



United States Department of the Interior

NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK
P.O. Box 129
Grand Canyon, AZ 86023



IN REPLY REFER TO:
1.A.2 (GRCA 8217)
JUL 23 2019

Ms. Kathryn Leonard
State Historic Preservation Officer
1100 W. Washington Street
Phoenix, Arizona 85007-2935

RE: Initiation of Section 106 for Telecommunications Plan, Grand Canyon National Park

Dear Ms. Leonard:

In accordance with the Advisory Council on Historic Preservation (ACHP) regulations, 36 CFR Part 800 Protection of Historic Properties, and the National Environmental Policy Act (NEPA), the National Park Service (NPS) is initiating Section 106 and NEPA consultation for an undertaking, the development of a Telecommunications Plan Environmental Assessment (EA) for Grand Canyon National Park (park). The Section 106 consultation will follow the standard process identified in 36 CFR Part 800.3 through 800.5.

Existing telecommunications, including cellular, Internet/wireless, two-way radio, and data networks, are severely lacking within developed areas of the park and are insufficient to support visitors, park operations, and the operations of park partners including concessioners, non-profits, tribes, a public school, a clinic, a utility company, and other local and federal law enforcement agencies.

The NPS is developing a telecommunications plan/EA to address this issue. The plan/EA would identify appropriate types and locations of telecommunications infrastructure and services within the park through the future construction, operation, and maintenance of various types of infrastructure including telecommunications towers and associated equipment, small antenna, and fiber optic cable within existing developed areas of the park. A Telecommunications Plan project page has been established in the NPS Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/GCTelecommunications>) where documents will be available for review and comment. The PEPC website is provided as an additional resource for you. We will continue to send you documents for your review, as is our usual practice.

We are also initiating NEPA and Section 106 consultation with the park's traditionally associated tribes for this undertaking.

Potential effects to historic properties include the visibility of telecommunications towers from historic districts and structures, installation of antenna on or inside historic structures, and ground disturbance from installing conduit and fiber optic cable below ground.

After applying the criteria of adverse effect in accordance with 36 CFR Part 800.5, the NPS believes that the effects on historic properties cannot be fully determined before the undertaking is approved (i.e., the signing of the Finding of No Significant Impact for the EA). The NPS would prepare a programmatic agreement (PA) for this undertaking in consultation with SHPO, the traditionally associated tribes, and the Advisory Council on Historic Preservation (if the ACHP chooses to participate) in accordance with 800.14(b)(1)(ii). The PA would record the terms and conditions agreed upon to continue Section 106 consultation for this undertaking. There is no existing park agreement document that could be amended to address this undertaking.

The PA is needed because the undertaking is currently in the conceptual phase with general areas identified for implementation and construction, which will occur over the next five to ten years and beyond. For these reasons the effects on historic properties cannot be fully determined at this time.

We seek your comments on the undertaking as described in the Initial Assessment of Effect and our intent to prepare a PA. We will continue to consult with you pursuant to 36 CFR Part 800.3-5, as we develop the plan/EA. If you have any questions regarding this project, please contact Catherine Lentz, Section 106 Coordinator, at 928-638-7327, catherine_lentz@nps.gov.

Sincerely,


Woody Smeck
Acting Superintendent

Enclosures:

Maps
Photos

**Initial Assessment of Effect
Telecommunications Plan
Grand Canyon National Park
7/22/2019**

Description of the Undertakings relevant to Section 106 of the National Historic Preservation Act

The undertaking is the development and implementation of a Telecommunications Plan for Grand Canyon National Park (GCNP or park). The purpose of this telecommunications plan is to identify appropriate types and locations of telecommunications infrastructure and services within the park that could provide sufficient cellular coverage, two-way radio communications, and Internet/wireless capacity to meet park operational, emergency services, community, and visitor needs.

Background

Existing Internet/wireless capacity within developed areas of the park is insufficient to support the operations of the National Park Service (NPS) and its in-park partners, the communities on the North and South Rims—whose population fluctuates between approximately 2,000 and 3,000 residents throughout the year, and visitors—who totaled close to 6.4 million in 2018.

Cellular (voice and data) service within the developed areas of the park is limited. Although cellular service is generally available within Grand Canyon Village on the South Rim and represents the best service within the park, is unreliable and the coverage is irregular because there is inadequate infrastructure. These issues are further magnified during heavy visitation periods when more individuals are utilizing the network.

Communications infrastructure development, particularly related to providing cellular services, is continuing to expand on adjacent lands outside the park, such as within Tusayan and the Kaibab National Forest; however, this development cannot fully address service needs in the park. Most cellular coverage within the park is provided by two existing towers: the South Rim Village Tower and the Desert View Tower. The South Rim Village tower is situated near the Magistrates Office, within Grand Canyon Village National Historic Landmark (NHL) District and was constructed prior to 1964. The Desert View tower is located in the housing area of Desert View, near the east entrance to the park, and was constructed between 2008 and 2010. These two towers are limited in their capacity to provide adequate cellular service/coverage. There are four additional telecommunications towers within the park, all of which are managed by the NPS to provide radio coverage across the park. These towers do not have the capacity to host non-federal entities. These towers include: Grand Canyon Station One and Hopi Point Fire Lookout (both on the South Rim), CC Hill on the North Rim, and Mt. Emma which is located west of Tuweep (see Photo Set 1 in the attachments). GCNP also relies on towers located outside of the park for radio coverage.

We recently consulted with you on two telecommunications ROW permits (Access Parks and DW telecommunications towers) at the Albright Avenue utility area within Grand Canyon Village. The Access Parks telecommunications tower was proposed at 70' tall; the DW

telecommunications tower was proposed at 100' tall. Your concurrence with no adverse effect was received 3/7/19 for Access Parks and 5/14/19 for DW Tower. While both towers address immediate telecommunication needs in the park, both towers are temporary and may be removed in accordance with this more comprehensive Telecommunications Plan.

Proposed Action/Undertaking

The NPS proposal for the Telecommunications Plan includes the following elements:

- Telecommunication Towers and Associated Equipment
- Small Cell Antenna
- Fiber Optic Cable

Telecommunication Towers and Associated Equipment

There could be five new cellular towers constructed under this proposal (see Table 1. Locations and Maximum Heights of New Telecommunications Towers). These general locations are shown in Map 1, Areas to be Considered for Potential Telecommunications Tower Placement). The South Rim Village Tower could also be relocated to an area outside of the Grand Canyon Village NHL District.

Table 1. Locations and Maximum Heights of New Telecommunications Towers

Rim	General Locations for New Telecommunications Towers	Maximum Height
South Rim	Grand Canyon Village	120ft (within 7,000 ft. of the rim) OR 180ft (if over 7,000 ft. from the rim)
	Desert View	80 ft.
	West Rim Drive, Hopi Point Fire Tower Area	80 ft.
North Rim	Entrance Station, Lindberg Hill	180 ft.
	Visitor Services Area, Vicinity of CC Hill	180 ft.

Design criteria to minimize impacts to historic properties include:

- Towers would not exceed the maximum heights identified in Table 1.
- No tower, new or relocated, would be sited within listed or eligible National Historic Landmark Districts or National Historic Districts.
- New towers would be located to minimize impacts to National Register eligible or listed historic properties and visitor use areas.
- New towers would be constructed in or immediately adjacent to developed and/or previously disturbed areas that have available power and are accessible via existing roads.
- New towers (except Grand Canyon Village and Lindberg Hill) would be located in close proximity to existing towers.
- New towers would be sited and designed to blend into the surroundings as much as possible to reduce the impact on National Register eligible or listed historic properties, the viewshed, and other natural and cultural resources.
- New towers, dishes, antennae, and associated equipment would also be painted to blend with the background (such as sky or trees), with potential colors being light blue, dark brown, or treating galvanized metal with a product like Natina staining solution, which

reacts with galvanized metal and develops into a mottled and rustic, brown finish (to eliminate shiny reflective surfaces).

- Equipment cabinets would be painted a color that blends with the surrounding area.
- All associated telecommunications equipment, specifically shelters, would be sited to minimize impacts to park resources; exteriors would be designed to be compatible with the surrounding architecture.

The total, maximum disturbance from construction, staging, and installation of each of the six (five new and one relocated) telecommunications towers and their associated facilities would be approximately 180 ft. by 180 ft. Each of these six sites would include:

- One monopole or lattice tower structure
- Antennae mounted on the tower structure for up to four wireless carriers and NPS and other public safety agency equipment
- One to two microwave dishes, no more than 24 inches, mounted on the tower structure to provide bandwidth to telecommunications providers
- Electrical service equipment (panels and meters) installed on a frame (typically 5 ft. tall x 12 ft. wide)
- Electrical wiring/cabling mounted to the tower structure
- One shared equipment shelter (typically around 33 ft. x 15 ft.) to provide space and protection for telecommunications equipment
- One shared generator shelter (typically around 12 ft. x 15 ft.) with interior generator fitted with a muffler and fuel tank (which could be internal or external depending on fuel type)
- 7 foot tall chain link fence (approximately 125 linear ft. of fencing) installed around the facility

Currently, none of the potential towers would require lighting; it is possible that security lighting around the equipment shelters would be needed for safety reasons. No guy wires would be permitted.

Small-Cell Antenna

In addition to telecommunications towers, small-cell antenna and associated facilities could be installed in the following high visitor use areas: in the Grand Canyon Visitor Center area, within Grand Canyon Village National Historic District, at Market Plaza, and surrounding Grand Canyon Lodge (on the North Rim) (see Map 2, Areas to be Considered for Potential Small-Cell Antenna). These short-range base stations would enhance coverage in terms of speed and capacity, for both indoor and outdoor users in these crowded areas where macro coverage (i.e. from Telecommunications Towers) is likely insufficient.

A typical antenna panel could be 3-4 ft. tall, about 6 inches wide, and 4-6 inches thick, with 2-4 of these mounted on a light pole, wrapping the pole (see Photo Set 2 in the attachments). In addition, all small cell locations would require power, connectivity to fiber optic cable, wires associated with power and fiber, and some cabinetry for equipment. Several of these antenna and associated equipment could be dispersed throughout each area shown in Map 2.

All antenna and associated equipment would be mounted to existing buildings or fixtures (such as a light pole) and sited on these features to reduce visibility from high use areas as much as

possible. No small-cell antenna or equipment would be placed on the roofs of historic structures that have no other modern equipment. If located within a National Historic Landmark district, historic landmark or district, equipment would be placed out of sight to avoid visual impacts.

Similar to telecommunications towers and equipment, all antenna and associated equipment would be painted a color that blends in with the surrounding area to minimize visual impacts.

Fiber Optic Cable

New fiber optic cable would be installed within the South Rim to provide reliable broadband for use by NPS, in-park partners, residents, and visitors. Installing fiber would provide GCNP with the capacity for practically unlimited speeds and endless capacity as technology continues to improve.

Fiber optic cable would be installed within right-of-ways for existing park roads or greenways (paved trails), railways, power or other utility lines, or a mix of these options. The preference would be to install fiber underground in existing or new conduit (buried at a depth of 20-30 inches) and consideration would be given to hanging fiber along existing power lines in non-visitor use areas (see Map 3 for potential fiber optic cable routes). Guy wires or anchors may be needed to support any hung fiber.

Identification and Description of Historic Properties

The area of potential effect (APE) includes the locations where telecommunications infrastructure would be constructed as well as locations where new or relocated towers and/or antenna could be visible. Please see Map 4, Area of Potential Effect to Historic Properties for a map of the initial APE. Below is a list of historic properties within the APE that may be affected.

- Grand Canyon Village NHL District
- M.E.J. Colter Buildings NHL – Hopi House, Lookout Studio, Hermit's Rest, and the Desert View Watchtower
- West Rim Drive Historic District
- Hopi Fire Tower
- Albright Historic District
- Mather Business Zone Historic District
- Desert View Watchtower Historic District
- North Rim Entrance Road Corridor Historic District
- Bright Angel Peninsula Historic District
- Grand Canyon North Rim Headquarters Historic District
- Grand Canyon Lodge Historic District
- Grand Canyon Inn and Campground Historic District
- Archaeological and Ethnographic Resources

More information will be provided on potentially affected historic properties in the next consultation and correspondence.

Description of Potential Effects to Historic Properties

Potential impacts to historic properties primarily include visual impacts and ground disturbance. Although no telecommunications towers would be constructed within a listed or eligible historic or NHL district, the towers could be visible from various historic properties, including cultural landscapes, historic districts, national historic landmark districts, and various individually listed or eligible properties. Ground disturbance for construction of telecommunications infrastructure and burying fiber cable or conduit could also result in impacts to historic properties.

New telecommunications towers may be seen from a number of historic districts on both the North and South Rim including Grand Canyon Village NHL District, West Rim Drive Historic District, Hopi Fire Tower, M.E.J. Colter Buildings NHL, Albright Historic District, Desert View Watchtower Historic District, North Rim Entrance Road Corridor Historic District, and Bright Angel Peninsula Historic District. These new towers would not be visible from every location within a historic district or historic property. In areas where the tower would be visible, its visual presence would be somewhat offset by all of the other features that are visible, such as trees, buildings, existing towers, utility poles and lines, etc. Visual impacts would be further minimized with the design criteria discussed previously.

The installation of small-cell antenna within Grand Canyon Village NHL District, Mather Business Zone Historic District, and the Grand Canyon Lodge Historic District and Grand Canyon Inn and Campground Historic District has the potential to impact the historic districts and historic structures within the districts.

Fiber optic cable and conduit would be buried along existing utility corridors when possible. Impacts to archaeological and ethnographic resources would be avoided when burying fiber.

Consultation with American Indian Tribes

The NPS is initiating tribal consultation with the park's 11 traditionally associated tribes. Correspondence is being sent concurrently with this letter to gather feedback on the NPS initial finding of effect and proposal to prepare a PA.

Discoveries

If previously unrecorded and or buried cultural deposits are encountered during any portion of the project, work at that location will immediately cease, and an assessment made by a qualified cultural resource specialist. The NPS will notify you and all concerned American Indian groups immediately.

Finding of Effect

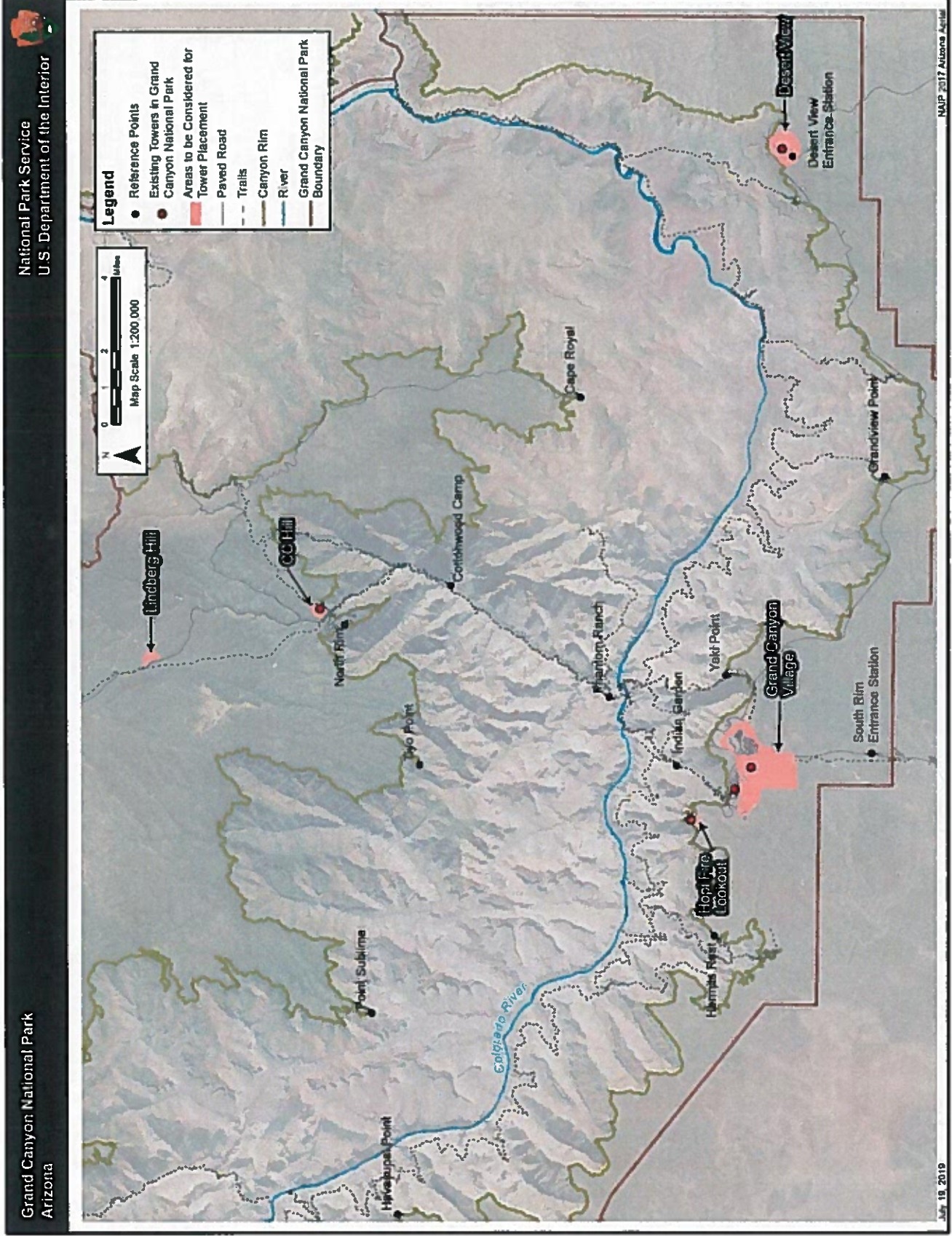
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Preservation (if the ACHP chooses to participate) in accordance with 800.14(b)(1)(ii). The PA would record the terms and conditions agreed upon to continue Section 106 consultation for this undertaking.

Additional Information Contact

Catherine Lentz, Section 106 Coordinator, 928-638-7327, catherine_lentz@nps.gov.

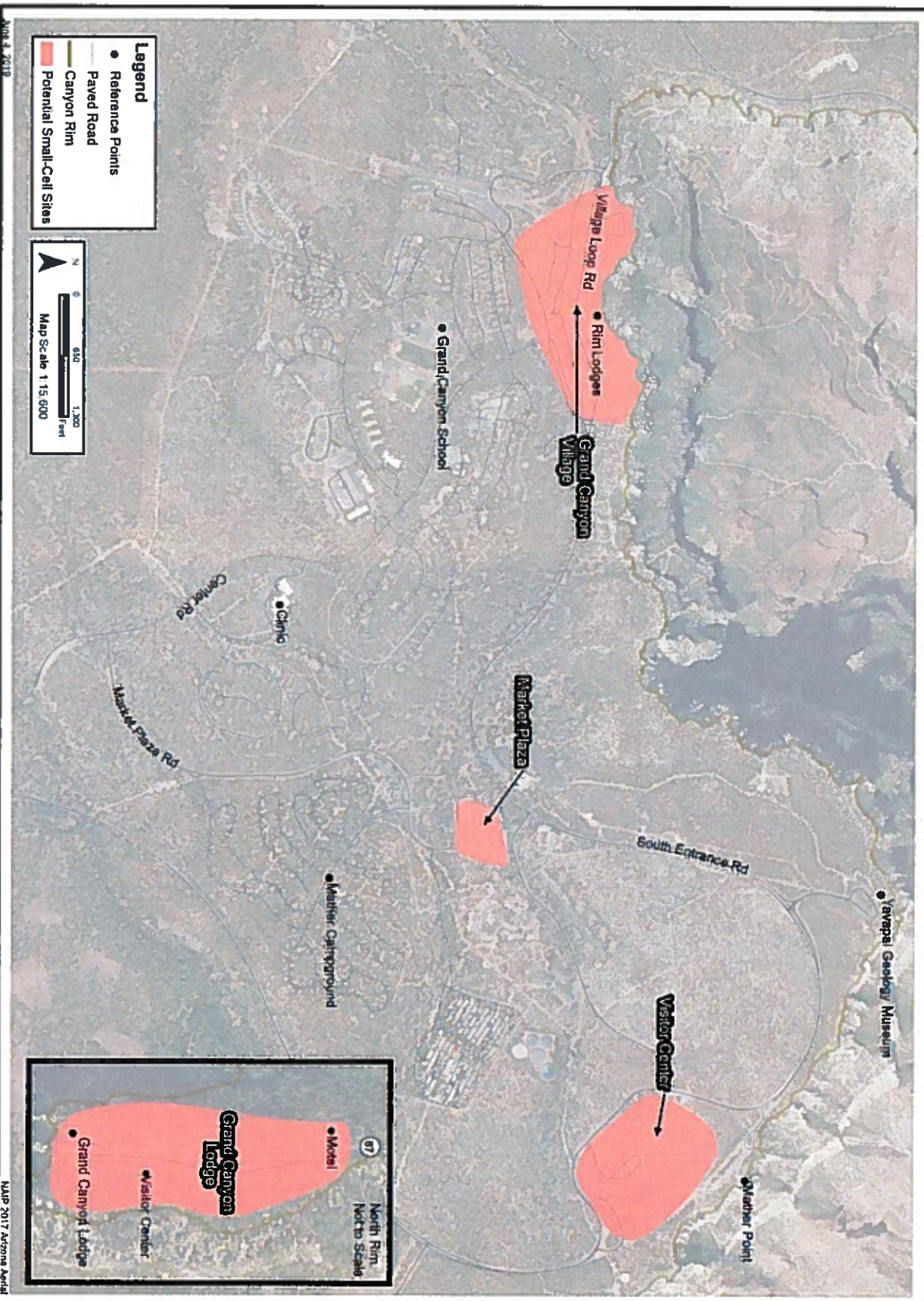
Map 1. Areas to be Considered for Potential Telecommunications Tower Placement



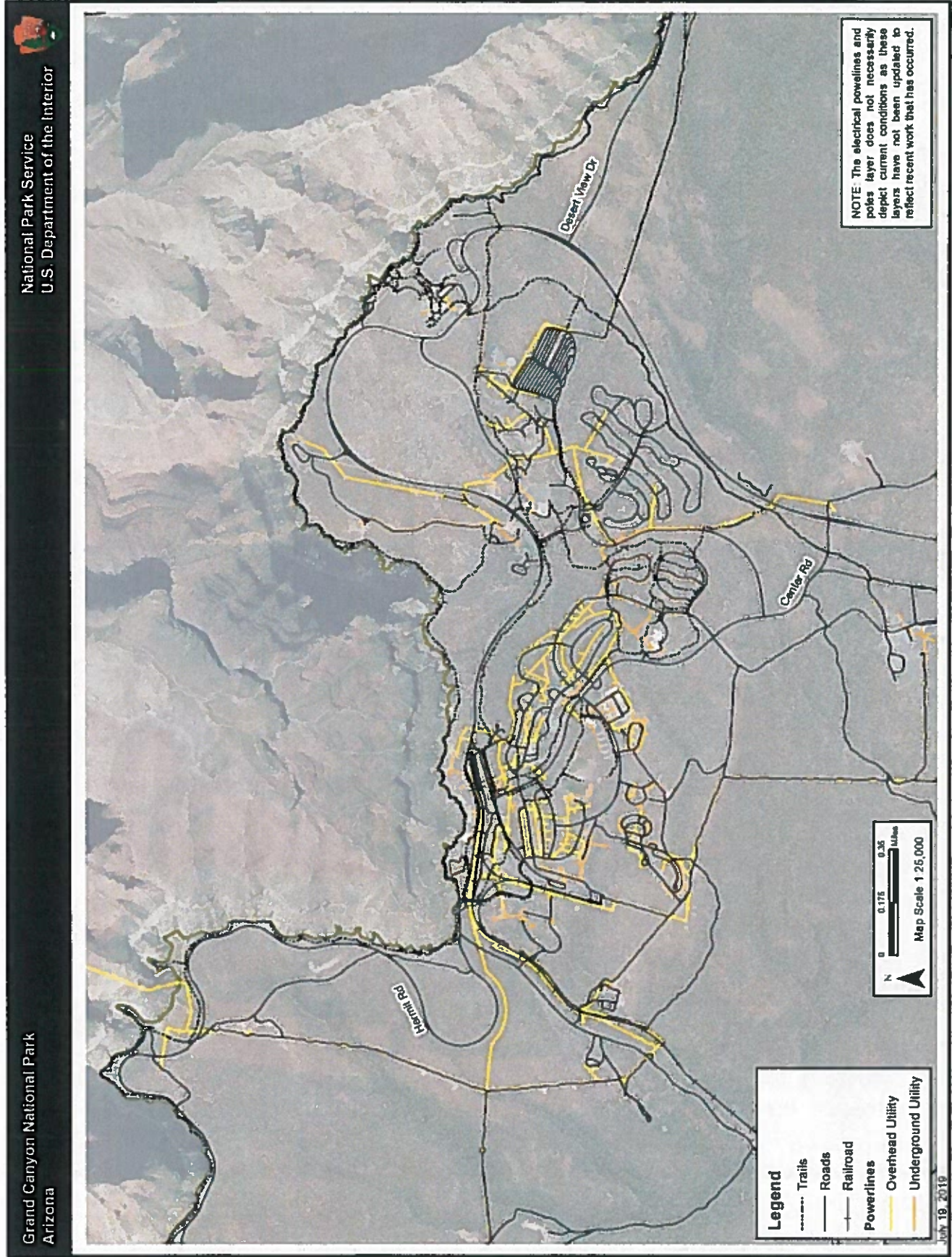
Map 2. Areas to be Considered for Potential Small-Cell Antenna

Grand Canyon National Park
Arizona

National Park Service
U.S. Department of the Interior



Map 3. Corridors to be Considered for Installation of Fiber Optic Cable, Hung or Buried



Map 4. Area of Potential Effect to Historic Properties

Grand Canyon National Park
Arizona

National Park Service
U.S. Department of the Interior

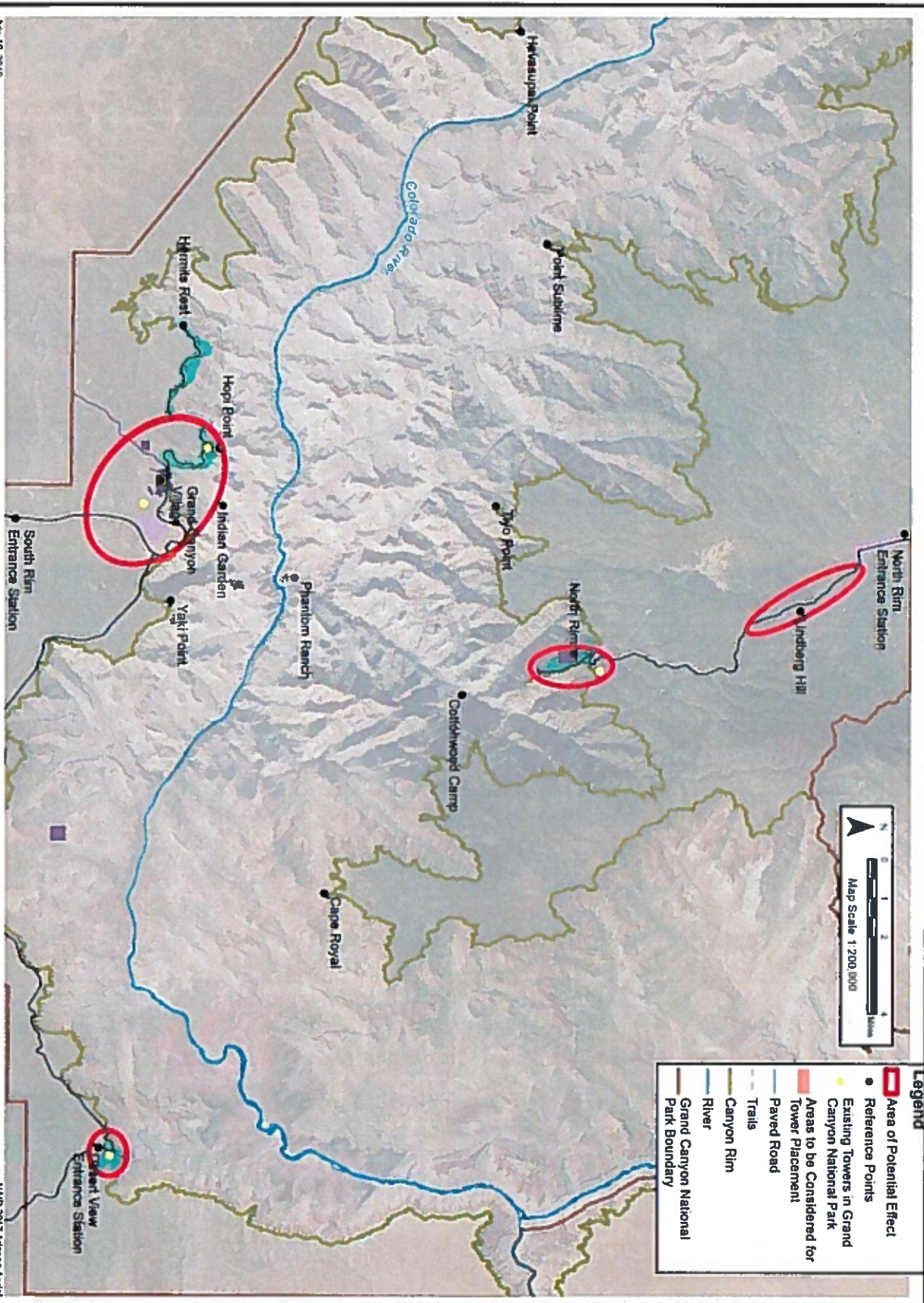
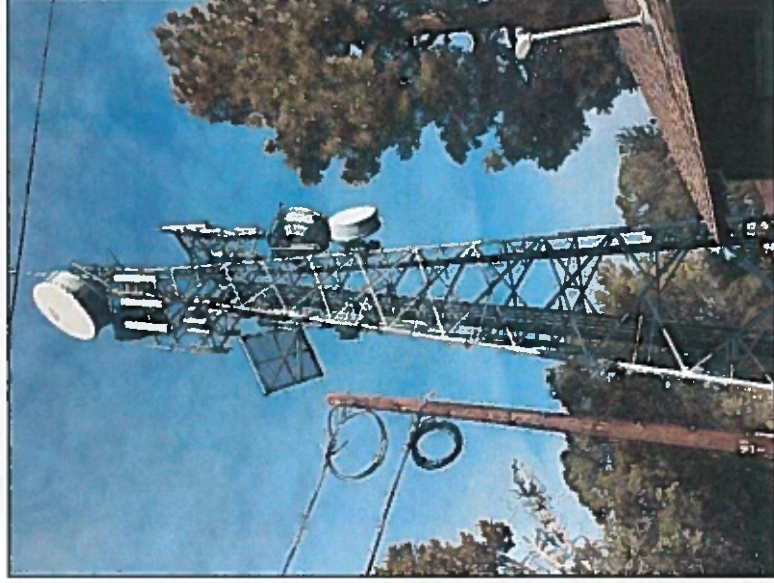


Photo Set 1. Photos of Existing Telecommunication Towers within Grand Canyon National Park



NPS Two-Way Radio Telecommunications Tower
at Hopi Fire Lookout Area, 80' tall (NPS Photo
9/21/2018)



Commercial Telecommunications Tower in
Grand Canyon Village National Historic
Landmark District, 107' tall (NPS Photo
3/15/2018)



NPS Two-Way Radio Telecommunications Tower
at Station One (Emergency Operations Center),
60' tall (NPS Photo 6/12/2019)

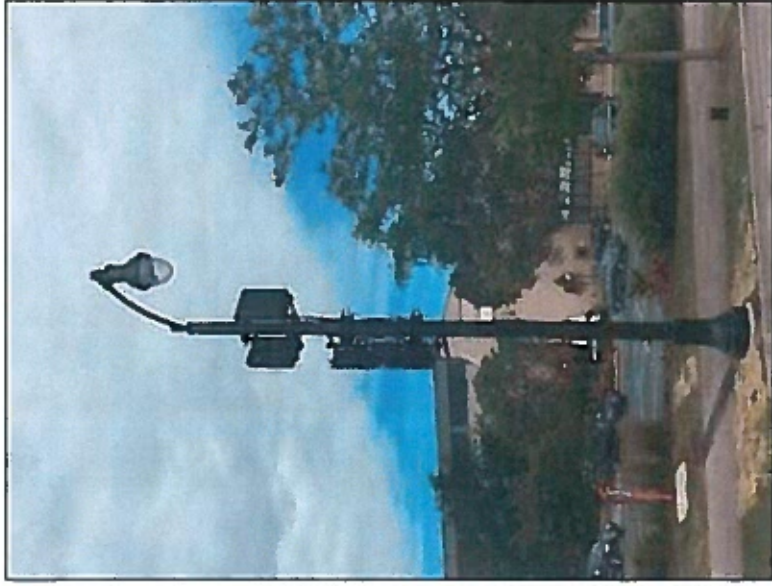


NPS Two-Way Radio Telecommunications Tower
with commercial antenna at Desert View, 80' tall
(NPS Photo 3/15/2018)



NPS Two-Way Radio Telecommunications Tower
at Mt. Emma, 40' tall (NPS Photo)

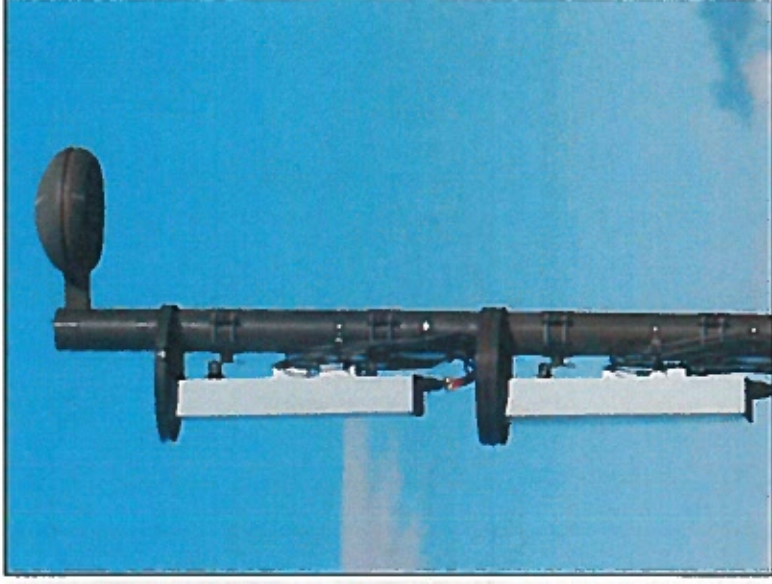
Photo Set 2. Photos of Small-Cell Antennas (Examples)



Sample of Small-Cell Antenna on Light Pole



Sample of Small-Cell Antenna on Light Pole

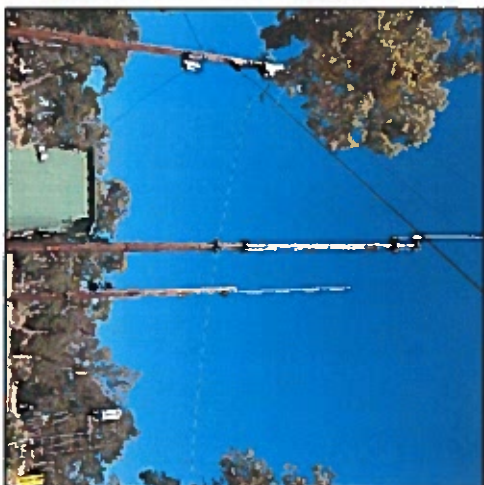


Sample of Small-Cell Antenna on Light Pole

Photo Set 3. Photos of Existing Two-Way Radio Infrastructure at Hopi Fire Lookout Area



The "Porcupine" of Two-Way Radio Infrastructure at Hopi Fire Lookout Area (NPS Photo 9/21/2018)



Two-Way Radio Infrastructure at Hopi Fire Lookout Area, including a monopole and equipment shed (NPS Photo 9/21/2018)



Two-Way Radio Infrastructure installed on the Hopi Fire Lookout Area (NPS Photo 9/21/2018)