Summary

Texas A&M University (TAMU) applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install approximately 190 miles of new fiber optic cable. The new network will include fiber optic cable installed underground and aerially within existing rights-of-way (ROWs) along state, city, and county roads and in previously disturbed areas. Twelve TAMU System facility locations will serve as primary community anchor institutions (CAIs) for the new fiber network. The proposed action passes through 17 Texas counties, and is referred to as the Texas Pipes Fiber Optic Network Project (Project).

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

TAMU completed an EA for this Project in May 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 total of 193 miles of aerial and buried fiber in existing state, city or county ROWs and associated handholes and/or pedestals throughout 17 counties in Texas;
- Installing approximately 15 miles of fiber aerially by attaching to existing poles;
- Installing approximately 178 miles of buried fiber by plowing, trenching, or directional boring;
- Attaching fiber to bridges, existing poles, or directional boring for water crossings;

 Providing broadband connectivity to 12 locations within the TAMU System by installing fiber underground within previously disturbed areas with associated handholes and/or pedestals.

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 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 TAMU System is a statewide network of eleven universities, seven state agencies, and a comprehensive health science center. All of the TAMU System campuses are rapidly approaching the need for additional bandwidth. In most areas, the service provider is utilizing expensive synchronous optical networking (SONET) equipment that either cannot support the bandwidth requirement, or provide an affordable solution. The cost to upgrade, rather than replace, portions of the existing network infrastructure would be prohibitively expensive and would provide only a temporary solution to an exponentially increasing problem. The purpose of the Project is to bring affordable broadband service to unserved and underserved communities in Texas. The Project will bring improved broadband service to TAMU campuses that provide public service to the state of Texas.

The Project will allow the 12 primary CAIs to provide additional fiber connections to municipalities, local telephone/cable companies, educational facilities, public safety offices, and other organizations. The Project will enhance public safety through improved telecommunication facilities, and stimulate economic growth and job creation. TAMU System facilities, acting as anchor institutions, will partner with regional telephone companies to build fiber paths and upgrade transmission equipment to provide broadband access to underserved

communities. This Project will also make advanced public safety services available to local campus police departments. The Project will leverage existing infrastructure by connecting to the nearest node of the Lonestar Education and Research Network (LEARN), a State-wide network that supports most major research universities and metropolitan areas of Texas, to expand their network. TAMU has also established public-private partnerships with five small, independent, rural telephone and cable companies to allow these rural carriers to deliver competitive services in the surrounding communities of Kingsville, Stephenville, Canyon, and Commerce. The areas to be served by the Project include approximately 6,550 households; 72 businesses, public safety and CAIs; and 12 additional schools, colleges and community centers.

Project Description

The Project involves installing approximately 178 miles of buried fiber and 15 miles of aerial fiber throughout 17 counties in Texas. The new network will connect 12 locations within the TAMU System, which will serve as the primary CAIs. The majority of the fiber network will be buried via plowing, trenching, or directional boring, while the remaining portion of the route will be installed aerially. Fiber will be installed within existing state, city, or county ROWs, or on existing utility poles.

Underground fiber optic cable will be installed via plowing, trenching, or directional boring along the Project route. However, where an existing duct is available, fiber will be pulled through it using conduit access points. Where existing ducts are not available, plowing will be the primary installation method. The fiber optic cables will be placed at a minimum depth of 36 to 42 inches below the surface. TAMU will install handholes approximately every 5,000 feet or in front of CAI connections, whichever is closest, along the entire route to allow routine system maintenance. Directional boring will be used to cross major roads and other existing infrastructure that requires avoidance. This method involves 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. Where water crossings are encountered, fiber will be either bored or attached to existing poles or bridges.

Aerial fiber will be installed along the Project route on existing utility poles using the stranding or lashing technique. If pole replacement is necessary the utility contact will be responsible for these repairs and future pole management.

TAMU will install buried fiber along previously disturbed corridors to complete the CAI connections. A fiber drop from a pedestal or handhole located along the buried cable route will be extended to the new handhole at the CAIs. If necessary, a new handhole will be installed outside of the CAI. Fiber drops will be terminated at CAIs through established utility access points, which will be determined during final engineering. Best practices will be used for building penetration of the fiber cable into the equipment room.

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.

Combined Aerial and Underground Construction (Preferred Alternative). As noted in the Project Description, this effort will include installation of approximately 178 miles of buried fiber and 15 miles of aerial fiber throughout Texas. The new fiber optic cable will be installed aerially on existing pole lines, attached to bridges, and buried via plowing, trenching, and directional boring.

No Action Alternative. No action was also considered. This alternative represents conditions as they currently exist in Texas. Under the no action alternative, new infrastructure would not be constructed. The underserved areas would remain without reliable and accessible high-speed Internet access. The EA examined this alternative as the baseline for evaluating impacts relative to other alternatives being considered.

Alternatives Considered But Not Carried Forward. TAMU considered the alternative of installing an all-aerial network. This alternative was eliminated because of the potential service disruption that may occur from knockdowns or severe weather, and the potential increase of environmental impacts compared to the Preferred Alternative to install additional poles along the Project route. TAMU also considered installing the Project's entire fiber route underground. This alternative was eliminated because it would have resulted in increased costs to facilitate the unnecessary excavation of trenches and bores, and the potential increase of environmental impacts compared to the Preferred Alternative to install additional buried fiber. TAMU also considered an all-wireless telecommunications network. However, wireless technology is not a viable alternative because of the inability to provide the capacity or speed to fully meet the purpose and need.

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

This Project will have no impacts on noise during long-term operation. However, short-term increases in ambient noise levels are expected during the construction period. Noise created by machinery used during installation will be temporary and localized in nature. To reduce noise impacts, construction activities will occur during daylight hours and construction equipment will be equipped with mufflers. TAMU will also comply with local noise ordinances. Based on

these considerations, no significant impacts on noise are expected to occur as a result of Project implementation.

Air Quality

Potential impacts to air quality associated with this Project will be limited to the construction period. Fiber optic cable installation will result in negligible fugitive dust emissions because plowing, trenching, and directional boring result in only minor disturbance of the ground surface. Best management practices (BMPs) will be used to control fugitive dust during the construction phase of the Project. These BMPs include covering or treating disturbed areas with dust suppression techniques and covering loaded trucks. Additionally, emissions would be minimized through the use of cleaner diesel fuels, establishing limits on idling, and increasing the use of cleaner burning diesel engines. A short-term minor increase in the use of fossil fuel and associated greenhouse gas (GHG) emissions will occur as a result of Project construction. Based on implementation of BMPs, construction of the planned network is not expected to have significant impacts on air quality.

Geology and Soils

The Project will be installed in existing highway ROWs, in previously disturbed areas, or hung aerially on existing poles or bridges. The cable will be installed in these locations to, among other considerations, minimize impacts on geologic and soil resources. Plowing, trenching, and directional boring techniques result in very minor, temporary disruption of the soils. Appropriate BMPs will be implemented to prevent sedimentation and erosion impacts on the Project area. These BMPs may include installing silt fences, straw bales, reseeding with existing grasses, and spraying down exposed surfaces. With these measures in place, the Project is not expected to result in significant impacts on geology or soils.

Water Resources

Project construction activities could result in short-term, minor impacts on water resources within the Project area. The Project will intersect at least 46 streams and rivers, as well as adjacent wetlands, during installation. Impacts on streams, rivers, floodplains, and adjacent wetlands will be avoided by using directional boring or hanging the fiber on an existing bridge or pole. There is the potential for a temporary increase in stormwater discharge during construction, but appropriate BMPs will minimize erosion, sedimentation, and turbidity in receiving waters. Pre-construction measures may include installing perimeter silt fences and stabilizing construction entrances. Control measures during construction may include earth and/or rock berms, additional silt fencing, slope stabilization, permanent erosion controls, and site restoration.

TAMU has alerted the U.S. Army Corps of Engineers (USACE) and Texas Parks and Wildlife Department (TPWD) of all planned water crossings. Because a portion of the Project route in Galveston will require boring beneath the Galveston ship channel, TAMU is currently coordinating with USACE Galveston Office and the U.S. Coast Guard for compliance with Section 10 of the Rivers and Harbors Act. TAMU has also submitted Section 404 permit applications to the USACE for easement access near Wright Patman Lake for the Texarkana

route and for access along the Killeen route. These permit applications are being reviewed and pending approval by the USACE and U.S. Coast Guard.

Four playa wetlands are located adjacent to the TAMU Canyon route. Impacts to adjacent playa wetlands are anticipated to be minimal because the proposed project will run fiber within previously disturbed ROW. TAMU will make an effort to conduct Project activities while the playa wetlands are dry to avoid adverse impacts on migratory bird species that may use these areas.

The TAMU Corpus Christi and Galveston alignments are within the Texas Coastal Management Zone Boundary (CMZB). TAMU will comply with the Texas Coastal Management Program. Proposed activities, including trenching, plowing, boring, or pole replacement, are not located within coastal barriers, coastal wetlands, submerged lands, reefs, coastal preserves, beaches, coastal shore areas, or special hazard areas. Therefore, no impacts to coastal management zones are anticipated. Coordination with the Texas General Land Office regarding the CMZB consistency determination has not yet been completed. TAMU will obtain the necessary coastal management permits prior to conducting any work within these areas.

Fiber optic cables will be placed within existing roadway ROWs or previously disturbed areas. TAMU will install the majority of the fiber in a trench approximately 36 to 42 inches deep. This shallow trench will not adversely affect groundwater flows. Therefore, no significant direct or indirect impacts to groundwater resources are anticipated. During construction, there may be a temporary, minor disturbance of floodplain areas, but no long-term impacts are anticipated. No National Wild and Scenic Rivers are located within the Project area. By avoiding construction through waterways, and implementing erosion and sediment control BMPs, TAMU will be able to construct the network with no significant impacts on water resources.

Biological Resources

The preferred alternative will result in minor impacts on biological resources. Some disturbance of the ground surface and vegetation will also occur during construction activities. This disturbance will be limited to existing ROWs and previously disturbed areas. Clearing of woody vegetation is not expected to be required for any of the cable placement. However, if vegetation removal is necessary, TAMU will try to conduct any clearing outside of the primary migratory bird nesting season, March through August, to avoid adverse impacts to migratory bird species within and near the project areas. At select locations where the Texas Department of Transportation determines vegetation to be of environmental and aesthetic value, TAMU will install fiber using boring techniques to preserve the natural setting. Fiber cable will either be bored or hung from an existing crossing structure when crossing rivers and tributaries to avoid aquatic species habitat.

TAMU consulted with the U.S. Fish and Wildlife Service (USFWS) Arlington, Corpus Christi, Clear Lake, and Austin Field Offices, and TPWD regarding potential Project impacts on biological resources. In an email dated February 2, 2011, the USFWS Arlington Ecological Field Services Office stated that, based on the information provided by TAMU, their office will be taking no further action regarding federally listed species based on the impact determinations.

In a letter dated April 27, 2011, the USFWS Clear Water Field Office stated that if the proposed action will not affect federally-listed species or critical habitat, then no coordination with the USFWS is necessary. If changes are made to the Project, the USFWS Clear Water Field Office requested that the Project be reanalyzed for effects that were not previously considered. In a response dated May 5, 2011, the USFWS Corpus Christi Field Office concluded that, based on the information provided by TAMU, the Project is not likely to adversely affect biological resources, and no further consultation is required under Section 7 of the Endangered Species Act (ESA). During a phone call on May 4, 2011, the USFWS Austin Field Office concurred that the no effects determination will be made by the federal action agency, NTIA, in compliance with Section 7 of the ESA. The following avoidance measures will be implemented by TAMU along the project route.

- Fiber will be installed along Ennis Joslin Road, east of a public park known to provide habitat for migratory and resident bird species. USFWS recommends that TAMU work with park authorities for any necessary replanting of native vegetation that might be disturbed by the Project. USFWS Corpus Christi Field Office, May 5, 2011
- Any landscaping associated with the Project should be limited to seeding and replanting
 with native species. Bermuda grass, and other introduced species, should be avoided as
 much as possible. USFWS Corpus Christi Field Office, May 5, 2011
- TAMU will implement erosion and sedimentation controls outlined in the USFWS guidance, Best Management Practices for Projects Affecting Rivers, Streams, and Tributaries. USFWS Clear Water Field Office, April 27, 2011

In a letter dated January 14, 2011, the TPWD provided information on listed rare, state threatened, or endangered species within the Project area. TPWD has determined that there are records of two federally and state-listed endangered species, and one state species of concern within the Project area. TPWD determined that, based on the information provided by TAMU, the Project should not have a significant impact on fish and wildlife resources and threatened and endangered species. In accordance with TPWD recommendations, TAMU will implement the following avoidance measures along the project route.

- Black-capped vireo (*Vireo atricapilla*) and golden-cheeked warbler (*Dendroica chrysoparia*) The Bell County route has two small adjacent areas of potential golden-cheeked warbler habitat. The Mills to Erath route crosses through potential areas of black-capped vireo habitat. Work will be avoided in areas adjacent to potential habitat in Bell, Erath, Comanche, and Mills counties during March through early September to avoid the breeding season and minimize potential impacts. Project activities will also be avoided in areas adjacent to designated potential habitat, as indentified on maps provided by TPWD, during the nesting season. *TPWD*, *January 14, 2011*
- Black-tailed prairie dog (*Cynomys ludovicianus*) The Project route in Randall and Swisher Counties may be located in or adjacent to black-tailed prairie dog towns. Construction activities will avoid prairie dog towns and dependent wildlife species (i.e., western burrowing owl, and ferruginous hawk). Non-harmful exclusion methods will be

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used if prairie dog towns will be disturbed by the Project. If construction activities will disturb nesting owls, these activities will also be scheduled after the eggs have hatched and the young have fledged. *TPWD, January 14, 2011*

- TAMU will ensure that the field crew is informed of the potential to encounter rare species along the Project route. Efforts will be made to avoid impacting sensitive species found during construction. TAMU will coordinate with TPWD if impacts to rare or sensitive species are anticipated.
- Vegetation removal, if necessary, will be avoided during March through August to avoid
 the primary nesting season and minimize potential impacts on migratory bird species. In
 the event that migratory birds are encountered during construction, TAMU will avoid
 disturbing protected birds, active nests, eggs, and/or young.

In addition, a bald eagle nest was observed in 2001, 2002, and 2004 along the southern portion of Wright Patman Lake (Lake Texarkana) in the Atlanta State Recreation Area. Fiber installation will be limited to the existing road ROW near the lake. No impacts on bald eagles are anticipated as a result of the Project. If a nest is encountered along the Project route, TAMU will comply with the USFWS National Bald Eagle Management Guidelines.

Based on this analysis and implementation of the recommended protective measures, TAMU will be able to construct the fiber network with no significant impacts on biological resources.

Historic and Cultural Resources

On September 24, 2010, NTIA sent a consultation initiation letter, including a detailed Project description, to the State Historic Preservation Officer (SHPO) in Texas. Following the initiation letter, TAMU engaged qualified staff at ACI Consulting to analyze the archaeological and architectural resources within the Project's area of potential effect (APE). A records check identified 12 archaeological sites, 3 cemeteries, 12 historic properties, and 4 historic districts located within or near the APE. Of the 12 archaeological sites, one site in Cass County and two sites in Erath County have unknown eligibility for the National Register of Historic Places (NRHP). TAMU will implement the following avoidance measures to avoid these three unevaluated sites.

- TAMU will install fiber along the east side of US Highway 59 to avoid the unevaluated site in Cass County.
- TAMU will install fiber along the north side of US Highway 8 to avoid the two unevaluated sites in Erath County.

TAMU will avoid two of the cemetery sites within Nueces County by installing fiber on existing poles. For the cemetery in Randall County, TAMU will avoid the cemetery by installing fiber on the north side of State Highway 217 or, if the cemetery boundary is not clear, directional boring will be used to a depth of at least 10 feet to minimize any potential for anticipated discovery.

On October 11, 2010, TAMU submitted their consultation request to the SHPO for the proposed fiber network and 12 individual project locations. In a response dated November 5, 2010, the SHPO determined that the Project is not expected to have adverse impacts to historic or cultural resources.

Through the Tower Construction Notification System, NTIA provided Project details to 16 tribes interested in the Project's geographical location (Texas). TAMU received responses from five tribes that were notified of the Project and requested further information about the Project. TAMU provided additional Project information to each of the five tribes. After review of the additional information, one tribe responded that they do not have any objections to the Project and requested that the Tribe be notified in the event of unanticipated discoveries. TAMU has not received responses from the other four tribes that requested additional information. The remaining 11 tribes originally notified of the Project through TCNS did not respond to the notification.

All construction will be restricted to previously disturbed areas. If any cultural material is discovered during construction, the SHPO will be notified immediately and all activities halted until a qualified archaeologist assesses the cultural remains. If any human skeletal remains or protected Native objects are uncovered during construction, construction will stop immediately, and all consulting parties will be contacted. Based on these consultations, guidance from the commenting agencies, and additional protective measures to be implemented by TAMU, the Project is not expected to have No Adverse Effect on historic and cultural resources.

Aesthetic and Visual Resources

The Project involves installing fiber optic cable by burying the cable underground in existing ROWs and previously disturbed areas, hanging cable on existing poles, and routing cable through existing conduit, where available. The TAMU Kingsville route is located within the King Ranch National Register District. Fiber will be installed through existing conduit on the TAMU Kingsville's Campus and continue, via boring or trenching, from the City of Kingsville's existing telecommunication ROWs to the ValleyTel tower site. The Project will only have temporary visual impacts on this historic district during the construction period. There are three other NRHP districts near the Project location, but the proposed Project route does not cross the remaining three NRHP districts. Fiber installation will have a short-term, minor, and temporary impact on aesthetic and visual resources due to the presence of construction equipment and limited soil disturbance. Accordingly, the Project is not expected to have a significant impacts on aesthetic and visual resources in the Project area.

Land Use

The fiber will be installed in existing ROWs and previously disturbed areas. Land use may be temporarily impacted as a result of work crews and heavy equipment in the ROW during construction only. However, there will be no change in the existing land use due to the aerial and underground fiber installation. Therefore, the Project will have no significant impact on land use.

Infrastructure

The Project's aerial fiber route will be attached to existing utility poles. Existing buried utilities will be identified, located, and avoided. There will be minor, short-term construction impacts on roadways as a result of fiber installation. Roadways will be crossed either aerially or underground by directional drilling. Project construction activities will only minimally interrupt the traffic flow along the Project route. One road closure is anticipated during construction activities proposed at TAMU Corpus Christi Campus. The closure is not expected to exceed two days, and traffic control will be provided, as necessary, around the construction area. The Project will improve communications infrastructure, and is expected to result in improved transfer of information between CAIs, businesses, and individuals residing within the communities along the Project route. Overall, the Project will have a positive impact on infrastructure in Texas, and will not result in significant impacts on infrastructure.

Socioeconomic Resources

The Project will expand the region's existing fiber optic networks within 17 counties in Texas. The new fiber backbone will benefit these communities by providing broadband capabilities to 12 facilities in the TAMU System. The project will also create jobs, provide greater broadband access for educational institutions, upgrade public safety infrastructure, and establish public-private partnerships with five small, independent, rural telephone and cable companies in unserved and underserved areas. The Project will have positive impacts on socioeconomic resources, and will not result in significant impacts on socioeconomic resources.

Human Health and Safety

Five hazardous waste sites have been identified within 100 feet of the Project area. However, these sites are not listed on the Superfund National Priority List maintained by the U.S. Environmental Protection Agency (EPA), and are not located within existing ROWs and disturbed areas within the Project area. Therefore, it is unlikely that hazardous wastes will be encountered during Project installation. BMPs for workplace safety will be implemented to protect workers and the public. Extra caution will also be taken in school zones and areas with playgrounds. TAMU has developed a Safety Plan, which provides details on safety policies and procedures for the Project. Contractors will adhere to all federal, state, and local safety and health laws and regulations under the applicable Occupational Safety and Health Administration (OSHA) and U.S. Department of Transportation (DOT) guidelines to ensure compliance with proper safety and installation procedures. If contaminated soils are encountered, contractors will follow instructions and training included in the Project Safety Plan. With implementation of these protection measures, the Project will not generate any significant adverse worker or traffic-related health or safety issues.

Cumulative Impacts

As described above, the Project will not have significant adverse impacts on any of the environmental resource areas evaluated in the EA. As such, no cumulative impacts on the environment are anticipated.

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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:

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