



Fiber Optic Line Installation

A Public Scoping Notice for a Proposal to Install a Fiber Optic Network in Yellowstone National Park

Project Proposal

In 2019 Yellowstone National Park (Park) received a proposal from Diamond Communications, LLC. for a project that would install fiber-optic communication cable along existing roads. This telecommunications upgrade would improve voice, data and internet connections within the Park and would provide opportunities to remove many antiquated telecommunications systems including radio components located in backcountry areas. This project does not expand currently authorized cellular phone coverage areas in the park and would be built primarily along road corridors. The dependability of the Park's landline, cell phone, data circuits, and public safety radio system would be improved, which in turn, would enhance visitor safety, park operations, emergency response, and transaction speeds at stores in the park.

Expected benefits for NPS staff, partners and visitors:

- Better workforce connectivity for government computers.
- Files could be attached to and opened through emails.
- Credit card transactions would be reliable and faster at stores.
- Cell phone calls would not fail to connect or be dropped.
- Text messages could be sent and received during periods of high visitation to popular areas.
- The quality of public safety voice channels would improve and the Park could utilize the FirstNet wireless broadband network for first responders.

An environmental assessment (EA) will be prepared to analyze the proposed action and its impacts on the environment. The EA will be prepared in accordance with the National Environmental Policy Act of 1969, regulations of the Council on Environmental Quality (40 CFR 1508.9), Section 106 of the National Historic Preservation Act, and other

Map of Project Area – with cable route shown in red





applicable laws, regulations and policy. The National Park Service will release the environmental assessment for public review before making a final decision about the project.

Project Location

The project area is 187-miles in length, following the park's Grand Loop Road with spurs or lateral lines branching off into multiple developed and administrative areas. The following segments are included: Madison Junction to Norris Junction, Norris Junction to Mammoth Hot Springs, Mammoth Hot Springs to Tower Junction, Tower Junction to Canyon Junction, Canyon Junction to Fishing Bridge Junction, Fishing Bridge Junction to West Thumb, Madison Junction to Old Faithful Interchange, Old Faithful Interchange to West Thumb, Old Gardiner Road, and West Thumb to South Entrance. The Elk Plaza Service Road and Chittenden Road to Mount Washburn are also included. Lateral lines are proposed into the following developed areas: Mammoth, Tower Junction, Mount Washburn, Canyon Village, Lake Village, Grant Village, South Entrance, Norris, Madison, and Old Faithful.

Project Purpose and Need

The purpose of this project is to improve voice, data, and internet connections in the park. The project is needed because existing communication systems are at capacity and do not function as intended during peak season. This project would not expand existing cell phone coverage areas, as defined in the 2008 Wireless Communications Services Plan / Environmental Assessment. Specific issues the project will address include:

- The bandwidth on microwave links are at full capacity.
- Retention of seasonal staff is difficult due to lack of connectivity and broadband access.
- Credit card transactions are slow.
- Employees cannot open or attach files to government emails.
- Cell phone calls within the park are commonly dropped or fail to connect.
- Slow speeds of existing WiFi and Internet for both employees and visitors.

Capacity of the existing wireless telecommunications system and fiber optic network is very limited in the interior of the Park. The Park is served by a 40-year old microwave transport system and underground copper cable that was built to increase the availability of land line telephones. In 2010, a new fiber optic line was built outside the Park by the local exchange carrier, from Livingston, Montana to Gardiner, Montana along the abandoned railroad bed next to the Yellowstone River. This fiber optic service delivered broadband to Gardiner and connected to a 1990's era fiber optic line along the Old Gardiner to Mammoth Road, which delivers broadband to Park Headquarters at Mammoth Hot Springs. The fiber optic infrastructure that is

Disturbance along road edge after cable installation for a similar project in Grand Teton National Park





present in Mammoth facilitates operations, administration, concessions, emergency response, and visitor communications. The microwave radio communications to the Park interior are transmitted via microwave links using privately owned and operated infrastructure. The carrying capacity of the microwave radio transport was last upgraded in 2008 to double the capacity for interior locations. This upgrade resulted in an increase in bandwidth to all interior locations, but with ever increasing visitation and changes in technology, the system was at full capacity again within a year with no additional circuits available for lease to the NPS or its partners.

Project Description

The proposed project includes the installation of a fiber optic cable network inside the park. The cable would connect to Grand Teton National Park from the south. The fiber network would be installed underground in the existing road prism and in previously developed or already disturbed areas. Known historical and archeological sites as well as wetlands and thermal areas would be avoided. Project design would include boring underneath stream crossings or using bridge attachments to avoid impacts to wetlands and waterways.

To install the conduit, a vibrating plow/rubber tracked vehicle would be used within the previously disturbed road corridor. The photograph below shows a typical plow that would be used to install the fiber optic cable. Conduit would be installed as close to the road edge as feasible. In some locations where there is insufficient space adjacent to the road, or to avoid impacts to sensitive resources, the conduit may need to be installed directly into the roadbed, after which the road surface would be repaired. Micro-trenching (4 inches wide x 12 inches deep) would be used in these areas. In more rocky areas, a rock saw would be used for installation. Precast maintenance hole boxes (for pulling and splicing fiber optic cable and maintenance and access) would be installed below grade approximately every 3,000 feet. Equipment would be staged in existing areas used by the National Park Service (NPS) for equipment storage and maintenance activities. Temporary road shoulder restrictions and temporary traffic control at roadway

Vibrating Plow and Fiber Optic Conduit Spools





crossings would be required in work areas. Speeds would be reduced to 20 mph in the immediate work area. Short, one lane traffic restrictions may be necessary in some locations; the length of the restriction would vary based on installation method and specific conditions in an area. Rolling traffic restrictions could occur throughout the construction window (April–November for three consecutive years). These rolling one-lane traffic restrictions would likely occur at multiple locations in the Park and would typically last five to ten minutes.

Project Schedule and How to Comment

The NPS invites your ideas and comments about this project. Comments may be submitted online at <https://parkplanning.nps.gov/fiber>, or mailed to: Compliance Office, Attn: Fiber Optic Project, P.O. Box 168, Yellowstone National Park, WY, 82190. Comments will only be accepted via the means mentioned above; faxed or emailed comments will not be accepted. Comments must be received by midnight MST, of the date listed on the webpage listed above.

The EA for this project is scheduled to be completed in winter 2021. Once complete, the EA will be placed on the NPS's Planning, Environment, and Public Comment website for public review and comment. A decision on the project will occur after this review period. If approved, construction would likely last three years utilizing multiple crews and could begin as early as 2021.