



**Office of
Energy Projects**

September 2020

Texas Eastern Transmission, LP

Docket No. CP20-436-000

Appalachia to Market Project

Environmental Assessment

Washington, DC 20426

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TECHNICAL ACRONYMS AND ABBREVIATIONS

ATWS	additional temporary workspace
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
Commission	Federal Energy Regulatory Commission
dB _A	decibels on the A-weighted scale
EA	Environmental Assessment
EI	environmental inspector
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FERC Plan	<i>FERC's Upland Erosion Control, Revegetation, and Maintenance Plan</i>
FERC Procedures	<i>FERC's Wetland and Waterbody Construction and Mitigation Procedures</i>
GHG	greenhouse gas
HCA	High Consequence Area
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consultation
L _{eq}	24-hour equivalent sound level
L _{dn}	day-night sound level
MAOP	maximum allowable operating pressure
Met Ed	Metropolitan Edison
MP	milepost
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Appalachia to Market Project and Request for Comments on Environmental Issues</i>
NO _x	nitrogen oxides
NSA	noise sensitive area
OEP	Office of Energy Projects
PADEP	Pennsylvania Department of Environmental Protection
PAR	Permanent Access Road
PEM wetland	palustrine emergent wetland

PHMSA	Pipeline and Hazardous Materials Safety Administration
PM _{2.5}	particulate matter less than or equal to 2.5 microns in aerodynamic diameter
PM ₁₀	particulate matter less than or equal to 10 microns in aerodynamic diameter
PNDI	Pennsylvania Natural Diversity Inventory
PPC Plan	Preparedness, Prevention, and Contingency Plan
Secretary	Secretary of the Commission
SHPO	Pennsylvania State Historic Preservation Office
SO ₂	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
TAR	Temporary Access Road
TMDL	Total Maximum Daily Loads
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
VOC	volatile organic compound

A. PROPOSED ACTION

1. Introduction

The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to address the environmental impacts of the construction and operation of the proposed Appalachia to Market Project (Project). On May 1, 2020, Texas Eastern Transmission, LP (Texas Eastern) filed an application with the Commission in Docket No. CP20-436-000 under Section 7(c) of the Natural Gas Act and Part 157 of the Commission's regulations. Texas Eastern seeks to obtain a Certificate of Public Convenience and Necessity (Certificate) to construct and operate certain natural gas pipeline facilities in Berks, Fayette, and Westmoreland Counties, Pennsylvania.

We¹ prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (Title 40 Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508])²; and the Commission's regulations at 18 CFR 380. The EA is an integral part of the Commission's decision-making process on whether to issue Texas Eastern a Certificate to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action; and
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts.

2. Project Purpose and Need

Under Section 7(c) of the Natural Gas Act, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on economic issues, including need, and environmental impacts. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the Project is in the public interest.

Texas Eastern states that the Project would fulfill the terms of a precedent agreement to provide up to 18,000 dekatherms per day of firm natural gas transportation

¹ "We," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

² In July 2020, CEQ comprehensively updated its NEPA regulations and the new regulations were effective as of September 14, 2020; however, the NEPA review of this project was in process at that time and was prepared using the 1978 regulations.

service from the Appalachian supply basin in Eastern Ohio and Western Pennsylvania to UGI Utilities Inc. at an existing delivery point near Reading, Pennsylvania.

Texas Eastern has requested a Certificate by December 31, 2020 in order to construct the Project and be in service by November 1, 2021.

3. Scope of this Environmental Assessment

The resources and topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, cultural resources, air quality, noise, reliability and safety, and cumulative impacts. This EA describes the affected environment as it currently exists and the anticipated environmental consequences of the Project and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any permits necessary for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.9, below.

4. Proposed Facilities

Texas Eastern's Project would consist of the following facilities, all in Pennsylvania:

- approximately 0.8 mile of 30-inch-diameter pipeline loop³ installed in the same trench as a segment of an abandoned 30-inch-diameter pipe (that would be removed for this Project) on the Texas Eastern system in Westmoreland County (Delmont Loop);
- one crossover⁴ at the existing Bechtelsville pig⁵ launcher site in Berks County (Bechtelsville Crossover);
- one crossover at the existing Uniontown pig receiver site in Fayette County (Uniontown Crossover); and
- other related appurtenances.

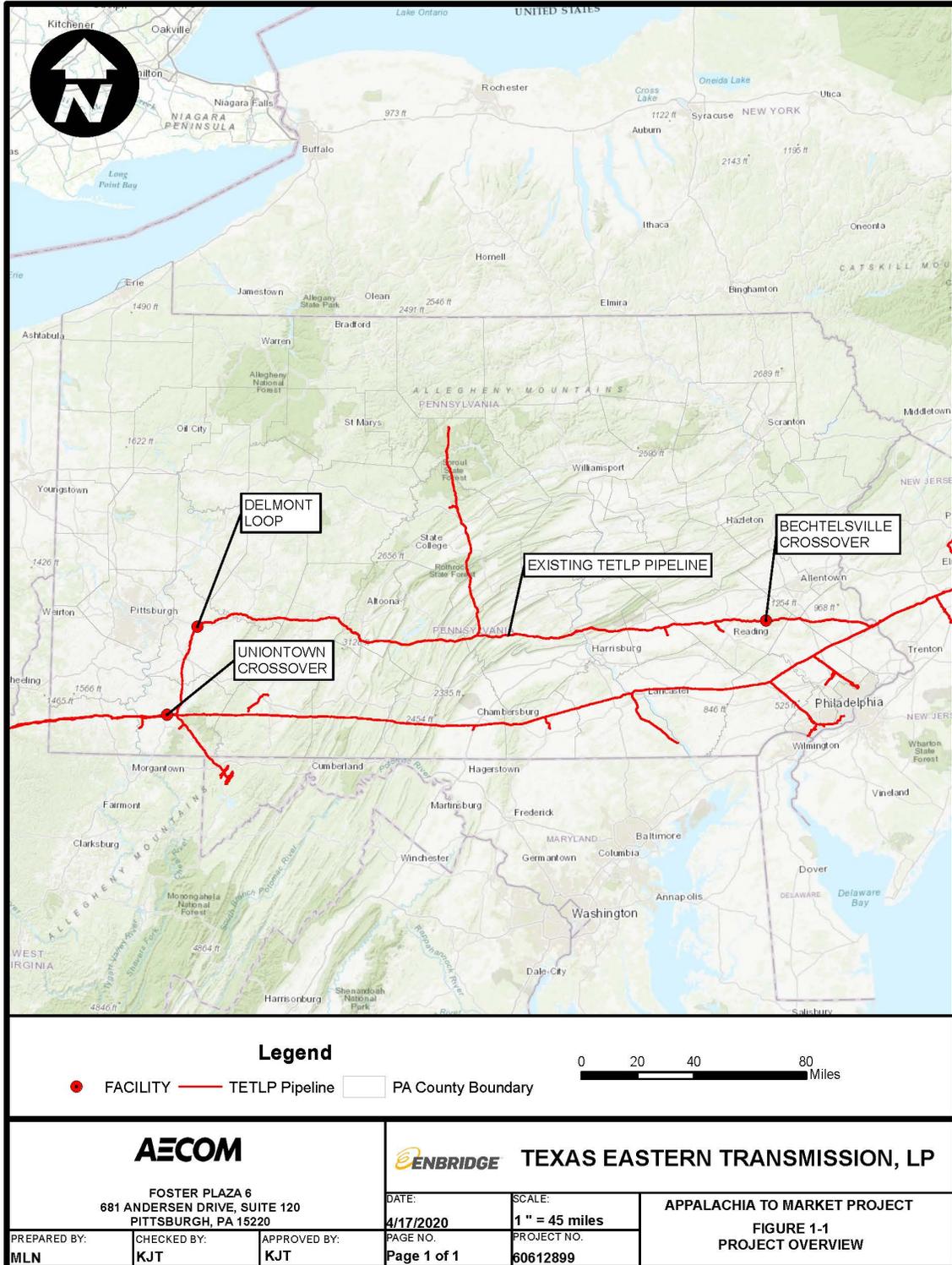
Figure 1 illustrates the general Project location.

³ A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

⁴ A "crossover" is an assembly that connects two parallel pipelines together.

⁵ A "pig" is a tool that the pipeline company inserts into and pushes through the pipeline for cleaning the pipeline, conducting internal inspections, or other purposes.

Figure 1: Project Location Map



5. Construction and Operation Procedures

The new Project facilities would be designed, constructed, tested, operated, and maintained to conform with or exceed federal, state, and local requirements, including the U.S. Department of Transportation's (USDOT) regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; FERC's *Siting and Maintenance Requirements* in 18 CFR 380.15; and other applicable federal and state safety regulations.

During construction and restoration of the Project, Texas Eastern would implement the measures contained in the following plans, in addition to other federal, state, and local permit requirements:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures);⁶
- Spill Prevention Control and Countermeasure Plan (SPCC Plan);
- Waste Management Plan for Construction Projects;
- Fugitive Dust Control Plan;
- Preparedness, Prevention, and Contingency Plan (PPC Plan)
- Post-Construction Stormwater Pollution Prevention Plan; and
- Plan for the Unanticipated Discovery of Historic Properties or Human Remains, during Construction (Unanticipated Discovery Plan).

Texas Eastern anticipates beginning construction in March of 2021 in order to have all facilities in service by November 1, 2021. The Project would require a peak workforce of approximately 60 workers for five months, spread out over the three Project areas. No new permanent employees would be required for operation or maintenance of the Project. Texas Eastern states that the typical construction schedule would be limited to only daylight hours or 7:00 a.m. to 7:00 p.m. Monday through Saturday; however, certain activities, such as wetland crossings or when an a timely work shutdown is not possible, may require extended construction hours, which may include nighttime and/or Sunday hours. Texas Eastern states that it would minimize the extended work hours to the best of its ability.

Texas Eastern would have a full-time inspection staff on-site during construction, which would include an environmental inspector (EI) with stop work authority reporting directly to Texas Eastern's construction Chief Inspector. The EI's duties would be consistent with those contained in FERC's Plan and Procedures and would include ensuring compliance with environmental conditions from the Certificate; Texas Eastern's

⁶ The FERC Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. The Plan and Procedures can be viewed on the FERC website at: www.ferc.gov/industries/gas/enviro/plan.pdf and www.ferc.gov/industries/gas/enviro/procedures.pdf.

proposed mitigation measures and environmental designs and specifications; and other applicable permits, requirements, or authorizations. The EI would have the authority to stop activities that violate the Project's environmental conditions and to order appropriate corrective action. If any contractor's performance is unsatisfactory, the terms of Texas Eastern's contract with such contractor would allow Texas Eastern to stop work in progress, as necessary, and cause such contractor to begin remedial work, as applicable. In addition, FERC staff would maintain compliance oversight of the Project throughout construction and restoration.

Upland Construction

Texas Eastern would begin construction by marking and staking workspace boundaries, including the locations of temporary access roads, proposed aboveground facilities, and existing utility lines. Erosion control devices would be installed prior to construction. The trench would be re-excavated to remove pipe, where applicable, accommodate the new, same-size diameter pipeline; installation would occur at approximately the same location as the removed pipe using standard construction methods.

New facilities would be hydrostatically tested in accordance with USDOT regulations, and hydrotest water would be disposed via tanker truck to a local municipality wastewater treatment plant. After completion, the disturbed areas would be graded and restored as applicable and described in the FERC Plan and the Post-Construction Stormwater Pollution Prevention Plan. Any remaining trash and debris would be properly disposed of in compliance with applicable regulations.

Specialized Construction Techniques

Texas Eastern proposes to cross three roads and one wetland by conventional open cut. Texas Eastern would make provisions for traffic management in work areas accessed from public roadways. Restoration and monitoring of the wetland crossing would be conducted in accordance with the FERC Procedures to ensure successful wetland revegetation.

One waterbody would be crossed during construction of the Project. If flow is present within the watercourse at the time of crossing, a dry-ditch crossing method would be implemented using dam-and-pump. The dam-and-pump method involves the installation of temporary dams (typically, sandbags) upstream and downstream of the waterbody crossing location, with pumps used to dewater and transport the stream flow around the construction work area and trench. Trench excavation and pipeline installation then commences through the dewatered portion of the waterbody channel.

6. Land Requirements

Texas Eastern would remove approximately 0.8 mile of 30-inch-diameter pipeline, previously abandoned in place, and install a new 30-inch-diameter loop pipeline in the same trench within and adjacent to the Texas Eastern right-of-way. New pig launcher/receiver facilities and other related appurtenances would be installed at the beginning and end of the loop. New right-of-way clearing would only be required for the new pig receiver for the Delmont Loop due to wetland and slope limitations. Texas Eastern would construct new pipeline crossovers at the existing Bechtelsville and Uniontown Crossover stations between existing lines within Texas Eastern’s right-of-way.

Texas Eastern proposes to utilize a 100-foot-wide right-of-way for construction of the Delmont Loop pipeline. The Project would disturb a total of about 16.1 acres of land during construction. Following construction, about 12.9 acres would be required for operation of the Project, with 0.72 acre being new permanent right-of-way for the Delmont Loop receiver station. The remaining 3.2 acres of temporary construction areas would consist of the construction right-of-way, temporary workspaces, and access roads. All disturbed areas not used for operation of the Project facilities would be returned to pre-construction conditions.

No staging areas or contractor lay yards would be required for the Project.

Texas Eastern would utilize one existing access road, two new permanent access roads (PAR), and three new temporary access roads (TAR) for this Project. As shown in table 1, a total of six access roads, requiring 2.58 acres, would be utilized for construction and operation of the Project facilities. Three of these roads would be used as TARs to the Project, requiring 1.55 acres. Following the completion of construction, land impacted by the TARs would be returned to pre-construction conditions.

In addition, the Project would require two new PARs, comprising 0.14 acre of impacts to provide permanent access to the Project facilities during operations.

**Table 1.
Existing, Temporary, and Permanent Access Roads for the Project**

Access Road ID	Milepost	Associated Facility	Planned Use	Improvement Needed	Area Impacted (Acres)
EAR-1	771.05	Uniontown Crossover	EAR to pig-receiver site	No	0.89
PAR-1	0.76	Delmont Loop	New PAR to pig launcher	Yes	0.09
PAR-2	1.6	Delmont Loop	New PAR to pig receiver	Yes	0.05
TAR-1	1.1	Delmont Loop	TAR for construction	Yes	0.58
TAR-2	1.14	Delmont Loop	TAR for construction	Yes	0.55
TAR-3	1.3	Delmont Loop	TAR for construction	Yes	0.42

EAR = Existing Access Road

Although Texas Eastern has identified areas where additional temporary workspace (ATWS) would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Texas Eastern would be required to file information on any such areas for our review and approval prior to use.

Further discussion of land requirements for the Project is provided in section B.5, below.

7. Non-Jurisdictional Facilities

Under Section 7 of the Natural Gas Act, the Commission is required to consider, as part of its decision to authorize jurisdictional facilities, all factors bearing on the public convenience and necessity. The primary jurisdictional facilities for the Project are the proposed 0.8-mile-long pipeline loop, and modifications to the Uniontown and Bechtelsville Crossovers.

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These non-jurisdictional facilities may be integral to the need for the proposed facilities (e.g., a gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated as a result of the proposed facilities.

One non-jurisdictional facility associated with the Project includes facilities to provide electrical power to the Bechtelsville Crossover. Metropolitan Edison (Met Ed)⁷ would provide 120/240 volts of power service to connect the Bechtelsville Crossover to the local electrical distribution grid. To provide the connection, Met Ed would construct 550 feet of primary line and 100 feet of secondary line extensions. Cumulative impacts from the construction of the Met Ed connection are discussed below in section B.10.

8. Public Review and Comment

On May 18, 2020, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Appalachia to Market Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers.

To date the Commission has not received comments from any contacted parties.

⁷ Metropolitan Edison is a subsidiary of FirstEnergy Corporation.

9. Permits

A number of federal, state, and local regulatory agencies have permit requirements, approval authority, or consultations associated with the proposed Project. Table 2 provides a list of permits and consultations for the Project; the applicable local, state, and federal agencies; as well as any responses received to date. Texas Eastern would be responsible for obtaining all permits and approvals required for construction and operation of the Project, regardless of whether or not they appear in the table.

Table 2. Environmental Permits, Approvals, and Consultations		
Agency	Permit/Approval/Consultation	Application Date and Status
FEDERAL		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act.	Application filed May 1, 2020.
Pennsylvania Department of Environmental Protection	Clean Water Act Section 401/404 Water Quality Certificate	Submission June 19, 2020, Anticipated receipt December 2020
U.S. Fish and Wildlife Service, Pennsylvania Field Office	Endangered Species Act – Section 7 Consultation	Clearance received May 2020
Pennsylvania State Historic Preservation Society (SHPO)	Section 106 of the National Historic Preservation Act	SHPO clearance received May 2020. Tribal consultation initiated by FERC June of 2020. No consultation requests received to date.
Pennsylvania		
Pennsylvania Game Commission	State Threatened and Endangered Species Consultation	Initiated October 2019, and updated March 2020. Clearance through Pennsylvania Natural Diversity Inventory (PNDI) Receipts
Pennsylvania Fish and Boat Commission	State Threatened and Endangered Species Consultation	Initiated October 2019, and updated March 2020. Clearance through PNDI Receipts
Pennsylvania Department of Environmental Protection	Chapter 105 General Permit for wetlands and watercourse impacts. Erosion and Sediment Control General Permit 3	Submission in May 2020 and anticipated receipt in October 2020.
Pennsylvania Historical and Museum Commission	National Historic Preservation Act Section 106 consultation	Clearance received May 2020

B. ENVIRONMENTAL ANALYSIS

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the proposed Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could result because of activities that modify resources to the extent that they would not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

1. Geology

The Uniontown Crossover and Delmont Loop areas are within the Appalachian Plateaus physiographic province, Pittsburgh Low Plateau section; and the Bechtelsville Crossover is within the New England physiographic province, Reading Prong section. The Pittsburgh Low Plateau section of the Appalachian Province primarily consists of smooth to irregular undulating surfaces with narrow, relatively shallow valleys, strip mines, and reclaimed land made up predominantly of shale, siltstone, sandstone, limestone, and coal. The New England physiographic province consists of circular to linear rounded hills and ridges of granitic gneiss, granodiorite, and quartzite (Pennsylvania Department of Conservation of and Natural Resources [PADCNR] 2019).

Approximately 0.46 acre of the Bechtelsville Crossover work area is characterized as having shallow bedrock at a depth of 5 feet or less. Blasting is not anticipated based on the underlying soils and geology.

1.1 Mineral Resources

Mineral resources in the vicinity of the Project area are limited to non-fuel resources. According to the Pennsylvania Department of Environmental Protection (PADEP), U.S. Geological Survey (USGS), and U.S. Mining (PADEP 2019; USGS 2019; U.S. Mining 2019), no active mines or quarries are present within 0.25 mile of the Bechtelsville Crossover or Uniontown Crossover and no abandoned or reclaimed mines are within the Project vicinity. Two unnamed, private quarries are within 1,600 and 750 feet of the Delmont Loop Project area. As these quarries have been in operation in conjunction with the existing Texas Eastern facilities, we do not anticipate adverse impacts on the quarries from the Project.

1.2 Geologic Hazards

Geologic hazards are natural physical conditions that can, when present, result in damage to land and structures or injury to people. Potential geologic hazards include seismicity (earthquakes and faults), slope stability and landslides, subsidence and karst conditions, flooding/scour, soil liquefaction, soil expansion, and volcanism. The review of available data for the Project area showed that the proposed Project is not characterized by flooding, surface faults, or volcanic conditions; thus, the Project would not be affected by these hazards. Seismic hazards (including soil liquefaction), subsidence and karst conditions, and landslides are discussed below.

1.2.1 Seismic Hazards

Seismic hazards include earthquakes, ground faulting, and secondary effects such as soil liquefaction. The Project is in areas of low seismic risk. Seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake as expressed in terms of the acceleration due to gravity (g), or peak ground acceleration. The USGS has developed a series of maps for the entire United States that describe the likelihood for shaking of varying degrees to occur in a given area. For the Bechtelsville Crossover Project area, peak acceleration is not expected to be more than 4 to 8 percent of gravity, with a 10 percent chance of being exceeded in 50 years. For the Delmont Loop and Uniontown Crossover Project areas, peak acceleration is not expected to be more than 2 to 4 percent of gravity, with a 10 percent chance of being exceeded in 50 years (USGS 2014). In addition, saturated soils that could contribute to soil liquefaction are not likely to be present in the Project areas. As such, we do not anticipate seismic-related impacts on the Project.

1.2.2 Land Subsidence and Karst Terrain

Ground subsidence is a lowering of the land surface elevation that results from changes that take place underground. Common causes of land subsidence include dissolution of limestone in areas of karst terrain, collapse of underground mines, and the pumping of water, oil, and gas from underground reservoirs. Underground mining and pumping of oil or gas do not take place in the vicinity of Project facilities. Karst terrain is not present or not likely to occur in the vicinity of the Uniontown Crossover or the Delmont Loop. Karst features have been identified adjacent to the Bechtelsville Crossover (PADCNR 2019). However, according to Texas Eastern, recent activities in 2017 did not encounter karst features or voids. Based on the lack of significant collapse hazards, underground mines, and pumping of oil and gas in and around the proposed Project area, impacts on the Project facilities or adjacent land due to land subsidence and karst terrain are not anticipated.

1.2.3 Landslides

A landslide is the downslope movement of soil, rock, and organic materials under the effects of gravity and also the landform that results from such movement. Landslides are commonly caused by earthquakes, volcanic activity, modification of existing slopes by construction activities, or saturation of soils from rainfall, groundwater changes, leaking water pipes, or other events. Landslides can move very slowly (millimeters per year) in the case of soil creep or can occur extremely rapidly. As a general rule, the steeper a slope, the more susceptible it is to landslides. According to the USGS Landslide Susceptibility maps (USGS 2018), the Bechtelsville Crossover has a low landslide incidence rate. The Uniontown Crossover and the Delmont Loop are in areas of high landslide susceptibility and moderate incidence rates. However, the Uniontown Crossover site is within an upland agricultural area and is relatively flat. According to a geotechnical investigation conducted by Texas Eastern in March and April 2020, the slope along the Delmont Loop appeared stable with no evidence of soil creep or significant erosion. In order to minimize the potential for slope failure, Texas Eastern would implement measures included in the FERC Plan. We consider these measures adequate.

1.3 Paleontology

No known significant fossil locations were identified within the Project area based on a review of known paleontological sites. If unique or significant fossil specimens are discovered during excavation activities, Texas Eastern would cease construction activities and consult with the appropriate county or State paleontological specialist. Additionally, the majority of Project activities would take place within previously disturbed areas. Thus, we conclude that significant paleontological resources are unlikely to be affected by construction or operation of the Project.

The overall effect of the Project on topography and geology would be minor, and significant adverse effects on geological resources are not anticipated. Given the geologic conditions within the Project area, and the fact that most construction would take place within existing Texas Eastern facilities and right-of-way, we do not anticipate that Project facilities would be compromised due to seismicity, subsidence or karst features, or landslides and that the proposed facilities would not result in significant impact on geologic or paleontological resources.

2. Soils

Construction of the Project would take place primarily within existing facility boundaries and right-of-way that have been previously disturbed. Approximately 16.1 acres would be temporarily impacted during construction, of which approximately 12.9 acres would be utilized during Project operation.

Construction activities that create soil disturbance, such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way, would result in temporary and minor impacts on soil resources. Soil characteristics could affect construction performance or increase the potential for adverse construction-related soil impacts. The activities that have the potential to impact soils and reduce soil quality are the mixing topsoil of with subsoil, bringing excess rocks to the surface, compacting soil by heavy equipment, and disrupting surface and subsurface drainage patterns.

According to a search of federal and state databases, no reported sources of known or potential soil contamination were identified in the vicinity of the Project (PADEP 2020; Environmental Data Resources, Inc. 2019). Therefore, no impact from contaminated soil is anticipated. Should unanticipated contaminated soil be encountered during construction, Texas Eastern would evaluate and treat impacted soil in accordance with its Waste Management Plan for Construction Projects, as well as with applicable federal and state requirements. We have reviewed this plan and find it adequate.

Soil contamination from equipment spills and/or leakage of fuels, lubricants, and coolants could impact soils. Texas Eastern has filed its SPCC and PPC Plans, which address preventative and mitigative measures that would be used to avoid or minimize the impacts of any hazardous material spills during construction. We reviewed these plans and find them adequate to address the storage and transfer of fuels and hazardous materials as well as the response to be taken in the event of a spill. Adherence with these plans would adequately minimize impacts on soils from inadvertent releases or spills during construction of Project facilities.

The U.S. Department of Agriculture defines prime farmland soils as those that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. Unique farmland is identified as land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. Prime and unique farmland soils can include either actively cultivated land or land that is potentially available for cultivation. Farmland that does not meet the criteria for prime or unique farmland may still be considered farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the local conservation districts. Farmland of statewide importance includes, generally, land with soils that nearly meet the requirements for prime or unique farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Approximately 10.56 acres of the soils impacted by Project activities are considered prime farmland or farmland of statewide importance. Of this, about 7.82 acres would be required for operation of the Project, the majority of which is currently within existing facility fence lines, existing permanent right-of-way, or land owned by Texas Eastern. These areas are not currently being used for agricultural

purposes. The remaining 2.74 acres impacted by the Project would revert to agricultural use once construction is complete.

Soil erosion would be mitigated through temporary erosion and sedimentation control measures and implementation of permanent measures in Texas Eastern's plans listed in section A.5 of this EA. Given the Project areas' soil characteristics and the impact minimization and mitigation measures described in these plans, we conclude that soils would not be significantly affected by Project construction and operation.

3. Water Resources and Wetlands

3.1 Groundwater

The Project is underlain by the Pennsylvanian and Piedmont and Blue Ridge Carbonate Rock principle aquifer systems. Groundwater movement within such aquifers occurs through secondary openings in the rock, such as faults, bedding planes, and other partings that have been enlarged by dissolution (Trapp and Horn 1997). No U.S. Environmental Protection Agency (USEPA)-designated Sole Source Aquifers are present in the Project areas (USEPA 2020a and 2020b). No state-designated Public Community Well Head Protection Areas are crossed by the Project (PADCNR 2020). No private or public drinking water wells or springs have been identified within 150 feet of the proposed Project construction areas (PADCNR 2020). Therefore, no impacts on sole source aquifers, well head protection areas, wells, or springs are anticipated.

Groundwater Contamination

According to a search of federal and state databases, no reported sources of known or potential groundwater contamination were identified in the vicinity of the Project (PADEP 2020; Environmental Data Resources, Inc. 2019). Therefore, no impact from contaminated groundwater is anticipated. Should unanticipated contaminated groundwater be encountered during construction, Texas Eastern would evaluate and treat impacted groundwater in accordance with its Waste Management Plan for Construction Projects, as well as with applicable federal and state requirements. We have reviewed this plan and find it adequate.

Pipeline and related infrastructure construction necessitate the use of heavy equipment and associated fuels, lubricants, and other potentially hazardous substances that, if spilled, could affect shallow groundwater and/or aquifers. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and material storage would present the greatest potential contamination threat to groundwater resources. Soil contamination resulting from these spills or leaks could continue to add pollutants to the groundwater long after a spill had occurred.

Implementation of proper storage, containment, and handling procedures would effectively minimize the chance of such releases. Texas Eastern's SPCC Plan and PPC

Plan for Construction Projects, address preventative and mitigative measures that would be used to avoid or minimize the potential impacts of hazardous material spills during construction.

Groundwater Mitigation

Pipeline and aboveground facility construction activities such as trench dewatering, blasting, and spills or leaks of hazardous materials have the potential to affect groundwater in several different ways. Clearing, grading, trenching, and soil stockpiling activities within the right-of-way may cause minor fluctuations in local groundwater levels and/or increased turbidity due to erosion and sediment runoff, especially where shallow aquifers exist. Soil compaction caused by heavy equipment could reduce water infiltration rates. Construction of aboveground facilities may result in minor, permanent increases of impervious areas; however, the facilities are unlikely to affect infiltration or groundwater recharge beyond the facility limits. In areas where groundwater is near the surface, trench excavation may intersect the shallow water table and dewatering may be required. Dewatering of trenches may result in temporary fluctuations in local groundwater levels; however, Texas Eastern would dewater into adjacent, well-vegetated upland areas to allow infiltration and minimize impacts on the local water table.

After installation of the pipeline and aboveground facilities, the ground surface would be restored as close as practicable to original contours, and any exposed soils would be revegetated to ensure restoration of preconstruction overland flow and recharge patterns. Therefore, these minor, direct, and indirect impacts would be temporary and would not significantly affect groundwater resources. We conclude that groundwater impacts during construction would be effectively minimized or avoided by implementing construction practices outlined in FERC's Plan and Procedures and other plans listed in section A.5 of this EA.

3.2 Surface Water Resources

The Project is within three watersheds: Cove Run – Redstone Creek (Uniontown Crossover); Upper Manawawny Creek (Bechtelsville Crossover); and Beaver Run Reservoir – Beaver Run (Delmont Loop).

The Delmont Loop is the only aspect of the Project that would directly impact a waterbody, an unnamed tributary to Beaver Run that is about 3 feet wide at the proposed crossing location. The crossing of this tributary would fall within a Federal Emergency Management Agency Special Flood Hazard Areas (those areas subject to flooding by the 1 percent annual chance flood, typically referred to as the 100-year floodplain); however, no permanent aboveground facilities are proposed within the floodplain (Federal Emergency Management Agency 2020a and 2020b). Therefore, no impacts are anticipated on flood water storage capacity. Under Pennsylvania regulations, a Chapter

105 Water Obstruction and Encroachment permit is required for any structure or activity which changes, expands, or diminishes the course, current or cross section of a watercourse, floodway, or body of water. Both the Bechtelsville Crossover and the Delmont Loop would be within an assumed 50-foot floodway and would require Chapter 105 permitting. The Uniontown Crossover area does not cross any floodways.

In accordance with Section 303(d) of the Clean Water Act, states are required to identify waters that do not attain their designated use(s) or meet the state water quality standards. Additionally, the USEPA's Water Quality Planning and Management Regulations (40 CFR 130) require states to develop Total Maximum Daily Loads (TMDL) for those waters. A TMDL establishes the maximum allowable discharge into a waterbody to better control pollutant levels. This information must be included as part of a state's water quality assessment. The unnamed tributary to Beaver Run is listed as "aquatic life impaired" due to siltation related to agricultural crops and grazing (PADEP 2018); however, the stream does not require a TMDL (USEPA 2020b).

The unnamed tributary to Beaver Run is classified as a high-quality, cold-water fishery; however, the waterbody is not classified by the Pennsylvania Fish and Boat Commission as Stocked Trout Waters, Approved Trout Waters, Wilderness Trout Streams, Class A Wild Trout or Wild Trout Waters Streams (Pennsylvania Fish and Boat Commission 2020a, 2020b, 2020c, 2020d, and 2020e).

The Project would not impact any Nationwide Rivers Inventory, National Wild and Scenic Rivers (National Wild and Scenic Rivers System 2020), Section 10 Navigable waters, or designated Pennsylvania Scenic Rivers (PADCNR 2020a). No potable water intake structures are within 3 miles downstream of the stream crossing.

Potential impacts on surface water resources include temporary loss of habitat for aquatic species, increased water temperatures, depletion of dissolved oxygen levels, and temporary interruption of spawning, depending on the time of crossing. The majority of impacts on the 3-foot-wide crossing of the unnamed tributary to Beaver Creek would be associated with the construction phase of the dam-and-pump crossing and would consist of soil erosion and sedimentation that could temporarily affect water quality downstream of the crossing.

We expect that pipeline construction of the Delmont Loop would affect the unnamed tributary to Beaver Creek on a temporary basis, as the crossing would occur in an existing pipeline corridor where Texas Eastern is proposing to remove an existing abandoned pipeline and then install the Delmont Loop. Texas Eastern proposes to use the dam-and-pump dry crossing method to construct the pipeline across the stream. Texas Eastern would utilize the FERC Procedures to limit the effects of clearing and grading of stream banks, in-stream trenching, trench dewatering, and backfilling operations on aquatic habitat. The FERC Plan would also minimize any indirect impacts from erosion from workspaces adjacent and upgradient of waterbodies. Also,

implementation of Texas Eastern's SPCC Plan would reduce the potential for introduction of chemical contamination, such as fuel and lubricants, into the streams by prohibiting the storage of hazardous materials and refueling of equipment within 100 feet from the edge of a waterbody (or wetland).

Hydrostatic testing would be performed in accordance with USDOT pipeline safety regulations identified in 49 CFR 192, "Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards," prior to placing the new facilities and pipeline into service. Water would be obtained from municipal sources and delivered via tanker truck to an approved local municipality wastewater treatment plant for final disposal. Approximately 5,200 gallons of water would be required to test the Bechtelsville Crossover, 8,000 gallons for the Uniontown Crossover, and 162,000 gallons for the Delmont Loop. No chemicals would be used in the hydrostatic test water. Any water utilized for dust suppression would also be obtained from a municipal source.

Based on the proposed dry-ditch crossing method, the minimal crossing width, and Texas Eastern's implementation of the FERC Procedures, we conclude impacts on waterbodies from the Project would be avoided or minimized.

3.3 Wetlands

The U.S. Army Corps of Engineers (USACE) and USEPA jointly define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987). Field delineations were conducted by Texas Eastern in accordance with the USACE's 1987 *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Eastern Mountains and Piedmont Regional Supplement* (USACE 2012).

Wetlands were classified using the Cowardin Wetland classification system (Cowardin 1979), of which only three palustrine emergent (PEM) wetlands were present in the Project areas: two wetlands along the Delmont Loop and one wetland within the work area for the Bechtelsville Crossover. The wetland impacted by the Bechtelsville Crossover is defined as an exceptional value wetland by Pennsylvania Code, Title 25, Chapter 105.17. No wetlands would be impacted by the Uniontown Crossover. In total, the Project would temporarily impact 0.50 acre of PEM wetlands, and permanent impacts would occur within 0.20 acre of that. Detailed acreage impacts and wetland information by Project facility is presented in table 3.

**Table 3.
Wetland Crossings**

Facility	Wetland ID	Wetland Cover Type ¹	Crossing Width (ft) ²	Crossing Length (ft)	Acres Affected ³		Proposed Pipeline Crossing Method	Proposed Equipment Crossing Method
					Const. ROW	Perm. ROW		
Bechtelsville Crossover	W-BLC-001	PEM	10	33	0.01	0.00	Temporary Access Road	Timber Matting
Delmont Loop	W-MAB-555	PEM	78	245	0.29	0.00	Open Trench	Timber Matting
	W-MRK-053 (1)	PEM	71	4	<0.005	0.00	Open Trench	Gravel
	W-MRK-053 (2)	PEM	190	86	0.19	0.19	Permanent Pad	Gravel
		PEM	7	64	0.01	0.01	Permanent Access Road	Gravel

¹ Wetland Cover Type based on Cowardin, 1979.

² Approximate wetland crossing distance measured within the proposed workspace.

³ For construction right-of-way (Const ROW), based on ATWS and temporary workspace. For permanent right-of-way (Perm ROW), affected area based on permanent workspace.

Texas Eastern was unable to avoid the permanent wetland impact because of access requirements to the proposed receiver station on the Delmont Loop. Therefore, Texas Eastern has requested a modification to Section V.I.A.6 of the Procedures, which states: Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with USDOT regulations. We have reviewed the site-specific circumstances, and section C.2.1 below discusses several alternative arrangements considered. We conclude that the proposed alignment balances permanent wetland impacts alongside landowner and other resource impacts and would not result in a significant impact on wetlands. We therefore find the modification to the FERC Procedures for this wetland acceptable.

The primary impact of the Project on wetlands would be the alteration of wetland function and value due to vegetation clearing. Construction could also impact water quality within the wetland due to sediment loading or inadvertent spills of fuel or chemicals. The use of heavy equipment within wetlands could also result in the compaction of wetland soils. Impacts on wetlands would be greatest during and immediately following construction. The majority of these effects would be short term in nature and would cease shortly after the wetlands are restored and vegetated. Following revegetation, wetlands would eventually transition back into a community with functionality similar to that of the preconstruction state. In PEM wetlands, the herbaceous vegetation would regenerate quickly (typically within 1 to 3 years).

Texas Eastern would adhere to wetland crossing procedures as detailed in the FERC Procedures to minimize any long-term effects on temporarily impacted wetlands. Texas Eastern would limit the construction right-of-way width to 75 feet within wetlands;

install and maintain sediment barriers along the edge of the construction right-of-way as necessary to prevent spoil and sediment flow into wetlands and waterbodies; use equipment matting to prevent rutting in wetlands; segregate topsoil for replacement over the trench line; install trench plugs at the interface between wetlands and uplands; and conduct post-construction wetland restoration and monitoring.

Upon completion of construction, topsoil, contour elevations, and hydrologic patterns would be restored to pre-construction conditions to promote the re-establishment of hydrophytic vegetation, with the exception of wetland area permanently filled within the Delmont Loop Pig Receiver Station, which would be graveled and lose its wetland function for the life of the Project. Woody vegetation would be allowed to regenerate within the temporarily disturbed right-of-way except for a 10-foot-wide area centered over the pipeline that would be maintained in an herbaceous/scrub-shrub state to allow for inspection and maintenance of the pipeline once it is in service. In addition, trees that are greater than 15 feet in height within 15 feet of the pipeline and within the permanent right-of-way would be selectively cut and removed.

Approximately 0.30 acre of PEM wetlands would be restored to pre-construction conditions following construction. As noted above, 0.20 acre of PEM wetland would be permanently filled. Texas Eastern anticipates that wetland impact mitigation would be achieved by on-site and off-site mitigation and that permanent wetland impacts would require compensatory mitigation. Texas Eastern is consulting with the USACE and PADEP to identify any mitigation requirements.

We believe the measures discussed above and those contained in the FERC Procedures would minimize or avoid potential impacts associated with construction in wetlands. We therefore conclude that impacts on wetlands would not be significant.

4. Fisheries, Vegetation, Wildlife, and Threatened and Endangered Species

4.1 Fisheries

Fish species that characterize cold water habitats in the Project region can include, but are not limited to, mottled sculpin, central stoneroller, and blacknose dace. No sensitive aquatic species or essential fish habitat under the jurisdiction of the National Marine Fisheries Service are present within the Project area.

In general, in-stream construction across waterbodies may cause both direct and indirect impacts on fish habitat, fish resources, and other aspects of aquatic ecology. Aquatic habitat modification caused from the waterbody crossing may occur due to increased sedimentation, turbidity, decreased dissolved oxygen concentrations, release of chemical and nutrient pollutants from sediments, and introduction of chemical contaminants such as fuel or lubricants that could result from clearing and grading stream banks, or heavy machinery operation, storage, or refueling.

Texas Eastern would adhere to its SPCC Plan as well as FERC's Plan and Procedures in order to minimize risks from spills or leaks, erosion and sedimentation, and stormwater runoff from construction areas with exposed soils. In accordance with the FERC Procedures, Texas Eastern would perform all in-stream work between June 1 and September 30 for cold water fisheries unless other agency-recommended timing restrictions are required and/or waived. Texas Eastern intends to comply with any waterbody crossing windows established by state and federal permit requirements in lieu of the less restrictive FERC-designated crossing windows. We conclude that impacts on aquatic resources from the Project would not be significant.

4.2 Vegetation

The proposed Project areas are within both the Northeastern Highlands Level III and the Western Allegheny Plateau ecoregions, which consist of mixed hardwood and spruce-fir forests and mixed mesophytic forest. The primary community types and land cover for the Project areas include agricultural, industrial/commercial, and open land. Agricultural areas within the Project areas are predominantly cultivated crop fields (primarily corn), hay fields, and pastures. Vegetation found around industrial/commercial lands at the crossovers include crown vetch or other common open space grass species. The open land category includes existing rights-of-way with pasture and emergent wetland vegetation, such as arrowleaf tearthumb, Allegheny monkeyflower, common boneset, and reed canary grass. Acreage impacts for these vegetation types are depicted in the Land Use section in table 5 below.

Abandoning and installing the proposed facilities would require the temporary and permanent clearing of vegetation. Select tree cutting or tree limbing would be conducted when necessary to provide safe access and the maneuvering of equipment during construction and restoration of the Bechtelsville Crossover and the Delmont Loop. No clearing of surface woody vegetation or grubbing would be required and no tree clearing or trimming is proposed at the Uniontown Crossover. Therefore, construction of the crossover sites, the Delmont Loop pipeline, and associated access roads is not anticipated to impact forest habitat and would not result in conversion of forested land.

At the proposed Delmont Loop pig receiver pad, a small number of trees (approximately 3-5) are located within an upland area, north of wetland WMRK-053. These trees would be cleared in order to complete grading and construction of the pig receiver pad. Although these trees would be cleared, the area in which they are located is primarily agricultural and is not considered forest habitat. Representative tree species in and along the construction work areas include upland species such as black walnut, red oak, and red maple.

Short-term temporary impacts on vegetation would be associated primarily with the preparation and use of the construction workspace, lasting through construction until successful restoration. Potential impacts may include compaction of soils by construction

equipment, trampling/crushing of herbaceous plants, and removal of herbaceous and woody plant cover. Areas that are already vegetated with grasses or early successional species would be restored in accordance with applicable permits, approvals, and FERC's Plan and Procedures. Changes to the vegetation cover type would be limited to the footprint of aboveground facility upgrades at the crossover locations and at the receiver site for the Delmont Loop, resulting mostly in the conversion of agricultural land to right-of-way and access roads. Due to the nature of the existing vegetation types, most vegetation types would re-establish within one to three growing seasons.

Noxious and invasive plant species can out-compete and displace native plant species. Texas Eastern would implement strategies and measures to minimize the spread of exotic and invasive plant species during construction and restoration of the Project, to include:

- following the FERC Plan, to minimize soil movement and the associated movement of non-native seeds and plant material;
- using techniques that minimize the time that bare soil is exposed, thus minimizing the opportunity for exotic species to become established; and
- monitoring disturbed sites following construction to successfully revegetate with suitable cover seed mixes and to minimize establishment of invasive or exotic species.

We find these measures to be appropriate to avoid and minimize the potential for the introduction and/or spread of invasive and noxious weed species.

Due to the siting of the proposed Project facilities within and adjacent to an existing, maintained right-of-way and at existing pig launcher and receiver sites, Project disturbances to vegetation would be minimal. Given the limited area of vegetation disturbance, the abundance of similar vegetation adjacent to the Project area, and Texas Eastern's commitment to restore vegetation in the temporarily disturbed areas, we conclude that impacts on vegetation would not be significant.

4.3 Wildlife

Wildlife habitat types are based on the vegetation cover types within the Project area which, as stated above, include agricultural, industrial/commercial, and open land (to include wetlands). Fallow agricultural areas bordered by woodland habitats or hedgerows are of value to birds and other wildlife because of the nesting and refuge opportunities they provide. In general, industrial and commercial areas consist of maintained turf grass and landscape trees and shrubs, and typically provide little to no wildlife habitat. However, several opportunistic species have adapted well to the presence of humans and can thrive in urban and suburban settings. Open, uncultivated areas may sustain abundant populations of small- and medium-sized mammals and birds,

while reptiles and amphibians frequent open, grassy areas. Emergent wetland habitat provides nesting, breeding, feeding, and migratory uses for a variety of wildlife, including mammals, amphibians, reptiles, invertebrates, and birds.

Characteristic wildlife in the Project area includes big brown bat, white-tailed deer, red fox, racoon, beaver, rabbit, coyote, woodchuck, gray squirrel, American kestrel, American robin, blue jay, house sparrow, Canada goose, European starling, red-tailed hawk, and wild turkey.

Impacts on wildlife resources and habitat would result from Project construction activities, including vegetation removal, ground disturbance, increased human activity, and noise levels. Mobile wildlife would be temporarily displaced to nearby habitats due to construction activities. Less mobile species, including small mammals, may suffer mortality from construction activities.

Although individual mortality of some wildlife species could occur as a result of the Project, the effects of these individual losses on wildlife populations would be minor. Based on the presence of similar habitats in the vicinity of construction activities, and the implementation of impact avoidance and minimization measures, we conclude that construction and operation of the Project would not significantly impact wildlife.

4.3.1 Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act (16 U.S Code [U.S.C.] 703-711); bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d).

Executive Order 13186 (66 CFR 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (USFWS).⁸ Executive Order 13186 was issued, in part, to ensure that environmental analyses of federal actions assess the impacts of these actions/plans on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from the USFWS.

⁸ On March 30, 2011, the USFWS and the Commission entered into a *Memorandum of Understanding Between the Federal Energy Regulatory Commission and the U.S. Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds"* that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies.

Table 4 below provides a description of migratory bird species of concern (i.e., Birds of Conservation Concern) that are listed within Bird Conservation Regions 28 and 29 and have the potential to occur within the general Project area.

Construction activities may cause some migratory birds to avoid the Project area during abandonment and construction, however, impacts would be limited to the relatively short construction period. Texas Eastern would implement conservation measures developed with the USFWS to minimize impacts on migratory birds during construction and operation of the Project, including:

- the colocation of the proposed Project along and adjacent to existing utility and transportation right-of-way to avoid habitat fragmentation and minimize impacts on forested locations; and
- the restoration of non-forested workspace locations to their pre-construction condition.

Common Name	Scientific Name	Breeds in Region	Nesting Habitat ^a		
			Ground	Shrub	Tree
bald eagle	<i>Haliaeetus leucocephalus</i>	x	o	o	x
black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	x	o	o	x
black capped chickadee	<i>Poecile atricapillus praticus</i>	x	o	o	x
bobolink	<i>Dolichonyx oryzivorus</i>	x	x	o	o
Canada warbler	<i>Cardellina canadensis</i>	x	x	o	o
Kentucky warbler	<i>Geothlypis formosa</i>	x	x	o	o
yellowbellied sapsucker	<i>Sphyrapicus varius</i>	x	o	o	x
wood thrush	<i>Hylocichla mustelina</i>	x	o	o	x

Sources: USFWS 2019 and Cornell Lab of Ornithology 2019

Note: "x" = applicable; "-" = not applicable; "o" = does not nest in habitat type

a. Nesting habitat type provided by the Cornell Lab of Ornithology. This list is limited to those species that are listed in Bird Conservation Regions 28 and 29 that have the potential to occur via breeding, nonbreeding or migration activities within the Project area.

The Project area is managed right-of-way and agricultural land that is maintained on a regular basis. Texas Eastern indicated that clearing would begin “as early as possible” to avoid impacts on ground nesting migratory bird species and is currently anticipated for March 2021. The typical bird nesting season in the Project area is from March 15 to July 31. To the extent right-of-way clearing begins prior to March 15, we would expect birds to simply avoid the area, although any clearing or new ground

disturbance after March 15 would have the potential to affect ground-nesting birds. However, as the majority of the Project area is actively maintained utility right-of-way or active agricultural area, the likelihood of widespread nesting is considered minimal. Given the relatively small area of disturbance, and the availability of similar adjacent habitats, we conclude that construction activities would not adversely impact migratory bird populations in the Project area, although a small number of nests or individual birds may be affected.

4.4 Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Special status species considered in this EA include federally listed species protected under the ESA, and those species that are state-listed or with other special status. Section 7(a)(2) of the ESA requires the Commission to ensure that any action it authorizes, funds, or carries out would not jeopardize the continued existence of federally listed or proposed listed species, or result in the adverse modification or destruction of critical habitat for federally listed and proposed species.

Texas Eastern, as our non-federal representative, conducted informal ESA consultations with the USFWS to determine whether any federally listed threatened or endangered species, federal species of concern, or designated critical habitats occur in the Project area. Texas Eastern also used the Pennsylvania Natural Diversity Inventory (PNDI) to research potential protected and sensitive wildlife habitats and lands managed for wildlife that could be affected by the Project. The Pennsylvania Natural Heritage Program, through the PNDI, inventories and maintains a list of all plant and wildlife species, plant communities, critical habitats, and geologic features in Pennsylvania for which there is a conservation concern. Through the PNDI review process, each applicable Pennsylvania state and federal agency evaluated the potential for the Project to affect threatened and endangered species under their jurisdiction.

The results of the PNDI review did not identify protected or sensitive habitats that would be crossed or otherwise impacted by the Project; however, the USFWS required further consultation for potential Project impacts on the northern long-eared bat (*Myotis septentrionalis*), the Indiana bat (*Myotis sodalists*), and the bog turtle (*Glyptemys muhlenbergii*).

Northern Long-eared Bat

All three Project sites are located within the range of the federally threatened northern long-eared bat. While bats of various species may use the airspace over the Project area as foraging habitat, no summer roosting or winter hibernating habitat was identified during surveys of the Project area.

The USFWS reviewed the Project and in a letter dated January 24, 2020, determined that the Project is not located within 0.25 mile of a known northern long eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree; therefore, any incidental take that may occur is in accordance with the Final 4(d) Rule and is not in violation of the ESA. However, the USFWS indicated that section 7 consultation should be completed under the streamlined consultation process by using the Determination Key that is available through the USFWS' Information for Planning and Consultation (IPaC) website. This IPaC key assists users in determining whether a federal action is consistent with the activities analyzed in Texas Eastern's IPaC submission.

The USFWS received Texas Eastern's effects determination for the Project using the northern long-eared bat key within the IPaC system on May 7, 2020. The USFWS indicated that the Project may affect the northern long-eared bat; however, any take that may occur as a result of the Project is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). On May 7, 2020, the USFWS determined that the Project is consistent with activities analyzed in the USFWS' January 5, 2016 Programmatic Biological Opinion and verified that the Opinion satisfies and concludes Texas Eastern's responsibilities for the Project under ESA Section 7(a)(2) with respect to the northern long-eared bat. We agree with this determination, and consultation for the northern long-eared bat is complete.

Indiana Bat

All three sites are located within the range of the federally endangered Indiana bat. Specifically, the Uniontown Crossover site is located within the swarming area of an Indiana bat hibernaculum, and the Bechtelsville Crossover site is located within the general area of a known Indiana bat maternity colony.

Summer habitat for the Indiana bat includes small to medium river and stream corridors with well-developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. The Indiana bat utilizes caves and mines as hibernacula. Texas Eastern indicated that no tree removal would occur at the Uniontown Crossover location and the Delmont Loop location. While limited to minor tree clearing would need to occur at the Bechtelsville Crossover Site, the USFWS concurred in its January 24, 2020 letter that these areas lack suitable potential roost trees for Indiana bats and concluded that the Project is *not likely to adversely affect* the Indiana bat. We agree with this determination, and consultation for the Indiana bat is complete.

Bog Turtle

The USFWS indicated that the Bechtelsville Crossover Site is in the range of the federally threatened bog turtle. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms;

clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied intermediate successional stage wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

Texas Eastern identified bog turtles as being potentially present in the Bechtelsville Project area. There is one wetland identified within that Project area. This wetland was evaluated by a USFWS qualified bog turtle surveyor for habitat suitability for the species and it was determined that the wetland does not have the combination of soils, vegetation, and hydrology typical of habitat occupied by bog turtles. In its January 24, 2020 letter, the USFWS concurred with his habitat determination and concluded that implementation of the proposed Project would have *no effect* on the bog turtle.

On April 8, 2020, Texas Eastern provided an updated consultation request to the USFWS to address minor Delmont Loop modifications resulting from a slight eastward shift of about 0.3 mile from the previously proposed Project location. The USFWS reviewed the modified information and indicated in an email dated April 22, 2020, that the determinations in the USFWS' January 24, 2020 concurrence letter remain valid. We agree with this determination, and consultation for the bog turtle is complete.

Through the PNDI review process and further consultation with the USFWS, we have evaluated the potential for Project construction and operation to affect threatened and endangered species and determined that the Project would not significantly affect sensitive species.

5. Land Use and Visual Resources

The Project area is rural, with the landscape being characterized by agricultural areas and forest with scattered residences associated with farms. Land uses in the Project areas consist primarily of agricultural, industrial/utility, and open lands. Agricultural land is the dominant land uses surrounding the Project facilities, with 77 percent of the Project area in agricultural production. Industrial/utility land comprises natural gas pipeline facility areas and roadways while open lands are areas of grassland or disturbed areas. Table 5 summarizes the land uses that would be affected by construction and operation of the Project.

**Table 5.
Land Use Impacts**

Facility or Access Road Designation	County	Mile-post (MP)	Agricultural		Industrial / Utility**		Open Land		Total	
			Const ***	Oper	Const	Oper	Const	Oper	Const	Oper
Bechtelsville Crossover	Berks	MP 218.81	-	-	-	0.16	0.12	0.41	0.12	0.57
Uniontown Crossover	Fayette	MP 771.05	0.25	0.32	-	0.28	0.10	0.09	0.35	0.69
SUBTOTAL			0.25	0.32	0.00	0.44	0.22	0.50	0.47	1.26
Delmont Loop	Westmoreland	MP 0.76 – 1.6	0.95	7.46	0.01	0.09****	0.23	3.15	1.19	10.70
SUBTOTAL			0.95	7.46	0.01	0.09	0.23	3.15	1.19	10.70
Access roads	Fayette	EAR-1	-	-	-	0.89	-	-	0.00	0.89
	Westmoreland	PAR-1*	-	-	-	-	-	-	-	-
		PAR-2	-	0.04	-	-	-	0.01	0.00	0.05
		TAR-1	0.58	-	-	-	-	-	0.58	-
		TAR-2	0.55	-	-	-	-	-	0.55	-
		TAR-3	0.41	-	-	-	-	-	0.41	-
SUBTOTAL			1.54	0.04	0.00	0.89	0.00	0.01	1.54	0.94
TOTAL			2.74	7.82	0.01	1.42	0.45	3.66	3.20	12.90

*Area not reported since this access road would be located entirely within the permanent right-of-way and therefore already reported in this tally.

**Industrial/Utility land includes the existing facility paved or gravel surfaces as well as existing road crossings within the Project right-of-way that may or may not be associated with the existing facilities.

***Construction area represents temporary construction workspace not including operational areas.

****Industrial/Utility Land listed for the Delmont Loop identified as existing roadway, crossed by the Project but not associated with existing facilities.

EAR = Existing Access Road

5.1 Land Use and Impacts

Land would be temporarily affected by construction activities and permanently affected by operations. During construction, approximately 16.1 acres of land would be affected. With the exception of the new pig launcher and receiver facilities, lands used during construction would be regraded to match the existing contours, reseeded, and returned to their previous use at Project completion.

Permanent (operational) impacts on land use/land cover would occur primarily within the existing permanent right-of-way and access roads (approximately 12.9 acres), of which, 0.72 acre will be an adjacent, new permanent right-of-way for the Delmont Loop pig-receiver station. The Bechtelsville and Uniontown Crossovers would be constructed within Texas Eastern's existing right-of-way resulting in no change in land use for these elements. The Delmont Loop would replace an existing Texas Eastern pipeline with a small expansion of the right-of-way for the pig-receiver station. While previous land uses would be allowed to resume following completion of construction at these locations, the construction of a new launcher/receiver facility on the Delmont Loop at milepost (MP) 1.6 would convert 0.5 acre of open land to gas pipeline facility. Approximately 1.26 acres of land (0.5 acre of open land, 0.32 acre of agricultural, and 0.44 acre of industrial land) would be permanently affected by the pipeline facilities.

The Project would affect approximately 10.56 acres of agricultural land, mainly active cropland and hay fields. With the exception of 0.32 acre of agricultural land impacted by the launcher/receiver facility at MP 0.0 and 0.04 acre of permanent access road (PAR-2), all agricultural land affected by the Project would be restored to its original use, including the 7.46 acres of permanent pipeline right-of-way.

Texas Eastern has proposed to use up to seven ATWS areas for construction of the Project, totaling 1.47 acres of land. The ATWS would be used for staging, road crossings, side slope areas, and in support of construction at the launcher/receivers. Table 6 identifies the location of the ATWS areas and their current land use. Following completion of construction, Texas Eastern would restore the ATWSs to their preconstruction condition. No staging areas or contractor lay yards would be required for the Project.

Agricultural lands to be crossed by the Project consist of active hayfields and cultivated lands. Typical cropland observed within the Project proposed work areas includes corn and clover. No specialty agricultural crops were observed within the Project work areas. Texas Eastern would minimize adverse impacts on agricultural land by implementing the FERC Plan. During construction, Texas Eastern would segregate topsoil in agricultural areas to preserve soil productivity and would negotiate with and reimburse landowners for any damages or loss of production resulting from the Project's construction activities. Resumption of agricultural operations following Project construction would aid in the restoration of soil structure and productivity that could take

several years to achieve success, depending on site-specific conditions and land use practices.

Texas Eastern would also work with landowners to identify and locate areas where there are drainage or irrigation systems. If drainage or irrigation systems are damaged by construction of the pipeline, Texas Eastern would repair or replace those damaged systems. Texas Eastern states that all drainage systems would remain operational during construction and that landowners would be compensated for losses of production and field damages.

Facility	County	Need	Approx. Dimensions (feet)	Approx. Area (acres)	Present Land Use
Bechtelsville Crossover	Berks	Staging Area and slope stabilization	25 x 200	0.12	Open Land
Uniontown Crossover North	Fayette	Staging Area and Safety	20 x 240	0.10	Open Land
Uniontown Crossover South		Staging Area	45 x 240	0.25	Agricultural
Delmont Loop South	Westmoreland	Launcher Site Construction	30 x 100	0.19	Open Land / Industrial
Delmont Loop MP 0.2		Road Crossing	30 x 300	0.21	Agricultural
Delmont Loop MP 0.3 – 0.4		Road Crossing	50 x 660	0.56	Open Land / Agricultural
Delmont Loop MP 0.8		Receiver Staging Area	23 x 80	0.04	Open Land
Project Total ATWS				1.47	

The proposed Project would not cross any residential areas or rural developments, and no residences are present within 50 feet of any construction work area. The areas where workspace is within 50 feet of residential outbuildings are classified as agricultural and open land.

Impacts on residences in the general vicinity to the pipeline may include noise and dust from construction and equipment and temporary visual effects from removal of vegetation and excavation of soils. Certain trees, shrubs, dense herbaceous growth, fences, and other obstructions may be cleared or removed from the construction right-of-way. Following completion of the construction of the Project, properties would be fully restored in accordance with the FERC Plan and agreements between Texas Eastern and the landowner.

The potential for dust and noise impacts on nearby residential areas are further discussed in sections B.7 and B.8, below. No future planned residential or commercial developments were identified that would be within 0.25 mile of the Project area.

No designated Coastal Zone Management Areas, registered National Historic Landmarks (National Park Service 2019a), Wild and Scenic Rivers (National Wild and

Scenic Rivers System 2019), or designated National Trails or Wildlife Refuges are within 0.25 mile of any proposed Project activities (National Park Service 2019a). Also, there are no waterbody crossings listed on the Nationwide Rivers Inventory (National Park Service 2019b).

In addition, the Project is not located within 0.25 mile of any state park, forest, or wildlife management area (PADCNR 2019a and 2019b). The Project would have no impact on recreational or other public facilities, as none are crossed by or adjacent to the Project.

5.2 Visual Resources

The Project is not within or in proximity to any federal, state, or locally designated scenic areas, such as National Wild and Scenic Rivers and scenic roads/highways. The Project could alter existing visual resources in three ways: (1) construction activity and equipment may temporarily alter the viewshed; (2) clearing along the right-of-way during construction would alter existing vegetation patterns; and (3) aboveground facilities would create permanent alterations to the viewshed.

The Project would be constructed over an approximate 6-month period, and during this time the presence of construction equipment and disturbed soil areas would be noticeable. Following completion of the Project, all areas, with the exception of the aboveground facilities, would be restored to their previous condition. The proposed pipeline would be within the existing pipeline right-of-way, therefore there would be no change in existing viewsheds along the Delmont Loop, except at the above ground facilities which are discussed below.

The proposed crossovers at aboveground facilities would be within the easements of existing facilities and enclosed within site fencing upon completion. Since the crossovers are being installed within existing fenced launcher/receiver sites, the minor modifications would result in negligible visual impacts.

The new pig launcher and receiver aboveground facilities on the Delmont Loop at MPs 1.60 and 0.0 would be in open areas within or adjacent to the existing right-of-way. The launcher/receiver facility at MP 0.0 would be adjacent to Crooked Run Road but likely not visible to any nearby residences. The facility at MP 1.60 would be adjacent to Boggs Hollow Road and approximately 185 feet from a residence. Based on our review of the aerial photo based alignment sheets and the proximity of the nearest residence, we believe the aboveground facilities at the receiver station at MP 1.60 would likely be visible to the nearest residence. The Commission's siting regulations at 18 CFR § 380.15(g)(5) require the planting of trees or other appropriate landscaping to enhance the appearance of aboveground facilities if they are visible from nearby residences. Therefore, to minimize permanent visual impacts, we recommend that:

- **Prior to construction, Texas Eastern should file with the Secretary of the Commission (Secretary), for review and written approval by the Director of the Office of Energy Projects (OEP), or the Director’s designee, a visual screening plan for the pig receiver station at MP 1.60. The plan should identify the locations of facility components and the location, type, quantity, and height of vegetation to be planted, or other equivalent screening, to minimize permanent visual impacts to residences. The plan should also address nighttime lighting and include measures to mitigate nighttime visual impacts to adjacent residences.**

Because the Project facilities would be mostly installed within existing pipeline right-of-way and due to the limited scope of activity and our recommendation above, we conclude that the Project would not have a significant impact on land use or visual resources.

6. Cultural Resources

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effects of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Texas Eastern, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and the FERC’s implementing regulations at 36 CFR 800.

On October 24, 2019, Texas Eastern submitted an initial consultation letter to the Pennsylvania State Historic Preservation Office (SHPO) that included Project mapping and the results of preliminary background research, and outlined the proposed methods for archaeological surveys for the Project. On November 8, 2019, the SHPO concurred with Texas Eastern’s recommendations that no cultural resources studies were necessary in the Bechtelsville Crossover or the Uniontown Crossover, and that an identification-level archaeological survey should be conducted for the Delmont Loop. Archaeological survey was completed on portions of the Delmont Loop that had not been previously surveyed for archaeological sites. No archaeological sites were identified.

Texas Eastern submitted two archaeological survey reports for the Delmont Loop to the SHPO and FERC. The first report was submitted to the SHPO on December 4, 2019, and recommended that the proposed Project would not have a direct or indirect effect on any historic properties. On December 18, 2019, the SHPO concurred with Texas Eastern that no historic properties would be affected by the Project. The second report, which presented the results of archaeological survey of ATWS, was submitted to the SHPO on April 10, 2020. Based on the results of the cultural resources investigations, Texas Eastern recommended that the ATWS for the Project would not have a direct or indirect effect on any historic properties. On May 4, 2020, the SHPO

agreed with Texas Eastern that no historic properties would be affected by the ATWS for the Project and that no further archaeological work was necessary for the Project. We agree with the SHPO and have determined that the Project would have no effect on historic properties. Accordingly, FERC has completed its compliance requirements with Section 106 of the National Historic Preservation Act for the Project.

Texas Eastern sent Project notification letters to eight federally recognized Native American Tribes and informed them about the Project on October 8, 2019. The letters introduced the Project and provided Project mapping. The eight Tribes include: the Absentee-Shawnee Tribe of Oklahoma, the Delaware Nation, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, the Seneca Nation of Indians, the Seneca-Cayuga Tribe of Oklahoma, the Shawnee Tribe, and the Stockbridge-Munsee Community. On December 16, 2019, Texas Eastern resubmitted the coordination letters to the Tribes. Texas Eastern sent a Project update letter on April 10, 2020, informing the Tribes of minor changes to the proposed Project temporary workspaces. To date, Texas Eastern has not received any correspondence from any of the contacted Tribes.

On May 18, 2020, we sent our NOI to the same eight federally recognized Native American Tribes. In addition, we sent formal consultation letters to these Tribes on May 20, 2020, both through the U.S. Postal Service and by e-mail.

The Seneca Nation of Indians replied to our consultation letter via e-mail on May 22, 2020, expressing an interest in the Project and requesting clarification on how to access the documents. We resent the consultation letter via e-mail, including maps and a Project description, on May 27, 2020. To date we have not received any further correspondence from the Seneca Nation of Indians or any of the other contacted Tribes.

Texas Eastern provided a plan to address the unanticipated discovery of historic properties and human remains during construction. We requested minor revisions to the plan. Texas Eastern provided a revised plan, which we find acceptable.

7. Air Quality

Federal and state air quality standards are designed to protect human health. The USEPA has developed National Ambient Air Quality Standards (NAAQS) for criteria air pollutants such as oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), and inhalable particulate matter (PM_{2.5} and PM₁₀). PM_{2.5} includes particles with an aerodynamic diameter less than or equal to 2.5 micrometers, and PM₁₀ includes particles with an aerodynamic diameter less than or equal to 10 micrometers. The NAAQS were established under the Clean Air Act of 1970, as amended in 1977 and 1990, to protect human health (primary standards) and public welfare (secondary standards). The NAAQS were set at levels the USEPA believes are necessary to protect human health and welfare.

Greenhouse Gases (GHG) produced by fossil-fuel combustion include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). GHG status as a pollutant is not related to toxicity. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHGs under the Clean Air Act.

During construction of the Project, these GHGs would be emitted from various earth-moving and other construction-related equipment. Emissions of GHGs are typically expressed in terms of CO₂ equivalents (CO₂e).

If measured ambient air pollutant concentrations for a subject area remain below the NAAQS criteria, the area is considered to be in attainment with the NAAQS. The Project area is in Berks, Fayette, and Westmoreland Counties, which are listed by the USEPA as nonattainment/maintenance for 8-hour ozone (2008 standard). In addition, Westmoreland County is designated maintenance for 24-hour PM_{2.5} (2006 standard).

During construction, a temporary reduction in ambient air quality may result from criteria pollutant emissions and fugitive dust generated by construction equipment. The quantity of fugitive dust emissions would depend on the moisture content and texture of the soils that are disturbed. Fugitive dust and other emissions due to construction activities generally do not pose a significant increase in regional pollutant levels; however, local pollutant levels could increase. Dust suppression techniques such as watering the right-of-way would be used as necessary in accordance with Texas Eastern's *Fugitive Dust Control Plan* in construction zones near residential and commercial areas to minimize the impacts of fugitive dust on sensitive areas. Estimated emissions to construct each Project component are presented in table 7.

As indicated above, Berks, Fayette, and Westmoreland Counties are within USEPA-designated nonattainment/maintenance areas for ozone. Texas Eastern's application estimates that emissions from construction would be below all applicable General Conformity thresholds within each of the respective air quality control regions; therefore, a General Conformity Determination is not required.

Source	NO_x	CO	VOC	SO₂	PM₁₀	PM_{2.5}	GHG (as CO_{2e})	Total HAPs
Delmont Loop (Westmoreland County)	4.79	2.67	0.44	0.02	28.47	4.81	2,096	0.05
Bechtelsville Crossover (Berks County)	4.81	2.77	0.45	0.02	19.66	3.49	2,097	0.05
Uniontown Crossover (Fayette County)	4.80	2.80	0.46	0.02	18.83	3.36	2,095	0.05
Project Total	14.4	8.24	1.35	0.06	66.46	11.66	6,288	0.15

Following construction, emissions from operation of the Delmont Loop and Uniontown and Bechtelsville Crossover facilities would be primarily limited to releases of methane through equipment leaks and infrequent blowdowns.

Based on the short duration of construction activities and our review of the estimated emissions from construction of the proposed Project, we conclude there would be no regionally significant impacts on air quality.

8. Noise

The noise environment can be affected both during construction and operation of pipeline projects. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetation cover. Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} plus 10 decibels on the A-weighted scale (dBA) added to account for people's greater sensitivity to nighttime sound levels during late evening and early morning hours (between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen 1988).

Construction noise is highly variable. Many construction machines operate intermittently, and the types of machines in use at a construction site change with the construction phase. The sound level impacts on residences along the pipeline right-of-way due the construction activities would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and machines used simultaneously, and the distance between the sound source and receptor. Nighttime noise due to construction would be limited since Project construction would typically take place during daylight hours, Monday through Saturday between 7:00 a.m. and 7:00 p.m. The Project would not emit noise during everyday operation, although periodic pigging of the pipeline does generate noise.

Noise generated during construction at the Bechtelsville Crossover is subject to the Boyertown Borough and Colebrookdale and Pike Townships Joint Zoning Ordinance. This ordinance limits noise from construction activities to a maximum dBA sound level as measured at a specified distance from the source. Noise produced from construction at the Uniontown Crossover would be subject to the Fayette County Zoning Ordinance (Fayette County 2006). In order to maintain compliance, Texas Eastern would limit

noise from construction activities to 90 dBA measured at a distance of 25 feet from any property line between the operating hours of 5:00 a.m. and 10:00 p.m.

Because of the temporary nature of construction activities, we conclude that no significant noise impacts are anticipated from the proposed Project's construction or operation.

9. Reliability and Safety

The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If inhaled in high concentrations, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of over 1,000 °F and is flammable at concentrations between 5 and 15 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite if there is an ignition source present. A flammable concentration within an enclosed space in the presence of an ignition source can explode. Methane is buoyant at atmospheric temperatures and disperses upward rapidly in air.

9.1 Safety Standards

The U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (USDOT-PHMSA) is mandated to provide pipeline safety under 49 U.S.C. Chapter 601. USDOT-PHMSA administers the USDOT's national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response associated with pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and require the pipeline operator to use various technologies to achieve safety. USDOT-PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local levels.

Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adoption and enforcement of federal standards, while Section 5(b) permits a state agency that does not qualify under Section 5(a) to perform certain inspection and monitoring functions. A state may also act as USDOT-PHMSA's agent to inspect interstate facilities within its boundaries; however, the USDOT-PHMSA is responsible for enforcement actions.

Pennsylvania is authorized under Section 5(a) to assume all aspects of the safety program for intrastate, but not interstate facilities (USDOT-PHMSA 2018a).

The USDOT-PHMSA pipeline standards are published in 49 CFR 190 through 199. Part 192 specifically addresses natural gas pipeline safety issues. Under a Memorandum of Understanding with FERC on Natural Gas Transportation Facilities, dated January 15, 1993, the USDOT-PHMSA has the exclusive authority to promulgate federal safety standards in the transportation of natural gas. Section 157.12(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by the USDOT-PHMSA in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. FERC accepts this certification and does not impose additional safety standards.

If FERC becomes aware of an existing or potential safety problem, there is a provision within the Memorandum to promptly alert the USDOT-PHMSA. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under FERC's jurisdiction. FERC also participates as a member of the USDOT-PHMSA's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

9.2 Project Design Requirements

The piping and aboveground facilities associated with the Appalachia to Market Project must be designed, constructed, operated, and maintained in accordance with the USDOT-PHMSA Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The USDOT-PHMSA specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

9.3 Pipeline Safety

In addition to the requirements reviewed above, the USDOT-PHMSA also defines area classifications, based on population density near the pipeline and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile-length of pipeline. The four area classifications are defined below:

- Class 1: Location with 10 or fewer buildings intended for human occupancy;
- Class 2: Location with more than 10 but less than 46 buildings intended for human occupancy;
- Class 3: Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by more than 20 or more people on at least 5 days a week for 10 weeks in any 12-month period; and
- Class 4: Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operations. For instance, pipelines constructed in Class 1 locations must be installed with a minimum depth cover of 18 inches in consolidated rock and 30 inches in normal soil. Class 2, 3 and 4 locations, as well as drainage ditches of public roads and railroad crossings require a minimum cover of 24 inches in consolidated rock and 36 inches in normal soil.

Class locations also specify the maximum distance to a sectionalizing block valve (i.e., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure (MAOP), inspection and testing of welds, and the frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

The Project would be constructed entirely in areas designated as Class 1 locations.⁹ Texas Eastern would design, test, and operate the pipeline in accordance with 49 CFR 192, Subpart G. Throughout the life of the pipeline, Texas Eastern would monitor population changes near the pipeline in accordance with 49 CFR 192, Subpart L (Section 192.609 and 192.611) to determine whether the pipeline requires upgrades to meet changes in population. If a subsequent increase in population density adjacent to the rights-of-way results in a change in class location for the pipeline, Texas Eastern would conduct a study to determine whether the new class location segments should have a reduction in MAOP, a new hydrostatic test, or replace the segment with pipe of sufficient grade and wall thickness, if required, in order to comply with USDOT-PHMSA requirements for the new class location.

High Consequence Areas (HCAs) may be defined in one of two ways. In the first method, an HCA includes:

⁹Available on eLibrary under accession no. 20200501-5446 (34075417).

- current Class 3 and 4 locations;
- any area in Class 1 or 2 locations where the potential impact radius is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle; or
- any area in Class 1 or 2 locations where the potential impact circle includes an identified site (as described below).

An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days per week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

In the second method, an HCA includes any area within a potential impact circle that contains:

- 20 or more buildings intended for human occupancy; or
- an identified site.

Texas Eastern has not identified any HCAs associated with the Project.

9.4 Emergencies

The USDOT-PHMSA prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Each pipeline operator is required under 49 CFR 192.615 to establish an emergency plan that includes procedures to minimize the hazards of natural gas pipeline emergency. Texas Eastern has indicated its intent to develop and implement an Emergency Response Plan in accordance with the regulation, which requires that a plan be prepared prior to commencing operations for a pipeline. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosion, and natural disasters;
- establishing and maintaining communications with local, fire, police, and public officials, and coordinating emergency response;
- emergency system shutdown and safe restoration of service; making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property and making them safe from actual or potential hazards.

The USDOT-PHMSA requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and

responsibilities of each organization that may respond to a natural gas pipeline or facility emergency, and to coordinate mutual assistance. Texas Eastern would be required to develop an Emergency Response Plan and to establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. As part of USDOT-PHMSA requirements Texas Eastern must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas emergency and report it to appropriate public officials. Texas Eastern would provide the appropriate training to local emergency service personnel before the Project is placed in service.

On October 1, 2019, USDOT-PHMSA issued new regulations modifying and expanding the standard pipeline safety standards under 49 CFR Parts 191 and 192. These regulations, in part, established: new standards for in-line inspections; requirements for newly established moderate consequence areas; requirements to consider seismicity and geotechnical risks in its integrity management plan for the pipeline; new regulations on pipeline patrol frequency for HCAs, moderate consequence areas, and grandfathered pipelines; a policy to reconfirm MAOP for certain pipelines; installation of pressure relief for pig launcher/receivers; and reporting requirements for exceedances of MAOP to USDOT-PHMSA. These regulations became effective on July 1, 2020.¹⁰

9.5 Pipeline Accident Data

The USDOT-PHMSA requires that all operators of natural gas transmission pipelines notify the USDOT-PHMSA of any significant incident and submit an incident report within 20 days. Significant incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization; or
- involved property damage of more than \$50,000 (1984 dollars).¹¹

During the 20-year period from 1998 through 2017, a total of 1,365 significant incidents were reported on more than 300,000 total miles of natural gas transmission pipelines nationwide (USDOT-PHMSA 2018b and 2018c). Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 8 provides a distribution of the causal factors as well as the number of each incident by cause.

¹⁰ DOT-PHMSA announced they will not enforce provisions of the recently finalized gas transmission rule for certain items that were due to be implemented on July 1, 2020. They will extend this July 1 deadline to December 31, 2020. <https://www.phmsa.dot.gov/news/phmsa-issues-notice-enforcement-discretion-gas-pipeline-operators>

¹¹\$50,000 in 1984 dollars is approximately \$122,500 as of March 2018 (U.S. Bureau of Labor Statistics 2018b).

The dominant causes of pipeline incidents are pipeline material, weld, or equipment failure, and corrosion constituting 53.2 percent of all significant incidents. The pipelines included in the data set in table 8 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

Cause	Number of Incidents ^a	Percentage
Corrosion	324	23.7
Excavation ^b	198	14.5
Pipeline material, weld, or equipment failure ^c	403	29.5
Natural force damage	148	10.8
Outside forces ^d	90	6.6
Incorrect operation	54	4.0
All other causes ^e	148	10.8
Total	1,365	-

^a All data gathered from USDOT-PHMSA's Significant Incident files (USDOT-PHMSA 2018c).
^b Includes third party damage.
^c The Project would replace a pipe segment in the same location along Texas Eastern's existing pipeline that exploded in 2016, resulting in severe injuries to one individual and destroying one house near Delmont, Pennsylvania, in Westmoreland County. According to USDOT-PHMSA, the rupture and resultant explosion was possibly attributable to corrosion due to a flawed tape coating applied to the pipe's girth weld joints. Reference: https://primis.phmsa.dot.gov/comm/reports/enforce/documents/120161004H/120161004H_Amended%20Corrective%20Action%20Order_07192016_text.pdf.
^d Fire, explosion, vehicle damage, previous damage, intentional damage.
^e Miscellaneous causes or unknown causes.

The frequency of significant incidents is strongly dependent on pipeline age. Older pipelines have a higher frequency of corrosion incidents and material failure because corrosion and pipeline stress/strain are time-dependent processes. The use of both an external protective coating and a cathodic protection,¹² required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially protected pipe. Table 9 provides a breakdown of outside force incidents by cause.

¹² Cathodic protection is a technique to reduce corrosion (rust) of the natural gas pipeline through the use of an induced current or a sacrificial anode (like zinc) that corrodes at a faster rate to reduce corrosion of the protected pipeline.

Cause	Number of Incidents	Percent of Outside Force Incidents
Third party excavation damage	160	36.7
Operator excavation damage	26	6.0
Unspecified excavation damage / previous damage	12	2.8
Heavy rain / floods	78	17.9
Earth movement	29	6.7
Lightning / temperature / high winds	30	6.9
Natural force (other) / unspecified natural force	11	2.5
Vehicle (not engaged with excavation)	52	11.9
Fire / explosion	10	2.3
Previous mechanical damage	6	1.4
Fishing or maritime activity/maritime equipment	9	2.1
Intentional damage	1	0.2
Electrical arcing from other equipment / facility	1	0.2
Unspecified / other outside force	11	2.5
Total	436	-
^a Excavation, outside force, and natural force from table 8 (USDOT-PHMSA 2018c).		

Outside forces, excavation, and natural forces are the cause of 31.9 percent of significant pipeline incidents. These result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. Older pipelines have a higher frequency of outside forces incidents, in part because their location may be less well known and less well marked as compared to newer pipelines. In addition, older pipelines comprise a disproportionate number of smaller-diameter pipelines, which have a greater rate of outside force incidents. Smaller pipelines are more easily crushed or broken by mechanical equipment or earth movement.

Since 1982, operators have been required to participate in “One-Call” public utility systems in populated areas to minimize unauthorized excavation activities near pipelines. The “One-Call” system is a service used by public utilities and some private sector companies (e.g., oil pipelines, cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. Texas Eastern participates in the Pennsylvania One-Call system.

9.6 Impact on Public Safety

Texas Eastern would comply with all applicable USDOT-PHMSA pipeline safety standards as well as regular monitoring and testing of the pipeline. While pipeline failures are rare, the potential for pipeline systems to rupture and the risk to nearby residents is discussed below.

The service incidents data summarized above in table 8 include pipeline failures of all magnitudes with widely varying consequences. Table 10 below presents the annual injuries and fatalities that occurred on natural gas transmission pipelines in the 5-year period between 2015 and 2019.

Year ^a	Injuries	Fatalities
2015	16	6
2016	3	3
2017	3	3
2018	7	1
2019	8	1
^a All data gathered from USDOT-PHMSA Significant Incident files, September 10, 2020 (USDOT-PHMSA 2020).		

The majority of fatalities from pipelines are due to incidents with local distribution pipelines not regulated by FERC. These are natural gas pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, these distribution lines are smaller diameter pipes and/or plastic pipes, which are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to FERC-regulated natural gas transmission pipelines.

The nationwide total of accidental fatalities from various anthropogenic and natural hazards are listed below in table 11 to provide a relative measure of the industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously because individual exposures to hazards are not uniform among all categories. The data, nonetheless, indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to other hazard categories. Furthermore, the fatality rate associated with natural gas distribution lines is much lower than fatalities from natural hazards such as lightning, tornadoes, or floods.

Type of Accident	Annual No. of Deaths
All accidents ^a	169,936
Poisoning ^a	64,795
Motor vehicle ^a	40,231
Falls ^a	36,338
Injury at work ^a	4,573
Drowning ^a	3,709
Fire, smoke inhalation, flames ^a	2,812
Floods ^b	85
Lightning ^b	44
Tornadoes ^b	69
Natural gas distribution lines ^c	10
Natural gas transmission pipelines ^c	2
^a Centers for Disease Control and Prevention, Deaths: Final Data for 2017 (CDC 2019). ^b National Oceanic and Atmospheric Administration National Weather Service, Office of Climate, Water and Weather Services, 30-year average 1988-2017 (NOAA 2018). ^c USDOT-PHMSA Significant Incident files, 20-year average 2000 – 2019 (USDOT-PHMSA 2020).	

The available data show that natural gas transmission pipelines continue to be a safe and reliable means of energy transportation. From 2000 to 2019, there were an average of 70 significant pipeline incidents, 9 injuries, and 2 fatalities per year (USDOT-PHMSA 2020).

As the number of significant incidents on over more than 300,000 miles of natural gas transmission lines indicate the risk is low for an incident at any given location, Texas Eastern’s construction and operation of the Project would represent a minimal increase in risk to the nearby public. We conclude that with the full implementation of the requirements of 49 CFR 192 for the design, materials, construction, pressure testing, cathodic protection, operations, maintenance, and integrity management, the Project would be constructed and operated safely.

10. Cumulative Impacts

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the proposed Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The CEQ guidance

states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions (CEQ 1997). In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered. Table 12 summarizes the resource-specific geographic scopes that were considered in this analysis.

To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affects a resource also potentially affected by the Project;
- causes this impact within all, or part of, the Project area defined by the resource-specific geographic scope; and
- causes this impact within all, or part of, the time span of the proposed Project's estimated impacts.

As described in our analysis above within section B of this EA, constructing and operating the Project would temporarily and permanently affect the environment. However, with the exceptions noted below, we concluded that most of the Project-related impacts would be contained within or adjacent to the temporary construction workspaces. For example, erosion control measures included in the FERC Plan would keep disturbed soils within the work areas and would therefore not contribute to cumulative impacts on soil resources. Resources that could be affected outside the immediate Project area and are subject to our cumulative impacts review include watershed-level impacts on vegetation and wildlife; visual resources; traffic; and air quality and construction-related noise. However, for some resources, the contribution to regional cumulative impacts is lessened by the expected recovery of ecosystem function. For example, non-forested vegetation communities and wildlife habitats would be cleared, but restoration would proceed immediately following construction.

The following resources would not be affected by the Project, and therefore no cumulative impacts would occur on:

- mineral resources
- cultural resources;
- Coastal Zone Management Areas; and
- natural or scenic areas and parks, recreational areas, registered natural landmarks, designated National or State Wild and Scenic Rivers, special use areas, or visually sensitive areas, because none are within the Project area.

Table 12 below summarizes the resource-specific geographic boundaries considered in this analysis, and the justification for each. Actions outside of these boundaries were not evaluated because their potential to contribute to cumulative impacts diminishes with increasing distance from the Project.

Table 12. Cumulative Impact Resource-Specific Geographic Scopes	
Resource	Cumulative Impact Geographic Scope
Geological Resources and Soils	For geological resources and soils, potential impacts include the area of disturbance of the Project (i.e., the construction workspaces) overlapping or immediately abutting the workspaces of other actions.
Water Resources and Floodplains	Impacts on water resources are traditionally assessed on a watershed level, defined by the watershed boundary, or hydrologic unit code (HUC), which for this Project is the HUC-12 level watershed. For floodplains, cumulative impact is assessed within the entire floodplain footprint.
Vegetation, Wildlife, and Special Status Species	The HUC-12 watershed level provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecology characteristics in the Project area; therefore, impacts of other actions on vegetation, wildlife, and special status species are evaluated in combination with the Project within each defined hydrologic unit code watershed boundary.
Land Use and Visual Resources	Impacts of other actions in combination with the Project are evaluated within a 1-mile radius from Project work areas.
Air Quality	Construction impacts include other actions within 0.25 mile from Project workspaces.
Noise	Construction impacts include other actions within 0.25 mile from the proposed Project's earth-disturbing equipment work.

10.1 Other Actions identified within the Geographic Scope

Table 13 summarizes recent past, current, and reasonably foreseeable actions and affected resources potentially falling within one or more geographic scopes identified in table 12. Information about present and future planned actions summarized in table 13 was obtained by consulting federal, state, and local agency and municipality websites, as well as local news websites.

10.2 Potential Cumulative Impacts of the Proposed Project

The actions considered in our cumulative impact analysis are included based on the likelihood of their impacts coinciding with impacts from the Project, meaning the other actions have current or ongoing impacts or are “reasonably foreseeable.” The actions we considered are those that could affect similar resources during the same timeframe as the Project. The anticipated cumulative impacts of the Project and these other actions are discussed below.

Project and Developer	County	Distance and Direction from Project	Project Size	Current Status and Schedule	Potentially Affected Environmental Resources
Bia Water Pipeline Project, Olympus Energy	Westmoreland	7 miles north	35 acres	Issued 1/9/2020	Water, Fish, Wildlife and Vegetation Resources
Aphrodite Well Pad, Olympus Energy	Westmoreland	10 miles west	16 acres	Pending	Water, Fish, Wildlife, and Vegetation Resources
JP-40 Pipeline Replacement, Dominion Energy	Westmoreland	1-mile northwest	Not Provided	Issued 12/23/2019	Water, Fish, Wildlife, and Vegetation Resources
West Penn Power	Westmoreland	< 1-mile west	Not Provided	Pending	Water, Fish, Wildlife, and Vegetation, Land Use and Visual Resources
Met Ed, Appalachia to Market Project power source	Berks	Non-jurisdictional facility overlapping	0.5 mile	Pending	Geology and Soils, Water, Fish, Wildlife, Vegetation, Land Use and Visual Resources
(a) An estimated eight hundred and ninety (890) pre-existing oil and gas wells were identified within the Hydrologic Unit Code (HUC)-12 watershed.					

10.2.1 Geology and Soils

As Project impacts on geology and soils would be highly localized and limited primarily to the Project footprint during the period of active construction, cumulative impacts on geology and soils would only occur if other geographically overlapping projects were constructed at the same time (and place) as the Project, and the exposure of soils to erosion and sedimentation occurs. None of the other projects/actions occurring within the temporal scope of the Project would occur within the geographic scope for the Project except for the non-jurisdictional Met Ed electricity supply to the Bechtelsville Crossover site. We believe that limited footprint and the measures Texas Eastern would adopt to minimize impacts on soils would prevent any significant cumulative impacts on geology and soils from the Project in consideration with other projects.

10.2.2 Groundwater

Construction of the Project could result in minor, temporary impacts on groundwater infiltration due to tree, herbaceous vegetation, or scrub-shrub vegetation clearing. There is a chance that construction associated from the Project in combination with construction associated with the projects identified in table 13 could result in temporary cumulative impacts within the aquifers if construction activities occur concurrently or within several days of one another. If temporary impacts occur, it would likely be limited to short-term turbidity visible in groundwater or reduced infiltration. Hydrostatic test water would be obtained from municipal sources, thus the Project would not contribute to groundwater depletions. We also anticipate that Texas Eastern's SPCC Plan would prevent or minimize the opportunity for and necessitate immediate control

and clean-up of spills of fuels, lubricants, or other hazardous material, and would therefore minimize the opportunity for cumulative impacts that could result if other projects were to also result in spills. For these reasons, we conclude that any cumulative impact on groundwater from the Project would be negligible.

10.2.3 Surface Waters and Fisheries

Projects from table 13 that are within the cumulative impacts area for surface waters include the Bia Water Pipeline Project, Aphrodite Well Pad Olympus Energy, JP-40 Pipeline Replacement Dominion Energy, West Penn Power, and past and ongoing natural gas development in the region (i.e., natural gas wells). No direct impacts on surface waterbodies are anticipated at the Uniontown Crossover or the Bechtelsville Crossover; therefore, there would be no cumulative impacts on waterbodies from these Project components. While there are no known projects that directly overlap with the proposed Delmont Loop, they share the same geographic scope area (i.e., Hydrologic Unit Code [HUC]-12 watershed) and are discussed generally. Cumulative impacts on surface waters from projects and actions identified in table 13 would dissipate the farther they occur from the Project.

Construction of the Delmont Loop and other projects in the cumulative impacts area could have direct and indirect impacts on surface water quality and flow, as well as on fish and other organisms that inhabit affected waters. These impacts could include increased sedimentation, turbidity, decreased dissolved oxygen, impaired flow, releases of chemicals and nutrient pollutants, reduced riparian cover, thermal changes, modification of habitat, and fish injury or mortality within the watershed. The only waterbody crossed by the Project is the unnamed tributary to Beaver Run. We do not believe any of the other projects would directly impact this waterbody at the same time as the Project, minimizing the possibility of cumulative impacts on the waterbody.

Most of the impacts on waterbodies have already ceased to exist with projects that are in restoration, preventing most cumulative impacts on waterbodies, such as existing natural gas wells. Other new projects (e.g., wells, powerlines) would likely be required to install and maintain best management practices required by federal, state, and local permitting authorities to minimize impacts on waterbodies. We conclude that construction and operation of the Project and other projects in the area would not result in significant cumulative impacts on surface water resources, fish, and other aquatic resources in the area.

10.2.4 Wetlands

Projects from table 13 that are within the cumulative impacts area for wetlands include Bia Water Pipeline Project, Aphrodite Well Pad Olympus Energy, JP-40 Pipeline Replacement Dominion Energy, West Penn Power, Met Ed, and past and ongoing natural gas development in the region (i.e., natural gas wells). No direct impacts on wetlands

would occur at the Uniontown Crossover; therefore, there would be no cumulative impacts on wetlands from this Project component.

Cumulative impacts on wetlands affected by the Project would be limited primarily to locations where there is overlap. The Met Ed powerline that would provide electricity to the Bechtelsville Crossover would overlap with the Project workspace. There are no other known projects that directly overlap with the proposed Project, although they share the same geographic scope area (i.e., HUC-12 watershed) and are discussed generally. The Project would result in temporary impacts on 0.50 acres of PEM wetlands; however, operational impacts on 0.20 acre of PEM wetlands would be permanent, as it would be converted to an upland graveled site for the Delmont Receiver Station and access road. We estimate that the projects in table 13 would cross wetlands within the same watersheds as the Project; however, we are unaware of the exact acreage of wetlands impacted by those projects.

We were unable to find quantitative data for the extent of impacts on wetlands from the existing non-FERC regulated projects. It is estimated that about 890 natural gas wells exist in the counties crossed by the Projects. We assume that wetlands would be avoided by future well placement or, if some level of impacts would occur, mitigation would be required by the USACE or state for projects requiring agency authorization.

The greatest impact on wetlands from the Project and other projects in the cumulative impacts area would be due to construction within or adjacent to wetlands and storm runoff from disturbed areas during construction. Most construction-related impacts on wetlands range from temporary to permanent, depending on the proposed action/facility and type of wetland impacted. For example, impacts on PEM wetlands from pipeline construction would be temporary because they would return to original emergent function and value shortly after construction. There would also be a permanent loss of some wetland habitat where aboveground facilities or roads would be placed and operated along the Delmont Loop.

While within the same HUC-12 watershed, some of the non-FERC jurisdictional projects are expected to avoid direct impacts on wetlands because their facilities are at discrete locations (versus long linear features) and relatively flexible in placement (not dependent on connecting to another existing facility). For other linear utility projects listed in table 13, we anticipate that each entity responsible for the project would develop its project in a manner to avoid impacts on wetlands and/or appropriately mitigate for any impacts in accordance with state and federal permitting requirements. For existing gas infrastructure (wells), we anticipate that each project has been constructed and restored in accordance with any permitting requirements and is no longer contributing to wetland impacts. Each project proponent would be responsible for restoration of its workspace, and the restoration timeframe could be extended because of ground disturbance associated with the next project in any given area.

Based on compliance with FERC's Plan and Procedures or comparable best management practices and the fact that federal and state permitting requirements for wetland impacts would apply to all projects (including any required USACE wetland mitigation), the Project when combined with other projects in the cumulative impacts area would not have significant cumulative impacts.

10.2.5 Land Use and Visual Resources

Construction of the Project would result in minor, permanent impacts on land use and visual resources. The West Penn Power and the non-jurisdictional Met Ed electricity supply to the Bechtelsville Crossover site projects would be constructed within the geographic scope for the Project. We believe that because the Project facilities would be mostly installed within existing pipeline right-of-way and due to the limited scope of activity there would not be any significant cumulative impacts on land use and visual resources from the Project in consideration with other projects.

10.2.6 Air Quality

Depending on the timing of construction, the West Penn Power and Met Ed projects identified in table 13 may overlap with the Pipeline Project's construction within the defined 0.25-mile geographic scope for construction-related air quality impacts and result in cumulative and localized air quality-related impacts on nearby receptors. The Project's contribution to cumulative impacts combined with these identified activities, if any, would be temporary and minor, persisting only so long as both the Project and these other project(s) were in active construction in those areas. Therefore, we believe that there would be no significant cumulative impacts on air quality from the Project in consideration with other projects.

10.2.7 Noise

Depending on the timing of construction, the West Penn Power and Met Ed projects identified in table 13 may overlap with the Project's construction within the defined 0.25-mile geographic scope for construction noise impacts and result in cumulative noise impacts on nearby receptors. However, most noise-related impacts from construction of the Project would be minor and temporary, and would persist only for time periods that active construction of the Project and these other projects were simultaneously taking place. Therefore, we believe that there would be no significant cumulative noise impacts from the Project in consideration with other projects.

C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to Texas Eastern's proposed action to determine whether they would be preferable to

constructing the Project as proposed. Our evaluation criteria for selecting potentially preferable alternatives are:

- ability to meet the objectives of the proposed action;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Our evaluation of alternatives is based on Project-specific information provided by the applicant; publicly available information; our consultations with federal and state resource and permitting agencies; our expertise and experience regarding the siting, construction, and operation of natural gas projects and such projects' potential environmental impacts; and the specific environmental impacts associated with the Appalachia to Market Project, as described in section B of this EA. Because the only proposed new aboveground facilities would be within an existing right-of-way or within other existing natural gas facilities, and we did not receive any comments regarding siting of the new facilities, we did not evaluate any aboveground facility site alternatives for the Project, with the exception of some initial review of alternate sites for the Delmont Loop pig-receiver and its access road (see discussion in section C.2.1).

The proposed Delmont Loop route is within an existing natural gas right-of-way for 100 percent of the alignment, and largely involves replacing pipe that is being excavated and removed from that same trench. We found this routing acceptable and that it minimizes environmental impact without interruption of service to existing customers. Further, we did not receive any comments regarding alternative routes or looping configurations. Any other alternative routes or looping configurations outside of existing rights-of-way would result in greater environmental impacts associated with the acquisition and construction through lands that were not previously disturbed. It would also result in two maintained rights-of-way (one for the still abandoned in place pipe, and one for the new pipeline), rather than the proposed single right-of-way. This would result in impacts that are greater to resources and landowners as compared to the proposed Project. Therefore, we did not evaluate alternative routes or looping configurations.

1. No-Action Alternative

Under the no-action alternative, Texas Eastern would not construct or operate the Appalachia to Market Project, and none of the impacts associated with the Project would occur. However, the Project objectives would not be met. Texas Eastern would not be able to meet the Project's stated need in section A.2, including providing up to 18,000 dekatherms per day of firm natural gas transportation service to UGI Utilities Inc.

Although a Commission decision to deny the proposed action would avoid the environmental impacts addressed in this EA, other natural gas projects could be constructed and provide a substitute for the natural gas supplies offered by Texas Eastern; or other fuel sources could be sought. Such alternative projects would require the

construction of additional and/or new facilities in the same or other locations to meet the Project objectives. These alternatives would result in their own set of specific environmental impacts that could be greater or equal to those associated with the current proposal. Therefore, we have dismissed this alternative as a reasonable alternative to meet the Project objectives.

2. System Alternatives

System alternatives are alternatives to the proposed action that would make use of Texas Eastern's (or other companies') existing, modified, or proposed pipeline systems to meet the stated objective of the proposed Project. Because Texas Eastern and its parent companies currently operate a transmission system across Pennsylvania, Texas Eastern can supply the increased demand for natural gas in this area using efficiencies afforded by its existing system. The Project has a firm purchaser commitment and can meet the demand sooner than a hypothetical project not yet planned or committed. Further, the proposed Project route was selected to minimize environmental impacts to the greatest extent possible while using existing right-of-way to limit the need for construction on undisturbed lands.

We did not identify any other existing systems in the area that could deliver the same quantities of gas, at similar locations, without additional pipeline construction. The modification or expansion of another existing or new pipeline system that does not connect at or near the specified receipt and delivery points would require construction with similar or greater environmental impact than Texas Eastern's proposal. Therefore, we did not further evaluate the expansion of another existing pipeline system to meet the Project objectives.

2.1 Delmont Loop Pig-Receiver Station Alternatives

Texas Eastern initially considered several sites for the proposed Delmont Loop pig-receiver station and associated PAR that would reduce or prevent permanent impacts on wetland W-MRK-053 (2). Wetland W-MRK-053 (2) is a 0.20 acre wetland located alongside a road in an agricultural field with current impacts from farm equipment and livestock. Two of the alternate sites were dismissed from further consideration due to landowner requests to stay within the existing easement. Three other alternatives were dismissed due to the slope of the hill on which the receiver station would be sited, if the alternate site was selected.

We received Texas Eastern's Project development and siting information concerning the proposed Delmont Loop pig receiver station, and agree that the proposed action is acceptable and that the potential alternate sites have constraints that make them infeasible or less attractive than the proposed site. As such, and because we did not receive any comments regarding this siting, we did not consider alternate sites further.

3. Conclusion

We reviewed alternatives to Texas Eastern's proposal, and conclude that no system or other alternative was identified that would provide a significant environmental advantage over the Project as proposed. Therefore, we conclude that the proposed Project, with our recommended mitigation measures, is the preferred alternative to meet the Project objectives.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Texas Eastern constructs and operates the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures below, approval of the Project would not constitute a major action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to Texas Eastern.

1. Texas Eastern shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the Environmental Assessment, unless modified by the Order. Texas Eastern must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP, or the Director's designee, **before using that modification.**

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, Texas Eastern shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Texas Eastern shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Texas Eastern's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Texas Eastern's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline/facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Texas Eastern shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the authorization and before construction begins**, Texas Eastern shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. Texas Eastern must file revisions to the plan as schedules change. The plan shall identify:
- a. how Texas Eastern will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Texas Eastern will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Texas Eastern will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change).
 - f. the company personnel (if known) and specific portion of Texas Eastern's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Texas Eastern will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration
7. Texas Eastern shall employ at least one EI per construction spread. The EI(s) shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

- b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - e. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Texas Eastern shall file updated status reports with the Secretary on a **biweekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Texas Eastern efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Texas Eastern from other federal, state, or local permitting agencies concerning instances of noncompliance, and Texas Eastern's response.
9. Texas Eastern must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities**. To obtain such authorization, Texas Eastern must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. Texas Eastern must receive written authorization from the Director of OEP, or the Director's designee, **before placing the Project into service**. Such authorization

will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

11. **Within 30 days of placing the authorized facilities in service**, Texas Eastern shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Texas Eastern has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

12. **Prior to construction**, Texas Eastern shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a visual screening plan for the pig receiver station at MP 1.60. The plan shall identify the locations of facility components and the location, type, quantity, and height of vegetation to be planted, or other equivalent screening, to minimize permanent visual impacts to residences. The plan shall also address nighttime lighting and include measures to mitigate nighttime visual impacts to adjacent residences.

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