



**National Park Service
U.S. Department of the Interior**

**Yellowstone National Park
Idaho, Montana, Wyoming**

**FINDING OF NO SIGNIFICANT IMPACT
Fiber Optic Cable Installation
July 2021**

BACKGROUND

Yellowstone National Park (park) encompasses nearly 2.25 million acres, 90% of which is managed as wilderness¹. Developed areas throughout the park provide amenities to over 4 million visitors annually, including lodging, dining, retail, gas stations, visitor centers, and emergency services. The National Park Service (NPS) and concessionaires employ approximately 4,000 employees each year in order to support visitors, protect resources, and manage day to day operations. Due to the immense size and relative isolation of the park, employees rely heavily on telecommunications equipment and technology to effectively communicate.

Park management, concessioners, partners, and emergency response increasingly rely on technologies that require access to the internet and intranet systems to perform basic operations and visitor service functions. However, existing telecommunications infrastructure within the park offers very limited capacity, has little redundancy, and is unreliable. The existing infrastructure routinely reaches capacity and is overwhelmed with data requests throughout the peak summer season (May – September), and once the existing network is overwhelmed, operations that depend on the data network become impossible to perform. Operational impacts not only include disruption of routine management functions such as employee emails and voice over internet protocol (VoIP) phone calls, but can also disrupt emergency response and communication due to lack of redundancy across the system. Additional impacts occur to certain operations that exclusively rely on internet connectivity to function including human resource and administrative programs, training and education, and intra-service cooperation platforms.

The park's lack of suitable telecommunications capacity in developed areas also affects employee hiring and retention. With the current infrastructure, there is a lack of reliable internet and cellular service within facilities and housing areas for use by permanent and seasonal employees and their families living in the park. Limited connectivity to the internet makes it difficult to impossible for those employees to access essential services such as online banking, continuing education, and remote healthcare visits, as well as other services the modern workforce expects to have access to such as social media, personal email, video chat, text messaging, and online shopping. As a result, many previous employees have described the feeling of digital isolation as one of the primary reasons for choosing not to return to Yellowstone.

In 2019, Diamond Communications, LLC. (applicant) submitted a right-of-way (ROW) permit request to the park that would allow for the installation of a fiber optic cable along existing park roads (proposal). The NPS must consider the request as required by Executive Order 13821, Streamlining and Expediting Requests to Locate Broadband Facilities in Rural America, as well as the Telecommunications Act of 1996 (P.L. 104-104, 110 Stat. 56). As a result, the NPS produced an Environmental Assessment (EA) to evaluate the environmental effects of the applicant's proposal.

The public was provided two opportunities to comment on the proposal. The NPS accepted public comments for the Yellowstone Fiber Optic Cable Installation from 6 October to 21 October 2020. The Yellowstone Fiber Optic Cable Installation EA was released to the public for review on 22 March 2021 and was open for comment until 21 April 2021. The public comments received and responses by the NPS are provided on page 12 of this document.

SELECTED ACTION AND RATIONALE FOR DECISION

The NPS has selected *Alternative 2*, the proposed action/preferred alternative, from the EA for implementation. When compared to the *Alternative 1*, the no-action alternative from the EA, *Alternative 2*

¹ In 1972, in accordance with the Wilderness Act, the Secretary of the Interior recommended over 2 million acres, or 90% of the park's backcountry areas, to be designated as wilderness. Despite not having officially been designated by an act of Congress, NPS Director's Order 41 requires these areas be managed to maintain their wilderness character as not to preclude them from wilderness designation in the future.

best meets the purpose of, and need for action without causing significant impacts on park resources. In addition, Alternative 2 will address shortfalls in existing telecommunications capabilities that would continue under Alternative 1, including substantially increasing the amount of available bandwidth needed to operate and maintain essential services and operations, and providing staff and visitors with adequate network coverage within developed areas.

Details of the selected alternative and other alternatives considered are described in Chapter 2 and Appendix A of the EA.

Under the selected alternative, the park will issue the ROW permit, authorizing the installation of approximately 187 miles of fiber optic cable along existing park roads. The fiber optic cable will be installed in underground conduit within the engineered road base of existing roadways, and in some limited instances, along utility lines, and will connect existing fiber optic at the South Entrance to existing cable at Mammoth Hot Springs. Lateral lines will connect developed areas of the park, including Canyon, Grant Village, Lake, Fishing Bridge, Tower/Roosevelt, Madison Junction, Norris and Old Faithful to the fiber optic network. In the Norris and Madison Junction areas, the communication services associated with the fiber optic line would not be available to visitors.

The selected alternative includes a 288 single-mode fiber optic cable with a theoretical maximum capacity up to 72 million megabits per second (Mbps), high-density polyethylene (HDPE) conduit, ducts, concrete and concrete polymer maintenance holes, splice cases, fiber optic line marker tape, and bridge attachments, as required. Conduit will be installed within the engineered road base of park roads, meaning within the approximate 20" – 30" fill material that has been placed to create the roadbed surface. Conduit will be placed within a 4-inch wide cut in the road shoulder, to a depth of no more than 20 inches. In thermal zones, the conduit will be installed at a shallower depth, no greater than 10 inches, to avoid impacts to subsurface thermal features. Directional drilling and asphalt cutting will be used for road crossings and intersections, and to avoid sensitive resources such as cultural sites, thermal areas, and wetlands, and roadside infrastructure such as drainage culverts, to move the conduit route from one side of the road to the other. In situations where resources are present on both sides of the road, the conduit will be installed in the roadbed in order to avoid impacts.

The selected alternative will not expand existing cell phone coverage areas as defined in the 2008 Wireless Communications Services Plan / Environmental Assessment (Wireless Plan, NPS 2008), and does not include additional above-ground telecommunications infrastructure. The increased data bandwidth will provide faster broadband speeds and will support more users within the existing coverage areas. In addition, implementation of the selected alternative may allow for the removal of obsolete telecommunications infrastructure located throughout the park, including from prominent high points such as Mount Washburn and Bunsen Peak. Other telecommunications infrastructure, such as passive microwave reflectors near Old Faithful, Madison Junction, and Tower Junction, are located in areas that have been recommended for wilderness designation and are managed as such. Implementation of the selected alternative would allow the park to remove this equipment from these recommended wilderness areas as well.

MITIGATION MEASURES

The National Park Service strongly emphasizes avoiding, minimizing, and mitigating potentially adverse environmental impacts. Therefore, the NPS will require multiple mitigation measures and best management practices to protect environmental and cultural resources potentially affected by the project. These measures and practices are described in Chapter 2 and Appendix B of the EA.

The authority for mitigation for this project comes from the following laws and policies:

- NPS Organic Act [16 U.S.C. §1.]
- Yellowstone National Park Protection Act [16 U.S.C §21]

- The Redwood Act [(H.R. 3813 (95th)]
- Endangered Species Act [16 U.S.C. § 1531 et seq.], as amended
- The Wilderness Act [16 U.S.C. ch. 23 § 1131 et seq.]
- National Historic Preservation Act of 1966, as amended [54 U.S.C. § 300101 et seq.]
- Clean Air Act [42 U.S.C. § 1857 et seq.], as amended and recodified [42 U.S.C. § 7401 et seq.]
- Clean Water Act [33 U.S.C. § 1251 et seq.]
- Paleontological Resources Preservation Act of 2009 [16 U.S.C. §470aaa et seq.]
- Native American Graves Protection and Repatriation Act of 1990 [25 U.S.C. § 3001 et seq.] and 43 CFR § 10
- Director’s Order 41: Wilderness Stewardship (NPS 2013)
- The National Park Service Management Policies (Chapters 4, 5 and 6) (NPS 2006)

FINDING OF NO SIGNIFICANT IMPACT

- Based on the information contained in the EA, the NPS has determined that the proposed action (selected alternative) does not constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement (EIS) will not be required.
- This finding is based on consideration of the Council on Environmental Quality (CEQ) criteria for significance (40 CFR 1501.3(b) [2020]), both regarding the affected environment and degree of effects of the impacts described in the EA (which is hereby incorporated by reference) and as summarized below. The EA is available at <https://parkplanning.nps.gov/fiber EA>

POTENTIALLY AFFECTED ENVIRONMENT

The project area is 187-miles in length and will have an average disturbance width of two feet, totaling approximately 46 acres of temporary disturbance in previously disturbed soils. Total land disturbance is less than .002% of the larger 2.25 million-acre Yellowstone National Park. Approximately 182 miles (97%) of the project will be installed in the road shoulder at a standard depth of 20 inches, and 4.5 miles (3%) will be installed under the road surface at a maximum depth of 10 inches. Additionally, approximately 0.5 miles of cable will be attached to the underside of bridges.

Vegetation along park road corridors and in developed areas has been affected by road construction, repair, rehabilitation, redesign, road shoulder maintenance, and other improvements resulting in the direct loss of native vegetation and fragmentation of vegetation communities, crushing of plants, and changes in plant species composition. Vegetation along road edges is further disturbed by vehicles pulling off the edge of the road. Nonnative invasive plants are present throughout the park in areas that are highly disturbed by human use, particularly along road corridors and in developed areas. Therefore, the project area or potentially affected environment is already highly disturbed. The project, while extending along many miles of park roads, is concentrated along already developed corridors and does not extend into undeveloped wilderness areas. The impacts to vegetation that may result from the selected alternative are not a significant change from existing conditions.

The potentially affected environment for visitor use and experience includes developed areas where cellular network coverage is allowed under the 2008 Wireless Plan: Mammoth, Canyon, Tower-Roosevelt, Old Faithful, Grant, Fishing Bridge, and Lake, and along the Grand Loop Road during the fiber optic cable installation. Despite past efforts to improve internet or cellular service in these areas, visitors currently do not have reliable access to these networks for park information about road closures, wildfires, traffic delays, or general trip planning. The inadequate telecommunication networks in these areas have the potential to affect the ability of the park, concessionaires, and other partners to provide adequate visitor services, from efficient, reliable systems for lodging, fuel, and retail operations to

emergency and medical services. And, while some visitors may come to the park seeking opportunities to experience solitude and naturalness, traffic delays and the sights and sounds of other construction activities occur in the potentially affected environment. For these reasons, the impacts to visitor use and experience from the selected alternative are not a significant change from existing conditions.

Federally listed or proposed species and critical habitat identified by the United States Fish and Wildlife Service (USFWS) that are known to occur or may occur in the park include Canada lynx (*Lynx canadensis*) and Canada lynx critical habitat, grizzly bear (*Ursus arctos horribilis*), and whitebark pine (*Pinus albicaulis*). There is no current evidence of resident lynx in the park, and any lynx that may occur, including in the project area, would likely be transitory. One portion of the project area is located within designated critical lynx habitat, but because the installation of fiber optic cable occurs within the existing road prism, there will be no effect of designated critical habitat. Increased noise during construction may result in wildlife, including lynx and grizzly bear, to temporarily avoid the project area, but it is anticipated that construction noise would only be a marginal increase above ambient traffic noise within road corridors, and there is ample habitat beyond the immediate construction area to allow for wildlife to avoid the construction area altogether. In addition, although the selected alternative transects habitat where whitebark pine grow, none are located near or adjacent to the project route, and none would be affected by the cable installation. For these reasons, the selected alternative is not expected to have an adverse effect on any of the species or critical habitat. Yellowstone National Park consulted with the USFWS, in which that agency concurred in the park's determination that the selected alternative "may affect, not likely to adversely affect" federally listed species and designated habitat.

THE DEGREE OF EFFECTS OF THE ACTION

The following have been considered in evaluating the degree of the effects (40 CFR 1501.3(b)(2) [2020]) for the selected alternative:

a. Beneficial and adverse, and short- and long-term effects of the proposed action

The selected alternative will result in long-term beneficial impacts to park communications capabilities by providing reliable voice, data, and internet connections within the park's developed areas; increasing the dependability of the park's landline, cellular phone, data circuits, and public safety radio system; creating system redundancy to reduce the occurrence of parkwide/systemwide network failures; and, in turn enhance visitor safety and visitor experience, critical park operations, emergency response, transaction speeds at retail venues throughout the park, and employee quality of life. Additionally, the selected alternative will result in long-term beneficial impacts to visitors who rely on devices and connectivity for trip planning, general information, and for personal communications within developed areas of the park. Additionally, the project may allow the park to remove obsolete telecommunications structures from recommended wilderness and from prominent high points throughout the park which benefits wilderness character. However, removal of obsolete equipment was not analyzed in the EA, and would require additional compliance in accordance with the National Environmental Policy Act (NEPA) and other applicable laws, as necessary.

The selected alternative will result in adverse impacts on vegetation during the installation of the fiber optic line. Because the proposed route of the selected alternative will remain within the disturbed corridor of the park's road system, direct loss of native vegetation will be limited. The use of a vibratory plow for most of the installation will also minimize the total surface disturbance and limit the loss of native vegetation to individual plants on the edges of the disturbance. Such effects to vegetation would be mitigated within three growing seasons following revegetation and monitoring efforts after project completion, described in the Mitigations section and Appendix B of the EA. In addition, there are few if any trees present in the road prism and therefore tree cutting or loss due to root damage is expected to be minimal. As a result, installation of the fiber optic line will affect individual plants but not overall plant

community composition. During installation, the potential exists for introduction and spread of nonnative invasive plants that can encroach on native habitats and outcompete native species. Temporarily disturbed soils along road corridors and in developed areas provide opportunities for nonnative plants to proliferate, where they can then be transported into more pristine plant communities. However, the introduction and spread of nonnative plant species would be mitigated through implementation of project design measures and BMPs, detailed in Appendix B of the EA, both during and after installation. As a result, the potential spread or introduction of nonnative plants will not have measurable impacts on broader vegetation communities in the project area.

Adverse impacts to visitor use and experience during installation activities will occur when the selected alternative is implemented, and is expected to last approximately three years. Installation will result in minor traffic delays that would typically last 5 to 10 minutes, with a maximum anticipated delay of 30 minutes. This could contribute to longer delays at a parkwide level, where there could be one or more hours of delays on a given day depending upon the route travelled and the number of active road projects. Visitors may also be affected by visual and acoustic impacts during construction. Impacts will be limited to the immediate area of construction and will cause similar impacts to those from normal vehicle traffic and other construction activities along the road corridor. Increased bandwidth capacity as a result of the selected alternative may contribute to more visitors using telecommunications devices within the park's developed areas where cellular phone coverage is already allowed. This could decrease satisfaction of those visitors who come to the park in part to disconnect from technology and who seek a park experience with minimal modern amenities. However, the selected alternative will not change or increase existing cellular coverage areas within the park, and it is unlikely that visitors outside of developed areas will be impacted by the selected alternative.

b. Degree to which the proposed action effects public health and safety

The selected alternative will provide reliable voice, data, and internet connections within the park's developed areas; increase the dependability of the park's landline, cellular phone, data circuits, and public safety radio system; and create system redundancy to reduce the occurrence of parkwide/systemwide network failures; enhancing visitor safety, critical park operations, and emergency response. The fiber optic cable will provide greater redundancy, increasing network reliability critical to visitor safety and emergency operations such as the use of 9-1-1 and incident communication and response. Improved data bandwidth in developed areas across the park will enable the NPS to disseminate information about traffic, road conditions, closures, and wildfires with greater speed and reliability, and could also be used to disseminate educational information in more ways. The new fiber optic cable will provide broadband data transport and high-speed internet access and data circuits between developed and administrative areas for use by public safety entities and visitors.

c. Effects that would violate federal, state, tribal, or local law protecting the environment

The selected alternative does not threaten or violate applicable federal, state, or local environmental laws or requirements imposed for the protection of the environment.

The selected alternative would not violate any provision or requirement identified under the enabling legislation of Yellowstone National Park, the National Park Service Organic Act, or any other subsequent legislation. Further detail can be found in the Non-impairment determination below.

The NPS coordinated with the USFWS Wyoming Field Office to ensure compliance with section 7 of the Endangered Species Act for Canada lynx (including critical habitat), grizzly bear, and whitebark pine. On March 26, 2021 the USFWS concurred with the NPS' determination of "May Affect, Not Likely to Adversely Affect" for federally listed species and designated critical habitat described in the potentially affected environment above.

The NPS notified the 27 traditionally associated tribes when the EA was released for public comment. The NPS initiated government to government consultation with these tribes on March 30, 2021 to solicit concerns and comments on the proposed project. The park received several inquiries for additional information, but did not receive any responses from tribes in opposition to the project.

In accordance with section 106 of the National Historic Preservation Act, the NPS initiated consultation with the Wyoming and Montana State Historic Preservation Office (SHPO) in March 2021. On April 8, 2021 the Montana SHPO concurred with the park’s finding of No Adverse Effect, and on April 28, 2021 the Wyoming SHPO also concurred with the park’s finding of No Adverse Effect. The Section 106 determination of “No Historic Properties Affected” was disclosed in the EA.

SIGNATURES

Recommended:

Cameron H. Sholly, Superintendent
Yellowstone National Park
National Park Service

Date

Approved:

Michael T. Reynolds, Regional Director
Interior Regions 6, 7, & 8
National Park Service

Date

NON-IMPAIRMENT DETERMINATION

Fiber Optic Cable Installation, Yellowstone National Park

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the National Park Service to manage units "to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. 100101). NPS Management Policies 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

"While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."

An action constitutes impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values" (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate the particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Fundamental resources and values for Yellowstone National Park are identified in the enabling legislation for the park, the Foundation for Planning and Management Statement, and the Long-Range Interpretive Plan. Based on a review of these documents, the fundamental resources and values for Yellowstone National Park come from the park's geologic wonders, the abundant and diverse wildlife, the 11,000-year-old continuum of human history, and providing for the benefit, enjoyment, education, and inspiration of this and future generations. Vegetation is the only resource carried forward for detailed analysis in the EA that is subject to the non-impairment standard established by the Organic Act and clarified further in Section 1.4.6 of NPS Management Policies. Vegetation is also a resource considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, key to the natural or cultural integrity of the park, and/or are identified as a goal in relevant NPS planning documents. The only other topic carried forward for detailed analysis in the Environmental Assessment (EA) was visitor use and experience, and consistent with NPS guidance, a non-impairment determination does not include discussion of this impact topic.

This non-impairment determination has been prepared for the selected alternative, as described in the Finding of No Significant Impact for the Fiber Optic Cable Installation, Yellowstone National Park EA.

Vegetation

Native plant communities in the park are generally described as montane forest communities consisting of lodgepole pine, Engelmann spruce, limber pine, subalpine fir, whitebark pine, and Douglas fir; and non-forest communities including sagebrush-steppe, alpine meadows, wetlands and riparian areas, and geothermal communities. The park's road network transects or is directly adjacent to these vegetation communities throughout the park. Road construction, repair, rehabilitation, redesign, and road shoulder maintenance have occurred repeatedly throughout the history of the park, resulting in the direct loss of native vegetation and fragmentation of vegetation communities, crushing of plants, and changes in plant species composition along road corridors and developed areas. Vegetation along road edges is further disturbed by vehicles pulling off the edge of the road for purposes such as wildlife and scenery viewing, photography, vehicle emergencies, and snow removal. Nonnative invasive plants exist in varying abundances in the park, and typically originate from areas that are highly disturbed by human use, particularly along road corridors and in developed areas, which can then spread into more pristine areas. Ongoing and upcoming projects involving ground disturbance throughout the park contribute to the introduction and/or proliferation of nonnative plant species, and can also contribute to the direct loss of native plants, resulting in the deterioration of native plant communities.

Implementation of the proposed action will result in a very limited loss of native vegetation within existing road corridors and developed areas.

During installation, disturbance will occur where the actual plow line, or cut, is placed, which will be primarily within roads and road shoulders. The use of a vibratory plow for most of the installation will minimize the total surface disturbance, but the outside track of the vehicle will be off pavement and would likely crush, flatten, or remove some plants. The plow will cause some uplifting of soil, which will cause root zone damage for plants on the edges of the disturbance, and some uprooting of plants. Such effects to individual plants will be mitigated in accordance with Yellowstone Vegetation Management Guidelines provided in Appendix B of the EA (page 37). There are few if any trees present in the road prism and therefore tree cutting or loss due to root damage is expected to be minimal. As a result, the loss of native vegetation at the project site will not affect the overall plant community composition in the park.

This project, in conjunction with other ongoing and future park road projects, will continue to provide conditions for the spread of nonnative plant species throughout the park along road corridors. Linear disturbance along roadways is difficult to rehabilitate due to repeated disturbance and movement of seeds along the path of work, and also results in a seed source of nonnative species that can then be moved by wildlife, cars, and social trailing, when anyone/thing crosses the path of invasive species into the adjacent native communities. However, the spread of nonnative plant species will be mitigated through implementation of project design measures and BMPs described in the mitigation measures (page 21), and in Appendix B (page 37) of the EA. Mitigations will include pre and post construction herbicide application of the project area, mechanical treatments on invasive species, and topsoil and revegetation BMPs to enhance plant regrowth. Therefore, the potential for the introduction and/or spread of nonnative plants is expected to have minimal impact on broader vegetation communities in the project area.

Conclusion

In conclusion, based on the preceding analysis and in consideration of the park's purpose and significance, it is the Superintendent's professional judgment that these resources will continue to be present for enjoyment by current and future generations. Therefore, implementation of the selected alternative will not constitute an impairment of vegetation at Yellowstone National Park.

ATTACHMENT A – ERRATA SHEET AND RESPONSE TO PUBLIC COMMENT

The Fiber Optic EA was released in digital format on the NPS PEPC webpage for a 30-day public review period from 22 March 2021 to 21 April 2021. A press release was distributed to approximately 200 media outlets, numerous local chambers of commerce, local visitor centers, public officials, social media, the park’s website, regulatory agencies, and affiliated Native American tribes. The park received a total of 170 individual pieces of correspondence and more than 406 comments. The NPS reviewed and considered comments and suggestions, and incorporated several minor modifications into the EA, as described in this Errata. None of the commentators provided additional, new, or substantive information that changed the determination of effects in the EA.

EA TEXT CHANGE ERRATA

In reference to changes to the EA, the topic heading and page number are shown in bold text.

Section 2.2, Alternative 2, Page 10, Figure 6

Replace the “Old Faithful Zoom View” map with the inset map below: The original proposal included a fiber segment spur running from the west Old Faithful parking lot to the Lower General Store and Yellowstone Park Service Station (identified by the red line below). This segment would have traversed the Myriad thermal group located to the south of the Old Faithful Inn. In order to avoid any potential impacts to the thermal area, the park has instructed the applicant to remove this segment from the project. Although this revision may temporarily impact point of sales transactions for concessionaires located in the Lower Store and Service Station, other, less intrusive telecommunications equipment could be installed to provide better connectivity to those operations. However, any equipment beyond what is mentioned in the EA would require additional compliance in accordance with NEPA and other applicable laws, as necessary.

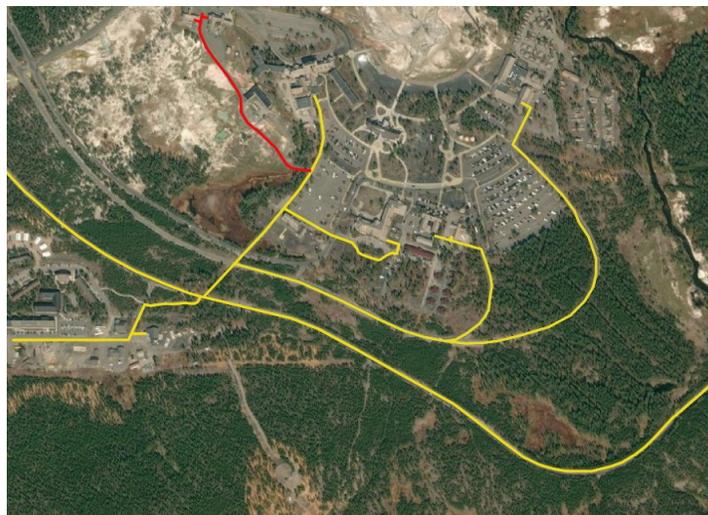
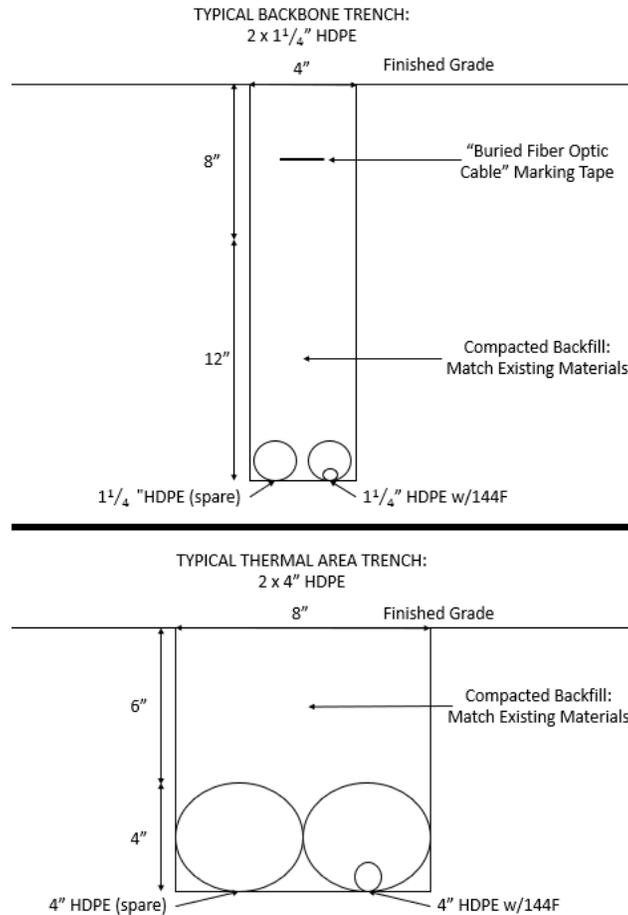


Figure 6, Page 10: Old Faithful Zoom View

Section 2.2, Alternative 2, Page 15

Clarification of Figure 8 drawings: Figure 8 describes the approximate depths of fiber optic cable throughout the project area depending on placement location. Each of the drawings include arrows on the left-hand side that indicate depth for each component of the fiber optic cable. These arrows appear to stop at the top of the cable, suggesting that the trenching will be deeper than what the EA has described. These drawings have been replaced to show these arrows extending to the bottom of the cable, to accurately describe the total depth of excavation disturbance, as depicted in the image below. Total excavation depth will range from 10” in thermal areas, to up to 20” in non-thermal areas.



Section 2.3, Mitigation Measures/Project Design Measures/BMPs, Page 21

Under Geothermal Resources, revise 2nd mitigation measure to the following: The applicant is required to have a park-approved geologist on-site during construction in areas identified by the park as thermal areas, such as the Upper Geyser Basin, Lower Geyser Basin, Midway Geyser Basin, Norris Geyser Basin, the road segment near Beryl Spring, and the road near Mud Volcano. The geologist will take soil temperatures and monitor installation in these areas to ensure the project route avoids thermal resources.

Appendix C, Impact Topics Dismissed, Page 44

Delete reference to: Lower General Store and Lower Gas Station.

EA SUBSTANTIVE COMMENTS AND NPS RESPONSES

This section summarizes substantive comments that were received during public review of the EA. The NPS must consider all comments that are timely received, and the standard NPS practice is to respond to substantive comments that are submitted during the public review period of the EA. Substantive comments raise, debate, or question a point of fact or analysis. Comments that merely support or oppose a proposal or that merely agree or disagree with NPS policy are not considered substantive and do not require a formal response. Substantive comments for this EA were condensed into concern statements, and a response to each statement is provided below.

NEPA LAW, POLICY, and REGULATIONS

Concern Statement: *The EA lacks information such as cumulative impacts analysis and detailed maps about the route of installation and where thermal areas are located.*

NPS Response: The NPS prepared the EA and FONSI pursuant to the Council on Environmental Quality (CEQ) regulations that went into effect on September 14, 2020. While the regulations require a discussion of environmental trends and planned actions in a project area that are reasonably foreseeable, they do not require a separate or stand-alone cumulative impact analysis. Discussion and analysis of environmental trends, other relevant projects, and planned actions in the project area can be found in Chapter 3 of the EA, Affected Environment and Environmental Consequences. For instance, in the Affected Environment Section for Vegetation, the NPS discusses previous road projects that have altered vegetation along roadways (page 24), reasonably foreseeable future projects that will impact vegetation, such as Replacement of Lewis River Bridge and Yellowstone River Bridge (page 25), and other relevant environmental trends such as warming temperatures (page 25) that will influence vegetation in the park and that are relevant to the impacts of this project.

The NPS has reviewed detailed maps of the route for all ~187 miles of installation, showing for example, exactly which side of the road the cable will be installed on, how wetlands and archeologic resources will be avoided, where boring will be necessary, and how the cable will cross major four-way road intersections. As part of the environmental analysis, the NPS also provided digital maps to the applicant showing the location and extent of geothermal areas and the presence of other resources such as wetlands to be avoided. The applicant completed additional surveys to ensure the entire area of potential impact had been surveyed for wetlands and cultural resources. The NPS included map sheets in the EA (pages 6 – 10) at a scale that would 1) provide sufficient detail to allow the public to evaluate the project and provide meaningful comment; and 2) support the NPS' environmental analysis and conclusions without adding unnecessary length and complexity to the document. The NPS also provided “zoom-view maps” of specific areas of interest, such as the example on page 7 of the EA.

Concern Statement: *Commenter suggests that an EA is inadequate, and that the park should prepare an environmental impact statement (EIS).*

NPS Response: The NPS initiated an EA to evaluate the potential environmental effects of this project and to determine whether there is any potential for significant impacts on the human environment, which would trigger preparation of an EIS. As shown in Chapter 3 of the EA (Affected Environment and Environmental Consequences) and Appendix C (Impact Topics Considered but Dismissed, page 40), the NPS considered the importance of the resources or values being impacted, whether any impacted resources were rare or unique, the geographic location and timing of the project, and other relevant factors important for understanding context, intensity and duration of

impacts. This FONSI provides detailed information to support the conclusion that the project will not result in significant adverse impacts on the environment, and therefore, an EIS is not necessary.

Concern Statement: *Commenter stated that the EA failed to include relevant laws and failed to address key terms from the NPS Organic Act, and the requirement to leave the park unimpaired.*

NPS Response: Neither the CEQ nor the Department of Interior (DOI) NEPA regulations require federal agencies to provide a complete list of relevant laws, policies, or regulations in an EA. The NPS Organic Act, NPS Management Policies 2006, and other law and policy, prohibit the NPS from taking any action that would result in impairment of park resources or values. The NPS has discretion to allow for adverse impacts, but managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values (NPS Management Policies 2006, 1.4.3, 1.4.4). The conclusions regarding impacts to park resources and values that are reached during the NEPA process are used by NPS managers when making decisions about NPS-administered resources, including when assessing whether or not an action would result in impairment to park resources. Separately, a written non-impairment determination for the selected action is required before signing a NEPA decision document such as this FONSI, and that determination can be found on page 8, above.

Concern Statement: *Commenter is concerned that the EA was pre-decisional and that the decision to install the cable was made prior to issuance of the FONSI.*

NPS Response: The applicant submitted a ROW request to the NPS in 2019 requesting to install fiber optic cable in the park. In 2020, the NPS initiated an EA to evaluate the effects of the project on the human environment. The NPS consulted with associated tribes, the USFWS, and the Wyoming and Montana State Historic Preservation Offices during the EA process. The NPS also provided two opportunities for the public to submit comments regarding the proposal and considered all comments received prior to making a final decision. The NPS will not authorize the ROW for the applicant, or allow the applicant to begin installation, or take any action that implied the project would be approved—such as allowing the applicant to stage equipment for the project in the park—prior to completing the EA and issuing a decision.

Concern Statement: *Commenter suggests the park should consider all potential future cellular equipment as part of this assessment, or provide a supplemental assessment to address those issues.*

NPS Response: The applicant did not include installation of other cellular equipment in their ROW request. Park staff evaluated whether there were “connected actions” that the applicant may have overlooked or not included. Actions are connected if they automatically trigger other actions, cannot or will not proceed unless other actions have been taken previously or simultaneously, or are interdependent parts of a larger action and depend on the larger action for justification (40 CFR 1501.9(e)(1))—in this case, the park evaluated whether the fiber optic project could be installed and operated as described by the applicant without other telecommunications projects also being authorized, such as installation of more cell phone towers in the park or expansion of cellular coverage zones. The NPS did not find any connected actions that warranted inclusion in this EA.

Regarding evaluation of other future telecommunications technologies, private telecommunications companies submit applications to the NPS to install telecommunications equipment in the park. These applications are not generated by the NPS, and the NPS cannot predict when they might be submitted or the kind of technology that might be proposed. Therefore, the potential for installation of future cellular equipment is speculative; the associated effects are not reasonably foreseeable; and analyzing them in this Environmental Assessment would be inconsistent with CEQ NEPA regulations.

Concern Statement: *Commenter is concerned that the park did not provide a list of contributors in the text of the EA.*

NPS Response: Neither CEQ nor DOI NEPA regulations require Environmental Assessments include a list of contributors. The NPS is required, however, to provide a list of agencies and persons consulted, which is on page 33 of the EA.

RESOURCE IMPACTS

Concern Statement: *Commenter is concerned about impacts to thermal resources along the project route, and that the proposed mitigations would not be effective in preventing impacts to thermal resources.*

NPS Response: The NPS is dedicated to conserving and protecting all natural and cultural resources, and shares the concern about potential impacts necessary infrastructure projects like this one have on those resources. For this reason, the park worked closely with the applicant to identify routes and locations where fiber optic installation would not impact thermal and other park resources. Installation of fiber optic cable in the 187-mile project area will occur at shallow depth, in areas of previous ground disturbance where infrastructure already exists. Park roads have generally been constructed on approximately 20-30 inches of engineered fill material (see Figure 7 on page 8 of the EA). This fill material was placed by road construction crews to elevate the road surface (pavement) from the surrounding landscape, which supports drainage and safe travel on the roadway. Approximately 182 miles, or 97% of the project is considered outside of thermal areas, and will be installed within this existing fill material at a maximum depth of 20" below the surface.

Approximately 4.5 miles, or 3% of project route is adjacent to thermal areas. These areas include the Upper Geyser Basin, the Lower Geyser Basin, Midway Geyser Basin, Norris Geyser Basin, the road segment near Beryl Spring, and the road near Mud Volcano. Fiber optic installation in these areas will be at a maximum depth of 10" in the engineered road fill material, in order to minimize the risk for impacts to thermal features. In addition, several road segments contain a thermal board barrier, placed approximately 18" below the road surface to help insulate the road from elevated soil temperatures, and the cable will be installed above this thermal barrier in those segments of road. To further ensure thermal resources are not impacted during installation, the park will require a park-approved geologist to be onsite during excavations in certain areas (as described in the text change errata above).

Of the approximately 575 maintenance holes and 35 pull boxes that will be installed as a part of the selected alternative, none will be placed within areas of elevated soil temperatures. In segments where the Grand Loop Road is bridged, the cable will be attached to the bridge itself to avoid impacts to resources.

Concern Statement: *Commenter is concerned about development in the Upper Geyser Basin, and suggests the park exercise caution with any development or infrastructure in the Old Faithful area.*

NPS Response: The Old Faithful Developed Area is situated directly adjacent to the Upper Geyser Basin, one of the most geothermally active zones in the park, and one of the most popular areas for visitors. Development around Old Faithful dates back to the late 19th Century and includes historic structures such as the Old Faithful Inn, which is a National Historic Landmark, the Laurel Dormitory, the Old Faithful Lodge, and the upper and lower Hamilton's Stores, as well as important non-historic infrastructure that supports visitor use of the area.

In the Upper Geyser Basin, the park must balance maintenance of historic properties protected under the National Historic Preservation Act, with opportunities for visitor enjoyment and protection of renowned thermal features. In 2013, NPS leadership convened a panel of experts, referred to as the Old Faithful Science Review Panel, to provide a summary of current knowledge of the hydrothermal system in the Upper Geyser Basin and its potential vulnerability to current and future human activities. In the resultant report, Titled *Hydrogeology of the Old Faithful Area, Yellowstone National Park, and its Relevance to Natural Resources and Infrastructure*, the panel proposed a balanced approach to protecting hydrothermal systems while simultaneously providing infrastructure for visitors and NPS employees. The report recommended phasing out infrastructure in the most geothermally active zones (USGS, 2014). Although not adopted as official park or NPS policy, Yellowstone National Park uses this study when evaluating infrastructure projects in the Upper Geyser Basin.

The cable has been routed to entirely avoid surface thermal features such as hot springs and geysers, and would be installed in the Old Faithful Developed Area, where other underground utilities, such as sewer and water lines, are already present. Installation of a relatively small diameter cable at shallow depth is a very low impact undertaking compared to construction of a new building, which typically requires large scale excavation for the foundation. In addition, there is no evidence of thermal activity at the 10-inch installation depth on the selected route. Because the cable would be installed at shallow depth where there is no evidence of thermal activity, there is little if any potential that the cable could interfere with geothermal system functions such as ground water recharge and heat transfer, or the conduits between subsurface heat sources and surface features. Simultaneously, geothermal systems are dynamic and interconnected, and therefore, all risk cannot be eliminated. The park has hence prescribed that a qualified geologist be onsite for the construction phase.

In addition, the cable will be installed within the engineered road base of the Old Faithful Entrance Road and in disturbed areas adjacent to parking lots. Only 50 yards of the cable would cross into the most geothermally active area near the Old Faithful Inn. However, this 50-yard section parallels a road and there is no evidence of thermal activity just below the surface where the cable will be installed.

The original proposal included a segment that would have installed fiber optic cable between the Old Faithful Inn and the Lower General Store along the service road that traverses the Myriad thermal group. Upon further evaluation, that proposed segment has been removed from the project.

Concern Statement: *Commenter is concerned about telecommunications equipment located in backcountry / recommended wilderness areas and questions why it was originally installed.*

NPS Response: The NPS has relied on commercially available microwave telecommunications technology to carry out day to day park operations since at least the late 1970s. Because of park topography and line-of-sight requirements, telecommunications equipment was placed on strategic high points in order to direct or “shoot” signals into developed areas most effectively. Some of this equipment was erected in what is now recommended wilderness. Implementation of this proposal would reduce the parks reliance on the existing microwave system and would allow the park to remove this equipment from recommended wilderness areas. Such removal is outside the scope of this EA, and would be addressed with additional compliance, as needed.

VISITOR EXPERIENCE

Concern Statement: *Commenter is concerned about increased traffic congestion and disruption, and the negative effect it will have on visitor experience.*

NPS Response: The NPS expects it will take three years to complete the install of the fiber optic cable. The project will result in minor traffic delays during construction, including rolling one-lane traffic restrictions. Typical delay times are expected to last 5 to 10 minutes on average, with a maximum anticipated delay time of 30 minutes in areas where the road pavement will need to be cut for installation. However, most of the installation will occur in areas where there is sufficient space on the road shoulder to have the vibrating plows operating outside of the travel lane for vehicles. In these areas, minimal traffic delays are expected. More information on traffic delays as a result of this project can be found on page 30 of the EA.

Concern Statement: *Commenter is concerned with the prospect of visitors talking on their cell phones in the park and affecting other visitors' experiences, and about service spilling over into backcountry areas.*

NPS Response: Natural soundscapes are a valuable part of the visitor experience in Yellowstone, and were analyzed in the Affected Environment section of the EA (page 28). Whether human voices and sounds are likely to be heard varies based on geographic location and other factors. Cellular phone service is already available in major developed areas of the park including Canyon, Lake, Fishing Bridge, Grant, Old Faithful, Tower-Roosevelt, and Mammoth. In these areas, visitors should expect to encounter more people than in undeveloped areas of the park, and it is likely such encounters will involve overhearing conversations between other visitors.

This proposal would not affect “spillover” of cellular phone signal, wherein cellular phone service is sometimes available outside of developed areas in Yellowstone. Limited spillover would continue to exist near developed areas. This is due to existing technologies; an existing cellular tower and antennae on a relative highpoint casts a signal over a large area for potential users. New technologies such as distributed antennae systems make more “targeted” coverage areas possible but are not within the scope of this decision and environmental analysis.

WILDLIFE

Concern Statement: *Commenter is concerned about the impacts the fiber optic cable would have on wildlife during construction, such as disturbance of wildlife or chance of habituation.*

NPS Response: The NPS anticipates that impacts to wildlife during construction will be minimal. Construction noise would only be a marginal increase above ambient traffic noise within road corridors, and the presence of installation crews in road corridors will also only be a marginal increase from existing levels of vehicles and people on park roads. Potential impacts to wildlife were dismissed from further analysis in the EA, which can be found on page 46. In addition, the NPS coordinated with the USFWS Wyoming Field Office to ensure compliance with section 7 of the Endangered Species Act for Canada lynx (including critical habitat), grizzly bear, and whitebark pine. On March 26, 2021 the USFWS concurred with the NPS' determination of “May Affect, Not Likely to Adversely Affect” for federally listed species and designated critical habitat described in the potentially affected environment above. Mitigations for reducing impacts to wildlife can be found on page 22 of the EA.

OTHER

Concern Statement: *Commenter stated the added bandwidth from the fiber optic cable should only be made available to NPS employees, and not to visitors.*

NPS Response: The park's 2008 Wireless Plan allows for cellular phone coverage and WIFI in major developed areas of the park. Opportunities for visitors to access the internet, make phone calls and send

text messages in major developed areas is consistent with the Wireless Plan. Visitor access to real-time information on park conditions and hazards such as wildfires would also enhance public safety.

Concern Statement: *Commenter is concerned that the installation of fiber optic would bring 5G coverage to Yellowstone.*

NPS Response: There is no prohibition of 5G networks in Yellowstone National Park or any other national park. However, 5G networks require new transmission equipment, including many small cells and distributed antenna systems – that are deployed on utility poles and other infrastructure. This proposal does not include any such infrastructure and the existing macro sites will not support 5G distribution.

Concern Statement: *Commenter is concerned over the longevity of the cable once installed and how often the line will need to be maintained/replaced, and is also concerned about the ability of the fiber optic infrastructure to withstand impacts from nature or natural disaster.*

NPS Response: The fiber optic cable will be placed inside 1.25 – 4 inch-diameter high-density polyethylene (HDPE) conduit, buried at a depth of between 10-20 inches. HDPE is very durable, and can have a lifespan well over 50 years, whereas the fiber optic cable is expected to have a lifespan of between 20 and 40 years. There is some risk that natural events such as fire, flood or earthquakes could damage the cable. The design of the project allows for new cable to be slipped in as needed at existing conduit access points. Minimal ground disturbance is necessary to expose these access points.

REFERENCES:

National Park Service (NPS), 2006. Management Policies 2006. Accessed at:
https://www.nps.gov/policy/MP_2006.pdf

NPS. 2015. NEPA Handbook. Accessed at:
https://www.nps.gov/subjects/nepa/upload/NPS_NEPAHandbook_Final_508.pdf

NPS. 2008. Wireless Communications Services Plan. National Park Service, Yellowstone National Park, Wyoming, Montana, Idaho. September 2008.

National Park System Advisory Board Science Committee, 2012. Revisiting Leopold— Resource stewardship in the National parks: National Park Foundation. Accessed at:
http://www.nps.gov/calltoaction/PDF/LeopoldReport_2012.pdf

U.S. Geological Survey (USGS) , 2014. Old Faithful Science Review Panel, 2014, Hydrogeology of the Old Faithful Area, Yellowstone National Park, Wyoming, and its Relevance to Natural Resources and Infrastructure: U.S. Geological Survey Open-File Report 2014-1058, 28 p.,
<http://dx.doi.org/10.3133/ofr20141058>