

ES.0 EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The proposed Vantage Pipeline is a high vapor pressure pipeline that would carry ethane from a source near Tioga, North Dakota, United States, northwest through Saskatchewan, Canada, to a site near Empress, Alberta, Canada. The pipeline would link a growing supply of ethane from North Dakota to markets in Alberta, Canada. More specifically, the Vantage Pipeline would have the capacity to deliver an initial rate of 40,000 barrels per day (bpd), expandable to 60,000 bpd, of liquid ethane from existing natural gas facilities in North Dakota to the Alberta Ethane Gathering System (AEGS) in Alberta, Canada. The entire proposed Vantage Pipeline in the United States would be approximately 79.8 miles long.

In the United States, Vantage Pipeline US LP (Vantage) has applied for a Presidential Permit for the construction, operation, and maintenance of a pipeline facility at the United States border to export liquid ethane to Canada. The U.S. Department of State (DOS) receives and considers applications for Presidential Permits for such pipeline border crossings and associated facilities pursuant to the President's constitutional authority over foreign relations, and as Commander-in-Chief, which authority the President delegated to DOS in Executive Order (EO) 13337, 69 FR 25299 (May 4, 2004). For liquid hydrocarbon pipelines, such as the proposed ethane pipeline, the President, through EO 13337, directs the Secretary of State to decide whether a project is in the national interest before a Presidential Permit is granted.

The determination of national interest involves consideration of many factors, including: energy security; environmental, cultural, and economic impacts; foreign policy; and compliance with relevant federal regulations. Before making a decision, DOS will consult with the eight federal agencies identified in EO 13337: the Departments of Energy, Defense, Transportation, Homeland Security, Justice, Interior, and Commerce, and the Environmental Protection Agency (EPA). DOS will also solicit public input on the national interest determination by accepting written comments.

In the United States, Vantage proposes to construct and operate 79.8 miles of 10-inch-diameter ethane pipeline in Williams and Divide Counties, North Dakota. Vantage's project would also include the installation of mainline block valves (MLBVs) at eight locations along the pipeline and the use of various ancillary facilities (e.g., access roads, yards). The pipeline and collective facilities are referred to as the Vantage Pipeline Project (Project). Vantage proposes to begin construction in June of 2013 and anticipates that the Project would go into service in October, 2013. DOS, as the lead federal agency, has prepared this Environmental Assessment (EA) to determine whether to prepare an Environmental Impact Statement or make a Finding of No Significant Impact consistent with the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) and its implementing regulations.¹

This EA is specific to the U.S. portion of the Project, and provides an assessment of the existing environment along the proposed pipeline route, an analysis of human and environmental impacts that could potentially result from pipeline right-of-way preparation, construction, operation, and maintenance of the proposed pipeline facilities, and a summary of the protection and restoration measures to be implemented to avoid and/or minimize environmental impacts.

In addition to the proposed facilities, DOS has determined that the operation of a heater at the existing Tioga Gas Plant and electric transmission lines and interconnects for the MLBVs would be connected actions for the purposes of this review consistent with the NEPA and 40 Code of Federal

¹ For more information on NEPA see "A Citizen's Guide to NEPA" Council on Environmental Quality (CEQ) (December 2007), which can be downloaded at <http://www.ceq.hss.doe.gov>.

Regulations (CFR) 1508.25(a)1. This Final EA describes the connected actions and the associated impacts.

In addition to approval from the U.S., the proposed Vantage Pipeline requires approval from the Canadian National Energy Board. In Canada, the proposed system would include the construction of approximately 350 miles of pipeline in Saskatchewan, Canada and approximately 2 miles of pipeline in Alberta, Canada, one pump station located at the midpoint of the pipeline between Lafleche and Assiniboia, Saskatchewan, one pump station located at the terminus near Empress, Alberta, and other associated facilities. The Canadian National Energy Board approved the Canadian portion of the pipeline project on January 19, 2012.

In May 2012, DOS issued a Draft EA for the Vantage Pipeline Project. This Final EA incorporates updated information regarding the Project that was received and developed subsequent to the May 2012 Draft EA, such as updated Section 7 and 106 consultations and plans.

ES.2 ALTERNATIVES

DOS considered the No Action Alternative; System Alternatives; two potential Alternative Routes; two potential Route Variations; and Alternative MLBV Locations based on information provided in Vantage's Presidential Permit application and supplemental submittals related to the application, comments received in the scoping process, and information obtained from research of relevant available information conducted by DOS.

As gas production in North Dakota increases, much of it is being burned into the atmosphere (i.e., flared) because there is insufficient infrastructure to accommodate natural gas gathering, compression, and processing. While hard data are lacking, one estimate suggests that flared gas in North Dakota produced two million tons of CO₂ last year, which is equivalent to the emissions created by over 350,000 extra cars on the road, and that flared gas cost the State of North Dakota about \$110 million in revenue in 2011 (Reuters, 2012). By processing the natural gas to separate out the ethane and installing infrastructure such as a pipeline to transport the ethane extracted, more of the product can be utilized, lowering the incentive to continue flaring.

ES.3 PURPOSE AND NEED FOR THE PROPOSED PROJECT

Vantage's stated purpose of the Project is to transport ethane from the existing Tioga Gas Plant in the Williston Basin of North Dakota to Alberta, Canada. Vantage believes that increasing ethane supplies in the Williston Basin and demonstrated interest from the petrochemical industry in Alberta to purchase these increased supplies, as well as existing and forecasted supply and demand, would make the Project economically viable. The Project would also provide the natural gas, oil, and ethane-producing Bakken Formation region of North Dakota with access to an existing ethane infrastructure and market associated with the AEGS in Alberta. Vantage believes exports of ethane from the United States would increase, which it contends is consistent with the EO for the National Export Initiative (March 11, 2010). Vantage also states that the Project would allow U.S. natural gas producers to recognize additional revenue from an existing resource and would thus be anticipated to contribute to the national economy through the creation of jobs and additional tax revenue.

ES.4 POTENTIAL IMPACTS AND MITIGATION

The environmental impact of constructing and operating the proposed Project would vary in duration. Using criteria recognized by other federal and state agencies such as the Federal Energy Regulatory Commission and Bureau of Land Management, DOS considered four levels of impact

duration: temporary, short-term, long-term, and permanent. An impact is considered significant if it would result in a substantial adverse change in the physical environment. Additionally, the Project's effects were classified as either direct or indirect consistent with the CEQ's guidelines on NEPA (Section 1508.8), depending on the activity and the resource.

As part of its Presidential Permit application, Vantage provided information regarding the existing environment in which the Project would operate and the Project's impacts on environmental resources. Additionally, Vantage, as part of its proposal, agreed to implement certain measures to reduce impacts. DOS has independently analyzed the information provided by Vantage, assessed the Project's impacts on environmental resources, and evaluated the proposed mitigation measures for their applicability using historical pipeline project data, information obtained during agency consultations, and subject matter expert knowledge. Project impacts were based on DOS's analysis of the environmental impact of the Project and the following assumptions:

- Vantage would comply with all applicable laws and regulations;
- the facilities would be constructed as described in the Final EA; and
- Vantage would implement the mitigation measures identified in its application materials and supplemental information submittals to DOS, which includes the Environmental Protection Plan (EPP). The Draft EPP can be found in Appendix C. DOS has reviewed Vantage's Draft EPP and does not expect there will be significant changes to the document before it is finalized. The Final EPP will be submitted to DOS for review and approval prior to beginning construction on the project.

ES.4.1 Geology

The Project would cross deposits of petroleum, coal, lignite, trace metal, clay, sand, gravel, scoria, and salt bearing formations. Geologic hazards in the Project area potentially include mass movement, flooding, and seismic events. Construction activities are likely to have temporary and direct impacts on the shallow subsurface geologic environment. During operation, direct impacts on subsurface geologic resources may also occur to the extent erosion is caused by Vantage's vehicles. To reduce potential impacts on the geologic environment and resulting from geologic hazards, Vantage would grade as necessary across slope areas; install temporary sediment barriers such as silt fence and straw bales at environmentally sensitive areas; install temporary slope breakers across the right-of-way during grading; and install permanent slope breakers during restoration. Based on a review of Natural Resources Conservation Service and U.S. Geological Service data, the resources identified in the Project area, and the pipeline construction methods proposed by Vantage, the potential for geologic hazards to significantly affect construction or operation of the proposed Project is anticipated to be low. Further, mineral resources (oil and gas, salts, etc.) associated with the underlying bedrock are found at a depth far below the proposed pipeline trench and installation depth and are anticipated to be unaffected during Project construction and operation.

The Project may encounter paleontological resources during construction and fossil resources in the underlying glacial deposits may be exposed. To reduce the potential impacts associated with the loss of fossil resources, Vantage would instruct construction personnel about the types of fossils that might be encountered and the steps to take (e.g., agency notification) if fossils are uncovered and to determine if additional mitigation is required.

ES.4.2 Soils

Construction activities may impact soil resources, exposing the soil to the effects of wind, rain, and runoff, which increases the potential for soil erosion and sedimentation in sensitive areas. Trenching may bring stones or rock fragments to the surface that could interfere with agricultural practices and hinder restoration of the right-of-way. Construction activities may also affect soil fertility and facilitate the dispersal and establishment of weeds. Contamination from spills or leaks of fuels, lubricants, and coolant from construction and operation equipment could adversely affect soils.

To reduce the potential for construction- and operation-related impacts on soils, Vantage would implement various project-specific plans, including its EPP (see Appendix C for the Draft EPP); Soil Conditions Contingency Plan; stormwater best management practices (BMPs) as stipulated in a Project-specific Stormwater Pollution Prevention Plan (SWPPP); Soil Erosion Contingency Plan; and Spill Prevention, Control and Countermeasure (SPCC) Plan; and would comply with all conditions of the Construction Stormwater Permit required by the North Dakota Health Department (NDHD). In addition, Vantage would develop and require contractor compliance with a Project-specific Fuels and Hazardous Materials Spill Contingency Plan to handle initial spill response and reporting, spill clean-up procedures, and special situations such as spills next to waterbodies. Vantage would implement topsoil handling protocols, and all soils would be returned to their original locations.

During operation, direct impacts on soils may also occur as a result of vehicles used to periodically conduct inspection and vegetation maintenance activities along the right-of-way. However, based on recent pipeline projects and the inspection requirements set forth by the U.S. Department of Transportation (DOT) in 49 CFR 195, these activities would be limited in scale and time, and are anticipated to result only in temporary, minor, and localized impacts on soils.

ES.4.3 Groundwater

Impacts on groundwater resources during construction would be temporary and limited to that portion of a groundwater system(s) that is near the land surface and near or within the Project construction work area. There are no designated federal or state sole-source aquifers in North Dakota and the Project area. Also, no wells or springs were identified within 150 feet of the Project. During construction, if the groundwater table is found to be less than 5 feet below the land surface, dewatering may be necessary, which would temporarily appropriate groundwater resources creating a short-term fluctuation in groundwater levels, and a change in shallow groundwater flow direction. These impacts would be minor, temporary, and localized to the construction area.

Project construction, including fueling activities and accidental spills of hazardous substances, could potentially impact the water quality and capacity of nearby private water supply wells. Vantage would implement its SPCC Plan to mitigate for potential spills. Further, while it is not anticipated that previously existing contamination would be encountered, Vantage would dispose of or mitigate any hazardous materials uncovered during construction consistent with applicable federal, state, and local requirements. Water appropriation for hydrostatic testing would be from an existing well at the Tioga Gas Plant and is not expected to have a long-term or adverse impact on the source aquifers groundwater quantity or quality.

Operation of the pipeline is not anticipated to significantly impact groundwater resources.

ES.4.4 Surface Water and Wetlands

The Project is located in the Northwestern Glaciated Plains ecoregion and would cross the prairie pothole region of the Missouri Coteau. Waterbodies crossed by the Project include intermittent and ephemeral drainages that are more characteristic of wetlands. The wetland type and area affected by construction and operation of the Project would be about 1.0 acre of palustrine emergent based on National Wetlands Inventory data. Vantage would minimize direct impacts on wetlands by installing the pipeline using the horizontal bore method under the feature with the entrance and exit points located outside the wetland boundaries. Wetlands would not be filled or permanently lost as a result of operation of the Project. Therefore, surface disturbance to wetland areas would not occur, and it is expected that the value and function of wetland areas would not be affected by construction or operation of the Project.

Stormwater runoff from the construction area could indirectly introduce contaminants and sediment into waterways and negatively impact aquatic resources. Vantage would be required, as part of its permitting process with the NDHD, to develop and implement the BMPs outlined in a Project-specific SWPPP. Vantage has also committed to developing with the construction contractor a Project-specific SPCC Plan that would be implemented during construction to mitigate for accidental spills during construction, including: response, containment, reporting, and cleanup measures.

Because Vantage would hydrostatically test the pipeline using water obtained from a high capacity well at the Tioga Gas Plant, as opposed to appropriating it from a nearby lake or river, significant impacts on surface waters or wetlands are not anticipated as a result of hydrostatic testing activities. No waterbodies or wetlands are anticipated to be affected by construction and operation of the MLBVs, access roads, and contractor/pipe storage yards proposed for the Project.

ES.4.5 Fisheries

No game or recreational fisheries are present in the waterbodies crossed by the Project, and no known fisheries considered significant by the North Dakota Game and Fish Department are anticipated to be affected by construction and operation of the Project. Further, no essential fish habitat under the jurisdiction of the U.S. Fish and Wildlife Service (FWS) and no naturally reproducing or stocked trout streams are located in the Project area. To minimize potential impacts on downstream and aquatic resources, Vantage would cross waterbodies/wetlands using the horizontal bore method. Potential impacts from sedimentation, turbidity, and potential contaminants encountered during and after construction would be minimized by Vantage's implementation of the measures included in its EPP (see Appendix C for the Draft EPP). Further, Vantage would be required to develop and implement a Project-specific SWPPP as part of the NDHD permitting process.

Vantage would hydrostatically test the pipeline to find leaks and verify the integrity of the pipeline using water obtained from a high capacity well at the Tioga Gas Plant. Impacts on fishery resources are not anticipated because these hydrostatic testing activities would ensure the pipeline is sealed. No fisheries are anticipated to be affected by construction and operation of the MLBVs, access roads, and contractor/pipe storage yards proposed for the Project.

ES.4.6 Vegetation

Agriculture is the most extensive land use in the Project area. The primary impact of construction and operation of the Project on vegetation would be the short- to long-term alteration of cover on managed hay land, grassland, and rangeland. Potential impacts from construction would be minimized by the implementation of BMPs outlined in the Vantage's EPP (see Appendix C for the Draft EPP). Further, Vantage would be required to develop and implement a Project-specific SWPPP as part of the NDHD

permitting process. The temporary construction right-of-way and additional temporary workspace (ATWS) would be allowed to return to pre-construction conditions shortly after construction, although that may require more than one full growing season to reestablish a protective vegetative cover. Agricultural lands would be available for planting immediately following restoration of the pipeline right-of-way. No woodlots or forested areas would be affected by construction; however, some tree lines (i.e., shelter belts) would be crossed by the pipeline route.

Following construction, the majority of disturbed areas would be allowed to revert to preconstruction conditions. Vantage would revegetate disturbed areas consistent with the EPP (see Appendix C for the Draft EPP), other permit requirements, and site-specific landowner requests. Further, Vantage would conduct routine monitoring of the right-of-way throughout the life of the pipeline, as required by the DOT. Permanent impacts would include the conversion of approximately 0.6 acre of native and mixed native vegetation to commercial uses by the installation of MLBVs and gravel roads providing access to the MLBV sites.

To address impacts on Conservation Reserve Program (CRP) land, Vantage would contact landowners enrolled in the CRP and determine the seed mix that must be planted to satisfy the conditions of the agreement and the acceptable seeding window. The Project would also cross about 62 feet of FWS Grassland Easement Program land. To mitigate impacts on the easement, Vantage would install the pipeline under the easement using the horizontal bore method.

Field surveys indicated that no federally listed noxious weed species were present in the Project area in noticeable concentrations. Two North Dakota-listed noxious weed species were identified in the Project area and, to mitigate the spread of any noxious weeds, Vantage would implement the BMPs and weed control practices discussed in its EPP (see Appendix C for the Draft EPP).

Based on Vantage's proposed construction, operation, and mitigation measures, the Project is not anticipated to significantly impact vegetative resources.

ES.4.7 Wildlife

The primary effect on wildlife would be the temporary loss of habitats and displacement of wildlife during construction. Large expanses of available habitat lie adjacent to the construction work areas and mobile species would disperse to those areas. Only temporary displacement is anticipated to occur. Smaller, less mobile wildlife species such as voles and mice may experience some direct mortality during clearing and grading activities depending on local population densities. The most common vole species in the Project area is the meadow vole. This species' population fluctuates in cycles every 2 to 5 years with peak densities of 60 to 250 individuals per acre recorded. The common deer mouse has widespread distribution throughout the Project area and population densities vary widely in different habitats and from season to season, but the species is considered generally abundant. Based on past and recent pipeline projects and the species' densities, the losses are anticipated to be minor and insignificant on the local populations.

Wetland areas and waterbodies that provide preferred habitat for frogs, turtles, and some snakes would not be affected by construction because Vantage would cross these areas using the horizontal bore method, thereby preventing impacts on aquatic habitats and minimizing impacts on individuals. Reptiles that prefer upland habitats (e.g., western hog-nose snake, prairie rattlesnake) are expected to be infrequently encountered during construction of the Project as population densities are low in the area. It is probable that construction could affect a small number of individuals; however, the effect of construction on the total population is expected to be minimal.

The possibility that construction could cause permanent displacement of wildlife or result in a decrease in wildlife population densities due to long-term changes in habitat is highly unlikely. The majority of the Project route (approximately 60 percent) is located in actively managed agricultural land that is periodically plowed, planted, sprayed, and/or harvested. The remaining areas consist of native grassland and many of these parcels support grazing livestock. Wildlife species occupying grassland may disperse into nearby habitats during construction, including marginal habitats, resulting in lowered reproductive success and survival due to increased competition or other effects of being forced into sub-optimal habitats; however, the affected habitat is minimal in relation to the adjacent habitat available. Additionally, grassland would be restored and returned to a pre-construction condition following construction, with the exception of about 0.6 acre of land converted to commercial/industrial use for the MLBVs and access roads. Based on past and recent pipeline projects, wildlife populations are expected to return to levels comparable to adjacent, undisturbed areas within a short time period, and it is anticipated that no long-term habitat alteration or detrimental affects to local wildlife populations are likely to occur as a result of construction and operation the Project.

Migratory Bird Treaty Act

Migratory bird species, including raptor species, could be disturbed during nesting depending on site-specific conditions, including vegetation types, terrain, presence of trees, line of sight, and adaption of the species to development. To avoid potential impacts on migratory birds, Vantage would adopt the FWS's recommended mitigation measures and has prepared the *Voluntary Conservation Plan in Furtherance of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act and Executive Order 13186* (Conservation Plan) in consultation with the FWS. The plan has been agreed to by both FWS and Vantage. Following construction, Vantage would reclaim disturbed areas to pre-construction habitat conditions consistent with the EPP (see Appendix C for the Draft EPP).

Bald and Golden Eagle Protection Act

Vantage would comply with the provisions of the Bald and Golden Eagle Protection Act (BGEPA). Vantage conducted bald and golden eagle nest location and nest occupancy surveys of a 1-mile-wide corridor based on the proposed pipeline centerline in May and June 2011 and no bald or golden eagle nests were identified within the survey corridor. Vantage would comply with the provisions of the BGEPA and would continue coordination with the FWS.

ES.4.8 Threatened and Endangered Species

Threatened and endangered species that may be present in the Project area would be subject to the same types of short-term impacts as general wildlife and vegetation. Of the federally listed species identified, the gray wolf, pallid sturgeon, and interior least tern are not anticipated to be present in the Project area. The federally endangered whooping crane and federally designated critical habitat associated with the piping plover are known to exist in the Project area. Further, the federal candidate species Sprague's pipit may also occur in the Project area. Vantage would adhere to FWS-identified recommendations to avoid impacts on the whooping crane, piping plover, and Sprague's pipit, and would implement the measures outlined in the Conservation Plan developed in consultation with the FWS and agreed to by both FWS and Vantage. Additionally, a Biological Assessment (BA) analyzing the potential impacts to federally listed species and designated critical habitat has been prepared for the Project. The BA is attached to this Final EA as Appendix B. The FWS concurred with and acknowledged DOS determinations presented in the BA (see Appendix B).

The FWS expressed concern about the risk of a leak during pipeline operation impacting piping plover nesting areas that could potentially result in a potential incidental take of the species. Consistent

with federal requirements, Vantage would develop an emergency response plan that discusses emergency contingencies in the event of a pipeline accident such as a pipeline leak, rupture, or failure. Contingencies would include pressure and leak detection monitoring, emergency valve closure procedures, aerial and foot surveillance, and hazardous materials response protocols.

In addition to federally designated threatened and endangered species, the North Dakota Game and Fish Department has identified Level 1 species, which are defined as species of a high level of conservation priority because of declining status either in North Dakota or across their range; or are at a high rate of occurrence in North Dakota constituting the core of the species' breeding range, but are at-risk range wide. Vantage would mitigate impacts on North Dakota Level 1 avian species by constructing the facilities after the nesting season has concluded or by removing nesting habitat prior to the nesting season. Other Level 1 species may be present in the Project area, however, Vantage would implement the mitigation measures identified in its EPP (see Appendix C for the Draft EPP) and would use the horizontal bore method to avoid impacts on wetlands and the species that inhabit wetland areas. The primary impact that could occur as a result of a horizontal bore is an inadvertent release of drilling mud (frac-out) directly or indirectly into a waterbody or wetland. Although drilling mud is a mix of naturally occurring nontoxic materials, such as bentonite clay and water, in larger quantities the release of drilling mud into a waterbody or wetland could affect aquatic organisms by settling in and temporarily inundating the habitats used by these species. Vantage would implement the measures discussed in its EPP (see Appendix C for the Draft EPP) that describe how each horizontal bore would be conducted to minimize the potential for an inadvertent release of drilling mud to occur, and the procedures to follow and the NDHD personnel to contact in the event of a drilling fluid release.

Based on the construction plans and mitigation measures proposed by Vantage, construction and operation of the Project is not anticipated to result in adverse impacts on Level 1 species of concern.

ES.4.9 Land Use, Recreation, Special Interest Areas, and Visual Resources

Land use impacts associated with the proposed pipeline would include the disturbance of existing land uses during construction and retention of an expanded permanent right-of-way during operation of the facilities. Vantage proposes to generally use a 70-foot-wide construction right-of-way, of which 6.3 miles (8 percent) would be adjacent to and within 100 feet of existing rights-of-way. Vantage's permanent right-of-way would typically be 30 feet wide, consisting of 25 feet and 5 feet on either side of the pipeline centerline.

The effects of pipeline construction on land uses are expected to be minor and short term. To reduce Project-related impacts, Vantage would adhere to the measures outlined in its EPP (see Appendix C for the Draft EPP). Following construction, Vantage would implement the restoration practices outlined in its EPP (see Appendix C for the Draft EPP) and agricultural, open, and wetland land uses would continue as before construction. Post-construction monitoring measures would include a post-construction soil assessment and visual inspections of the right-of-way to identify locations of invasive weed infestations, poor vegetation establishment, and reduced crop growth. The land retained as permanent right-of-way would generally be allowed to revert to former use; however, certain activities such as the construction of aboveground structures would be prohibited.

In general, Project impacts on recreational and special interest areas, which consist of Private Land Open to Sportsman, would be temporary and limited to the period of active construction, which typically would last only several days to several weeks in any one area. These impacts would be minimized by implementing Vantage's EPP (see Appendix C for the Draft EPP), which includes commitments by Vantage to restore and revegetate disturbed areas and coordinate with agency personnel.

MLBVs and pipeline signs and markers would be the most visible features and would result in a permanent impact on visual resources. While permanent, the impact of these features is not anticipated to have an adverse impact on the visual landscape of the area because these features are not out of character with the landscape of Divide and Williams Counties.

ES.4.10 Socioeconomics

Project-area impacts on population, economy, employment, and public services are expected to be temporary, minor, and largely beneficial. Based on the county populations within the Project area, the additional people that might temporarily relocate to the area as a result of the Project would not result in a significant change. A brief decrease in the unemployment rate could occur as a result of hiring local workers for construction and increased demands on the local economy, including purchases by Vantage, its construction contractors, and workers employed on the Project. The anticipated demand for police, fire, and medical services is not expected to exceed the existing capability of the infrastructure in the Project area to provide them, as the Project would result in a temporary addition of 60 to 70 workers in the area and these services are expected to be used only in emergencies. The Project would not be expected to result in adverse impacts that would fall disproportionately on minority or low-income populations located along the Project route. Construction and operation of the Project would have beneficial impacts on local sales tax revenue. During operation of the Project, Divide and Williams Counties, local school districts, townships, and other local taxing jurisdictions are anticipated to realize ad valorem property tax revenues assessed on the pipeline.

Construction of the proposed Project could result in minor, short-term impacts along some roads and highways due to the movement and delivery of equipment, materials, and workers. To reduce impacts on the flow of traffic, Vantage would coordinate and limit the hours of construction, including scheduling the transportation of construction materials and the daily arrival and departure of workers to occur generally outside peak commuting hours. Traffic impacts at pipeline crossings would further be minimized by using a horizontal bore at all gravel and paved road crossings, where possible. Vantage would also prepare detours in locations requiring open cuts. Where crossings are open cut, temporary measures would be available to allow for emergency crossings. Following construction, Vantage would repair any damage to road quality caused by the transport of heavy construction equipment or other procedures related to pipeline construction to pre-existing conditions. Based on Vantage's proposed construction measures and the temporary time period associated with road crossings, the Project is not anticipated to significantly impact transportation in the Project area.

ES.4.11 Cultural Resources

The Project is a federal "undertaking" and is reviewed consistent with the provisions of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations at 36 CFR 800. Section 106 requires that prior to issuing a "license," such as a Presidential Permit for a federal undertaking, the lead federal reviewing agency (for this Project, DOS) must take into account the effect that such undertaking would have on historic properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP). Section 106 also provides that DOS afford the Advisory Council on Historic Preservation the opportunity to comment on the undertaking. The Section 106 process is assisted at the state level by the State Historic Preservation Officer (SHPO) of North Dakota.

Pursuant to 36 CFR 800.2(a)(3), DOS requested the services of the applicant (i.e., Vantage) and its consultant (i.e., Ethnoscience) to prepare information, analyses, and recommendations specific to cultural resources for the Project. Vantage completed cultural resources investigations along the proposed pipeline route and ancillary facilities, and identified 79 archaeological sites and 19 isolated finds. Based

on DOS's independent review of the cultural resources investigations to date and coordination with the North Dakota SHPO, the 19 isolated finds are not considered eligible for listing on the NRHP; 17 of the 79 archaeological sites are not recommended as eligible for listing on the NRHP and no further work is recommended; and two sites are recommended as eligible for listing on the NRHP. The eligibility of the remaining 60 sites was left undetermined because Vantage has committed to avoiding these sites. During Vantage's cultural resources surveys, representatives from two tribes accompanied Vantage's survey crews in their respective historic territory, and provided cultural and historic information for 14 of the recorded archaeological sites. Vantage would prepare an avoidance treatment plan for the two NRHP-recommended eligible sites. To avoid adverse impacts on 60 NRHP-unevaluated archaeological sites, Vantage would provide a minimum 45-foot buffer and/or has realigned the construction centerline, narrowed the construction workspace, and/or rerouted the construction corridor.

Vantage submitted the Class III cultural resources inventory report to the North Dakota SHPO on December 29, 2011. On January 11, 2012, the North Dakota SHPO submitted a letter to DOS stating that it concurred with the Class III cultural resources inventory report's "no historic properties affected" and "no significant sites affected" determinations.

Additional cultural resource surveys for the proposed MLBVs, access roads, and contractor/pipe yards are forthcoming, as well as treatment plans for sites that would be avoided. These reports would be reviewed by DOS and then forwarded to the applicable consulting parties consistent with 36 CFR 800.

Twenty tribes have been contacted by Vantage and/or DOS. To date, two tribes have indicated that they are not interested in consulting, and 10 tribes have asked to consult on the Project. Interested tribes have been provided a copy of Vantage's cultural resources investigations report for review. DOS has conducted a conference call with several tribes and hosted a meeting in New Town, North Dakota with interested tribes in early 2012. The primary objective of the call and meeting was to exchange information and to listen to tribal concerns; learn of any properties important to tribes and specific resources that should be considered in the environmental review and as part of the NHPA process; and provide an opportunity for tribes to request a study of possible historic properties of religious and cultural significance to an Indian tribe in the Project area. As a result of the meeting, Vantage sponsored tribal surveys that were conducted between June 2 and 17, 2012. Following the tribal survey, there was disagreement regarding the adequacy of access to the Project route. DOS visited the project area on July 10, 2012 and hosted a tribal consultation meeting on July 11, 2012.

DOS hosted additional tribal consultation meetings in Bismarck, North Dakota on January 14 and February 8, 2013. The North Dakota SHPO and the ACHP attended both meetings. Representatives of 10 tribes attended the January meeting, which focused on the adequacy of the June 2012 tribal survey, and representatives of 9 tribes attended the February meeting, which focused on the clauses and stipulations of the Programmatic Agreement (PA).

The ACHP formally entered consultation for the Project with a February 14, 2013 letter from Executive Director John Fowler to DOS Secretary John F. Kerry.

DOS sent an outline of the PA to consulting parties in July 2012, and a first draft of the PA to consulting parties in August 2012 for review and comment. Tribal representatives from six tribes, the North Dakota SHPO, and the ACHP provided comments to the PA, which was revised four times until it was finalized in April 2013. The final PA, which specifies the responsibilities of all parties and provides provisions to complete tribal surveys and employ tribal monitors in order to identify historic properties of religious and cultural significance to tribes, was signed by DOS on April 8, 2013. DOS will ensure adherence to the provisions of the PA, and will continue to consult with Indian tribes throughout the Project. The final PA is included as Appendix D.

ES.4.12 Air Quality

Emissions associated with construction and installation of the pipeline would include fossil-fuel combustion emissions and fugitive dust. Emissions may result from small propane heaters used to warm personnel during construction activities. Emissions from construction would be controlled to the extent required by state and local agencies (e.g., any special conditions of the North Dakota Public Service Commission listed in the Certificate of Corridor Compatibility and Route Permit applicable to air quality), while tailpipe emission from gasoline and diesel powered construction equipment would be subject to federal mobile source regulations listed in 40 CFR 85. Based on past and recent pipeline projects and Vantage's commitment to adhere to the regulation measures, emissions from construction-related activities are not anticipated to significantly affect local or regional air quality. Further, based on the proposed mitigation and the local and intermittent nature of the construction, these emissions are not expected to impact local air quality attainment status.

Emissions from pipeline operation and maintenance would occur, and greenhouse gases would also be produced, but would be subject to federal emissions standards. The emissions associated with the Project would be below major source permitting thresholds and are generally insignificant. As such, operation of the Project is not expected to impact the local area attainment status.

Regarding the connected action, the total incremental emissions from the Tioga Gas Plant would equate to 29,280 tons per year (26,570 megagrams per year) of greenhouse gas (GHG) emissions (in carbon dioxide (CO₂) equivalent units). This equates to a 26 percent increase in GHG emissions from the Tioga Gas Plant over 2010 emissions. The total incremental CO₂ emissions increase from the Tioga Gas Plant and Project would equate to 29,717 tons per year (26,966 megagrams per year), which is a 0.055 percent of the CO₂ emissions generated in North Dakota. The total incremental emissions increase for the Tioga Gas Plant and Project would be well below major source permitting thresholds (75,000 tons per year or 68,039 megagrams per year for modifications to existing sources).

ES.4.13 Noise

The construction activities associated with the Project would be temporary, intermittent, and vary over time. Construction noise would be limited to daylight hours and any horizontal bores for the Project would be completed within one day between 7 AM and 10 PM. As such, the construction activities would not exceed a nighttime noise level of 55 decibels on the A-weighted scale (dBA) because the equipment would not operate between 10 PM and 7 AM. Operational noise attributable to MLBV sites at the closest noise-sensitive area would be about 0 dBA, which is below the EPA's noise guideline day-night sound level of 55 dBA applied to operational noise sources.

ES.4.14 Reliability and Safety

The pipeline and aboveground facilities associated with the Project would be designed, constructed, operated, and maintained consistent with or to exceed the DOT's Minimum Federal Safety Standards in 49 CFR 190 through 199. These regulations, which are intended to protect the public and to prevent pipeline facility accidents and failures, include specifications for material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion.

ES.4.15 Cumulative Impacts

Existing conditions in the vicinity of the proposed Project reflect the extensive past changes brought about by long-term human occupancy and use of the Project area. For example, agricultural

impacts and oil and gas development activities have altered the native landscape in the Project area. When the impacts of the Project are considered additively with the impacts of other past, present, or reasonably foreseeable future projects, there is some potential for cumulative effect on resources such as soils, surface waters, wetlands, fish and fish habitat, vegetation, wildlife and wildlife habitat, and socioeconomics. However, for the proposed Project, mitigation has been or would be developed in the form of several Project-specific documents such as the EPP (see Appendix C for the Draft EPP) and BA that, when implemented, are anticipated to avoid, minimize, or compensate for adverse impacts on these resources. Therefore, construction and operation of the Project, in addition to other proposed and planned projects in the Project area, is not anticipated to result in significant cumulative effects on the region's environment.

ES.5 SUMMARY OF ASSUMPTIONS

Our analyses of potential impacts associated with construction and normal operation of the proposed Project on most resources along the proposed Project corridor assume the following:

- Vantage would comply with all applicable laws and regulations;
- Vantage would incorporate the mitigation measures required in permits issued by environmental permitting agencies listed in table 1.10-1 of the Final EA into the construction, operation, and maintenance of the proposed Project;
- Vantage would adopt the timing restrictions and/or adopt the mitigation measures recommended by the FWS to avoid adversely affecting federally listed species or their habitat;
- Vantage would adopt the timing restrictions and/or adopt the mitigation measures recommended by the FWS and listed in the Conservation Plan developed in consultation with the FWS to avoid adversely affecting species protected by the Migratory Bird Treaty Act and BGEPA;
- Vantage would complete cultural resources surveys, assist DOS in review consistent with Section 106 of the NHPA, and adhere to the stipulations listed in the PA;
- Vantage would construct, operate, and maintain the proposed Project as described in the Final EA; and
- Vantage would implement the measures designed to avoid or reduce impacts described in its application for a Presidential Permit and supplemental filings with DOS and the EPP (see Appendix C for the Draft EPP) and its attachments.
- Vantage would submit all plans that are incomplete at the time of issuance of this EA to DOS for review and approval prior to beginning construction on the project.