular service at Wuksachi Village would consist of Long Term Evolution (LTE) (roaming internet access) initially transmitted over the 700 Megahertz (MHz) band. Both voice and data service would be available.

Page 1, Introduction.

Original Text: The proposed cellular service at Wuksachi Village would consist of Long Term Evolution (LTE) (roaming internet access) transmitted over the 700 Megahertz (MHz) band. Both voice and data service would be available.

Updated Text: The proposed cellular service at Wuksachi Village would consist of Long Term Evolution (LTE) (roaming internet access) initially transmitted over the 700 Megahertz (MHz) band. Both voice and data service would be available.

Page 7, Background.

Original Text: This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) §1508.9), and National Park Service (NPS) Director's Order (DO)-12: Conservation Planning, Environmental Impact Analysis, and Decision-Making, and Director's Order 53 and Reference Manual 53 (RM-53, NPS 2009): Special Park Uses (NPS 2009).

Updated Text: This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) §1508.9), and National Park Service (NPS) Director's Order (DO)-12: Conservation Planning, Environmental Impact Analysis, and Decision-Making, the 2015 NPS NEPA Handbook, and Director's Order 53 and Reference Manual 53 (RM-53, NPS 2009): Special Park Uses (NPS 2009). The 2015 NEPA manual was followed where the NEPA handbook and RM-53 differ, in accordance with Director's Order 12, section 4.2 of the NEPA handbook and the NPS Directives System.

Page 7, Purpose and Need for Action.

Original Text: The NPS action is needed to give consideration, consistent with NPS Management Policies, to the benefits of having wireless cell service for emergency law enforcement and public safety, and to give consideration, consistent with NPS Management Policies, as to whether the proposal is consistent with the park's mission.

Updated Text: The NPS action is needed to give consideration, consistent with NPS Management Policies, to the benefits of having wireless cell service for visitor communication, emergency law enforcement and public safety, and to give consideration, consistent with NPS Management Policies, as to whether the proposal is consistent with the park's mission.

Page 9, Issues Considered but Dismissed from Analysis.

Additional Text: Effects to Flora and Fauna from the Tower's Radio Frequency (RF) Exposure: In response to public comments during the EA public review period, SEKI scientists reviewed the latest and most comprehensive information available, including a website on "EMF Research" provided by the commenter (<http://www.emfresearch.com/emf-wildlife/>). There are many published reports in the scientific literature concerning possible biological effects of RF-EMF exposure to biota, particularly insects and plants. However, much of the research into the effects of RF-EMF energy on wildlife and plants has been scattered in approach and uneven in quality, and in some cases different studies find contradictory results. A 2018 report by the EKLIPSE project (Malkemper et al. 2018) evaluated 97 peer-reviewed scientific papers published since 2000 on the effects of anthropogenic-produced electromagnetic radiation on flora and fauna. The report did not find a well-established finding (in which there is a high level of agreement and high level of quality and quantity of evidence) that electromagnetic radiation has a detrimental effect on invertebrates (diversity, abundance, behavior, or reproduction), and that although there is agreement that electromagnetic energy can pose a risk to physiological orientation mechanisms for insects, the research is incomplete. In summary, the additional studies reviewed were determined to not be relevant in

providing an understanding of the influence on EMFs on the environment from the proposed Verizon cell tower. See the public comment response summary, Attachment C, Errata.

Page 11, alternative 2- Installation of a Wireless Telecommunications Facility.

Original Text:

Antennas mounted on the tower or steel platform would include:

- Three wireless antennas (6 feet in diameter) and three Remote Radio Head (RRH) units installed at 128 feet above ground level (AGL)
- A wireless surge protector (18 inches by 1 foot by 1 foot) installed at 128 feet AGL
- A wireless microwave dish (6 feet in diameter) and ice shield, installed at 120 feet AGL
- Proposed and future wireless microwave dishes and ice shields (6 feet in diameter), installed at between 44 and 111 feet AGL
- Two Verizon wireless GPS antennas mounted on an H-Frame on the steel equipment platform

In addition, the tower would support re-location of four RF antennas, currently mounted on the water tower adjacent to the proposed wireless telecommunications facility. Co-location would be permitted by other wireless providers; AT&T communications is interested in co-location on the tower.

Updated Text:

Antennas mounted on the tower or steel platform would include:

- Nine wireless antennas (6 feet in diameter) and nine Remote Radio Head (RRH) units installed at 132 feet above ground level (AGL)
- A wireless surge protector (18 inches by 1 foot by 1 foot) installed at 128 feet AGL
- A wireless microwave dish (6 feet in diameter) and ice shield, installed at 120 feet AGL
- Proposed and future wireless microwave dishes and ice shields (6 feet in diameter), installed at between 44 and 111 feet AGL
- Two Verizon wireless GPS antennas mounted on an H-Frame on the steel equipment platform

In addition, the tower would support NPS telecommunications equipment, including two 24-inch diameter microwave dishes; a ground-based repeater cabinet for the microwave dishes would be installed adjacent to the equipment platform. re-location of four RF antennas, currently mounted on the water tower adjacent to the proposed wireless telecommunications facility. Co-location would be permitted by other wireless providers; AT&T communications is interested in co-location on the tower.

Page 14, Figure 6. Facility Profile.

Original Figure:

Antenna installation height is noted as 128 feet

Updated Figure:

Antenna installation height is noted as 132 feet

Page 15, Proposed Action, Construction equipment.

Addition:

12. Manlift

Page 31, Health and Safety, Environmental Consequences.

Original Text:

Although a large number of studies have been performed to assess whether cellular phone use poses a risk, and studies are on-going, WHO has determined that currently there is no established link between cell phone use and human health risks (WHO 2018). In addition, the Federal Communications Commission (FCC 2018) has established RF exposure limits from hand-held wireless devices; these limits are defined in terms of a maximum allowable Specific Absorption Rate (SAR) of 1.6 watts per kilogram (referring to the mass or weight of the person holding the device). According to the FCC, ongoing research has not provided a basis to establish different safety thresholds (FCC 2018).

Updated Text:

Although a large number of studies have been performed to assess whether cellular phone use poses a risk, and studies are on-going, WHO has determined that currently there is no established link between cell phone use and human health risks (WHO 2005 and 2014). In addition, the Federal Communications Commission (FCC 2018) has established RF exposure limits from hand-held wireless devices; these limits are defined in terms of a maximum allowable Specific Absorption Rate (SAR) of 1.6 watts per kilogram (referring to the mass or weight of the person holding the device). According to the FCC, ongoing research has not provided a basis to establish different safety thresholds (FCC 2016 and 2018).

Pages 38 and 39, References.

Additions:

Federal Communications Commission (FCC). 2016. *Consumer Guide: Human Exposure to Radio Frequency Fields, Guidelines for Cellular and PCS Sites*. Available at: <https://transition.fcc.gov/cgb/consumerfacts/rfexposure.pdf>. Accessed December 13, 2018.

National Park Service (NPS). 2015. National Park Service NEPA Handbook.

U.S. Fish and Wildlife Service (FWS). 2018. *Recommended Best Practices for Communication Tower Design, Construction, Operation, Maintenance, and Decommissioning*. FWS Migratory Bird Program. Available at:

<https://www.fws.gov/migratorybirds/pdf/management/usfwscommtowerguidance.pdf>. April 2018.

World Health Organization (WHO). 2005. *Electromagnetic fields and public health effects of EMF on the environment*. (https://www.who.int/peh-emf/publications/facts/envimpactemf_infosheet.pdf). Accessed December 13, 2018.

ERRATA PART 2 – EA SUBSTANTIVE COMMENTS AND NPS RESPONSES

This section summarizes the input regarding tower construction type, and substantive comments that were received during the public review period of the EA. Substantive comments do not include the entire correspondence text from any individual letter, but capture the primary concerns in “concern statements.” Concern statements are italicized below; the NPS responses are in plain text. All correspondence received by the NPS is contained in the project’s decision file located at Sequoia and Kings Canyon National Parks.

Opinion Statements Regarding Tower Construction (Replica pine tree [monopine], lattice, or monopole were provided as options with visual simulation).

Four commenters were in favor of the replica pine tree construction:

- “The tower's presence would not be very noticeable, as it would blend in amongst the trees”;
- “It is in an already developed area and is not highly visible from the road when measures are taken (monopine) to conceal it”;
- “Do not build a metal tower. Definitely go with the tree”;
- “The monopine model is the only acceptable alternative among those presented here.”

Three commenters were not in favor of the replica pine tree construction:

- “...these tower do not resemble a pine tree and would easily take away from the beautiful nature that is displayed all around Sequoia National Park”;
- “PLEASE do not accept the fake tree cell tower in Sequoia!”;
- “If it is constructed, I hope that it is either the lattice or the monopole.... fake anything (does) not belong in national parks in my opinion. If something is a facility, it is okay for it to look like what it is.”

- Response: According to a visual study of 1,000 potential public viewpoints within 1 mile of the site, the tower will not be in public view in close proximity. The six most visible public locations show only the very top portion of the tower; the tower’s form, shape, line and color appear to blend in with the surrounding trees. From a distance, the monopine construction appears to mitigate visual effects relative to the other options and for that reason is the selected tower construction type.

Concern Statement: Effects of electromagnetic frequency (EMF) exposure on biota are not analyzed.

- Response: In the US, EMF exposure limits are set by the FCC (FCC 2016). The FCC consulted with and obtained the support of the Environmental Protection Agency, among several other federal agencies, when adopting the current RF-EMF exposure guidelines (FCC 2016). The FCC states that the current exposure criteria and standards “...were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The exposure guidelines are based on thresholds for known adverse

effects, and they incorporate prudent margins of safety (FCC 2016). " When looking at the effects of RF-EMF for the proposed Verizon tower at Wuksachi Village, it is worth noting that ground-level power densities of cellular communication sites, especially those with tower-mounted antennas, are well below ("are hundreds to thousands of times less") than the exposure limit safety standards set by the FCC (FCC 2016). The NPS has analyzed additional research articles on the topic of EMF exposure to biota, including additional research articles provided by the commenter, and has determined that none of the materials reviewed establish a need to reanalyze the topic in the EA.

The list of peer-reviewed articles on EMF effects of communication towers on wildlife (<http://www.emfresearch.com/emf-wildlife/>) provided by the commenter, was reviewed by staff scientists and summarized as follows:

There are many published reports in the scientific literature concerning possible biological effects of RF-EMF exposure to insects and plants. In particular, some studies suggest that there may be an effect on bee navigation. A much more limited number of studies have looked at the effects of RF-EMF on plants. Possible effects depend on plant family, growth stage, exposure duration, and other factors. However, much of the work looking at the effects of RF-EMF energy on wildlife and plants has been scattered in approach and uneven in quality, and in some cases different studies find contradictory results. This field of study is challenging. Studies performed in the laboratory are often not applicable to real-world field conditions. Field studies tend to have very low replication, and results are confounded by many unmeasured potential effects that confound the findings of the analysis. Due to these reasons, it is useful to refer to comprehensive reviews and assessments published by reliable sources.

A 2018 report by the EKLIPSE project (Malkemper et al. 2018) evaluated 97 peer-reviewed scientific papers published since 2000 on the effects of anthropogenic-produced electromagnetic radiation on flora and fauna. The report provides an evaluation of the level of quality/reliability, level of agreement, and knowledge gaps for this field of research on vertebrates, invertebrates, and plants. Although this report is not a peer-reviewed published article, and states that it is not an exhaustive review of all the available scientific literature, it is still useful as it provides an independent research group's overview of current papers on this topic. The report concludes that overall, the studies on vertebrates, invertebrates, and plants are inconclusive, unresolved, and/or established but incomplete. For example, the report did not find a well-established finding (in which there is a high level of agreement and high level of quality and quantity of evidence) that electromagnetic radiation has a detrimental effect on invertebrates (diversity, abundance, behavior, or reproduction), and that although there is agreement that electromagnetic energy can pose a risk to physiological orientation mechanisms for insects, the research is too incomplete to be determined to be a well-established finding. Further, the USFWS provides protective standards for cell tower siting; these standards do not consider RF-EMF exposure concerns for birds (FWS 2018).

Current scientific understanding on the biological effects of EMF, including effects to flora and fauna, is best summarized by the World Health Organization's International EMF Project, formed in 1996. Their information sheet "Electromagnetic Fields and

Public Health Effects of EMF on the Environment” (WHO 2005) concludes after a review of the scientific literature, that international exposure limits (similar to those set by the FCC) for EMF emitting devices are protective of the [living] environment. It notes that studies that showed that damage to trees due to electric fields occur at levels far above exposure limit safety standards, and are found only close to conductors of very high voltage power lines. Also, flight performance of insects can be impaired in electric fields above 1kV/m, but significantly only when electrically conductive hives are placed directly under power lines. The information sheet also addresses the need for further research.

Finally, the NPS is supportive of scientific studies within NPS boundaries, including research to study EMF effects associated with cell tower installations within the NPS system.

Concern Statement: The proposed action is in conflict with the Park’s mission, and with the NPS Organic Act of 1916.

- Response: The NPS has determined that the action will not cause conflict with the park’s mission, and that the provision of cellular service at Wuksachi Village, Lodgepole, Wolverton, and surrounding areas will benefit the public by improving communication between visitors, and between the NPS and the public. Public and employee safety would be best served by cellular signals in those areas that are mostly intensely used, and where accidents and visitor fatalities are most likely, including the Wuksachi Village and nearby visitor service areas. The NPS does not favor increased cellular coverage in wilderness areas where solitude and primitive and unconfined recreation are most available and expected. In these areas the NPS will continue to work with cellular providers to constrain the signal to the greatest degree possible. Further, the NPS is committed to a public education program to promote considerate use of cell phones in shared public facilities and spaces.

Concern Statement: Cell phone use while driving is a major safety issue.

- Response: Cell use while driving is illegal in California, and California state law is incorporated into traffic laws that apply to national parks in California. The NPS is committed to a public education program to promote safe, considerate use of cell phones in shared public facilities and spaces.

Concern Statement: The proposed action will open the door to commercialization of our Nation’s parks

- Response: We agree that National Parks need to be protected from commercial exploitation. The NPS has determined that permitting the Wuksachi Telecommunications Facility to be constructed and operated is consistent with policy from the National Park Service Concessions Management Improvement Act of 1998, which is important for protecting national parks from commercial exploitation. Section 402 of the National Park Service Concessions Management Improvement Act of 1998 policy requires that development is limited to “accommodations, facilities, and services that - (1) are necessary and appropriate for public use and enjoyment of the unit of the National Park System in which they are located; and (2) are consistent to the highest practicable degree with the preservation and conservation of the resources and values of the unit.” [Section 402 (b)]. The facility will be placed within or adjacent to an existing utility corridor, and wireless coverage directed away from wilderness areas. Further mitigation is detailed in the EA to protect resources and values of Sequoia National Park (see EA, pages 15 through 23).

Concern Statement: The proposed action will attract additional cellular providers to Wuksachi Village which will increase the impacts beyond what is analyzed in the EA.

- Response: The NPS agrees that future co-location could occur on the tower, and add to potential disruptions to park visitors, as discussed in the Cumulative Impacts section on page 32 of the EA. These effects would not result in a significant environmental impact.

Concern Statement: Consider an alternative to the antenna height, the platform size, proposed removal of trees, and inclusion of a propane tank as large as 400 gallons, and potential for lessening impacts in designated wilderness areas.

- Response: alternatives considered but not analyzed in the EA are discussed on page 23. Aspects of the project related to antenna height, platform size, tree removal, and propane tank use are not considered to have substantial environmental impacts and are not analyzed in the EA. In accordance with the NPS NEPA Handbook (NPS 2015), the NPS endeavors to provide an EA focused on the issues most important to the project's impacts. Further, under Secretarial Order 3355 (2017) the NPS has been directed to streamline the NEPA process as much as possible. Issues selected for detailed analysis and issues that are not considered to have substantial environmental impacts worthy of detailed analysis are discussed on pages 8, 9, and 10 of the EA. Potential effects to wilderness character and visitor experience are analyzed in detail, and impacts to designated wilderness areas have been minimized by directing the antennas away from wilderness areas (see EA Figures 4 and 9). Additional mitigating measures are described on pages 15 through 23 of the EA. Tree removal plans will be conducted in accordance with NPS recommendations to minimize the effects to live trees. This mitigating action has been added to the EA on page 20. Although two live, 14-inch white fir trees will be removed, these trees are recommended for removal due to the presence of a mechanical wound and fire scar on the lower bole observed during a January 2018 survey. Propane tanks in the size range of 300 to 500 gallons are very common in Sequoia and Kings Canyon National Parks; one additional tank is not considered a substantial change in propane use and associated wildfire risk. Wildfire clearance around propane tanks is standard practice.

Concern Statement: NPS should be wholly indemnified in case of emergencies that occur as a result of the location of the Facility at Wuksachi Village.

- Response: Indemnification is addressed as part of the Right-of-Way (ROW) permit.

Concern Statement: Create and distribute guidelines for cell phone etiquette funded in whole or in part by the provider.

- Response: The NPS is committed to a public education program to promote considerate use of cell phones in shared public facilities and spaces.

Concern Statement: ROW permits should contain provisions for revocation and facility removal based on availability of new technologies that can lessen impacts to the park (such as being outside park boundaries, or on a shorter tower). ROW permits should require bonding to ensure facility removal and be limited to a five year period subject to review for technological obsolescence.

- Response: It is standard practice to issue ROW permits for 10-year periods, including a clause that the permit can be revoked at any time. Should there be a reason to remove the facility due to technological obsolescence prior to the 10-year period, this clause could be implemented.

Concern Statement: The preferred alternative has not been revealed.

- Response: We acknowledge that the preferred alternative was not identified in the EA, and according to the 2015 NEPA Handbook, on page 56, this is not required.

Concern Statement: Mitigation is written in the future tense, as if the decision has already been made.

- Response: Mitigation describes actions to be taken, if the project occurs. Because these actions are incorporated into the proposed action scenario being considered in the EA, the future tense is used for clarity.

Concern Statement: The EA does not evaluate the use of wi-fi as an alternative to cellular service.

- Response: Wi-fi technology is not considered a viable alternative to cellular service, as coverage would continue to be very limited and there would be little improvement in communication services available to the public and staff. The NPS is responding to the purpose and need for responding to a ROW permit application presented by Verizon for the installation of a wireless cellular facility, and has given consideration to the benefits of having wireless cell service for emergency law enforcement and public safety.

Concern Statement: The NPS has not complied with RM-53.

- Response: RM-53 is a "level 3" policy document, per the NPS Directives System, and was last revised in 2009. The NPS NEPA Handbook is also a level 3 document, last revised in 2015 with the goal of allowing the NPS to complete more timely and efficient NEPA reviews. Many of the Handbook revisions were directed at removing "unsupported requirements" (i.e., requirements not found in law, regulation, or higher level policy documents) that slow down the NEPA process. Direction in the NEPA Handbook takes precedence over any NEPA direction in RM-53 because the Handbook is a "later in time" document that has the same policy-making authority under the directives system. The NEPA Handbook is where service-wide NEPA guidance should come from (Director's Order 12, section 4.2 of the NEPA Handbook, NPS 2015). There is no requirement to publish federal register notices for EAs in the NEPA Handbook for most cases, and certainly no direction in the NEPA Handbook that EAs for telecommunication plans or projects need to have Federal Register notices.

Furthermore, per NPS Management Policies, "Level 3 documents may not impose any new Service-wide requirements unless the Director has specifically authorized them to do so, but they may reiterate or compile requirements (for example, laws, regulations, and policies) that have been imposed by higher authorities" (NPS Management Policies 2006, pages 4-5). There is no requirement in any law, regulation, or higher level policy that has been found, that requires a Federal Register notice for telecommunications EAs; therefore, RM-53 does not have the authority to impose such a requirement.

Lastly, the NPS has been directed by Secretarial Order 3355 in 2017 to streamline the NEPA process as much as possible. Adding an unsupported requirement to publish a Federal Register notice for an EA (typically Federal Register notices take months to publish) is counter to that direction. The NPS is aware and is planning to update RM-53 to remove that requirement so there isn't confusion in the future.

Concern Statement: The EA and accompanying documents are inconsistent regarding the number of antennas mounted on the tower.

- Response: This is a technical edit to the EA that has been made. The correct number of antennas is nine, as shown on the “Antenna Layout Plan” available on the PEPC site during the time of public review. The number of antennas to be mounted on the tower is not considered an aspect of the project associated with direct or indirect effects on the natural or human environment, thus the edited EA need not be re-released for public review.

Concern Statement: The EA does not indicate whether the 500-gallon propane tank would impact the park due to wildfire risk.

- Response: Propane tanks in the size range of 300 to 500 gallons are very common in Sequoia and Kings Canyon National Parks; one additional tank is not considered a substantial change in propane use and associated wildfire risk. Wildfire clearance around propane tanks is standard practice (this response is also part of the response to comment on page 6 of this document).