

**National Telecommunications and Information Administration
Broadband Technology Opportunities Program
Finding of No Significant Impact
California Broadband Cooperative, Inc.
Digital 395 Middle Mile Project**

Summary

The California Broadband Cooperative, Inc. (CBC) applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install approximately 593 miles of fiber optic cable to create a new middle mile network. The new network will include both aerial and buried fiber, with the majority of the route installed underground in existing infrastructure rights-of-way (ROW). A small portion of the fiber will be placed in conduit attached to bridges, as required, to cross water bodies and other sensitive features. CBC will also install 626 underground vaults and 17 prefabricated buildings (nodes) along the route. The new fiber network will provide broadband service to various CAIs, such as county offices, community colleges, California State Universities, libraries, hospitals, and public safety institutions. The network will connect four counties within California and three counties in Nevada, and the project is referred to as the Digital 395 Middle Mile Project (Project).

The National Telecommunications and Information Administration (NTIA) awarded this grant through BTOP, as part of the American Recovery and Reinvestment Act (ARRA). The funding must be obligated and the Project completed within three years. This timeline will comply with the laws and regulations governing the use of this ARRA grant funding.

BTOP supports the deployment of broadband infrastructure in unserved and underserved areas of the United States and its Territories. As a condition of receiving BTOP grant funding, recipients must comply with all relevant Federal legislation, including the National Environmental Policy Act of 1969 (NEPA). Specifically, NEPA limits the types of actions that the grantee can initiate prior to completing required environmental reviews. Some actions may be categorically excluded from further NEPA analyses based on the specific types and scope of work to be conducted. For projects that are not categorically excluded from further environmental review, the grant recipient must prepare an Environmental Assessment (EA) that meets the requirements of NEPA. After a sufficiency review, NTIA may adopt the EA, use it as the basis for finding that the Project will not have a significant impact on the environment, and issue a finding of no significant impact (FONSI). Following such a finding, the BTOP grant recipient may then begin construction or other activities identified in the EA, in accordance with any special protocols or identified environmental protection measures.

CBC completed an EA for this Project in May 2012. NTIA reviewed the EA, determined it is sufficient, and adopted it as part of the development of this FONSI.

The Project includes:

- Installing a hybrid broadband network of aerial and buried fiber in existing utility and infrastructure ROWs through San Bernardino, Kern, Inyo, and Mono Counties in California and Carson City, Douglas, and Washoe Counties in Nevada;

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- Installing approximately 3 miles of fiber aerially;
- Installing approximately 590 miles of fiber in underground conduit via plowing, horizontal directional drilling (HDD), and trenching; approximately 495 miles of new backbone fiber, 61 miles of new distribution lines, and 34 miles of this buried fiber will be installed in existing conduit;
- Installing approximately 626 underground vaults along the route at intervals of approximately 4,500 feet;
- Constructing 17 nodes or prefabricated buildings to support wireless systems.

Based on a review of the analysis in the EA, NTIA has determined that the Project, implemented in accordance with the preferred alternative and programmatic agreement (PA), and incorporating best management practices (BMPs) and protective measures identified in the EA, will not result in any significant environmental impacts. Therefore, the preparation of an EIS is not required. The basis for this determination is described in this FONSI.

Additional information and copies of the Executive Summary of the EA and FONSI are available to all interested persons and the public through the BTOP website (www2.ntia.doc.gov) and the following contact:

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Purpose and Need

The purpose of this Project is to provide broadband internet access in rural areas of northeastern California and northwestern Nevada. These areas currently lack adequate access to the bandwidth required to support e-healthcare, advanced learning opportunities, economic development opportunities, and communication needs. CBC's project will provide more affordable and accessible broadband service to CAIs within the Project area, including K-12 schools, colleges, and libraries within 36 communities; 7 Native American tribal reservations; and 2 military bases.

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Project Description

CBC will install 593 miles of middle mile fiber in San Bernardino, Kern, Inyo, and Mono Counties in California, and Carson City, Douglas, and Washoe Counties in Nevada. The Project traverses many public and private lands, including several Bureau of Land Management (BLM) jurisdictions, U.S. Department of Agriculture - Forest Service (USDA-FS) jurisdictions, and Native American reservations and lands. The Project will include two BLM Resource Management Plan (RMP) areas in California: the West Mojave Plan and the Bishop RMP. In Nevada, the Project is located within the BLM Carson City Consolidated RMP area. The Project backbone will also cross a portion of the Humboldt National Forest, Toiyabe National Forest, Inyo National Forest, and the Mono Basin National Forest Scenic Area. In addition, CBC will install fiber on two Department of Defense (DoD) installations, Naval Air Weapons Station China Lake (NAWSCL) and the United States Marine Corps Mountain Warfare Training Center. CBC will continue working with BLM, USDA-FS, and DoD on obtaining the necessary ROW authorizations. CBC will obtain any required permits and complete any coordination associated with these ROWs, and meet any federal requirements of the land management agencies in constructing and maintaining the Project.

CBC will install approximately 590 miles underground and 3 miles of cable aerially on existing pole infrastructure. Specifically, CBC will install approximately 495 miles of new fiber optic cable (FOC) backbone, approximately 61 miles of new distribution lines, and approximately 34 miles of fiber in existing utility conduit. The FOC backbone will consist of one 1.50-inch duct, where one cable will initially be installed, and two 1.25-inch ducts for future use. The distribution line will consist of one 1.25-inch duct, where between 2 and 7 microducts will be installed.

CBC will use either cable plowing; horizontal directional drilling (HDD); or trenching, with either a trencher or track-hoe, to install all buried fiber in new conduit. CBC will use mostly trenching and plowing construction methods for underground fiber installation; HDD will be used where environmentally sensitive areas must be avoided. CBC will implement an HDD Contingency and Resource Protection Plan to account for potential variation in actual construction methods, based on ground conditions or other restrictions during construction.

Fiber will be installed underground within the California Department of Transportation (Caltrans) ROW/easements, county-maintained dirt roads, Los Angeles Department of Water and Power (LADWP) ROW/easements, Nevada Department of Transportation (NDOT) ROW/easements, and the United States Marine Corps Mountain Warfare Training Center. Installation of both underground and aerial optical fiber cables also will occur on Naval Air Weapons Station China Lake. The cable will be placed as far as possible from the edge of the pavement along State highways to minimize disruption and damage to the cable in the event of future highway maintenance/construction. The location of the fiber within the California State Highway ROW will be determined by Caltrans policy, which requires broadband facilities to be located outside the Clear Recovery Zone (CRZ) and placed as far from the travel-way as

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feasible. Physical conditions at specific locations may make it infeasible to place the cable as normally required, so an alternate location may be proposed by submitting an exception request to Caltrans.

Plowing is a trenchless method for installing underground conduit and fiber. The plow uses a vibrating blade to cut a narrow slit in the ground to insert conduit. A typical plowing blade, which is not more than 2 to 3 inches in width, acts like a knife and creates minimal, temporary disruption to the soil. Soil disturbance from the plow blade is anticipated to occur within a 4- to 6-inch width, but may be more, and may need to be routed in a variable fashion along the road corridors. As the ground is cut, the conduit is installed at the desired depth by feeding it down a chute located on the back of the blade. As the plow passes the insertion point, the ground is then packed, restoring it to its original condition. Plowing will occur within existing dirt roads, as well as adjacent to and within Caltrans and NDOT ROWs/easements, but not within the paved portions of the roads. After the conduit is installed, the furrow is compacted back in place by the back end of the plow or a following compaction vehicle. This method is typically used in open areas with suitable terrain. The disturbed soil surface will be returned to the pre-construction conditions.

CBC will use trenching machines, excavators, or backhoes to install conduit and fiber in locations inaccessible to plowing or characterized by excessive rockiness or fracture rock. The trenches are opened and then backfilled after the conduit is installed in the trench. Soil disturbance from trenching will be within a 6-foot wide-area and up to a depth of 42 inches, based on the terrain type and accounting for side-cast. As soon as the conduit is installed, the trench will be refilled and compacted. When necessary, the refilled trench will be landscaped with a local, native seed source. Erosion and dust control measures also will be implemented. CBC may require short sections of a trench to remain open temporarily, such as splice box locations, which will remain open until the next workday. Trenches will not be left open overnight unless appropriately secured for safety using barricades and/or trench covers. In sensitive habitat areas, all trenches will be inspected prior to filling or covering to identify and protect the desert tortoise and other sensitive wildlife.

CBC will use HDD to install conduit and fiber when necessary to avoid sensitive areas. HDD is a steerable, trenchless method of installing underground conduits and cables using a surface drilling rig to bore beneath specific environmental features, making minimal impact only at the entrance and exit pits of the bore. An HDD bore may extend from approximately 50 feet to over 2,500 feet, depending on the need and the substrate. HDD will be used to avoid open trenches and where plowing is not practical. HDD minimizes environmental disruption, and will be used for consolidated substrate and/or solid rock conditions, in locations where roadways or rivers must be crossed, and/or where environmentally sensitive areas must be avoided. At both ends of the bore, boring pits will be created, which are open pit areas approximately 3 feet wide by 10 feet long, and which allow for the entrance and exit of the bore. The bore itself will extend beyond the length of the element being avoided (e.g., stream, railroad). HDD uses a

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bentonite/water mixture that is pumped down the drill stem to cool the drill head, lubricate the drill pipe, maintain the borehole opening, and remove bore cuttings.

To install FOC into existing conduit, CBC will use conduit proving, cable pulling, and cable blowing. Conduit proving is to install fiber in existing conduit and to check for blockages and snags that may occur. If there is a blockage, the conduit is exposed, the blockage is cut out, and new conduit is installed. Cable pulling is conducted by accessing the conduit system through existing splice points or access vaults. The cable is then pulled through the conduit system in a “figure-eight” or “bi-directional” method, where a mid-point vault allows the cable to be pulled in both directions. Cable blowing is initiated by accessing the conduit system through existing buried vaults or manholes. A 3x2 foot “blowing machine” channels the cable and compressed air from the compressor along a tube and blows the cable into the conduit. Lubricants are manually placed into the conduit during the threading of the pull ropes and applied to the cable. The lubricants are composed of non-toxic materials and CBC will use proper spill containment materials to isolate potential spills, in accordance with a project-specific Spill Prevention and Pollution Plan (SPPP).

The Project route will cross two major river systems in Nevada, the Truckee River and the Carson River. CBC has also identified eight bridge locations in California along the Project route. Although HDD is proposed for river crossings, bridge attachments may be used if: (1) authorizing agencies prohibit boring alternatives, and (2) boring is not feasible and conduit within the bridge structure is not available. Also, the FOC backbone will cross the Long Valley Dam, which will be surface-mounted or located on the dam face along a maintenance road, subject to approval by the LADWP. Also, at four railroad crossings along the proposed route, fiber installation will be constructed below grade by HDD or jack and bore methods at least 10 feet below grade.

While the majority of the new fiber will be installed underground, approximately 3 miles of fiber will be installed aerially on existing utility poles. The existing poles at this location have adequate clearance for additional attachments. CBC will install the new fiber by having linemen climb the poles and pull the cable through rollers from the uphill end of the route. Once the cable is pulled through the rollers, the linemen will detach the rollers and permanently affix the cable to the poles.

CBC will install 17 new prefabricated buildings (or nodes), measuring approximately 35x45x11 feet, at the end of distribution lines as points of interconnection. The nodes will have a concrete or steel exterior, be equipped with an air conditioning system, and secured to a concrete slab. The nodes will be powered by local existing electrical service, backed up by battery and generator, and may also be supported by solar power. CBC plans to place these buildings within existing industrial parks and commercial areas. Some sites may require grading prior to installation to create a level surface. At the Benton, June Lake, and Crowley Lake locations, a 4x4x7 foot building (or “cabinet”) may be placed instead of the above-mentioned node building if it is determined that a cabinet can provide adequate services (a cabinet generally provides

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fewer services, is not a central node, and is not a regeneration station). The possible use of a smaller cabinet in these locations will be determined during final engineering.

CBC also will install additional underground components, including buried access or splice vaults. These vaults will be placed along the new construction segments (approximately every 7,500 feet) to enable access to the underground conduits. Approximately 626 vaults are proposed for installation. The buried access vaults measure 48x48 inches. With the exception of the flush metal manhole lids, the remaining body of the round, prefabricated structure will not be visible from the surface.

CBC will use a continuous ribbon of Buried Cable Warning tape placed above, and parallel to, the new conduit within the ground. The tape will be imprinted with a warning message for future ground excavations that fiber-optic cable is buried below. Also, CBC will place above-ground warning marker posts along the entire cable route at intervals of approximately 700 feet. These metal, poly-vinyl, or fiberglass posts are installed to provide visible evidence of the presence of buried cable, identify the owner of the cable, and provide a phone number for emergency notifications. The posts will be installed within the Project ROW, directly above, or offset, as required by the conduit/cable.

CBC will establish several temporary staging/laydown areas (approximately 100x100 feet) outside of the Project footprint, in commercial property areas. These areas will be used for vehicle parking, to store material and large equipment for intermittent periods of time, and to conduct fueling and maintenance work, as necessary.

Alternatives

The EA includes an analysis of the alternatives for implementing the Project to meet the purpose and need. NTIA also requires that an EA include a discussion of the no action alternative. The following summarizes the alternatives analyzed in the EA.

Hybrid (Aerial and Underground) Fiber Network Build (Preferred Alternative). This alternative will install approximately 593 miles of fiber cable along existing Federal, state, county, and city road ROWs and easements. Approximately 590 miles of new fiber will be installed in underground conduit. The remaining 3 miles will be installed aerially on existing overhead electrical poles.

No Action Alternative. No action was also considered. This alternative represents conditions as they currently exist in the Project area. Under the no action alternative, the new network would not be constructed and the rural areas of San Bernardino, Kern, Inyo, and Mono Counties in CA, and Carson City, Douglas, and Washoe Counties in NV would continue to be unserved or underserved. Without the new fiber, these areas would lack adequate broadband infrastructure to support communications, public safety, emergency response, business, education, telemedicine,

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and governmental applications. The EA examined this alternative as a baseline for evaluating impacts relative to other alternatives being considered.

Alternatives Considered But Not Carried Forward. CBC considered installing the new infrastructure as an all-aerial network. Although this alternative does have the advantages of lower costs and less ground disturbance, it was not considered a viable alternative due to the fact that significant internet routes in the Project area are deemed national security assets (e.g. NAWSCCL); aerial lines are subject to wildfires, vandalism, or accidental shooting by hunters; and severe weather in the Eastern Sierra region could affect this infrastructure. CBC also considered installing the new infrastructure as all wireless technology, but this technology does not have the capacity to provide consistent middle mile services to the area. Wireless technologies are currently being used by several of the communities to facilitate last mile internet access, but would not be applicable for the purpose and need for this middle mile Project.

Findings and Conclusions

The EA analyzed existing conditions and environmental consequences of the preferred alternative and the no action alternative in 11 major resource areas, including Noise, Air Quality, Geology and Soils, Water Resources, Biological Resources, Historic and Cultural Resources, Aesthetic and Visual Resources, Land Use, Infrastructure, Socioeconomic Resources, and Human Health and Safety. Cumulative impacts were also evaluated.

Noise

This Project will have short-term impacts on noise due to the use of heavy machinery, such as plows or excavators. However, this noise will be restricted to the construction phase of the Project and there are few sensitive noise receptors along the proposed route. In urban areas, where installation and construction equipment may be more disruptive, CBC will restrict construction activities to daylight hours (7am to 7pm) and will notify area residents of the planned construction in advance. Moreover, because infrastructure installation will continually move along the planned fiber route, it is unlikely that construction noise will impact any area for more than two days. Equipment installed at the nodes would result in minor increases of noise in the immediate vicinity, due primarily to emergency back-up generator use. However, noise associated with construction equipment and the occasional backup generator use will be localized and limited to brief periods along any particular section of the Project route. Use of the new infrastructure for data transmission will not alter ambient noise in the long-term. The Project will be in conformance with applicable General Plan policies and Noise Ordinances. Based on the assessments, no significant impacts on noise are expected.

Air Quality

Operation of heavy equipment and vehicles for plowing, HDD, and trenching construction will result in emissions of air pollutants and fugitive dust. However, these air pollutant emissions will be limited to the construction period, and are considered negligible in comparison to emissions currently experienced along roadway corridors adjacent to the Project ROWs. The

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Project will also result in short-term, minor increases in the use of fossil fuel and associated greenhouse (GHG) emissions during construction. CBC estimates that the Project will result in the release of less than 7,000 metric tons of carbon dioxide equivalent emissions. Thus, GHG emissions are expected to be well under the Council on Environmental Quality's presumptive effects threshold of 25,000 metric tons of carbon dioxide equivalent emissions. Long-term operation and maintenance of the network will result in minimal air emissions. Based on these assessments, no significant impacts on air quality are expected.

Geology and Soils

Conduit and fiber will be installed by cable plowing, trenching, and HDD, depending on the nature of the terrain, geology, and environmental conditions. Ground disturbance will be temporary and confined to a narrow trench via the proposed underground installation methods. Soil disturbance from the plowing blade is expected to occur within a 4-to 6-inch width, but could be up to 12 inches wide. After the conduits are installed, the furrow will be compacted back in place by the back end of the plow and the disturbed soil surface will be restored to its original condition. The area of soil disturbance for trenching will generally be 1 foot wide, but potentially as wide as 4 feet, depending on terrain type. Any soil disturbance by trenching will be restored to its original condition. HDD will result in minimal soil disturbance and will be used for solid rock conditions and for locations where roadways, rivers, and environmentally sensitive areas must be crossed. In addition, grading may be required to prepare pads for the 17 new prefabricated buildings that will be installed along the route. Overall, ground disturbance is expected to be minor and the Project is not expected to result in substantial erosion or loss of topsoil. The potential for erosion during construction would be minimized by adherence to the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Based on these assessments, no significant impact on geology and soils is expected to occur as a result of this Project.

Water Resources

The Proposed Project route crosses or runs adjacent to numerous streams. To avoid impacts to streams, the conduit will be installed using HDD at stream crossings or by bridge attachments. For ephemeral drainages, the conduit will be installed during the dry season, the trench will be backfilled, and the soil will be restored to its original condition. Wetlands will be avoided or bored under to the extent feasible. Along the proposed route, CBC is not able to avoid or bore under approximately 0.16 acre of wetlands. Therefore, CBC will install conduit in these wetlands during the dry season.

CBC has alerted the Army Corps of Engineers (ACOE), Sacramento, Los Angeles, and Reno Districts, of all planned water crossings and is consulting with these offices to obtain applicable Section 404 permits for river and stream crossings. The USACE Sacramento District has confirmed that Water Quality Certification under Section 401 of the Clean Water Act will also be required from the State of California before the USACE can issue their permit. In a letter dated June 17, 2011, the USACE Sacramento District designated the US Department of Commerce as the Lead Federal Agency under NEPA and authorizes DOC to act in their behalf to

