Summary

Clackamas County applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install a fiber optic network ring and lateral line extensions to 160 community anchor institutions (CAIs). The new 185-mile network will be a hybrid of aerial and buried fiber, with approximately 125 miles of backbone fiber and 60 miles installed to reach the targeted CAIs. The proposed action is located entirely within Clackamas County, Oregon and is referred to as the Clackamas Broadband Innovation Initiative (Project).

The National Telecommunications and Information Administration (NTIA) awarded a grant for the Project to the County of Clackamas 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 is driven by 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 as the preferred alternative, in accordance with any special protocols or identified environmental protection measures.

Clackamas County completed an EA for this Project in January 2011. 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 primarily aerial and supplemental buried fiber throughout Clackamas County, Oregon;
- Installing 125 miles of high capacity fiber to create a network ring backbone;
- Installing aerial portions of the network backbone infrastructure on existing pole lines, and replacing poles when necessary;
- Installing buried portions of the network backbone infrastructure in existing rights-of-way (ROWs) and along roadways via plowing, trenching, and horizontal directional drilling (HDD) methods;

• Installing 60 miles of lower capacity lateral lines for 160 CAIs to access in establishing a last mile connection to the network.

Based on a review of the analysis in the EA, NTIA has determined that the Project, implemented in accordance with the preferred alternative, and incorporating mitigations, 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 the Project is to provide improve broadband service to unserved and underserved areas of Clackamas County, Oregon. The Project will deploy fiber to areas where there is a current lack of broadband infrastructure and comprehensive telecommunications service providers. The Project will also provide 160 CAIs with new or enhanced access to broadband services.

Project Description

The Project will install a 185-mile network of aerial and buried fiber throughout Clackamas County, Oregon. Of the 185 miles of fiber installation, approximately 125 miles will be installed aerially on existing utility poles. The remaining 60 miles of fiber will be installed in existing ROWs and along roadways using HDD, existing conduit, and trenching. Approximately 10 miles of the Project will be placed within Mt. Hood National Forest (MHNF), which is managed by the United States Forest Service (USFS). A small segment (0.29 miles) will cross the Wildwood Recreation Area, which is managed by the Bureau of Land Management (BLM). Cable will also be attached to the existing Clackamas River Bridge. A 4 mile long segment of the Project would

be collocated in the trench created by the Clackamas County Service District #1's Intertie 2 – Diversion Project B Force Main (near Oregon City).

Most of the Project will involve placing fiber optic cable along existing utility poles. Fiber spool trucks and bucket trucks will be used to connect fiber optic cable to utility poles. All stringing activities will occur within existing ROWs, most of which are located along paved roadways. This activity will involve only minor surface disturbance. Utility poles will be replaced when new fiber installation will cause the existing pole to exceed its acceptable strength capacity. Pole replacement will involve using a large truck mounted auger that will dig a pocket into the ground to a depth sufficient for pole placement. Poles will be replaced immediately beside or touching the former pole. Utility lines will then be transferred from the old pole to the new pole. The number of pole replacements is anticipated to be very limited.

In areas where cable is to be buried, Clackamas County will use HDD, existing conduit, or trenching techniques to install the cable. HDD involves excavation of drilling entry and exit pits, drilling a horizontal cable pathway from one access point along the route to another, installing conduit to house the cable, and then pulling the cable back through the conduit. The HDD drill will extend fiber optic conduit from upland area to upland area to avoid impacts on waterways. HDD will be used to cross beneath waterways or roadways where no existing underground conduit is available, no utility poles exist to carry the proposed fiber cable, or no bridge or other structure can be used to attach the new fiber lines. For last mile installation, HDD will be used when: (1) no existing aerial utility pole is in close proximity to the CAI, (2) use of an existing utility pole would exceed the acceptable strength capacity for hanging utility lines, (3) no other structure (such as a bridge) can be used to carry a conduit, (4) an existing conduit does not exist, (5) aerial installation would diminish the visual aesthetics of the property, or (6) the use of an existing pole and subsequent installation would create an adverse visual or direct effect upon a historic property.

The Project will involve placement of conduit for the Clackamas County fiber optic cable line as part of the installation of the four mile trench associated with the Clackamas County Water Environment Services Intertie 2 Diversion Project B Force Main. Addition of fiber conduit within this trench is not expected to contribute significantly to any of the impacts associated with the Project B Force Main. A four hundred foot trench, unrelated to the Project B Force Main will also be constructed. This separate trench will be considerably smaller than the Project B Force Main trench, which is designed to accommodate 2 inch conduit. Other disturbances such as property clearing, fencing, and excavating (beyond the installation described above) are not planned.

No buildings will be constructed or modified as part of the Project. Although Clackamas County will not be connecting the fiber optic cable to CAIs located along the Project route, such activities are considered a connected action, and potential impacts are discussed in the Project's EA. Fiber optic connections to CAIs will either occur aerially from an existing utility pole, through an existing conduit, or via a new conduit installed using HDD. The connections themselves will be to existing junction boxes or through a new utility entry point. A new utility

entry point will involve drilling a hole that is approximately one inch in diameter through the building's exterior wall.

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.

Alternative 1 – Hybrid Fiber Installation (Preferred Alternative). As noted in the Project Description, this effort will include installation of approximately 185 miles of fiber in existing ROWs and along roadways. The new fiber optic cable will be installed primarily on aerial pole lines. Fiber will be installed underground along 60 miles of the Project route where aerial infrastructure is not available.

Alternative 2 – Buried Fiber Installation. The buried cable alternative would eliminate the use of aerial transmission structures and all segments of the cable would be installed in the subsurface by trenching and HDD. The buried cable alternative would take advantage of existing ROWs by trenching or directionally drilling the conduit primarily along roads and within exclusive utility corridors. It would also involve directional drilling beneath wetlands and water bodies to avoid impacts to water resources. After evaluation against the EA resource areas, Alternative 2 was eliminated due to increased noise and air emissions associated with a longer construction period, greater amounts of land disturbance and vegetative clearing, the inability to leverage existing utility poles, and potential reductions in Project scope to compensate for increased construction costs.

No Action Alternative. No action was also considered. This alternative represents conditions as they currently exist in Clackamas County, Oregon. Under the no action alternative, a new fiber network would not be constructed. Many rural communities would continue to be unserved or underserved with respect to broadband internet access. Additionally, new or improved broadband services would not be provided to CAIs in the Project area, including schools, libraries, police stations, government offices, and medical facilities. The EA examined this alternative as the baseline for evaluating impacts related to other alternatives being considered.

Alternatives Considered But Not Carried Forward. Clackamas County considered the alternative of installing a wireless telecommunications network. However, wireless technology is not feasible for this network because of the mountainous terrain. In addition, the network requires a significant amount of bandwidth capacity that cannot be met using a wireless solution. Construction of a wireless network also would create more ground disturbance and visual impacts throughout the Project area.

Clackamas County also considered installing an all-aerial network. This alternative was not considered viable because it would require construction of additional poles in areas where current spans between existing poles are too great. This alternative would require construction

of structures or poles in streams, rivers, or wetlands. This alternative would also require significant changes to the route to avoid environmentally sensitive areas. This alternative was eliminated from further consideration due to increased costs, increased potential for environmental impacts, and potentially reductions in the number of CAIs that would be served.

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.

Noise

Construction activities associated with the Project will cause short-term noise effects in the immediate vicinity of the Project area. The nearest noise sensitive receptors are less than 15 meters from the Project site. However, peak noise levels will be temporary and intermittent, generally limited to daylight hours, and attenuated with distance. Fiber optic cables do not generate any noise during transmission. Therefore, no long-term changes in ambient noise levels will occur during operation of the fiber optic network. Therefore, the Project is not expected to have significant adverse impacts on noise.

Air Quality

Use of fossil fuels to power on-road and non-road equipment during the construction phase of the Project will result a temporary increase in air pollutant emissions. In addition, minor amounts of fugitive dust will be generated during construction. However, these emissions are not expected to have a significant effect on air quality or a measurable effect on climate change. No stationary source permitting will be required. Furthermore, the only air quality emissions that will be generated during long-term operation of the fiber optic network are related to cable line maintenance and inspections. These emissions are expected to be minor with no significant effect on air quality or measurable effect on climate change. Therefore, the Project is not expected to have significant adverse impacts on air quality.

Geology and Soils

Approximately 67% of the fiber optic line will be aerial and placed on existing poles in an existing ROW. In these areas, the Project will have no impacts to geology and soils. Where installation cannot be completed aerially, Clackamas County will employ methods to minimize surface disturbance (e.g., HDDs, feeding fiber through existing conduit, or using bridge spans). During fiber installation via trenching (covering approximately 0.06 mile near Milwaukee), soil will be excavated, placed adjacent to the trench, and immediately backfilled after the conduit has been placed. The planned construction methodologies are appropriate for the soil types and geology present. Additionally, because the fiber optic line will be buried using existing ROWs or along existing roadways, implementation of the Project will not convert important farmland to

a non-farm use. No long-term impacts are expected for this resource area. Therefore, the Project is not expected to have any significant adverse impacts on geology and soils.

Water Resources

With over 73 percent of the route being completed as aerial fiber on existing poles or being routed through existing conduit, the Project is expected to have only minimal impacts on water resources.

Although limited pole replacement would occur, this portion of the Project will not result in any filling of wetlands or water bodies. If pole replacement is necessary in wetlands areas, Clackamas County will obtain and comply with applicable provisions of U.S. Army Corps of Engineers (USACE) Nationwide Permit 12. In addition, a total of 24 wetlands areas will be crossed by the fiber route. Access to these areas will be via existing roads and disturbed upland areas, and all wetlands will be spanned by aerial cable hung on existing poles. There will be no clearing, grading, or trimming in the existing ROW in these areas. Nevertheless, for the four mile segment of network that will be collocated with the Project B Force Main, Clackamas County has determined that approximately 0.8 acres of wetland will be permanently lost. To compensate for this loss, Clackamas County will complete a 1.72 acre mitigation project involving a combination of wetland creation in a non-wetland area, restoration of historic wetland, and enhancement of existing wetland. USACE's Portland District will continue to consult on this component of the Project.

HDD techniques will be used for stream crossings in order to avoid and minimize disturbance of such features. Most floodplain crossings will be aerial, but three will be crossed by HDD. No dredging, filling, clearing, or grading of floodplains will be necessary. During HDD operations, Clackamas County will implement procedures to minimize and control potential impacts that could occur as a result of the release of drilling mud from fractures in the bore hole (i.e., a "frac out"). Should such a situation occur, HDD operations will be stopped immediately and proper authorities will be notified of the incident to consult on cleanup efforts.

Based on these assessments, the Project will have only minimal impacts on water resources. Potential loss of wetlands resources will be mitigated.

Biological Resources

The Project will have minimal impacts on biological resources, as over 73 percent of the fiber optic cable will be added to existing pole alignments within existing ROWs or routed through existing subsurface conduits. Any pole replacement will be conducted in previously disturbed habitat of limited value for wildlife and vegetation. HDD techniques will be used for stream crossings, with HDD construction activities set back far enough from the waterbody to avoid any disturbance of riparian habitat. During long term operation of the network, the ROW will be maintained in accordance with existing maintenance schedules, and no new maintenance-related impacts on wildlife or vegetation are anticipated.

Effects on threatened and endangered species in the Project area will be avoided by constructing the network in existing ROWs and completing waterbody crossings aerially or via HDD. Threatened wildlife species, such as northern spotted owl (Strix occidentalis caurina) and Canada lynx (Lynx canadensis), are not expected to be present on the ROW. Threatened fish species will not be impacted due to the avoidance of waterbody and riparian habitat. Threatened vegetation species are not expected to be encountered due to the previously disturbed nature of the ROW in which Project activities will occur and ongoing maintenance activities. Critical habitats for Chinook and Steelhead salmon (Oncorhynchus tshawytscha and Oncorhynchus mykiss, respectively) are present in the Project area, but will not experience any structural, hydrological, or water quality changes as a result of Project implementation. Although no effects on listed species are anticipated, Project contractors will receive training on identification of species of special concern and protocols for stopping work and notifying Clackamas County in the event of a sighting. Clackamas County will then immediately contact the U.S. Fish and Wildlife Service (USFWS) for further direction.

On November 17, 2010, Clackamas County notified the USFWS of the Project and their "no effect" determination. Although the USFWS declined to provide a "no effect" letter of concurrence, the agency did issue an email on December 20, 2010, indicating that Section 7 consultation requirements have been adequately fulfilled for this Project. The NTIA and Clackamas County have also provided information regarding the Project to the National Marine Fisheries Service (NMFS) to address any potential concerns with Essential Fish Habitat. During a call on December 6, 2010, NMFS indicated that it would likely not issue a concurrence letter but, again, consultation requirement had been met.

Based on these assessments, it does not appear that the Project will have any significant adverse impacts on biological resources.

Historic and Cultural Resources

Potential effects to historic properties could result from Project-related construction activities including trenching, HDD, utility pole replacement, and installation of fiber optic cable at historic CAI buildings. Consultation with the Oregon State Historic Preservation Office (SHPO) was initiated by the NTIA on September 13, 2010. On January 6, 2011, the SHPO concurred with NTIA's determination that the Project will have "No Adverse Effects" on historic properties (including both architectural and archaeological resources). As stated in a letter dated January 7, 2011, this concurrence is contingent upon Clackamas County's completion of several specific mitigations.

Clackamas County will complete archaeological surveys, including a pedestrian survey and subsurface probes, in advance of ground disturbing work at 13 CAI sites, and a middle mile underground segment, where there is a very high probability for encountering cultural resources. If cultural resources are identified as potentially eligible for the National Register of Historic Places (NRHP), Clackamas County will make every effort to avoid such resources by repositioning HDD equipment; rerouting conduit around the cultural resource; using construction matting to reduce subsurface effects; using a smaller construction pad and protective fencing;

and/or abandoning the anchor site location. In addition, Clackamas County will ensure that a qualified archaeologist will assess pole replacement locations for archaeological potential and soil integrity, and make recommendations to avoid any identified cultural resources. If these measures cannot successfully avoid adverse effects, then Clackamas County will conduct additional investigations to confirm the NRHP eligibility of the resource and consult with NTIA and the SHPO to determine eligibility and assess effects. No ground disturbing activities will commence at the site until all parties concur that adverse effects are resolved through avoidance, effect minimization measures, or mitigation.

If any project changes occur, Clackamas County will communicate the changes to NTIA and the SHPO, and proceed to have a qualified archaeologist assess any new areas of potential subsurface disturbance. Clackamas County will prepare cultural resource addendum reports for any cultural resource investigations undertaken in association with this Project and submit them to NTIA and the SHPO for review. Clackamas County will also implement an approved unanticipated discovery plan and specified best management practices to avoid adverse effects during the installation of the fiber optic cable at CAI sites that are either eligible for, or listed in, the NRHP.

The NTIA has conducted tribal consultation through the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS) as suggested in the NTIA's Section 106 Guidance for BTOP Projects (NTIA 2010). Six tribes were contacted through the TCNS. The only response received to date was from the Fallon Paiute-Shoshone Tribe, requesting cessation of work and immediate notification in the event that archaeological resources are encountered during construction.

Based on these consultations and through implementation of SHPO stipulations, the Project is not expected to have significant adverse impacts on historic and cultural resources.

Aesthetic and Visual Resources

Attachment of fiber optic cable to existing aerial poles will not result in new visual impacts in the Project area, as similar infrastructure is already in place. Limited pole replacement will occur along the Project route, but the new poles will simply replace old poles in the same locations. No new poles will be constructed on USFS or BLM lands. There will be no permanent changes to topography and no new construction except in the few locations where new conduit will be installed by trenching or bore in existing ROW. The Clackamas River will be spanned by attaching conduit to two existing transportation bridges. If necessary, new 2 inch diameter conduit will be attached to the bridges. This conduit would have either no, or only minor, visual impacts. Underground segments of the new network will not be visible after installation. Accordingly, no significant aesthetic or visual effects will occur as a result of Project implementation.

Land Use

Two middle mile segments that require burying are located within a habitat conservation area (HCA) and water quality resource area (WQRA). However, there will be no impact to habitat,

no removal of vegetation, and no impact to the floodplain. Use of HDD methods will allow for equipment to remain outside of the HCA boundary. Buried segments of the fiber optic line are will also pass areas designated as "Prime Farmland," "Farmland of Statewide Importance," "Prime Farmland if drained," and "Prime Farmland if irrigated." Because these segments will be buried within existing ROWs or along existing roadways, Project implementation will not convert important farmland to a non-farm use. No changes in land use designation will occur as a result of the Project.

The BLM has approved a Temporary Use Permit for installation of 0.29 miles of network fiber that extends through BLM lands. In this permit, BLM requires that aerial fiber installation vehicles will use existing ROWs and roads, fiber optic cable will be installed on existing Portland General Electric utility poles, no clearing or trimming of vegetation will occur, the duration of construction activities will be limited to approximately one or two days, no temporary work or staging areas will be established, and there will be no control or structural change to any stream or other body of water in the area. The USFS is currently reviewing a Temporary Use Permit application for the 9.91 mile segment of fiber path that extends through the MHNF. No construction will occur on USFS-managed lands until this review and associated permitting have been completed.

By following appropriate permit-specified technical requirements, this Project is not expected to have significant adverse impacts on land use.

Infrastructure

Existing telecommunications infrastructure is inadequate, and cannot provide the high-capacity broadband services that are required for economic development and video-based services, including emergency response, traffic monitoring, and distance learning. The Project will facilitate development of these services, resulting in a positive impact to infrastructure. The Project will leverage existing infrastructure for construction (e.g., existing poles within existing ROW). No buildings will be constructed or modified as part of this Project, but new conduit will be installed in existing ROW. Most bridge crossings will be completed by hanging fiber on existing poles along the bridge. The Clackamas River, however, will be spanned by attaching conduit to two existing transportation bridges. If necessary, new 2 inch diameter conduit will be attached to the bridges. Overall, the Project will have no significant short-term adverse impacts, and beneficial long-term impacts, on infrastructure.

Socioeconomic Resources

The Project will benefit both the public and private sectors of the economy through increased productivity and efficiency, as well as a higher quality internet experience. This Project will allow private internet service providers to connect to the network and provide affordable and reliable internet to residents and businesses throughout the County. Fast and reliable broadband access will increase incentives for high wage employers to continue to set up establishments in Clackamas County. This will directly impact County residents by bringing approximately 121 jobs into the area and reducing the long out-of-county commutes that nearly half of Clackamas

County residents are currently making. This Project is expected to have significant beneficial impacts on socioeconomic resources in Clackamas County.

Human Health and Safety

As with all types of construction projects, this Project may be subject to typical occupational health hazards, including vehicular accidents, improper equipment operation, chemical exposure, and electrical hazards. Worker health and safety hazards will be minimized through adherence to a site-specific Safety, Health, and Environmental Program Manual. This manual also specifies procedures that will minimize safety issues for the general public. No construction is proposed that will impact leaking underground storage tank facilities or sites that manufacture or store hazardous waste. Construction of the Project within the vicinity of brownfields and corrective action sites will be aerial in nature, with no ground disruption. The Superfund site at SE Mather Rd and SE Industrial Way in Clackamas will not be disturbed. The risk of encountering previously unknown hazardous materials during construction will be minimized by keeping the Project route entirely within existing, previously disturbed public ROW.

The Project will have a beneficial effect on human safety by providing higher capacity data connectivity for online video training between fire stations and police locations, and enabling greater access to bandwidth-intensive graphical data. The Oregon Department of Transportation (ODOT) will be provided with fiber pathways needed to implement Intelligent Transportation System traffic monitoring and video monitoring along high traffic corridors, thereby enhancing traffic safety. Overall, it is anticipated that the Project will have a positive impact on human health and safety in Clackamas County.

Cumulative Impacts

Several actions proposed or currently underway in Clackamas County could result in disturbance of roadways, existing easements, and other lands to be affected by this Project. Examples include ODOT roadway projects (e.g. West Ski Bowl to Government Camp Loop Project, Highway 26 Mount Hood Safety Project), new sewer design and installation for the North Clackamas Revitalization Area, and several small construction projects and land use planning actions in MHNF. These actions in conjunction with other general land and infrastructure development in Clackamas County may impact similar resources within a similar timeframe as the Project outlined above. However, only a small cumulative effect is anticipated when the minor impacts of the Project are added to any associated with past, present, or reasonably foreseeable future projects.

Decision

Based on the above analysis, NTIA concludes that constructing and operating the Project as defined by the preferred alternative, identified BMPs, and protective measures, will not require additional mitigation. A separate mitigation plan is not required for the Project. The analyses indicate that the proposed action is not a major Federal action that will significantly affect the

quality of the human environment. NTIA has determined that preparation of an EIS is not required.

Issued:

Chief Administrative Officer

Office of Telecommunications and Information Applications National Telecommunications and Information Administration