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# EXECUTIVE SUMMARY

## A. Introduction

On behalf of Dakota Carrier Network (DCN), Kadrmas, Lee & Jackson is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the U.S. Department of Commerce National Telecommunications and Information Administration (NTIA). NTIA has awarded a grant to DCN through the Broadband Technology Opportunities Program (BTOP) as part of the American Recovery and Reinvestment Act (ARRA). The proposed project includes installation of approximately 204 miles of new telecommunications fiber optic cable in various counties throughout North Dakota. Most of the proposed cable will be placed in city limits along existing rights-of-way of local, county, and state roadways. Approximately 31 miles of the proposed cable will be placed in private rights-of-way.

## B. Purpose

The purpose of this project is to provide interconnectivity with critical community infrastructure and existing fiber optic facilities adjacent to the proposed project segments. The locations identified as part of the proposed project currently do not have access to broadband fiber-based services. Construction of the proposed project would help enhance the broadband network statewide, create a foundation to spur economic development, create jobs, and enhance quality of life for those currently without network services.

## C. Need

As a primarily rural state, North Dakota's critical community institutions face numerous challenges when trying to provide emergency medical and public safety services. In order to adequately serve citizens of North Dakota, first responders need to have broadband capabilities statewide. Telecommunications upgrades to state radio towers, as well as other public safety facilities, is an important part of North Dakota's public safety infrastructure. In addition, public safety officials need a reliable system to quickly distribute information concerning missing persons, stolen property, etc. Much of this service across the state is provided by copper wiring, which has limited data transmission speeds when compared to fiber cable.

The North Dakota Health Information Technology Advisory Committee is currently working towards the development of tele-medicine, tele-radiology, tele-dermatology, tele-pharmacy, practice management systems, disease registries, clinical messaging, electronic health records, and health information exchanges to improve access to healthcare records statewide. All of these services require access to broadband and connectivity to each facility across the state or to a central database. The current copper facilities do not support many of these emergency and non-emergency medical services due to copper's limited broadband capacity.

K-12 schools and community colleges have to find ways to overcome teacher shortages in rural areas, while still providing quality education. North Dakota is a rural state with low population and large geographic distances. As a result, many K-12 schools and community colleges rely on distance learning applications to provide classes via interactive video conferencing, video streaming, and on-line learning.

Over the last several years, DCN and its partnering telephone entities have set a goal to upgrade current copper facilities to fiber-based facilities. This goal has been achieved in many

communities throughout North Dakota. However, 177 of the state's anchor institutions remain either un-served or underserved.

This project is driven by a need for North Dakota to have a statewide broadband system to enhance service offerings of critical community anchors (i.e. medical/healthcare facilities, schools, and libraries), public safety entities, government entities, and all levels of academia. The proposed project would contribute to this overall goal by enhancing broadband service to 582 currently underserved healthcare and public safety entities, schools, and government agencies, including 177 anchor institutions, in 48 communities, 5 unincorporated areas, and 27 rural locations.

#### **D. Description of the Proposed Action**

Approximately 173 miles of the proposed project would be located within existing road rights-of-way or utility corridors. The remaining 31 miles would be installed in previously undisturbed areas, for a total of 204 miles of fiber optic line installed as part of this project.

The proposed cable would be buried underground. It would be installed by a combination of plowing and horizontal directional drilling (directional boring) methods. All segments crossing wetlands, waterways, and trees, as well as urban segments will be installed using directional boring. Bore entry and exit pits will be excavated at least 30 feet from the target feature in order to avoid impacts. Wetlands and waterways will be bored at depths determined on a site-by-site basis as to not diminish the hydrologic properties of these features. The number of miles installed using boring methods will be determined on a segment-by-segment basis during project design.

Installation of the proposed project would not require a substantial amount of earthwork. A typical plowing blade up to three-inches wide would be used to plow a slot in which the cable would be laid. Directional boring would be used to cross roadways and avoid environmentally sensitive areas. The cable would be placed approximately 36 inches deep. DCN will abide by industry standard procedures and follow all state and local ordinances pertaining to construction projects of this nature.

Construction activities would occur primarily in ditch bottoms (for plow installation) or in existing utility easements (for bore installation). Plow equipment used to place the cable is approximately 12 feet wide. All disturbed areas, including boring entry and exit pits, would be immediately back-filled, compacted, and re-seeded in kind upon completion of installation activities.

The construction equipment needed for the proposed project may include the following: tracked plow cat with static plow, tracked pull cat, backhoe, horizontal directional drilling machines, trenchers, rubber tire vibratory plow, tracked clean-up cat, cable reel trucks and trailers, transport semis, ¾ and 1 ton trucks.

Construction of the proposed project would take place year-round, as weather conditions and local city restrictions permit. The normal operating day would comply with local noise ordinances, as applicable.

## E. Alternatives

DCN considered two alternatives for the proposed project: a no action and an underground cable placement alternative.

**Alternative A (No Action)** – Under Alternative A, North Dakota’s broadband fiber optic network would not be expanded. The 582 sites that would be benefitted by construction of the proposed project would continue to lack broadband service or experience sub-standard service. Alternative A would not meet the purpose and need of this project.

**Alternative B (Underground Cable Placement)** – Alternative B would include the installation of new, buried fiber optic cables to be completed using a combination of plowing and directional boring techniques. Alternative B would be consistent with the purpose and need of this project by expanding North Dakota’s broadband network and providing service to 582 healthcare and public safety entities, schools, and government agencies. Alternative B is the preferred alternative for the proposed project as it meets the project’s purpose and need while allowing cable installation methods to be adapted (i.e. plowing vs. boring) to avoid areas of environmental concern.

**Alternatives Considered but Eliminated from Further Discussion** – Two additional alternatives were considered for the proposed project: aerial (overhead cable) construction and wireless technology; however, these alternatives have been eliminated from further discussion in this document.

Aerial construction would not be a feasible alternative for the proposed project as overhead fiber optic cable is susceptible to severe weather. With North Dakota’s harsh winter, it is highly likely that overhead lines would be susceptible to breaking from wind or ice accumulation, compromising the reliability of the network. In addition, aerial construction would increase the potential for avian and bat mortality due to strikes.

Wireless service has also been eliminated from further discussion in this document as it is not capable of supporting the network and bandwidth needed to provide services to the 582 sites that would be benefitted by the proposed project.

## F. Environmental Impacts

The following provides a summary of environmental impacts associated with the proposed project:

- **Noise:** Construction activities would result in temporary increases in noise levels in the vicinity of the project segments. Noise would be generated primarily from heavy equipment used to transport materials and install the fiber optic cable. The normal operating day would comply with local noise ordinances, as applicable. Regulating the hours of construction and equipping machinery with suitable mufflers can control and minimize construction noise. No permanent increases in noise levels are anticipated with the proposed project.
- **Air Quality:** Installation of the proposed project is anticipated to temporarily impact air quality in the project area, primarily through the generation of dust during construction. However, given the nature of construction activities, dust is anticipated to be minimal. Watering will be used as needed to minimize dust. The proposed project would also

include short-term, minor increase in the use of fossil fuels and associated greenhouse gas (GHG) emissions during project construction. Construction is anticipated to result in the release of approximately 770.9 metric tons of equivalent CO<sub>2</sub> emissions. This amount is well below the Council on Environmental Quality established threshold and would not contribute appreciable to climate change or global warming.

- **Geology and Soils:** The placement of underground telecommunications cable would not remove farmland from permanent production; therefore, the Farmland Protection Policy Act would not apply. Upon completion of the proposed project construction, all temporarily disturbed farmland would be restored to its pre-construction condition, making it available again for agricultural use. The placement of buried fiber optic cable would not alter the geologic setting or soil content. Bore entry and exit pits would be re-seeded immediately following installation, and the surface would be mulched to minimize soil erosion potential during seedling establishment. Silt fences would be installed where construction activities are near wetlands or water bodies to minimize the potential for soil erosion and siltation.
- **Surface Water:** No significant impacts to surface waters are expected to result from Alternative B. At waterbody crossings, the cable would be placed on existing bridges or underground by boring beneath the waterbody. Alternative B is not anticipated to alter drainage patterns or result in an increase in pollutant loads. Bore entry and exit pits would be re-seeded immediately following installation, and the surface would be mulched to minimize soil erosion potential during seedling establishment. Silt fences would be installed where construction activities are near wetlands or water bodies to minimize the potential for runoff of sediment into surface waters. Applicable surface water permits may include a USACE Section 10 Permit, USACE Section 404 Permit, and a North Dakota Department of Health North Dakota Pollutant Discharge Elimination System (NDPDES). The USACE Section 10 and USACE Section 404 permit needs for each segment would be addressed on a case-by-case basis. The contractor would be required to obtain a NDPDES Permit from the North Dakota Department of Health prior to construction of project segments on a case-by-case basis, as appropriate.
- **Groundwater:** All aquifers in the project area are located hundreds to thousands of feet below the surface. Since the proposed project would be placed at an approximate depth of 36 inches, it would not affect the integrity of aquifers or other ground waters.
- **Coastal Zones:** There are no coastal zones within the project area; therefore, the proposed project would not impact coastal zones.
- **Floodplains:** Alternative B would include construction of project segments within the regulatory floodway and/or floodplain of the Green River, Heart River, Missouri River, Red River, and Sheyenne River. Construction of the proposed project would not result in placement of fill in these waterways or increase the base flood elevations over existing conditions. The proposed project would be designed to comply with the 1977 Executive Order 11988, Floodplain Management, the North Dakota Floodplain Management Act of 1981, and County design guidelines. A Non-Building Floodplain Development Permit would be acquired from the appropriate floodplain administrator for all project segments located within an identified floodplain on a case-by-case basis, as appropriate.
- **Wild and Scenic Rivers:** The only designated wild and scenic river in North Dakota is located approximately 7.5 miles from the nearest project segment. Due to the distance

from the proposed project to this river, the proposed project would not impact wild and scenic rivers.

- **Wetlands:** The proposed project would minimize wetland impacts by boring beneath wetlands. Prior to the installation of each project segment, the need to conduct a field wetland delineation will be determined. The findings of the field delineation will be submitted to the USACE with a request for a jurisdictional determination. If there are locations where boring is not practical, a Section 404 Permit would be acquired and mitigation plan developed, as appropriate, for unavoidable impacts to USACE jurisdictional wetlands. According to correspondence received from the USACE (see Appendix C) as part of project scoping, the proposed project is anticipated to fall within Section 404 Nationwide Permit 12, Utility Line Activities, provided that it can be constructed without change to pre-construction contours and that all other requirements of the Nationwide 12 Permit are met.

Per recommendations from the North Dakota Game and Fish (NDGF) Department, existing drainage patterns would be maintained, bore entry/exit pits would be re-seeded immediately following construction, and the surface will be mulched to minimize soil erosion potential during seedling establishment. Silt fences would be installed where construction activities would take place near wetlands or water bodies to minimize the potential for runoff of sediment into wetlands.

Impacts to wetlands protected by USFWS Wetland Easement will be avoided by boring beneath all easement wetlands. These locations will be identified on project plan sheets. According to correspondence received from the USFWS as part of project scoping, (see Appendix C), a Special Use Permit will be required from the appropriate USFWS management district for all project segments located on USFWS easement properties.

- **Wildlife:** The proposed project study area lies in the central flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many waterfowl species. Due to the presence of suitable habitat at the project site for many wildlife and avian species, construction activities associated with the proposed project may impact individuals by displacing animals from suitable habitat. These impacts would be temporary in nature and would only last for the duration of construction. It is anticipated that wildlife would continue to use the project area following construction. The proposed project may impact individual migratory birds and other wildlife species but is not likely to affect populations of migratory bird species or to result in a trend towards listing any migratory bird species.

Based on coordination with the USFWS, construction will be completed outside of the migratory bird nesting and breeding season (from February 1 to July 15), to the extent feasible. If construction within undisturbed right-of-way areas during this time period is unavoidable, a qualified biologist will conduct pre-construction surveys for migratory birds or their nests within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to USFWS.

In addition, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species during construction would be implemented. The proposed fiber optic line would be buried, thus avoiding the potential for bird or bat strikes.

Per coordination from the USFWS, construction of the project segment located in Sections 5 and 6, Township 139 North, Range 104 West in Golden Valley County will be avoided from February 1 to August 15 to avoid disturbing nesting golden eagles. If any



active bald or golden eagle nest (either documented or undocumented) is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

Coordination received from the NDGF indicates that the agency does not believe this project will have significant adverse effects on wildlife or wildlife habitat provided the agency's recommendations are implemented where appropriate and disturbed areas are reclaimed to pre-project conditions.

- **Vegetation:** Installation activities associated with the proposed project would result in vegetation disturbance. However, the area of proposed surface disturbance is minimal in the context of the setting. Reclamation activities, including backfilling the trench and re-seeding, would take place immediately following cable installation. Areas of disturbance would be re-seeded to match the surrounding landscape. Per recommendations from both the USFWS and NDPRD, where native prairie is disturbed, it will be re-seeded with a mixture of native grasses and forb species.

Disturbance of vegetation in areas of noxious weed infestations may also result in redistribution of invasive grasses within the project areas. Thus, areas not currently dominated by these species may have an increased potential to become infested. The spread of invasive species and noxious weeds can have an adverse effect on multiple aspects of the vegetation resource ranging from the suitability of sensitive plant habitat and maintenance of native biodiversity, to forage production for livestock grazing. Noxious weed infestations will be treated with herbicide prior to construction to prevent the spread of the infestations.

- **Threatened and Endangered Species:** Construction of the proposed project takes place within or near habitats that are suitable for threatened, endangered, and candidate species. The effects of the proposed project are discussed individually for each species below. It should be noted that USFWS concurrence with these determinations of effect is pending and will be included in the final version of this document.

#### Whooping Crane

Palustrine wetlands and cropland food sources do exist near segments of the proposed project. A large portion of the proposed project segments are located in the Central Flyway where 95 percent of confirmed whooping crane sightings have occurred. Whooping cranes traveling near where construction activities are taking place may alter their flight and landing patterns to avoid disturbances related to construction-related activities. However, most of the proposed project segments are located in urban areas or areas that have been previously disturbed by roadway construction. Whooping cranes are anticipated to avoid these previously disturbed areas regardless of ongoing construction activities. In addition, fiber optic cables associated with the proposed project would be buried, eliminating the potential for whooping crane strikes. If a whooping crane is sighted within one-mile of any project segment while under construction, all work will cease within one-mile of that part of the project and the USFWS will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area. Therefore, the proposed project may affect but is not likely to adversely affect the whooping crane. The USFWS has concurred with this determination.

#### Interior least tern

One segment of the proposed project would cross the Missouri River between Bismarck and Mandan. This segment would cross the river by utilizing existing conduit on the bridge above, thus minimizing impacts to interior least tern habitat; however, flight patterns of interior least terns may be temporarily disrupted by construction activities.

The project segment the next closest to suitable interior least tern habitat is located approximately 10 miles north of Lake Sakakawea. Given the proximity of the proposed project to suitable interior least tern habitat at one location, temporary construction activities associated with the proposed project may affect but are not likely to adversely affect the interior least tern. The USFWS has concurred with this determination.

#### Black-footed Ferret

Due to a lack of suitable habitat and known populations, the proposed project is anticipated to have no effect to the black-footed ferret. The USFWS has acknowledged this determination.

#### Pallid Sturgeon

One segment of the proposed project would cross the Missouri River between Bismarck and Mandan. This segment would cross the river by utilizing existing conduit on the bridge above, thus avoiding impacts to pallid sturgeon habitat. The next nearest project segment is located approximately 10 miles north of Lake Sakakawea. Therefore, the proposed project is anticipated to have no effect to the pallid sturgeon. The USFWS has acknowledged this determination.

#### Gray Wolf

The project site is located far from other known wolf populations and is predominantly positioned in urban areas or areas that have been previously disturbed by roadway construction. Segments of the project that are located in undeveloped areas are positioned upon agricultural fields and grasslands that would not likely provide sufficient cover for gray wolves. Due to a lack of preferred habitat characteristics and known populations, the proposed project is anticipated to have no effect to the gray wolf. The USFWS has acknowledged this determination.

#### Piping Plover

As none of the project segments traverse designated critical habitat, the proposed project would not impact designated critical habitat for the piping plover. The overall area of project disturbance would be small (approximately 8-inches wide), temporary in nature, and would be reclaimed immediately following construction. Fiber optic cables associated with the proposed project would be buried, eliminating the potential for piping plover strikes. For the four project segments located within 0.5 miles of designated critical habitat, no construction activities would take place between April 1 and August 31 to avoid potential disturbance during the piping plover nesting/breeding season. Due to the proximity of these temporary construction activities to designated critical habitat, construction of the proposed project may affect, but is not likely to adversely affect the piping plover. The USFWS has concurred with this determination.

#### Western Prairie Fringed Orchid

Within the proposed project area, the Western prairie fringed orchid is only listed in Richland County. All project segments in Richland County occur in urban areas or areas previously disturbed by road construction activities. The United States Forest Service (USFS) conducts surveys of the Western prairie fringed orchid and maintains a database of population locations. Prior to construction, the USFS will be contacted to determine whether the proposed project segments lie within previously surveyed orchid population areas. If the USFS determines that a project segment is located within a previously surveyed area void of orchid populations, construction of that project segment may proceed upon USFWS approval. If USFS coordination reveals that a project segment is located within an un-surveyed area or an area with a known orchid population, no

construction activities shall take place until after a pre-construction orchid survey has been conducted in mid-July. If the field surveys indicate that the proposed segment would pass through an orchid population, the segment would be re-routed to avoid the orchids. Due to the project's potential to occur in suitable Western prairie fringed orchid habitat, the proposed project may affect, but is not likely to adversely affect, the Western prairie fringed orchid. The USFWS has concurred with this determination.

#### Dakota Skipper

Due to the potential for the presence of suitable habitat within the project area, the proposed project may impact individuals or habitat through ground disturbance associated with construction activities. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

#### Greater Sage Grouse

All project segments in Golden Valley County occur in urban areas or areas that have been previously disturbed by road construction, both of which are areas this species is anticipated to avoid regardless of construction activities. Therefore, the proposed project is not anticipated to impact the greater sage grouse. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

#### Sprague's Pipit

Most of the proposed project segments are located in urban areas or areas that have been previously disturbed by roadway construction. Sprague's pipits are anticipated to avoid these previously disturbed areas regardless of ongoing construction activities. As some other segments of the proposed project are located on upland grass areas, there is the potential for suitable Sprague's pipit habitat to exist within the project area. Construction of the proposed project in these locations may temporarily impact individual Sprague's pipits. However, the areas of disturbance would be small (approximately 8-inches wide) and would be reclaimed immediately following construction. In addition, fiber optic cables associated with the proposed project would be buried, eliminating the potential for Sprague's pipit strikes. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

- **Historic and Cultural Resources:** No known historic or cultural resources were identified within the proposed project area. SHPO concurred with a *No Historic Properties Affected* determination, provided three sites not included in the Class III Cultural Resource Inventory report are avoided. These sites are not located near proposed project segments and would, therefore, be avoided. If previously unknown culture resources are discovered during project installation, work shall immediately be stopped, the affected site secured, and the SHPO notified immediately. In the event of a discovery, work shall not resume until written authorization has been received from SHPO. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

Requests for additional information regarding the proposed project were received from the Spirit Lake Nation, Lower Brule Sioux Tribe, Three Affiliated Tribes, and Fort Peck Tribes, and this information has been provided. The Lower Brule Sioux Tribe indicated it has no interest in the proposed project unless there is an inadvertent discovery of archaeological or cultural materials during excavation. If project activities result in the

discovery of cultural materials or human remains, all work must cease, and the FCC and Tribe notified.

Per the request of the Fort Peck Tribe, ethnographic reports have been prepared for the 31 miles of project segments would be located in previously undisturbed locations. The ethnographic reports concluded that the areas evaluated no longer contain plants and animals that would have been utilized by the Sioux and that construction of the proposed project would not adversely affect culturally sensitive site areas. These reports were submitted to the Fort Peck Tribe on May 5, 2011, and the THPO's 30-day response period expired on June 6, 2011. After attempts to contact the Fort Peck Tribe THPO both before and after the conclusion of the 30-day response period (see Appendix D, Tribal Coordination for a recorded summary of these attempts), no written response was received. Informal verbal communication indicates that the THPO requests to be notified as appropriate if any human remains or buried sites are discovered during construction of the proposed project.

No further comments have been received from the Spirit Lake Nation or Three Affiliated Tribes.

- **Infrastructure:** Installation of the proposed project would improve the broadband infrastructure within the project area by improving existing service and providing new service to under-served areas. Segments of the proposed project would bore beneath existing roadways and/or share utility corridors with other communications or power networks. Additionally, vehicular traffic associated with installation of the proposed project would temporarily increase overall traffic on overall roadway networks. County and North Dakota Department of Transportation (NDDOT) rules and regulations for oversize/overweight loads on state and county roads would be followed and permits would be acquired as appropriate. For project segments proposed within highway rights-of-way, appropriate permits and risk management documents will be obtained from the appropriate NDDOT District Engineer.

Installation of the proposed project is not anticipated to conflict with existing infrastructure or utility services. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

- **Socioeconomic Resources:** Based on reporting requirements of the Executive Office of the President's Council of Economic Advisers' Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009 guidelines, Alternative B is anticipated to create 167 new jobs. These jobs would require a set skill base and would provide above living wage salaries to residents in rural and urban North Dakota. With the potential to create up to 167 new jobs, Alternative B would have a positive impact on the economic development throughout the State. Additional jobs may be created by the local exchange carriers, health industry, public safety entities, and government and academia entities as many of these organizations would need to hire technical support staff to handle the enhanced broadband service offerings.
- **Human Health and Safety:** No substantial health and safety impacts to workers, the traveling public, or community anchor institutions project would be impacted as a result of the construction of this project. A formal Health and Safety Plan has not been developed for this project as proposed construction methodologies do not pose significant safety risks. Alternative B would improve public health and safety by providing

new or improved broadband telecommunications service to entities that work to promote and enhance human health and safety.

In addition, the proposed project would not require the use of hazardous substances or materials.