



**Office of
Energy Projects**

July 2018

Texas Eastern Transmission, LP

Docket No. CP18-26-000

Lambertville East Expansion Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas Branch 1
Texas Eastern Transmission, LP
Lambertville East Expansion Project
Docket No. CP18-26-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Lambertville East Expansion Project, proposed by Texas Eastern Transmission, LP (Texas Eastern) in the above-referenced docket. Texas Eastern requests authorization to replace two existing natural gas-fired turbine compressor engines and appurtenant facilities at their existing Lambertville Compressor Station in Hunterdon County, New Jersey.

The EA assesses the potential environmental effects of the construction and operation of the Lambertville East Expansion Project in accordance with the requirements of the National Environmental Policy Act. The FERC staff concludes that approval of the proposed project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The proposed Lambertville East Expansion Project includes abandonment by removal of the following facilities at Texas Eastern's existing Lambertville Compressor Station:

- two 5,100 horsepower Clark DC-990 natural gas-fired turbine compressor units and associated building, coolers, and auxiliary piping and equipment;
- four retired reciprocating compressor units¹ and associated building, coolers, and auxiliary piping and equipment;
- an existing warehouse; and
- auxiliary and control buildings.

Additionally, the proposed project includes construction and operation of the following new facilities at the Lambertville Compressor Station:

¹ The four existing reciprocating compressor units were retired in 2011 as part of Texas Eastern's Advanced Notification filing in Docket No. CP11-143-000.

- a new compressor building to house two new Solar Taurus 70 natural gas-fired turbine compressor units rated at 8,600 horsepower each and associated piping and equipment;
- electrical control and auxiliary buildings, replacement warehouse buildings, and an electrical generator building;
- appurtenant facilities;
- yard piping modifications; and
- new plant roads and reconfiguration of existing plant roads.

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; Native American tribes; potentially affected landowners; and other interested individuals, groups, and commenters. In addition, the EA is available for public viewing on the FERC's website (www.ferc.gov) using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC on or before 5:00 pm Eastern Time on **August 23, 2018**.

For your convenience, there are three methods you can use to file your comments with the Commission. In all instances please reference the project docket number (CP18-26-000) with your submission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov.

- (1) You can file your comments electronically using the [eComment](#) feature located on the Commission's website (www.ferc.gov) under the link to [Documents and Filings](#). This is an easy method for submitting brief, text-only comments on a project;

- (2) You can also file your comments electronically using the [eFiling](#) feature on the Commission's website (www.ferc.gov) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or
- (3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214). Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission may grant affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e., CP18-26). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

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TECHNICAL ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ATWS	additional temporary workspace
AQCR	Air Quality Control Region
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CEA	Classification Exception Areas
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Clark turbine engine	Dresser Clark DC-990 Turbine Engine
CO	carbon monoxide
Commission	Federal Energy Regulatory Commission
Cooper engine	Cooper Bessemer GMVR-10 Reciprocating Engine
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
dBA	decibels on the A-weighted scale
DOT	Department of Transportation
EA	environmental assessment
ESA	Endangered Species Act
EI	environmental inspector
EPA	U.S. Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
g	gravity
GHG	greenhouse gas
gpm	gallons per minute
GWP	global warming potential
HAP	hazardous air pollutant
HCA	high consequence area
hp	horsepower
HUC	Hydrologic Unit Code
ISO	International Standards Organization
L _{eq}	24-hour equivalent sound level
L _{dn}	day-night sound level
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NGA	Natural Gas Act

NEPA	National Environmental Policy Act
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJGS	New Jersey Geological Society
NJ RACT	New Jersey Reasonably Achievable Control Technology
NNSR	Nonattainment New Source Review
NO ₂	nitrogen dioxide
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Lambertville East Expansion Project and Request for Comments on Environmental Issues</i>
NO _x	nitrogen oxides
NRHP	National Register of Historic Places
NSA	noise sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
OEP	Office of Energy Projects
Order	FERC's <i>Order Issuing Certificate</i>
ppm	parts per million
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
PCB	polychlorinated biphenyls
PAH	polycyclic-aromatic hydrocarbons
PennEast Project	PennEast Pipeline Project
PGA	peak ground acceleration
Plan	FERC's <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>
Procedures	FERC's <i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Lambertville East Expansion Project
PSD	Prevention of Significant Deterioration
PTE	potential to emit
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
Siemens motor	Siemens electric-driven motor
SIL	significant impact level
SO ₂	sulfur dioxide
Solar Taurus turbine engine	Solar Taurus 70 turbine engine

SPCC Plan	<i>Spill Prevention, Containment, and Countermeasures Plan</i>
Texas Eastern	Texas Eastern Transmission, LP
tpy	tons per year
USGS	United States Geological Survey
VOC	volatile organic compounds

A. PROPOSED ACTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the environmental impacts of the construction and operation of the Lambertville East Expansion Project (Project) proposed by Texas Eastern Transmission, LP (Texas Eastern). We² prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]), and the Commission's implementing regulations.³

A.1 INTRODUCTION

On December 7, 2017, Texas Eastern filed an application with the Commission in Docket No. CP18-26-000 under sections 7(b) and 7(c) of the Natural Gas Act (NGA)⁴ seeking authorization to retire existing compressor units and a Certificate of Public Convenience and Necessity (Certificate) to expand the compression facilities at its existing Lambertville Compressor Station. The proposed new facilities would all be constructed in West Amwell Township, Hunterdon County, New Jersey (see figure 1).

FERC is the lead federal agency for the Project and for the preparation of this EA. 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;
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts; and
- facilitate public involvement in the environmental review process.

The EA is an integral part of the Commission's decision-making process in determining whether to authorize Texas Eastern's proposal.

A.2 PROJECT PURPOSE AND NEED

Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity. Under section 7(c) of the NGA, 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

² "We," "us," and "our" refer to the environmental staff of the Commission's Office of Energy Projects.

³ See [18 CFR 380](#).

⁴ See Natural Gas Code [15 of the U.S. Code, Chapter 15B](#).

bases its decisions on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

Texas Eastern's stated Project purpose is to provide an incremental 60 million cubic feet per day of firm transportation service to local New Jersey gas utilities (PSEG Power LLC and Elizabethtown Gas) to serve city gate delivery points in and near Union, Somerset, and Middlesex Counties in New Jersey. Additionally, the Project is proposed to comply with new air emissions regulations under the New Jersey air quality regulations and to perform capital maintenance on Texas Eastern's existing system.

A.3 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

The topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, socioeconomics, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the 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, as amended (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 permits for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10 of this EA.

A.4 PROPOSED FACILITIES

The existing facilities at the Lambertville Compressor Station include compressor buildings that house the natural gas compressors and related equipment, electrical and controls buildings, and auxiliary buildings that house air compressors, generators, and other related ancillary equipment. Additionally, there are office buildings, a microwave tower, natural gas meter station buildings, and warehouse/storage buildings within the existing fenced boundary of the compressor station. The Lambertville Compressor Station currently operates one 10,000 horsepower (hp) Siemens electric-driven motor (Siemens motor), two 5,100 hp Dresser Clark DC-990 natural gas-fired turbine engines (Clark turbine engines), and two 2,200 hp Cooper Bessemer GMVS-10 reciprocating engines (Cooper engines).

As part of the proposed Project, Texas Eastern proposes to remove the following facilities:

- two existing 5,100 hp Clark turbine engines and associated building, coolers, and auxiliary piping and equipment;
- four retired reciprocating compressor units⁵ and associated building, coolers, and auxiliary piping and equipment;
- an existing warehouse; and
- auxiliary and control buildings.

Texas Eastern proposes to construct, install, and operate the following new facilities:

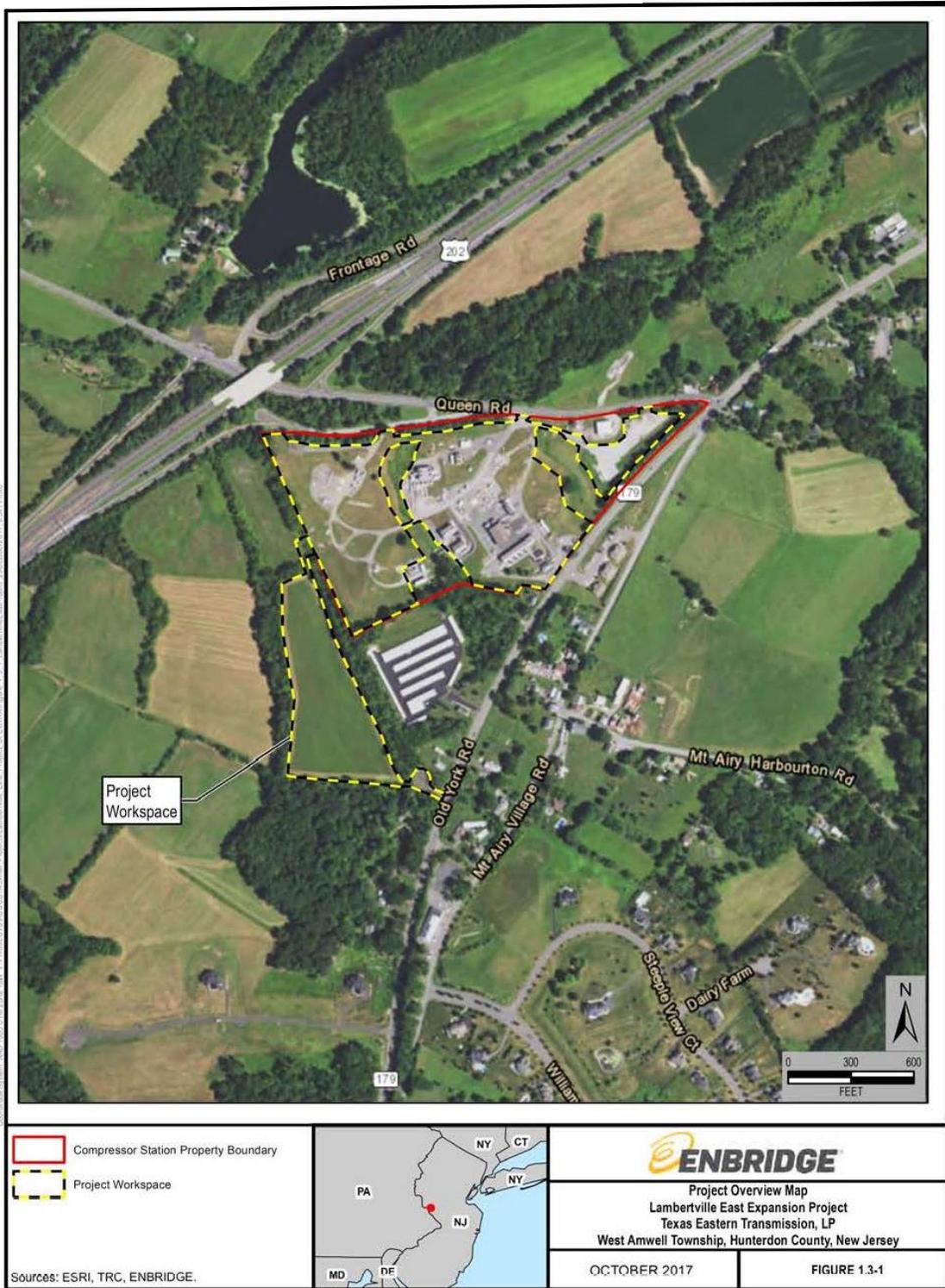
- a new compressor building to house two new Solar Taurus 70 natural gas-fired turbine compressor engines (Solar Taurus turbine engines) rated at 8,600 hp each and associated piping and equipment;
- gas and lube oil coolers;
- electrical control and auxiliary buildings;
- overpressure protection skid;
- replacement warehouse buildings;
- electrical generator building;
- case vent separator/silencers;
- emergency shutdown facilities and gas conditioning equipment;
- filter separator;
- yard piping modifications; and
- new plant roads and reconfiguration of existing plant roads.

Lastly, Texas Eastern would also relocate select existing station instrumentation. Following Project completion, the Lambertville Compressor Station would include a total of 31,600 hp of compression, including 4,400 hp from the two existing Cooper engines, 10,000 hp from the existing Siemens motor, and 17,200 hp from the two new Solar Taurus turbine engines. The full horsepower rating of the two new Solar Taurus turbine engines is 18,800 hp; however, Texas Eastern would install software control to limit total horsepower output to 17,200 hp.

Figure 1 shows the general Project location.

⁵ The four existing reciprocating compressor units were retired in 2011 as part of Texas Eastern's Advanced Notification filing in Docket No. CP11-143-000.

Figure 1 Project Overview Map



A.5 CONSTRUCTION AND OPERATION PROCEDURES

Texas Eastern would design, construct, test, operate, and maintain the proposed facilities to conform with or exceed federal, state, and local requirements, including the US Department of Transportation's (DOT) Minimum Safety Standards in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and 18 CFR 380.15, *Siting and Maintenance Requirements*.

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

- Erosion and Sediment Control Plan (ESCP);
- Spill Control Prevention Control and Countermeasure (SPCC) Plan
- Preparedness, Prevention, and Contingency Plan for Construction Projects;
- Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains; and
- Dust Control Plan.

In addition, Texas Eastern would implement our *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan)⁶ and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures).⁷ Our Plan and Procedures are baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. Texas Eastern requested two modifications to section V.B.2.b. of our Procedures regarding additional temporary workspace (ATWS) within 50 feet of waterbodies. These modifications are further detailed in section B.3.2. Based on our review of the request for these modifications, we have determined that Texas Eastern has provided sufficient justification for these changes. Texas Eastern did not request any modifications to the Plan.

Texas Eastern would employ at least one environmental inspector (EI) to oversee and document environmental compliance per section II of our Plan. All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to commencement of work on the Project. Depending on the progress of the construction, additional EIs may be added as necessary. FERC staff would also conduct inspections of the Project facilities during construction and restoration to determine compliance with environmental conditions attached to any

⁶ The FERC Plan can be viewed on the FERC website <http://www.ferc.gov/industries/gas/enviro/plan.pdf>.

⁷ The FERC Procedures can be viewed on the FERC website <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

Order Issuing Certificate and Authorizing Abandonment (Order) that the Commission may issue.

Prior to commencement of any construction-related activities, survey crews would stake the limits of the construction work areas and access roads. Texas Eastern would avoid environmentally sensitive areas by flagging or fencing the resource, as appropriate. Texas Eastern would contact the national “One Call” system to identify and mark buried utility lines prior to ground disturbance. Construction work areas would be cleared of existing vegetation and graded, as necessary, to create level surfaces for the movement of construction vehicles. In accordance with the Plan, temporary erosion and sediment control measures would be installed following initial ground disturbance.

A portion of the open field within the Project workspace, but outside of the compressor station property to the southwest, would require additional preparation prior to use as a temporary construction staging area (i.e., ATWS). In this area, Texas Eastern would remove the existing vegetation and segregate up to 12 inches of topsoil within the Project ATWS. Following topsoil segregation, the ATWS would be covered with gravel or stone prior to use. After Project construction is complete, Texas Eastern would remove the gravel/stone from the ATWS and replace the topsoil. The ATWS would be restored to pre-existing conditions and stabilized in accordance with Texas Eastern’s ESCP.

Aboveground Facility Construction

Texas Eastern would excavate the sites for the new compressor units and buildings as necessary, to accommodate reinforced concrete foundations. After the reinforced concrete foundations have been completed and tested to verify minimum strength requirements, installation of the buildings and machinery would begin. Texas Eastern would erect the steel frames, followed by installing the roofs, interior siding, insulation, and exterior siding. The compressor units would then be positioned on the foundations, leveled, grouted, and secured. Texas Eastern would flange, screw, or welt the pipe connections associated with the new compressors and equipment. As the various systems and subsystems are completed, Texas Eastern would test and calibrate them for proper operation using computerized systems prior to start-up of the facilities. Prior to placing the new facilities into service, Texas Eastern would test the piping system welds by a non-destructive method to ensure compliance with 49 CFR 192. The natural gas piping system would be tested hydrostatically or with a comparable or equivalent method to meet DOT standards. Texas Eastern would check and test the controls and safety devices, such as the emergency shutdown system, relief valves, and other protection and safety devices. The new Project facilities would be operated on a trial basis after the completion of piping and mechanical systems to verify operation of the safety and protective devices. Texas Eastern would gravel or pave permanent workspaces. An existing security fence around the permanent aboveground facilities would remain in place.

Texas Eastern would remove the two existing natural gas-fired turbine compressor units, the four retired reciprocating compressor units, and auxiliary equipment and demolish the associated building, coolers, and auxiliary equipment as soon as practical while the new compressor units are being constructed. Texas Eastern does not anticipate that removal would interfere with other site construction activities.

During Project operation, Texas Eastern would operate and maintain the proposed facilities in compliance with the Commission's guidance in 18 CFR 380.15, and the maintenance requirements in our Plan. Project facilities would be marked and identified in accordance with applicable DOT regulations. In accordance with 49 CFR 192, the facilities would be inspected for leaks as part of scheduled operations and maintenance.

A.6 CONSTRUCTION SCHEDULE

Texas Eastern plans to obtain all necessary permits to begin construction by March 1, 2019. Based upon the anticipated schedule, construction would last approximately 8 months. Construction activities would primarily occur from the hours of 7:00 am until 7:00 pm Monday through Saturday. However, Texas Eastern identified some activities that would necessitate nighttime work; these activities, and the mitigation measures Texas Eastern would implement to minimize disruption to nearby residents, are further detailed in section B.9.4. Texas Eastern anticipates placing the facilities into service by November 1, 2019.

A.7 LAND REQUIREMENTS

Construction of the Project would disturb about 29.6 acres of land, which includes 22.1 acres of the 29.1-acre Lambertville Compressor Station property. Project operation would disturb about 22.1 acres of land within the existing compressor station property. Following construction, the permanent operational footprint of the compressor station would either be graveled or maintained in an herbaceous state and would remain within the existing fenced area.

The remaining 7.5 acres of land includes an ATWS and a temporary access road outside of the compressor station property and consists of an open field southwest of and immediately adjacent to the existing (fenced) compressor station property. The ATWS and temporary access road would be restored to pre-construction conditions following construction. Land requirements are summarized in table 1 below.

Table 1 Land Requirements for the Proposed Project		
Facility	Temporary Impact (acres)	Permanent/Operational Impact (acres)
Lambertville Compressor Station	22.1	22.1
ATWS and Temporary Access Road	7.5	0.0
Project Total	29.6	22.1

Although Texas Eastern has identified areas where 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 each of those areas for our review and approval prior to use.

A.8 NON-JURISDICTIONAL FACILITIES

Under Section 7 of the NGA, the Commission is required to consider, as part of the decision to approve facilities under its jurisdiction, all factors bearing on the public convenience and necessity. 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, such as a power plant at the end of a jurisdictional pipeline, or they may be minor, non-integral components of the facilities under the Commission’s jurisdiction. The proposed Project would not require any non-jurisdictional facilities.

A.9 PUBLIC REVIEW AND COMMENT

On January 10, 2018, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Lambertville East Expansion Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; Native American tribes, and other interested parties.

In response to the NOI, the Commission received comments from the U.S. Environmental Protection Agency (EPA), the Township of West Amwell, and seven residents. The EPA commented that the EA should include a full discussion of purpose and need of the Project; an evaluation of alternatives; a general conformity applicability analysis; and an analysis of cumulative, indirect, and secondary impacts, and environmental justice. The Township of West Amwell expressed Project concerns about increases in toxic air emissions and pollutants and impacts on residents from construction and operation of the compressor station. The seven residents also expressed Project concerns about the following:

- impacts on air quality, nearby high consequence areas, and health;
- compressor type and size;
- effects on local communities, nearby properties, and property rights and values;
- direct harm to commercial, cultural, and historical interests and open space;
- water quality impacts;
- contaminated groundwater and soil;
- traffic impacts;
- impacts on tourism; and
- effects on quality of life.

The need for the Project will be determined by the Commission in the Order. All other substantive comments are addressed in the relevant EA sections as outlined in table 2 below.

Concern	Relevant EA Section
alternatives, including those not within the jurisdiction of the lead agency	C
general conformity applicability analysis; air quality impacts; compressor type and size; health costs	B.8
cumulative, indirect, and secondary impacts	B.11
environmental justice	B.6
potential impacts on nearby high consequence areas	B.10
effects on local communities and nearby properties	B.5
infringement on property rights	B.5.1
direct harm to commercial, cultural, and historical interests and open space	B.5 and B.7
water quality impacts	B.3
contaminated groundwater and soil	B.2 and B.3
traffic impacts	B.5
impacts on tourism	B.5
effects on quality of life	B.6

A.10 PERMITS

Table 3 below provides a list of federal, state, and local permits for the Project, as well as any responses that have been received to date. Texas Eastern would be

responsible for obtaining all permits and approvals required for the Project, regardless of their listing in table 3.

Table 3 Federal, State, and Local Permits for the Project		
Agency	Permit/Approval/Consultations	Status
Federal		
FERC	Certificate of Public Convenience and Necessity under sections 7(b) and 7(c) of the Natural Gas Act	Pending
U. S. Fish and Wildlife Service	Consultation regarding compliance with section 7 of the ESA	Consultation completed August 23, 2017
	Consultation regarding compliance with the Migratory Bird Treaty Act	
EPA	Section 404 of the Clean Water Act, EPA oversight of New Jersey Department of Environmental Protection's (NJDEP) delegated Section 404 program)	To Be Filed September 13, 2018; Anticipated Issuance 3rd Quarter 2018
State		
New Jersey Department of Environmental Protection (NJDEP), Department of Land Use Regulation	Section 401 of the Clean Water Act	Filed December 29, 2017; Anticipated Issuance 3rd Quarter 2018
	Flood Hazard Area Verification and Permit of the NJ Administrative Code 7:13	
NJDEP, Division of Water Quality	New Jersey Pollutant Discharge Elimination System General Permit for Hydrostatic Test Water Discharges	To Be Filed September 13, 2018; Anticipated Issuance 3rd Quarter 2018
	New Jersey Pollutant Discharge Elimination System General Permit for Construction Dewatering Discharges	
NJDEP, Division of Air Quality	Title V Significant Modification	Filed November 14, 2017; Anticipated Issuance 1st Quarter 2019
NJDEP, Natural Heritage Program	Consultation regarding state-listed threatened and endangered species	Completed August 23, 2017
NJDEP, Historic Preservation Office	Section 106 of the National Historic Preservation Act	Completed December 4, 2017
Local		
Hunterdon County Soil Conservation District	Soil Erosion and Sedimentation Control Plan Approval and Request for Authorization to Discharge Construction Stormwater	To Be Filed July 13, 2018; Anticipated Issuance 3rd Quarter 2018

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 occur because of activities that modify resources to the extent that they may 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.

B.1 GEOLOGY

Elevations in the Project vicinity range between 150 and 250 feet above sea level; primary lithology consists of weathered shale, mudstone, and sandstone (New Jersey Department of Environmental Protection [NJDEP], 2006). Based on the results of geotechnical investigations conducted by Texas Eastern at the Lambertville Compressor Station in 2011 and 2017, the Project overlies surficial fill and topsoil materials, and subsoils consisting of residual bedrock clayey silt. Weathered bedrock was encountered at depths between 1.5 and 8 feet below the ground surface (fbg) and competent bedrock (red-brown shale) was encountered at depths between 10 and 24 fbg.

B.1.1 MINERAL AND PALEONTOLOGICAL RESOURCES

No oil and gas exploration or active or inactive surface or subsurface mines are within 1 mile of the Project area (U.S. Geological Survey [USGS] Mineral Resources Online Spatial Data, 2017; NJDEP, 2017a). Given the limited depth of disturbance and the previously disturbed nature of the site, we conclude that the Project would not affect paleontological resources. Additionally, given the distance from mining and oil and gas extraction facilities or mineral resource extraction activities, we conclude that the Project would not affect mineral resource extraction activities.

B.1.2 GEOLOGIC HAZARDS

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards typically are seismic-related, including earthquakes, surface faulting, and soil liquefaction; landslides, flood, and karst terrain; or ground subsidence hazards.

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Seismicity

The shaking during an earthquake can be expressed in terms of the acceleration as a percent of gravity (g). The USGS Seismic Hazard Probability Mapping shows that for the Project area, there is a 2 percent probability of an earthquake with an effective peak ground acceleration (PGA) of 12 to 14 percent g; and a 10 percent probability of an earthquake with an effective PGA of 3 to 4 percent g being exceeded in 50 years (2,500 and 500-year return period, respectively) (USGS, 2014). For reference, a 3 to 4 percent g PGA is characterized as light to moderate perceived ground shaking and very light to no potential for damage. A PGA of 10 percent g (0.1g) is generally considered the minimum threshold for damage to older structures or structures that are not constructed to resist earthquakes (USGS, 1989). A 12 to 14 percent g PGA is associated with strong perceived ground shaking and light potential damage (USGS, 1989).

Earthquakes in New Jersey are infrequent and typically minor. Since 1900, there have been no earthquakes within 10 miles of the Project with a magnitude greater than 2.0 (USGS, 2018).

Soil liquefaction is a phenomena associated with seismic activity in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like a viscous liquid) when subjected to forces such as intense and prolonged ground shaking. All three of these conditions (non-cohesive soils, near surface saturation, and seismicity) are necessary for soil liquefaction to occur. Texas Eastern conducted a geotechnical seismic evaluation which included an assessment for liquefaction potential. Utilizing the Idriss and Boulanger (2008) empirical methodology, Texas Eastern determined the potential for liquefaction to occur during the International Building Code design earthquake⁸ to be very low. Furthermore, all facilities/equipment/buildings associated with the Project have been designed in accordance with the most current building codes for New Jersey, the 2015 New Jersey International Building Code and American Society of Civil Engineers 7-10. These standards/codes provide specific parameters for wind and seismic loading which was used in all structural calculations and was also provided to all building and equipment vendors.

Based on the implementation of these measures and the low frequency and magnitude of recent and historic seismic activity in the region, we conclude the Project is

⁸ 2015 International Building Code, sections 1603.1.5 and 202. The earthquake ground motion that buildings and structures are specifically proportioned to resist is calculated based on factors including a location's seismic design category, site class, risk category, and seismic loads. Accessed at <https://codes.iccsafe.org/public/document/IBC2015> on June 5, 2018.

not likely to be adversely impacted by future seismic incidents, including soil liquefaction.

Landslides and Slope Stability

The majority of the Project area is relatively flat. Furthermore, given the depth to consolidated bedrock at the station, Texas Eastern does not anticipate using blasting during Project construction. Therefore, there is negligible hazard posed to the Project by landslides or unstable slopes.

Ground Subsidence

Oil and gas extraction does not occur in the Project vicinity, and the Project does not overlie karst terrain or lithology that could lead to bedrock dissolution and karst development (NJGS, 2014). Additionally, the Project does not overlie an unconsolidated aquifer susceptible to subsidence from excessive pumping. Therefore, the Project is not anticipated to be affected by subsidence.

Based on the above analysis, we conclude that Project construction and operation would not affect or be affected by geologic resources or hazards.

B.2 SOILS

Project area soils have low wind erosion potential, shallow depth to bedrock (weathered bedrock is within 60 inches of the soil surface), generally low compaction potential, and do not have poor revegetation potential. The majority of soils within the Project area are not highly water erodible (22.3 acres). The majority of the Project area (27.2 acres) is classified as prime farmland and farmland of statewide importance.

Typical soil impacts that may occur during construction include mixing of topsoil and subsoil layers, compaction, rutting, erosion, and alteration of drainage characteristics. Construction activities such as clearing, grading, excavation, backfilling, heavy equipment traffic, and restoration of the compressor station and ATWS have the potential to adversely affect natural soil characteristics such as water infiltration, storage and routing, and soil nutrient levels, thus reducing soil productivity. Clearing removes protective vegetative cover and exposes soil to the effects of wind and water which potentially increases soil erosion, the transport of sediment to sensitive resource areas, and decreased soil productivity.

Prime Farmland

Because the Lambertville Compressor Station is an existing facility, new impacts on prime farmland and farmland of statewide importance would be limited to areas outside of the existing fenceline. ATWS and access roads outside of the existing Lambertville Compressor Station overlie 7.3 acres of prime farmland and farmland of

statewide importance. No Project area is currently in agricultural use and these areas would be returned to pre-construction conditions in accordance with Texas Eastern's ESCP. Therefore, we conclude that new impacts on prime farmland and farmland of statewide importance would be temporary and not significant.

Shallow Bedrock

In geotechnical investigations completed at the Lambertville Compressor Station, weathered bedrock was encountered at depths between 1.5 and 8 fbg. During Project construction, the introduction of stones or rocks to surface soil layers may reduce soil moisture-holding capacity, resulting in a reduction of soil productivity. To minimize the introduction of stones or rocks to surface soil layers in the ATWS outside of the existing fenceline, Texas Eastern would excavate up to 12 inches of topsoil for segregation purposes. Segregated topsoil would be stored within the ATWS and upon completion of Project construction activities, topsoil would be replaced. The disturbed area within the fenceline will be paved or graveled following construction. However, most of this area is already paved and graveled. Therefore, this Project would not result in a significant impact on surficial soils.

Erosion and Revegetation

Topsoil removal, clearing, grading, and equipment movement could accelerate the erosion process and, without adequate protection, result in discharge of sediment to waterbodies and wetlands. Soil loss due to erosion could also reduce soil fertility and impair revegetation. To minimize or avoid potential impacts due to soil erosion, Texas Eastern would implement its ESCP and the FERC Plan. Temporary erosion controls would be installed immediately following land disturbing activities. Texas Eastern would inspect these devices on a regular basis and after each rainfall event of 0.5 inch or greater to ensure proper function. Texas Eastern would additionally utilize dust-control measures, as outlined in its Dust Control Plan, including routine wetting of the construction workspace, as necessary, where soils are exposed. Temporary erosion control devices would be maintained until the Project area is successfully stabilized/revegetated.

Texas Eastern consulted with the Hunterdon County Soil Conservation District and would reseed all disturbed areas that are not graveled/paved in accordance with the Hunterdon County Soil Conservation District's "Agronomic Specifications for Lawns and Construction Sites."

Given Texas Eastern's proposed mitigation measures and that disturbed areas would be returned to pre-construction conditions or stabilized with pavement or gravel cover, permanent impacts due to soil erosion or poor revegetation potential are not anticipated.

Soil Contamination

Texas Eastern previously conducted site soils characterization and remediation activities at the Lambertville Compressor Station per the requirements of an EPA Consent Decree and the New Jersey Environmental Cleanup Responsibility Act. Texas Eastern submitted the Site Characterization and Site Verification Reports to the NJDEP on February 15, 1991 and August 6, 1992, respectively. A *Remedial Action Workplan* that summarized soil and groundwater investigations and remedial activities conducted at the facility was filed with the NJDEP in June 1997.⁹ The *Remedial Action Workplan* shows that onsite soil remediation was conducted from August 1991 to January 1992, and a letter from the NJDEP dated May 13, 1993¹⁰ stated that “no further action is required regarding the onsite soils at this [the Lambertville Compressor Station] facility.”

Texas Eastern states that remediation activities at the Lambertville Compressor Station addressed soils impacted by polychlorinated biphenyls (PCB), base/neutral extractable compounds, total petroleum hydrocarbons, and polycyclic-aromatic hydrocarbons (PAH). According to Texas Eastern’s application, soils were remediated to 1,000 parts per million (ppm) for total petroleum hydrocarbons, 100 ppm for base/neutral extractable compounds, 10 ppm for PAHs, and to between 10 ppm and 25 ppm for PCBs in soils. These levels were reportedly met in all areas of the site. Texas Eastern also filed a *Site Control Plan*,¹¹ which depicts the aerial extent of areas of soil remediation, but did not file further pertinent documentation of soil remediation efforts, such as documentation of the specific concentrations of chemicals of concern left in place at the site, or which remediated areas were/are impacted by which specific chemicals. During Project construction, eight of the previously remediated areas would be disturbed during construction of the following Project components:

- filter separator piping installation;
- emergency shutdown system conditioning system piping and conduit installation;
- conduit, emergency shutdown system pipe and domestic gas pipe installation;
- source control piping and conduit installation; and
- electrical conduit installation.

The PCB concentrations of remediated soils at the Lambertville Compressor Station exceed current NJDEP PCB soil remediation standards for residential and non-

⁹ Texas Eastern’s filing to FERC Project Docket CP18-26-000 on March 27, 2018 under accession number 20180327-5182.

¹⁰ Texas Eastern’s filing to the FERC Project Docket CP18-26-000 on May 3, 2018 under accession number 20180503-5058.

¹¹ Texas Eastern’s filing to the FERC Project Docket CP18-26-000 on May 3, 2018 under accession number 20180503-5058.

residential use per New Jersey Administrative Code (NJAC) 7:26D.¹² Documentation filed by Texas Eastern pertinent to completed soil remediation efforts did not elaborate on specific PAH compounds remaining in Project area soil, for which soil remediation standards for residential and non-residential use per NJAC 7:26D vary significantly.¹³ As such, soil remediation standards for PAHs in soils may also exceed current NJDEP soil remediation standards.

Texas Eastern provided measures for handling soil excavated from the previously remediated areas. Texas Eastern states that where suitable for use as backfill, excavated material from these areas would be returned to the same excavation after construction. These soils would be sidecast adjacent to the excavation or stockpiled and segregated within the construction workspace. If the excavated material is not suitable for use as backfill, Texas Eastern would stockpile the soil for waste classification and disposal in accordance with EPA and NJDEP requirements.

Texas Eastern committed to covering soil stockpiles with a minimum of 6-mil thick overlapped and weighted polyethylene sheeting in the remediated areas prior to inclement weather and at the end of each work day to form a continuous waterproof barrier. The cover would be maintained throughout the stockpile period to control water entering the stockpiled materials and to limit dust generation. If dust suppression becomes necessary during the stockpiling, exposed soils would be wetted by Texas Eastern's contractor.

Texas Eastern would prepare a site-specific Health and Safety Plan prior to construction to ensure worker health and safety. The Health and Safety Plan would be prepared and implemented in compliance with governmental requirements, including worker health and safety requirements mandated by the Occupational Safety and Health Administration.

Texas Eastern has provided procedures that would be followed in the event of an unanticipated contamination encounter; however, these measures do not specifically address the potential to encounter existing contamination in remediated areas and do not provide sufficient detail regarding the management of PCB-impacted soils. Texas Eastern also provided waste management procedures for removal, disposal, or storage of

¹² NJAC 26D Residential Direct Contact Soil Remediation Standard = 0.2 milligrams per kilogram (mg/kg, or parts per million [ppm]); Non-Residential Direct Contact Soil Remediation Standard = 1 mg/kg. Accessed at http://www.nj.gov/dep/rules/rules/njac7_26d.pdf on June 7, 2018. : NJDEP Soil Remediation Standards September 2017.

¹³ For example, the NJAC 26D Residential Direct Contact Soil Remediation Standard for the PAH anthracene = 17,000 ppm; Non-Residential Direct Contact Soil Remediation Standard = 30,000 ppm. Residential Direct Contact Soil Remediation Standard for the PAH benzo(a)pyrene = 0.5 ppm; Non-Residential Direct Contact Soil Remediation Standard = 2 ppm. Accessed at http://www.nj.gov/dep/rules/rules/njac7_26d.pdf on June 7, 2018. NJDEP Soil Remediation Standards September 2017.

facilities potentially contaminated with PCBs; however, these procedures were not generally applicable to soils.

Contaminated soils within Project areas planned for disturbance are in excess of NJDEP current health-based soil remediation standards, which are established to protect human health due to the direct ingestion of contamination and the absorption of contamination through the skin at residential and non-residential use sites. To ensure Texas Eastern implements appropriate mitigation measures for soil management and disposal to prevent migration of contaminated soils, **we recommend that:**

Prior to construction or abandonment activities, 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), a site-specific plan to manage disturbed soils in the previously remediated areas at the Lambertville Compressor Station, developed in consultation with the NJDEP and in compliance with applicable regulations.

Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could also adversely affect soils. Measures outlined in Texas Eastern’s SPCC Plan would be implemented to reduce potential impacts on soils from spills of the hazardous materials used during construction. These measures include regularly inspecting equipment to ensure it is in good working order, properly training employees on the handling of fuels and other hazardous materials, implementing appropriate clean-up protocols, and promptly reporting any spills to the appropriate agencies, if applicable.

We received comments from three residents concerned with contaminated soils at the Lambertville Compressor Station. Given the mitigation measures described above, and our recommendation, we conclude that soils would not be significantly affected by Project construction and operation.

B.3 WATER RESOURCES AND WETLANDS

B.3.1 GROUNDWATER RESOURCES

The Project area overlies the Triassic-age Brunswick (Passaic Sedimentary) Aquifer System comprised of sandstone, siltstone, and shale aquifers. The Brunswick Aquifer System underlying the Project is ranked as “C” for well yields ranging between 101 to 250 gpm (NJGS, 1998).

The EPA oversees the Sole Source Aquifer Protection Program to protect high production aquifers that supply 50 percent or more of the region’s water supply and for which there is no reasonably available alternative drinking water sources should the aquifer become contaminated. The Project does not overlie a Sole Source Aquifer (EPA, 2017a and NJDEP, 2018).

Wellhead protection areas are defined as designated surface and subsurface zones surrounding public water supply wells or wellfields. These zones are identified in an effort to prevent contaminants from entering the groundwater table and compromising the quality of public drinking water. A review of the NJDEP information confirmed that the nearest wellhead protection area is more than 0.5 mile from Project facilities (NJDEP, 2018).

Texas Eastern conducted field surveys, received information from affected landowners, and reviewed NJDEP well records to locate water wells within 150 feet of the Project workspace. Two private water supply wells were identified. Texas Eastern owns one private well on the facility. This well, within the Project workspace, is used for domestic purposes (servicing the existing buildings, kitchen, bathrooms, and outdoor spigots). The well is within a shed, which would be surrounded by a construction fence during construction to provide a visible barrier and further protect the well. The second well, also a domestic well, is 57 feet from a Project access road. This area of the Project workspace is paved and no ground disturbance is proposed within 150 feet of this well.

Contaminated groundwater is known to be present at the Lambertville Compressor Station. Two Classification Exception Areas (CEA)¹⁴ have been established for groundwater plumes impacted with PCBs. One CEA in the northwestern portion of the Project area is described in a NJDEP informational website (2018) as a 13,500 square-foot area. The second CEA is within the southeastern portion of the Project area and is described as an 8,100 square-foot area. Neither CEA extends greater than 40 feet below the ground surface (NJDEP, 2018).

Texas Eastern filed a document titled *Final Groundwater Assessment Report* (dated August 1993) pertaining to CEA groundwater contamination.¹⁵ As described in this report, shallow groundwater at a depth of approximately 2- to 8-feet below the ground surface is present within the overburden materials and underlying weathered bedrock at the Lambertville Compressor Station. Deeper groundwater, within competent bedrock monitoring wells have demonstrated confined or semi-confined conditions at the site. PCB impacted groundwater was considered to be limited to the shallow overburden interface at the top of bedrock; PCB was not confirmed in bedrock monitoring wells, completed to depths of 31.5 to 64 feet below grade.

There are currently 8 groundwater monitoring wells at the Lambertville Compressor Station. Each monitoring well is on a concrete pad and surrounded by bollards. For additional protection during construction, Texas Eastern would surround each well with construction fencing and appropriate signage.

¹⁴ A designation established whenever groundwater standards in a particular area are not met. It ensures the use of the groundwater in that area is restricted until standards are achieved (NJDEP, 2017e).

¹⁵ Texas Eastern's filing to FERC Project Docket CP18-26-000 on March 27, 2018 under accession number 20180327-5182.

Texas Eastern conducted a regulatory database review and identified seven potentially contaminated sites within 0.25 mile of the construction workspace. The Project is not anticipated to be impacted by any identified sites based on distance from the construction work area, regulatory status (i.e., all closed, no violations found), and/or media impacted (i.e., soil only).

Groundwater Impacts and Mitigation

Project construction has the potential to impact groundwater. Short-term effects include alteration of overland flow and groundwater recharge resulting from clearing of vegetation, grading, and trenching activities and potential spills and leaks of fuels into shallow groundwater aquifers. Shallow groundwater resources immediately adjacent to Project work areas where dewatering may be necessary could be affected during Project construction.

No excavation is proposed in CEA areas; however, given the depth to the shallow groundwater system (2 to 8 feet), and the proximity of CEAs to proposed areas of disturbance (e.g., 40 feet at the northern CEA and 65 feet at the southern CEA), we believe there is a potential for contact with contaminated groundwater during Project dewatering activities. Texas Eastern stated that if contaminated groundwater is encountered, it would implement groundwater management procedures at the intersection of the Project-related construction activities with contaminated groundwater sites to avoid or minimize potential impacts. Groundwater management procedures may include transporting groundwater to a treatment facility, as permitted, or using clay trench breakers or equivalent to prevent the potential migration of contaminated groundwater.

With implementation of appropriate containment and disposal procedures, potential impacts on groundwater resources would be adequately minimized. However, Texas Eastern's construction plans do not provide hazard mitigation for construction in the vicinity of the CEAs with regard to specific testing, handling, and disposal of potentially contaminated groundwater. Given the Project's proposed construction in proximity to the CEAs and PCB soil contamination, we believe that construction activities may encounter contaminated groundwater. Therefore, to ensure appropriate plans are in place for this area, **we recommend that:**

Prior to construction or abandonment activities, Texas Eastern should consult with the NJDEP regarding appropriate groundwater containment and disposal guidelines and practices, and file the results of this consultation, along with any proposed mitigation measures, with the Secretary, for review and written approval by the Director of the OEP.

Groundwater contamination could occur from accidental spills of fuels, solvents, and lubricants used during construction. Texas Eastern would minimize spill-related impacts through implementation of the measures included in its SPCC Plan. We have

reviewed this plan and find it acceptable. Texas Eastern would also prohibit refueling activities and the storage of hazardous liquids within at least a 200-foot radius of all private wells. We received comments from three residents concerned with contamination; however, given the lack of wells in the Project vicinity, short-term duration of construction activities, and implementation of our recommendation, we conclude that the Project would not have a significant impact on groundwater resources.

B.3.2 SURFACE WATERS AND WETLANDS

Two minor waterbodies were identified within the compressor station facility: one intermittent and one ephemeral. Both waterbodies are unnamed tributaries to Alexauken Creek. Alexauken Creek is designated as a FW-2 Trout Maintenance, Category One Stream, meaning in general that it is freshwater and capable of supporting trout, but not trout reproduction. These designations indicate the relatively high quality of the system. The stream is also subject to Category One anti-degradation status providing for no negative changes in water quality. However, the stream also has documented water quality impairments, including designation on the Clean Water Act Section 303(d) list for non-attainment of aquatic life uses related to temperature impairments, moderate impairment of benthic infauna, and elevated Enterococcus. These conflicting classifications indicate that water quality metrics for the watershed are mixed (NJDEP, 2011). The two waterbodies flow through existing culverts at the locations within the Project workspace, and therefore, would not be directly impacted.

One intermittent waterbody is just outside of the proposed ATWS limits, approximately 30 feet to the west at its closest point. Additionally, another intermittent waterbody would cross the ATWS in two locations:

- 1) near the construction access off of Route 179 where it is contained within an existing culvert under a paved driveway; and
- 2) close to the entrance to the Lambertville Compressor Station along its western border, where existing gate access would be used to permit construction vehicle access and transit between the station site and the ATWS.

Aside from these two crossings, this waterbody also runs along the edge of the ATWS and is within approximately 15 feet from the ATWS at its closest point. At the location along the western border of the compressor station, Texas Eastern proposes to use an equipment bridge structure to completely span the intermittent waterbody which would avoid direct impacts on the waterbody. No in-water work is proposed and, being ephemeral or intermittent in nature, none of the waterbodies in the Project area are capable of supporting fisheries.

No wetlands occur directly within the Project workspaces; however, five palustrine emergent wetlands were delineated adjacent to the proposed Project workspace

within the Lambertville Compressor Station property. Wetlands in the vicinity of the compressor station were verified by the NJDEP in its Letter of Interpretation Line Verification, dated March 6, 2017.

Surface Waters and Wetlands Impacts and Mitigation

No in-water work is proposed; however, potential impacts on waterbodies and nearby wetlands from construction activities may include stormwater runoff, erosion of sediments, or spills of hazardous materials. Prior to ground disturbing activities, boundaries of wetlands near Project workspaces would be clearly marked in the field and maintained until construction-related ground-disturbing activities are complete. Texas Eastern would minimize any indirect impacts on waterbodies and wetlands from erosion and run-off by implementing its ESCP. The ESCP contains measures such as the installation of erosion control devices, including silt fence and straw bales, and revegetation or stabilization of disturbed areas upon completion of construction. Texas Eastern would implement its SPCC Plan which includes preventative measures to avoid spills of hazardous materials and response procedures to be implemented in the event of a release. Specific measures include not refueling or storing fuel and other potentially hazardous materials within 100 feet of any stream or wetland, except under limited, highly controlled circumstances and under the direct supervision of the EI, properly maintaining equipment, and checking equipment daily for leaks. Further, Texas Eastern would adhere to conditions of all applicable permits. We received comments from three residents concerned with impacts on water quality; however, based on the lack of direct impacts and the proposed mitigation measures, we conclude that the Project would not have a significant impact on surface waters and wetlands.

Hydrostatic Testing

Texas Eastern would hydrostatically or pneumatically test the station piping in accordance with DOT pipeline safety regulations. A hydrostatic test involves filling the pipeline facilities with water and pressurizing them above its maximum allowable operating pressure. Approximately 43,000 gallons of water would be needed for hydrostatic testing of the Project facilities. This water would be obtained from a local, non-potable water supplier and trucked to the site. Following testing, depending on site conditions and constraints at the time of construction, hydrostatic test water may be held in storage tanks and transported to an approved facility; discharged to the site's stormwater management system; or discharged to upland areas onsite. If discharged onsite, water would be discharged in compliance with applicable permits and measures prescribed in the ESCP, which include discharging water into a well-vegetated and stabilized area. Based on the proposed mitigation measures, we conclude that hydrostatic testing would not result in significant impacts.

Modifications to the Procedures

Texas Eastern has requested a modification to section V.B.2.b. of the Procedures for ATWS within 50 feet of two waterbodies (within 30 feet to the west and 15 feet to the east at the closest points to the ATWS). The proposed ATWS is in an open upland field that would not result in impacts on wetlands or waterbodies, and would require limited tree clearing. Texas Eastern would use the ATWS for construction materials and soil storage, staging, contractor trailers, and parking. The ATWS would also be used to provide construction vehicle access off of Route 179. Texas Eastern would implement measures in the Plan and Procedures and its ESCP to avoid impacts on the adjacent waterbodies associated with construction, including the installation of erosion control devices between the waterbodies and the limits of construction. Texas Eastern would establish signage that clearly defines these resources and the limitations on such activities as equipment refueling and storage. We find the justification and equal compliance measures for this modification acceptable.

B.4 VEGETATION, WILDLIFE, AND THREATENED AND ENDANGERED SPECIES

B.4.1 VEGETATION

The Project area consists primarily of industrial land within the fence line of the Lambertville Compressor Station (22.1 acres) and open upland to be utilized as ATWS (7.5 acres). Within the Lambertville Compressor Station, the existing vegetation is maintained as lawn. The ATWS outside the compressor station is regularly cut and maintained as grasslands. No vegetation types of special concern would be impacted by the Project.

The grassland vegetation within the ATWS would be cut to prepare the area for use during construction. Limited tree clearing of individual trees within otherwise open land and trimming may be required for construction. Texas Eastern would conduct topsoil segregation during use of the ATWS and would decompact, restore the topsoil layer, and revegetate the area following construction in accordance with its ESCP and our Plan. No land outside of the existing Lambertville Compressor Station facility would be permanently acquired or maintained. Additionally, Texas Eastern would conduct follow-up inspections of all disturbed areas to ensure revegetation is successful. Given the limited area of disturbance and that all vegetation impacts would be temporary, we conclude that impacts on vegetation would not be significant.

B.4.2 WILDLIFE

The Project consists of grasslands and disturbed and/or maintained areas such as lawns where ground nesting birds such as eastern meadowlark and killdeer, and small mammal species such as the eastern cottontail are commonly found. Edge habitats

adjacent to open spaces and low-growing areas can create another type of habitat that is used by a distinct group of species, including blue-winged warbler, field sparrow, red-tailed hawk, American kestrel, and box turtles. Industrial areas are typically characterized by a low diversity of wildlife species that are tolerant of human development and activity, including European starling, American crow, Norway rat, common opossum, striped, skunk, red fox, and eastern gray squirrel.

Potential impacts on wildlife include habitat removal, construction-related ground disturbance, and noise. Some individuals could be inadvertently injured or killed by construction equipment. However, more mobile species such as birds and mammals would likely relocate to other nearby suitable habitat and avoid the Project area once construction activities commence. Given the limited Project area and abundant adjacent habitat, the temporary disturbance of local habitat is not expected to have population-level effects. Long-term impacts from habitat alteration would be further minimized by the use of previously disturbed areas (i.e., the existing compressor station) and implementation of Texas Eastern's ESCP, which would ensure revegetation of areas temporarily disturbed by construction. Therefore, we conclude that the Project would not have a significant impact on wildlife or their habitat in the Project area.

Significant or Sensitive Wildlife Habitat

Vernal pools are intermittently to ephemerally ponded shallow depressions. Pools are typically flooded in spring or after a heavy rainfall but are usually dry during summer, with many filling again in autumn. Vernal pools typically include characteristic animals such as species of amphibians, reptiles, crustaceans, mollusks, annelids, and insects. Fairy shrimp may also breed and survive in some vernal pools. The NJDEP identified potential vernal pool habitat as possibly occurring within 0.25 mile of the Project area. Based on field surveys, no vernal pools were identified at the Project sites. No other significant or sensitive wildlife habitat was identified in the Project area. Therefore, we conclude that the Project would not have significant impacts on these areas.

B.4.3 MIGRATORY BIRDS

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from the 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 and bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act. The Migratory Bird Treaty Act, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Further, Executive Order 13186 was enacted in 2001 to, among other things, ensure that environmental analyses of federal actions evaluate the impacts of actions on migratory birds. This Order directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and avoid or minimize adverse impacts on migratory

birds through enhanced collaboration with the U.S. Fish and Wildlife Service (FWS), and emphasizes species of concern, priority habitats, and key risk factors.

On March 30, 2011, the FWS and FERC entered into a Memorandum of Understanding regarding implementation of Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” that focuses on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies. This memorandum does not waive legal requirements under the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, the ESA, or any other statutes, and does not authorize the take of migratory birds.

In its letter dated August 23, 2017, the FWS stated that, in New Jersey, the recommended seasonal restriction for tree or shrub removal to minimize impacts on active nests with eggs or unfledged chicks of most migratory birds is April 1 to August 31. Texas Eastern is targeting commencing construction activities as early as March 2019; therefore, construction activities may occur during the migratory bird nesting season. However, the Project area consists of industrial land within the existing compressor station and maintained grassland. Limited tree clearing of individual trees within otherwise open land and minor trimming may be required for construction. Texas Eastern would only clear trees outside of the active season for the Indiana and northern long-eared bats (April 1-September 30), which is also outside of the migratory bird nesting season in New Jersey. Additionally, the new facilities to be constructed within the existing compressor station facility site, the ATWS would be revegetated following construction, and Texas Eastern would not mow the ATWS following restoration, thereby limiting any long-term to permanent impacts on migratory birds.

No bald eagles or their nests were observed during Texas Eastern’s field surveys of the Project sites. Additionally, there are no large waterbodies or trees at the Project, where bald eagles typically hunt for prey. However, if a nest is observed during construction, Texas Eastern would adhere to the National Bald Eagle Management Guidelines. For the reasons listed above, we find that the Project would not significantly affect migratory bird species within the Project area.

B.4.4 THREATENED AND ENDANGERED SPECIES

Section 7 of the ESA requires each federal agency to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat for any federally listed species. FERC, as the lead agency in the review of the proposed Project, is required to consult with the FWS to determine whether federally listed species, species proposed for listing, or their designated critical habitat may occur in the Project area and determine the Project’s potential effects on these species and critical habitats.

As our non-federal representative, Texas Eastern consulted with the FWS. Texas Eastern utilized the FWS online database, Information for Planning and Consultation, to identify the federally listed species potentially present in the Project area. The federally endangered Indiana bat and federally threatened northern long-eared bat were identified as potentially present within the Project workspaces. Indiana bat summer habitat includes at least 16 trees containing loose or shaggy bark, crevices, and hollows. The northern long-eared bat is comparable to the Indiana bat in terms of summer roost selection, but appears to be more opportunistic.

Limited tree clearing of individual trees within otherwise open land and minor trimming may be required for construction. Trees would only be removed outside of the active bat season (April 1 to September 30). Therefore, we conclude that the Project *is not likely to adversely affect* the Indiana bat and the northern long-eared bat.

In a letter dated August 23, 2017, the FWS stated that a known occurrence or potential habitat for the Indiana bat and northern long-eared bat is on or near the Project's impact area. However, given that any tree removal would be conducted outside the active bat season, which is April 1 to September 30, the FWS concurs that the proposed Project is not likely to adversely affect federally listed or candidate species. No other federally listed or proposed threatened or endangered flora or fauna under the FWS' jurisdiction are known to occur within the proposed Project's impact area. Therefore, no further consultation pursuant to the ESA is required. Should any listed species be identified during construction, Texas Eastern would halt construction activities that potentially affect the species, and we would consult with the FWS.

B.4.5 STATE-LISTED SPECIES

Texas Eastern also consulted with NJDEP on the Project's potential impacts on state-listed species, species of special concern, tracked species, and significant wildlife habitats. The NJDEP identified the bald eagle, great blue heron, northern long-eared bat (not state-listed), and the cobblestone tiger beetle as potentially present in the Project area (site-based). Additionally, the NJDEP identified a number of species and vernal pools as potentially occurring within one mile of the Project area (see table A-1).

The Project would not impact forested land and would take place within developed and disturbed land. No riparian cobble bars or sand beaches would be impacted and, therefore, the Project would not impact the cobblestone tiger beetle. Grasslands in the ATWS may provide foraging habitat for the great blue heron. However, the landscape surrounding the Project is dominated by grasslands, meadows, and agricultural fields, thereby providing abundant alternate foraging habitat. Further, the ATWS would be restored to pre-existing conditions upon completion of the Project. The bald eagle and the northern long-eared bat are federally protected and were previously discussed in sections B.4.3 and B.4.4, respectively. Vernal pools were discussed in section B.4.2. For

the reasons discussed above, we conclude that the Project would not adversely affect state-listed species.

B.5 LAND USE, RECREATION, AND VISUAL RESOURCES

B.5.1 LAND USE

Land use categories identified in the Project area consist of open land, utility right-of-way, and industrial/commercial land. Open land typically includes non-forested lands, waterbody crossings less than 100 feet, and other roads not included under Commercial/Industrial Land. Industrial/Commercial land includes the area within the existing compressor station and public/state roads.

The Project would impact a total of 29.6 acres of land, including 22.1 acres of permanent impacts associated with the aboveground facility. Table 4 summarizes the land use impacts associated with the construction and operation of the Project.

Facility	Open Land ^a		Industrial/Commercial ^b		Project Total	
	Construction ^c	Operation ^d	Construction ^c	Operation ^d	Construction ^c	Operation ^d
Aboveground Facility	0.0	0.0	22.1	22.1	22.1	22.1
ATWS	7.5	0.0	0.0	0.0	7.5	0.0
Project Total	7.5	0.0	22.1	22.1	29.6	22.1

^a Includes maintained existing pipeline ROW, other utility ROWs, open fields, vacant land, herbaceous and scrub-shrub uplands, non-forested lands.
^b Includes developed and paved areas, existing roads, and commercial facilities.
^c Total Construction Workspace includes the total of land impacted during construction.
^d Operation includes all areas that would be maintained after construction of the Project.

The Project site is currently zoned light industrial. Texas Eastern would not permanently acquire land outside of the existing Lambertville Compressor Station facility to expand the existing facility footprint, which would be permanently maintained for operations of the Project facilities. We received two comments from residents concerned with the Project’s infringement on property rights. The Project would not result in the permanent acquisition of land outside of the existing compressor station footprint, which is on land owned by Texas Eastern, and the land use would not change. Therefore, we conclude that the Project would not result in infringement on property rights. Texas Eastern would obtain permission from the landowner of the ATWS prior to the temporary use of this property during construction and the landowner would be compensated by Texas Eastern.

B.5.2 PLANNED DEVELOPMENT

Planned development projects are those that are permitted and not yet constructed, or have permit applications that have been filed but not yet approved. The workspaces for the Project are within Texas Eastern's existing Lambertville Compressor Station and on an adjacent property. The Creekside Preserve, a 14 single family home subdivision, is 0.23 mile south of the proposed Project area and would not be impacted by the Project. No additional planned residential or commercial developments are within any areas that would be directly impacted by the Project. Given that the proposed Project would not change any land use characteristics of the area, we conclude that the Project would not result in significant impacts on planned developments.

B.5.3 TRANSPORTATION

The Project involves construction activities within the existing compressor station facility and proposed ATWS area adjacent to the compressor station site. No in-street construction activities, detours or lane reductions are proposed as a result of the planned construction. Texas Eastern has identified a sufficient construction workspace to contain all construction vehicles to avoid parking on existing roadways that could impact existing traffic flows.

As a result, Texas Eastern does not expect any traffic impacts during construction or during operations. Commuting construction workers are not expected to have a significant impact on traffic. Texas Eastern would utilize a temporary police detail or flagger, as appropriate, for ingress and egress of large equipment to the site. During operation of the Project, the number of on-site company personnel would not change.

B.5.4 PUBLIC LAND, RECREATION, AND OTHER DESIGNATED AREAS

The Project would not impact any designated federal and/or state wildlife preserve areas, conservation land, municipal parks and public lands, road or utility crossings, transportation corridors, or other designated areas.

B.5.5 VISUAL RESOURCES

The Project would not be within any federal, state, or locally designated scenic areas, such as National Wild and Scenic Rivers and scenic roads/highways. Impacts on visual and/or aesthetic resources would primarily occur during construction as a result of the presence of construction equipment.

Impacts on visual resources as a result of the modified compressor station would be minimal. The new building and associated piping and equipment would be similar in size and character to the existing infrastructure currently at the Lambertville Compressor

Station. Therefore, we conclude that visual impacts from construction and operation of the Project would be minimal and not significant.

B.6 SOCIOECONOMICS

Analysis of socioeconomic impacts is required for projects involving significant aboveground facilities, such as large new compressor stations. This report is not required under section 380.12 (g) for projects that only involve pipelines, expansion or modifications to existing compressor stations, or other associated facilities. However, we received comments from the EPA stating that Environmental Justice concerns should be analyzed and discussed in the EA. The following addresses the EPA's comment.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that environmental analyses of federal actions address any disproportionately high and adverse human health or environmental effects on minority and low-income communities.

In its guidance for the consideration of environmental justice under NEPA, the CEQ defines a "minority" as an individual who is American Indian or Alaskan Native, Black or African American, Asian, Native Hawaiian or Pacific Islander, Hispanic or Latino. CEQ characterizes a "minority population" as existing in an affected area where the percentage of defined minorities exceeds 50 percent of the population, or where the percentage of defined minorities in the affected area is meaningfully greater (10 percent higher) than the percentage of defined minorities in the general population or other appropriate unit of geographic analysis. The CEQ guidance further recommends that low-income populations in an affected area should be identified using data on income and poverty from the U.S. Census Bureau (CEQ, 1997). Low-income populations are populations where households have an annual household income below the poverty threshold, which is currently \$24,600 for a family of four (Health and Human Services, 2017).

None of the census tracts within 1 mile of the Project have a minority population that exceeds the 50 percent minority threshold identified by Executive Order 12898 or is meaningfully greater (10 percent higher) than the reference community; therefore, no "minority population" as defined by CEQ exists within the Project area. Because no minority population exists, no disproportionately high and adverse impacts on minority populations are anticipated.

All census tracts within 1 mile of the Project have a lower percentage of people below the poverty level than both the state and county (U.S. Census, 2015). Because no low income population exist in the Project area no disproportionately high and adverse impacts on low income populations are anticipated.

We received comments from the public regarding potential regional impacts on tourism, local communities, and nearby properties. No impacts on tourism are anticipated as no traffic impacts would occur from construction or operation (as described in section B.5.3). Additionally, because this Project involves the replacement of existing infrastructure within the fenced property of the compressor station, there would not be impacts on local communities or nearby properties during construction or operation, other than the ATWS, which would be used temporarily during construction.

B.7 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 (NRHP), 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 its implementing regulations at 36 CFR 800.

Texas Eastern completed cultural resources surveys for the Project and provided a *Phase I Archaeological Identification Survey* report (October 2017) and an *Historic Architectural Property Effects Assessment* (October 12, 2017) to the FERC and New Jersey State Historic Preservation Office (SHPO). The archaeological survey identified a scatter of nineteenth and twentieth century refuse considered not to be an archaeological site nor significant. No further work was recommended. In addition, background research conducted as part of the Phase I report identified two historic districts within or adjacent to the Project area. A portion of the “Inch Lines Linear Multi-State Historic District,” a pipeline system constructed during World War II, determined eligible for the NRHP, was identified within the compressor station. The Mount Airy Historic District, listed on the NRHP, was identified across the road from the compressor station. Because the Project does not involve replacement of any sections of the Inch Lines Multi-State Linear Historic District pipelines, and would not affect a well house identified as a contributing element to that historic district, Texas Eastern recommended no further work. In a letter dated December 4, 2017, the SHPO commented on the Phase I report and concurred. We concur also.

Texas Eastern further analyzed the Project’s effects on the Mount Airy Historic District in its effects assessment. Because the proposed Project’s visibility from the district would be limited by distance, existing vegetation, and intervening development, Texas Eastern recommended that the Project would have no effect on the Mount Airy Historic District. In a letter dated February 21, 2018, the SHPO commented on the effects assessment and indicated the Project would have no adverse effect on the Mount Airy Historic District. We agree with the SHPO.

Texas Eastern contacted the Absentee Shawnee Tribe of Oklahoma, Delaware Nation of Oklahoma, Delaware Tribe of Indians, and Shawnee Tribe of Oklahoma

regarding the Project, provided the archaeological survey report to all four tribes, and also followed-up with the tribes. The Delaware Nation had no objections to the Project, but requested to be contacted in the event of unexpected discoveries. The Shawnee Tribe concurred that no known historic properties would be negatively impacted by the Project. No further comments have been received. We sent our NOI to these same tribes. No responses to our NOI have been received.

Texas Eastern provided *Procedures Guiding the Discovery of Unanticipated Historic Properties and Human Remains* to address unanticipated discoveries during construction. We requested minor updates to the plan. Texas Eastern provided a revised plan which we find acceptable. In its December 4, 2017 letter, the SHPO also found the plan acceptable.

B.8 AIR QUALITY

The term air quality refers to relative concentrations of pollutants in the ambient air. The subsections below describe air quality concepts that are applied to characterize air quality and to determine the significance of increases in air pollution.

Air quality in the Project area would be affected by construction and operation of the Project. Although air emissions would be generated by Project construction activities, the majority of air emissions associated with the Project would result from operation of the new compressor units at the existing Lambertville Compressor Station. However, due to the retirement and removal of two existing and higher emitting compressor units, the Project would result in a decrease in some operational emissions and an increase in others. Table 5 below summarizes the existing and proposed compressor engines at the Lambertville Compressor Station.

Make and Model	Rated output (horsepower)		
	Station Existing	Station Proposed	Station Total Additional Proposed
Replace one Dresser Clark DC-990 Turbine Engine (Clark turbine engine) with one Solar Taurus 70 Turbine Engine (Solar Taurus engine)	5,100	8,600	3,500
Replace one Dresser Clark DC-990 Turbine Engine with one Solar Taurus 70 Turbine Engine	5,100	8,600	3,500
Siemens Electric Driven Motor (Siemens motor)	10,000	10,000	N/A
Cooper Bessemer GMVR-10 Reciprocating Engine (Cooper reciprocating engine)	2,200	2,200	N/A
Cooper Bessemer GMVR-10 Reciprocating Engine	2,200	2,200	N/A
Station Totals	24,600	31,600	7,000
N/A = not applicable			

B.8.1 EXISTING ENVIRONMENT

The Project area is within Hunterdon County, New Jersey. The climate in Hunterdon County is generally characterized as continental with relatively short and moderately cold winters, and warm summers with periods of heat and humidity, with mild autumn temperatures. Hunterdon County is characterized by winters from December to March with average temperatures that range from 34 to 48 degrees Fahrenheit (°F) to average temperatures of 54°F from April to 76 °F in August. Average precipitation is 49 inches per year, with well-distributed rainfall throughout the year (National Climatic Data Center, 2017).

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.¹⁶ NAAQS have been developed for seven “criteria air pollutants,” including nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA, 2017b). At the state level, the NJDEP has adopted the NAAQS, as promulgated by the EPA, but requires additional standards that are more stringent than the NAAQS for some pollutants. Texas Eastern would be required to comply with both NAAQS and the New Jersey Ambient Air Quality Standards. Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further in section 8.2.

The EPA, and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS) or maintenance (area was formerly nonattainment and is currently in attainment).

Air quality control regions (AQCR) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe

¹⁶ The current NAAQS are listed on EPA's website at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions (such as large metropolitan areas) where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Hunterdon County is within the New York-New Jersey-Connecticut ACQR, which has a marginal nonattainment for the 8-hour ozone. For all other criteria pollutants, Hunterdon County is designated attainment (EPA 2017b, 2017c). Ozone is not emitted into the atmosphere from an emissions source; rather, it develops as a result of a chemical reaction between nitrogen oxides (NO_x) and VOCs in the presence of sunlight. Therefore, NO_x and VOCs are referred to as ozone precursors and are regulated to control the potential for ozone formation.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide is the primary GHG emitted during fossil-fuel combustion, while smaller amounts of methane and nitrous oxide are GHGs that are also emitted. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the CAA. GHG emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The primary GHGs that would be emitted by the Project are carbon dioxide (CO₂), methane, and nitrous oxide. During construction and operation of the Project, these GHGs would be emitted from the majority of construction and operational equipment, as well as from fugitive methane leaks from the pipeline and aboveground facilities.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO₂e). The CO₂e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO₂. Thus, CO₂ has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.¹⁷

B.8.2 REGULATORY REQUIREMENTS

The provisions of the CAA that are applicable to the Project are discussed below. The estimated potential operational emissions for the Lambertville Compressor Station are shown in table 8.

¹⁷ These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

Prevention of Significant Deterioration and Nonattainment New Source Review

Proposed new or modified air pollutant emission sources must undergo a New Source Review (NSR) prior to construction or operation. Through the NSR permitting process, state and federal regulatory agencies review and approve project emission increases or changes, emission controls, and various other details to ensure air quality does not deteriorate as a result of new or modified existing emission sources. The two basic groups of NSR are major source NSR and minor source NSR. Major source NSR has two components: Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR). The applicability of PSD, NNSR, and minor source NSR depend on the size of the proposed project, the projected emissions, and if the project is proposed in an attainment area or nonattainment/maintenance area. The NJDEP administers the PSD and NNSR programs in New Jersey through their permitting process. The NNSR is administered through N.J.A.C. 7:27-18: Control and Prohibition of Air Pollution from New or Altered Sources Affecting Ambient Air Quality (Emissions Offset Rules), which establishes preconstruction requirements for new and modified major facilities in nonattainment areas. PSD regulations define a major source as any source type belonging to a list of 28 specifically listed source categories that have a potential to emit 100 tons per year (tpy) or more of any regulated pollutant or 250 tpy for sources not among the listed source categories (such as natural gas compressor stations). These are referred to as the PSD major source thresholds.

The Lambertville Compressor Station is considered a major stationary source under the PSD program due to NO₂ emissions that exceed the 250 tpy major source threshold. However, the proposed Project would result in the replacement of the Clark turbine engines with lower NO₂-emitting Solar Taurus turbines that would result in the facility being reclassified as a minor source because all emissions would be less than the 250 tpy major source threshold. EPA guidance indicates that if a major source undergoes a modification that would result in total facility emissions for each pollutant that would each be less than the major source threshold, the facility would not be required to undergo PSD review. However, Texas Eastern provided an air quality analysis as part of its PSD applicability analysis reviewed in section B.8.5.

Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The major source threshold under Title V is different than the PSD major source thresholds and is 100 tpy for criteria pollutants, 10 tpy for any single HAP, and 25 tpy for total HAPs. In areas of ozone nonattainment, the threshold for VOC and NO_x is 50 tpy for areas defined as serious, 25 tpy in areas defined as severe, and 10 tpy in areas classified as extreme. In areas that comprise the Ozone Transport Region, the threshold for VOC only is 50 tpy. Hunterdon County is within the New York-New Jersey-Connecticut ACQR, which is in marginal nonattainment. However,

because the New York-New Jersey-Connecticut ACQR is part of the Ozone Transport Region, the VOC threshold is 50 tpy. The existing Lambertville Compressor Station is an existing Title V facility based on the current annual emissions. Because the proposed Project modifications are considered a significant modification to the existing Title V permit, Texas Eastern submitted a Title V permit modification to the NJDEP in November 2017.

New Source Performance Standards

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories, as specified in the applicable provisions discussed below. NSPS also establishes fuel, monitoring, notification, reporting, recordkeeping, and testing requirements.

NSPS Subpart JJJJ sets emissions standards for NO_x, CO, and VOCs for emergency and non-emergency engines. Subpart JJJJ would apply to the new generator proposed at the Lambertville Compressor Station.

NSPS Subpart KKKK sets emissions limitations for NO_x and limits the sulfur content of fuel that is combusted from stationary combustion turbines with a heat input rate at peak load of 10 million British Thermal Units (MMBtu). The Project involves the installation of new stationary combustion turbines and would therefore trigger the requirements of Subpart KKKK.

NSPS Subpart OOOOa sets emission standards and compliance schedules for VOC and SO₂ emissions for new, modified, or reconstructed wet seal centrifugal compressors and reciprocating compressors; limits for bleed rates for natural-gas driven pneumatic controllers; requires work practice standards for compressor rod packing compressor units; and sets fugitive leak monitoring and repair requirements for compressor stations. The various components of Subpart OOOOa would apply, as applicable, to the Lambertville Compressor Station.

Texas Eastern would comply with the all applicable NSPS standards and requirements, as necessary and as summarized in the Title V Significant Modification Application for the Lambertville Compressor Station submitted to the NJDEP in November 2017.

National Emission Standards for Hazardous Air Pollutants

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from specific source types at major or area sources of HAPs by setting emission limits,

monitoring, testing, record keeping, and notification requirements. The Lambertville Compressor Station would have the potential to emit less than the combined HAP total threshold of 25 tpy and single HAP threshold of 10 tpy, and is therefore considered an area (and not major) source of HAPs. The applicable regulations for area sources are described below.

Subpart ZZZZ applies to all reciprocating internal combustion engines at area sources and would therefore apply to the emergency generators at the Lambertville Compressor Station. However, Texas Eastern would comply with Subpart ZZZZ by meeting the requirements of NSPS JJJJ.

General Conformity

The General Conformity rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. The lead federal agency (i.e., FERC) must conduct a conformity analysis if a federal action (the approval of the proposed Project) is likely to result in the generation of emissions that would exceed the conformity threshold levels of the pollutant(s) for which a county is designated nonattainment or maintenance. It is the lead federal agency's responsibility to confirm activities or action should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS;
or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity Rule entails both an applicability analysis and a subsequent conformity determination, if applicable. A general conformity applicability analysis determines if a federal action will be subject to general conformity requirements. As part of the general conformity applicability analysis, the total "non-exempt" direct and indirect emissions (e.g., construction emissions) of nonattainment pollutants (or precursor pollutants) associated with a federal action is compared to the annual general conformity applicability emissions thresholds. Exempt emissions are emissions from stationary sources that are subject to any NNSR or PSD permitting/licensing (major or minor), are deemed to have conformed, and are therefore not evaluated in the applicability analysis.

If the total non-exempt direct and indirect emissions (e.g., construction emissions) for a specified pollutant threshold is met or exceeded for each nonattainment or maintenance area, then a separate analysis, a General Conformity Determination, must be completed. However, if the specified pollutant threshold is less than the general conformity applicability emissions thresholds, then general conformity requirements do not apply, and a conformity determination is not required.

Table 6 summarizes the results of the general conformity applicability analysis for the proposed Project. As previously reviewed, the proposed Project is in a nonattainment area for ozone; therefore, the precursor pollutants VOCs and NO_x were quantified and compared to the general conformity applicability thresholds of 50 tpy for VOCs and 100 tpy for NO_x. Based on the total Project's non-exempt emissions that are below the corresponding general conformity applicability thresholds, the general conformity requirements do not apply to the Project and a general conformity determination is not required. We received a comment from the EPA regarding a need to complete a general conformity applicability analysis. The analysis detailed above and summarized in table 6 below serve to address this comment.

Table 6 General Conformity Applicability Analysis					
Designed Nonattainment Pollutant	Designated Area	Pollutant or Precursor	2019 Total Non-Exempt Emissions (tpy)	Ongoing Non-Exempt Operational Emissions¹	Threshold (tpy)
Ozone (O ₃)	AQCR 043 NJ-NY-CT Interstate	VOC	3.96	N/A	50
		NO _x	2.64	N/A	100
¹ Ongoing operational emissions are exempt from general conformity requirements as they were included in the NSR permit application filed with the NJDEP in November 2017					

B.8.3 STATE AIR QUALITY REGULATIONS

This section discusses the potentially applicable state air regulations for the proposed Project. In addition to federal standards, the NJDEP establishes additional standards outlined in Chapter 7:27 of the NJAC.

Control and Prohibition of Smoke from Combustion of Fuel

Subchapter 3 of the NJAC limits opacity from internal combustion engines and stationary combustion turbines. The combustion turbines and emergency generator would have an opacity near zero and would comply with the standard.

Control and Prohibition of Particles Combustion of Fuel

Subchapter 4 of the NJAC limits the mass emission of particulates from the proposed turbines and emergency generator. Due to the combustion of natural gas, the potential to emit PM₁₀ and PM_{2.5} would be well below the respective standards and Texas Eastern would therefore comply with this standard.

Ambient Air Quality Standards

Subchapter 13 of the NJAC provide ambient air quality standards that are applicable to the Project. Texas Eastern completed an air quality analysis using modeling protocols approved by the NJDEP and is reviewed further in section B.8.5 below. Texas Eastern would be required by NJDEP to comply with this standard.

Control and Prohibition by Volatile Organic Compounds

Subchapter 16 of the NJAC establishes VOC and CO limits for stationary gas turbines. The proposed new Solar Taurus turbine engines would comply with these limits under all operating scenarios.

Control and Prohibition of Air Pollution by Oxides of Nitrogen

Subchapter 19 of the NJAC establishes the New Jersey Reasonably Achievable Control Technology (NJ RACT) program that went into effect in November 2017. This rule limits NO_x emission from simple cycle combustion turbines burning natural gas and compressing gaseous fuel at major NO_x facilities. The proposed NO_x limit for the two new Solar Taurus turbine engines would comply with the amended NJ RACT program.

Operating Permits

Subchapter 22 of the NJAC requires new sources and modifications to perform a risk assessment for any hazardous air pollutant with potential emissions greater than or equal to the NJDEP reporting thresholds. The facility performed a risk assessment using modeling protocols approved by the NJDEP, and is further reviewed in section B.8.5.

B.8.4 CONSTRUCTION EMISSIONS IMPACTS AND MITIGATION

Project construction would result in temporary, localized emissions that would last the duration of construction activities (i.e., about 8 months). Heavy equipment and trucks, delivery vehicles, and construction workers commuting to and from work areas would generate exhaust emissions through the use of diesel or gasoline engines.

Construction activities, such as land clearing and grading, ground excavation and soil disturbance, and driving on unpaved roads, would also result in the temporary generation of fugitive dust. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Texas Eastern estimated construction emissions based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were estimated using EPA’s MOVES model and NONROAD model, and the Western Regional Air Partnership Fugitive Dust Handbook. Table 7 below provides the total Project construction emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles, exhaust emissions from construction worker vehicles for commuting and vehicles used to deliver equipment/materials to the site.

Table 7 Construction Emissions for the Project (tons per construction duration)								
Activity	CO	NO_x	PM₁₀	PM_{2.5}	SO₂	VOC	HAPS	CO_{2e}
Non-road and On-road Construction Vehicles	40	2.6	0.3	0.3	0.01	1	0.07	1,218.3
Fugitive Dust	0	0	14.9	1.6	0	0	0	
Blowdown and Purge	0	0	0	0	0	3	0	693
Total Project Emissions	40	2.6	15.2	1.9	0.01	4	0.07	1,911.3

Construction emissions shown in table 7 are not expected to result in a violation or degradation of ambient air quality standards. Texas Eastern would minimize construction exhaust emissions by operating equipment on an as-needed basis, using properly tuned equipment, ultra-low sulphur diesel in construction equipment, utilizing non-road engines either retrofitted with best available technology or certified to meet EPA’s Tier IV Exhaust Emissions Standards, and limiting idling to less than 5 minutes. In order to mitigate and minimize fugitive dust, Texas Eastern has committed to implementing measures contained in its Dust Control Plan, including the following:

- apply water when needed prior to disturbance and during disturbance;
- maintain low speeds (5 miles per hour) in unpaved areas;
- clear streets and clean trucks to remove soil/material displaced by construction equipment/vehicle track out;
- load haul trucks such that load is below the freeboard;
- cover open-bodied haul trucks when transporting materials and prevent spillage;
- maintain existing ground coverings until disturbance is required;
- stabilize soil with gravel or other stabilizing material, if dust generation is observed that cannot be controlled; and
- discontinue construction activities if generation of dust is observed until dust control is applied.

Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the Project area. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. With the mitigation measures proposed by Texas Eastern, we conclude air quality impacts from construction would be temporary and would not result in significant impact on local or regional air quality.

B.8.5 OPERATIONAL EMISSIONS IMPACTS AND MITIGATION

The Project would result in changes to the operational air emissions at the existing Lambertville Compressor Station. Texas Eastern proposes to install the following new equipment at the existing Lambertville Compressor Station:

- two new 10,915 hp International Standards Organization (ISO) Solar Taurus turbine engines, which would replace the two existing 5,800 hp ISO Clark natural gas-fired compressor turbine engines;
- one new 880 brake hp Waukesha VGF36GL natural gas-fired emergency generator which would replace the existing Caterpillar G-398 emergency generator;
- two new natural gas-fired gas heaters (rated less than 1 MMBtu/hr) for the new turbine compressors;
- four new natural gas-fired warehouse space heaters (rated less than 1 MMBtu/hr heat input);
- two new 44-gallon storage tanks, which would replace existing tanks; and
- new gas release vents.

As summarized previously in table 5, the proposed Project would increase the Lambertville Compressor Station's total rated output from 24,600 hp to 31,600 hp. The proposed Project is necessary to comply with new requirements published in NJ RACT NO_x rule in November 2017. The new Solar Taurus turbine engines would result in an 84 percent decrease in NO_x emissions at the Lambertville Compressor Station. Table 8 below summarizes the operational emissions from proposed new sources at the Lambertville Compressor Station. Table 9, also below, summarizes the pre- and post-Project facility-wide potential to emit (PTE). This post-Project facility wide emissions includes the existing emissions sources to remain in operation, the proposed new sources as a result of this Project, and additional sources (two meter and regulating stations and interconnecting piping, among other appurtenant equipment) that were approved for construction and operation within the Lambertville Compressor Station as part of the PennEast Pipeline Project (PennEast Project) that is further reviewed in section B.11.

Unit	NO₂	CO	PM_{2.5}	PM₁₀	SO₂	VOC	HAPs	CO_{2e}
Solar Taurus Turbine	12.5	13.3	2.51	2.51	5.33	4.07	1.42	45,244
Solar Taurus Turbine	12.5	13.3	2.51	2.51	5.33	4.07	1.42	45,244
Waukesha VGF36GL Generator	0.19	0.39	0	0	0	0.17	0.11	86
Cameron Fuel Gas Heater	0.16	0.25	0.01	0.01	0.02	0.06	0.014	200
Cameron Fuel Gas Heater	0.16	0.25	0.01	0.01	0.02	0.06	0.014	200
Four Space Heaters	0.1	0.04	0.01	0.01	0.01	0.0084	0.002	124
Two Storage Tanks	-	-	-	-	-	0.04	0.002	1.9
Gas Releases	-	-	-	-	-	3.62	-	6,739
Fugitive Piping Components	-	-	-	-	-	0	-	302
Total New Emissions	25.61	27.53	5.05	5.05	10.71	12.10	2.98	98,140.9

Project Phase	NO_x	CO	PM_{2.5/10}	SO₂	VOC	HAPs	CO_{2e}
Pre-Project Facility-wide PTE (tpy) ¹	308.22	29.93	23.45	1.71	38.03	1.91	72,584
Post-Project Facility-wide PTE (tpy) ²	50.13	49.72	13.57	17.4	51.59	7.27	182,265
Difference in Emissions Post-Project	-258.09	19.79	-9.88	15.69	13.56	5.36	109,681
¹ existing, permitted emissions							
² includes the proposed Project modification emissions, and emissions associated with the PennEast Interconnect Project							

Table 9 indicates that NO_x and PM emissions would be reduced by 83.7 percent and 42.1 percent, respectively, while emissions of CO, SO₂, VOC, HAPs, and CO_{2e} would increase. The impact that the post-Project facility-wide emissions would have on air quality is reviewed further in the Air Quality Modeling section below.

Compressor unit blowdowns (gas venting) can occur during initial construction/testing, operational startup and shutdown, maintenance activities, and during emergency purposes. Table 8 provides estimates of compressor unit blowdown emissions. Texas Eastern would manage operations and maintenance blowdowns to minimize the amount of each release through various mitigation measures, including conducting annual emergency shutdown system tests while the blowdown vents are capped, utilizing pump-down techniques to lower gas line pressure before maintenance, and scheduling multiple maintenance activities concurrently to reduce the number of independently required blowdowns, among several other mitigation measures.

Fugitive emissions are minor leaks that would occur at various piping components, fittings, and aboveground equipment, and from operation and maintenance activities at the Lambertville Compressor Station. Table 8 provides estimates of fugitive emissions. In order to minimize fugitive emissions, Texas Eastern participates in the EPA Natural Gas Star Program to share best practices for methane reduction technologies. Texas Eastern would mitigate fugitive equipment leaks by implementing annual leak surveys, at a minimum, and in addition, would comply with EPA's 40 CFR 98, Subpart W and with 40 CFR 60, Subpart OOOOa standards, which both require leak detection and repair programs. However, certain provisions from 40 CFR 60, Subpart OOOOa are formally being reconsidered by the EPA, including the leak detection and repair programs. Texas Eastern would comply with all provisions from Subpart OOOOa that apply at the time the Project is completed. Fugitive methane emissions are a source of GHG emissions from the proposed Project.

In addition to complying with all applicable air permits, Texas Eastern would mitigate the impacts of operational emissions through installation of low-emission combustion technology (SoLoNO_xTM) for NO_x and CO and through the use of an oxidation catalyst system, for CO, VOCs, and HAPs. Additionally, in the state of New Jersey, State-of-the-Art Technology requirements would apply to NO_x, CO, and SO₂ emissions from the turbine operations. Texas Eastern would be required to comply with these requirements to obtain air emissions permits.

Air Quality Modeling

Texas Eastern completed an air quality dispersion model (model) to determine the impacts of emissions from the Lambertville Compressor Station on regional air quality. The analysis was conducted using the EPA AERMOD model and methodology outlined in EPA and NJDEP guidance. Additionally, Texas Eastern consulted with NJDEP on site-specific factors and assumptions used in their model. The model evaluated new sources associated with the proposed Project and existing sources that will remain in operation at the Lambertville Compressor Station. The model also evaluated the new emissions sources (eight new heaters and one new emergency generator) that were approved for construction and operation within the Lambertville Compressor Station as part of the PennEast Project. The model considered these sources collectively as a conservative measure and in order to be most reflective of the actual emissions of the Lambertville Compressor Station following completion of the proposed and already-approved modifications.

The modeling analysis was completed assuming various load and temperature scenarios, and a startup/shutdown scenario. Because the modeled concentrations of these various scenarios were generally within one percent of each other, the full load, normal temperature scenario is presented that assumes Project facilities would run at full load (i.e., continuously for 24 hours a day, all year, at full capacity) because that scenario is

highly conservative. Additionally, the model used meteorological data from the years 2010 to 2014. The highest predicted concentration from these years was selected for comparison to the NAAQS. The model estimates the maximum predicted concentrations of criteria pollutants emitted from the compressor station using conservative assumptions. Background concentrations from the nearest air monitors were then added to the maximum modeled concentrations and the total was compared to the NAAQS. The model results are provided below in table 10.

Pollutant	Averaging Period	Existing Background (µg/m³)	Maximum Modeled Concentration (µg/m³)	Combined Background and Maximum Modeled (µg/m³)	NAAQS (µg/m³)
CO	1-hour	2,406.0	21,205.3	23,611.3	40,000
	8-hour	2,177.0	6,656.2	8,833.2	10,000
NO ₂	1-hour	82.2	96.7	178.9	188
	Annual	18.3	12.2	30.5	100
PM _{2.5}	24-Hour	21.8	8.3	30.1	35
	Annual	8.1	2.5	10.6	12
PM ₁₀	24-Hour	42.0	10.0	52.0	150
SO ₂	1-Hour	26.2	143.0	169.2	196
	3-hour	29.6	114.3	143.9	1,300
	24-Hour	17.6	61.2	78.8	365
	Annual	4.5	15.9	20.4	80

The results in table 10 indicate that the combined total of existing background and maximum modeled concentrations are less than the applicable NAAQS for all pollutants. Therefore, the Project would not cause or significantly contribute to a degradation of ambient air quality.

We received comments from four residents and the Township of West Amwell regarding air quality impacts and impacts on health from the proposed Project. Based on the analysis presented above, the Project would result in continued compliance with the NAAQS, which are established to be protective of human health, including sensitive populations such as children, the elderly, and asthmatics. As reviewed in section B.8.5, Texas Eastern would install multiple technologies on the two new Solar Taurus turbine engines in order to reduce emissions of NO_x, CO, VOCs, HAPs, and SO₂, including low-emission combustion technology (SoLoNO_xTM) and oxidation catalyst systems. Lastly, Texas Eastern would comply with New Jersey State-of-the-Art Technology requirements. Based on Texas Eastern's mitigation measures and the results of the air quality analysis

presented above, we believe that the Project would not result in adverse impacts on regional or local air quality.

Risk Assessment for Air Contaminant Emissions

Texas Eastern conducted a facility-wide risk assessment for air toxics using modeling guidance from the NJDEP and EPA. Additionally, Texas Eastern consulted with NJDEP on site-specific factors and assumptions used in their risk assessment. Similar to the air dispersion model, both the proposed and PennEast Project, as well as the existing sources that would remain in operation were considered in the risk assessment, with the exception of formaldehyde from the existing Cooper reciprocating engines that was modeled in 2011. The risk assessment evaluated the facility-wide total PTE for each air toxic (i.e., HAPs and VOCs). If air toxics exceeded the reporting threshold, they were further evaluated in a risk screening worksheet that estimated the cancer and non-cancer health risks. If unacceptable risk was identified, a refined risk assessment was performed in accordance with NJDEP guidance. A refined risk assessment was performed for six air toxics which indicated that the maximum estimated concentrations were less than the New Jersey Cancer Risk and Negligible Risk thresholds. Therefore, the proposed Project (in addition to the existing sources and the PennEast Project) would not cause or significantly contribute to an exceedance of air toxics or HAPs.

B.9 NOISE

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Construction and operation of the Project would affect overall noise levels in the Project area. 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 vegetative cover. Two measures that 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 an A-weighted sound level containing the same energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, the L_{dn} is the L_{eq} plus a 10 decibel on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used to assess noise impacts 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).

B.9.1 FEDERAL NOISE REGULATIONS

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA, 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSAs). NSAs are defined as homes, schools, churches, or any location where people reside or gather. FERC requires that the noise attributable to any new compressor engine or modifications during full load operation not exceed an L_{dn} of 55 dBA at any NSAs. Due to the 10 dBA nighttime penalty added prior to the logarithmic calculation of the L_{dn} , for a facility to meet the 55 dBA L_{dn} limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA L_{eq} at any NSA.

B.9.2 STATE AND LOCAL NOISE REGULATIONS

The State of New Jersey regulates noise pursuant to the State Noise Pollution Code at N.J.A.C 7:29, which states that the continuous airborne sound from an industrial, commercial, or community service facility not exceed 65 dBA (day or night) at the property line of any other commercial or community service facility, and not exceed 65 dBA at the property line of any residential property line during the daytime (7:00 AM to 10:00 PM) or 50 dBA during the nighttime (10:00 PM to 7:00 AM). There are also unweighted octave band sound pressure levels and maximum impulsive sound levels that should not be exceeded at any property line. Therefore, the FERC sound level requirement of 55 dBA (L_{dn}) (which corresponds to an L_{eq} of 48.6 dBA) is considered slightly more stringent than the State Noise Pollution Code.

The Township of West Amwell has a local noise nuisance code that prohibits unnecessary noises or sounds by means of the human voice or by other means or methods which are prolonged or unnatural or unusual in their use. Since the local noise nuisance code does not provide specific sound level limits, the FERC sound level requirement of 55 dBA L_{dn} is considered more stringent than the local noise nuisance code within the Township of West Amwell.

B.9.3 AMBIENT NOISE CONDITIONS

The existing Lambertville Compressor Station is off State Highway 179 in Hunterdon County, New Jersey. The area immediately surrounding the Project site consists of open and commercial/industrial land, with residential areas between 700 feet to 1,250 feet away, to the south-southeast and east-northeast of the site, respectively. In order to measure the sound levels of all 5 existing compressor units at the station, Texas Eastern completed a sound survey in March 2017 (when the two Clark turbine engines

were operating at full load) and used two historic sound surveys from 2003 (when only the Siemens motor was running at full load) and 2012 (when only the two Cooper engines were running at full load). The results of these separate sound surveys were added together to be representative of the existing station when all compressor units are running at full load. The results of the ambient sound survey are presented in table 11.

B.9.4 CONSTRUCTION NOISE IMPACTS AND MITIGATION

Noise would be generated during construction of the Project. Construction activities in any one area could last from several weeks to several months on an intermittent basis. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. Texas Eastern would employ noise mitigation measures to reduce the impacts of construction noise, such as ensuring that sound muffling devices, which are provided as standard equipment by the construction equipment manufacturer, are kept in good working order. If needed, Texas Eastern would implement additional noise abatement techniques and other measures during construction to mitigate noise disturbances at NSAs. As reviewed in section A.6, construction activities would primarily occur from the hours of 7:00 am until 7:00 pm Monday through Saturday; however, Texas Eastern identified some activities that would necessitate nighttime work, including the following:

- hydrostatic and/or pneumatic pressure testing;
- welding;
- x-ray activities including non-destructive testing of welds;
- depressurization of pipelines; and
- miscellaneous electrical or similar work inside building structures.

These activities tend to be quieter than typical construction work that involves heavy equipment and would therefore be less disruptive to nearby NSAs. If Texas Eastern determines that nighttime or Sunday work would be necessary, it would provide advanced notification and a 24-hour hotline for noise complaints to nearby residents. Additionally, Texas Eastern has committed to working with residents to promptly resolve any noise complaints and would employ less impactful backup alarms and ensure that light towers were positioned/shielded to direct light away from the NSAs. Based on the temporary nature of construction activities, and the mitigation measures proposed by Texas Eastern, we conclude that construction noise would not result in significant noise impacts on residents or the surrounding communities.

B.9.5 OPERATION NOISE IMPACTS AND MITIGATION

The proposed compressor station would generate noise on a continuous basis (i.e., up to 24 hours per day) when operating. The noise impact associated with the

compressor station would attenuate with distance. Noise generated at the compressor station would result primarily from the following operational noise sources:

- two new Solar Taurus turbine engines;
- three existing compressor units;
- turbine engine exhaust systems;
- turbine air intakes;
- lube oil coolers;
- discharge gas aftercoolers; and
- aboveground piping and associated components.

The results of the ambient (existing) sound survey were combined with the predicted noise impacts from the proposed new compressor station equipment to determine the noise impacts from operation of the compressor station at each NSA. The noise survey also incorporates noise control measures for operational noise. Specific noise control measures include enclosing the compressor turbines in a new building built to specifications, and using exhaust silencers; air intake filter-silencers; acoustical pipe insulation covering outdoor aboveground gas piping; blowdown silencers; and insulated roll-up doors, among others. Texas Eastern committed to installing the noise control measures recommended in the noise analysis. The results of the operational noise analysis are provided below in table 11.

The operational noise analysis in table 11 indicates that total noise at the NSAs would be greater than 55 dBA; however, the contribution from the new Solar Taurus turbine engines would not exceed 55 dBA L_{dn} at any NSA. Additionally, the retirement of the older Clark turbine engines may result in an overall decrease in sound levels ranging from 3.5 dBA to 3.7 dBA at the Lambertville Compressor Station. However, it is also possible that the Project may result in the existing units running more often than they previously did.

Blowdown events generate noise at compressor stations and occur when pressure in the compressor casing, piping, or the entire station must be released in a controlled manner. Blowdown events cause a temporary increase in sound levels that would typically last for about 1 to 5 minutes. Texas Eastern estimated that a blowdown event from the new Solar Taurus turbine engines would be about 53 to 54 dBA L_{dn} . Because of the short duration and infrequent occurrence, we do not believe that blowdown events would be a significant contributor to operational noise from the Project.

Table 11 Noise Analysis for the Lambertville Compressor Station						
NSA	Type	Distance and Direction from Facility	Existing Compressor Station Sound Levels (dBA L _{dn}) ¹	Predicted Sound Level Contribution from New Compressor Units (dBA L _{dn})	Total Sound Level after Project Modifications (dBA L _{dn}) ²	Predicted Change ³ in L _{dn} (dBA)
NSA 1	residence	600 feet south-southeast	59.8	51.3	56.1	-3.7
NSA 2	residence	850 feet south-southeast	58.5	48.6	55.1	-3.4
NSA 3	residence	1,250 feet east-northeast	60.9	46.1	57.3	-3.6
1 = includes all 5 existing compressor units (2 Clark turbines, 1 Siemens motor, 2 Cooper engines) running at near full-load 2 = includes the 3 existing units to remain in operation (1 Siemens motor and 2 Cooper engines) and the 2 proposed new Solar Taurus turbines 3 = predicted change if all existing and proposed compressor units are operating at full load						

While the analysis above shows that noise impacts at the NSAs from the new units at the compressor station would be below our 55 dBA requirement, to verify compliance with the FERC's noise standards, **we recommend that:**

Texas Eastern should file with the Secretary noise surveys for the Lambertville Compressor Station no later than 60 days after placing the modified station into service to verify that the noise from the existing and proposed new equipment operated at full power load condition does not exceed the previously existing noise levels that are at or above an L_{dn} of 55 dBA at nearby NSAs, and that the noise attributable to the operation of the new units at full power load condition does not exceed an L_{dn} of 55 dBA at any nearby NSAs. If a full power load condition noise survey is not possible, Texas Eastern should file an interim survey at the maximum possible power load within 60 days of placing the modified station into service and file the full power load survey within 6 months. If the noise from all the equipment operated at full power load condition exceeds the previously existing noise levels or if the total noise attributable to operation of the new units at the station under interim or full

power load conditions exceeds an L_{dn} of 55 dBA at any nearby NSA, Texas Eastern should:

- a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;**
- b. install additional noise controls to meet that level within 1 year of the in-service date; and**
- c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary for review and written approval by the Director of OEP no later than 60 days after it installs the additional noise controls.**

Based on the overall reduction in sound levels at the Lambertville Compressor Station as a result of the proposed Project, the sound mitigation measures proposed by Texas Eastern, and the recommendation stated above, we believe that the proposed Project would not result in significant noise impacts on residents or the surrounding communities.

B.10 RELIABILITY AND SAFETY

The pressurization of natural gas at a compressor station 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 breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of 1,000 degrees F and is flammable at concentrations between 5.0 percent and 15.0 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

We received one comment from a resident concerned with impacts on high consequence areas (HCA) nearby, such as the West Amwell Elementary School and Hunterdon County Library South Branch. The DOT has published rules that define HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. The proposed Project would result in changes within the Lambertville Compressor Station, but would not result in changes to the maximum allowable operating pressure of the pipelines that feed to and from the compressor station, which may result in changes to nearby high consequence areas. Therefore, the proposed Project would not

result in changes to the classification of high consequence areas nearby. Additional information on standards to ensure the safety of nearby residents and communities is provided below.

B.10.1 SAFETY STANDARDS

The DOT is mandated to prescribe minimum safety standards to protect against risks posed by natural gas facilities under Title 49 of the U.S. Code, Chapter 601. The DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) administers the 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 of natural gas facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the operator to use various technologies to achieve safety. PHMSA's safety mission is to ensure that people and the environment are protected from the risk of incidents. This work is shared with state agency partners and others at the federal, state, and local level.

B.10.1.1 STATION DESIGN

The piping and aboveground facilities associated with the proposed Project must be designed, constructed, operated, and maintained in accordance with the DOT 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 DOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

Part 192 of 49 CFR establishes safety guidelines for the design and construction of compressor stations in addition to pipeline safety standards. Part 192.163 requires the location of each main compressor building of a compressor station be on a property under the control of the operator. The station must also be far enough away from adjacent property, not under control of the operator, to minimize the possibility of fire spreading to the compressor building from structures on adjacent properties. Part 192.163 also requires each building on a compressor station site be made of specific building materials and to have at least two separate and unobstructed exits. The station must be in an enclosed fenced area and must have at least two gates to provide a safe exit during an emergency.

The Lambertville Compressor Station safety systems would be highly engineered with automated control systems to ensure the station and pipeline pressures are maintained within safe limits, and would include several additional over-pressure protection systems that provide an additional layer of safety to back-up the primary controls. The station would also have an automated emergency system that would shut

down the station to prevent an incident should an abnormal operating condition occur, and if appropriate, would evacuate the gas from the station piping at a safe location.

System alarms are designed to notify Texas Eastern's Gas Control center should any abnormal conditions occur, allowing them to take appropriate measures using remote control systems if the station operations personnel are unable to respond to a particular situation. The station would have two different communication systems so that station monitoring and controls would still be operational if the primary communications method were to become disabled. In the event the systems in the station were to become inoperative, remote control valves at the existing nearby pipeline facilities could be closed.

B.10.2 OPERATIONAL INSPECTIONS

Part 192.731 through 192.736 establish safety guidelines for inspection, testing, and monitoring at compressor stations. Texas Eastern would inspect the facilities at least once per calendar year, at intervals not exceeding 15 months. Inspections would ensure that the facilities and pipeline systems are in good mechanical condition, set to control or relieve at the correct pressure consistent with the pressure limits in Part 192.201(a), and are properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

Part 192.163 of 49 CFR requires that each compressor station have an emergency shutdown system (except for unattended field compressor stations of 1,000 horsepower or less) that must meet several specifications. The proposed Lambertville Compressor Station will be equipped with automatic detection and emergency shutdown systems, including:

- flame detection that uses ultraviolet sensors;
- gas detection for detecting low concentrations of natural gas inside buildings;
- emergency shutdowns to isolate the gas piping, stop equipment, and safely vent station gas;
- individual unit shutdown systems in case of mechanical or electrical failure of a compressor unit system or component;
- emergency shutdowns will be operable from at least two locations; and
- pressure relief or other suitable protective devices of sufficient capacity and sensitivity to ensure that the maximum allowable operating pressure of the station piping and equipment will not be exceeded by more than 10 percent.

B.10.2.1 EMERGENCIES

The DOT prescribes the minimum standards for operating and maintaining pipeline and aboveground natural gas facilities, including the requirement to establish a

written plan governing these activities. Each operator is required to establish an emergency plan that includes procedures to minimize the hazards of a natural gas emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, 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 DOT 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 review and expand its existing public liaison program, including the Emergency Response Plan, to alert local public safety officials and first responder organizations in how Texas Eastern plans to coordinate a response with public safety and first responder personnel in the unlikely event of an emergency at the compressor station. 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.

The Project's construction and operation would represent a minimum increase in risk to the public; however, we are confident that with continued compliance with DOT safety standards, operation, and maintenance requirements, the Project would be constructed and operated safely.

B.11 CUMULATIVE IMPACTS

In accordance with NEPA and with FERC policy, we evaluated the potential for cumulative effects of the Project. Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or 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.

This cumulative effects analysis generally follows a method set forth in relevant CEQ and EPA guidance and focuses on potential impacts from the proposed Project on

resource areas or issues where the incremental contribution would be potentially significant when added to the potential impacts of other actions. 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:

- affect a resource potentially affected by the Project;
- cause this impact within all, or part of, the Project area; and
- cause this impact within all, or part of, the time span for the potential impact from the Project.

B.11.1 PROJECTS IDENTIFIED WITHIN THE GEOGRAPHIC SCOPE

Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed action, within all or part of the Project area affected by the proposed action (i.e., geographic scope), and within all or part of the time span of the impacts. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 12. The projects considered in the cumulative impacts analysis are provided in table 13.

Table 12	
Geographic Scope of Potential Impact of the Project	
Resource	Geographic Scope
Geological Resources and Soils	Limits of Project disturbance
Water Resources	Watershed boundary (hydrologic unit code [HUC]-12)
Vegetation, Wildlife, and Special Status Species	HUC-12
Land Use, Recreation, and Visual Resources	1 mile
Socioeconomics	Hunterdon County
Cultural Resources	Area of potential effect
Air Quality	Construction: 0.25 mile; Operation: 31 miles
Noise	Construction: 0.25 mile; Operation: 1 mile

The EA analyzed the Project’s impacts on geology and soils; water resources; vegetation and wildlife; cultural resources; socioeconomics; land use and visual resources; and air quality and noise. The following describes the geographic scope and rationale for our cumulative impact analysis:

- Project construction and restoration measures, including erosion control devices, are designed to confine impacts on geologic and soil resources to the project workspaces. Therefore, we evaluated potential cumulative impacts on soils and geological resources within the same construction footprint as the Project.
- Impacts on water resources (primarily increased turbidity) and wetlands could extend outside of the workspaces, but would also be contained to a relatively small area. Furthermore, impacts on water resources are traditionally assessed on a watershed level. As such, we evaluated other projects within the hydrologic unit code (HUC)-12 watersheds crossed by the Project.
- Impacts on fisheries, vegetation, wildlife, and special status species could extend outside of the workspaces to plant seed dispersion areas or individual home ranges for species with potential to occur in the Project area, but would generally be contained to a relatively small area. We believe the watershed scale is most appropriate to evaluate impacts as it provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecology characteristics in the Project area. Therefore, we evaluated projects within the HUC-12 watersheds crossed by the Project.

- Impacts on socioeconomic conditions could include entire counties, as demographic statistics are generally assessed on a county basis.
- Impacts on cultural resources are highly localized and generally confined to the historic property or resource that is affected. Therefore, the geographic scope for cultural resources impacts is limited to the area of potential effect.
- Temporary impacts on air quality, including fugitive dust, would be largely limited to areas within 0.25 mile of active construction. For long-term impacts on air quality over the lifetime of the facilities due to Project operation, we adopted the distance used by the EPA for cumulative modeling of large PSD sources during permitting (40 CFR 51, appendix W) which is a 31-mile, or 50-kilometer, radius of the Lambertville Compressor Station. We evaluated current and proposed sources that overlap in time and location with construction activities and those with potentially significant long-term stationary emission sources within the geographic scopes.
- Impacts from construction and operational noise could potentially contribute to cumulative impacts on NSAs within 0.25 mile for construction activities and 1 mile during operation of the Lambertville Compressor Station. Therefore, we evaluated current and proposed sources within 0.25 mile for temporary impact and 1 mile of the compressor station for long-term/permanent impacts.

An evaluation was performed to identify past, present, and reasonably foreseeable future projects within the resource-specific geographic scopes. In this analysis, we consider the impacts of past projects as part of the affected environment (environmental baseline) which was described and evaluated in the preceding analysis. However, present effects of past actions that are relevant and useful are also considered. Texas Eastern obtained information about present and future planned developments by consulting federal, state, and local agency and municipality websites, reports, and direct communications; permit applications with various agencies; and online database searches. The projects identified as occurring within the resource-specific geographic scopes are identified below based on resource type.

B.11.2 POTENTIAL CUMULATIVE IMPACTS OF THE PROPOSED ACTION

The Project would impact soils; water resources; vegetation and wildlife; land use; and air quality and noise, but would not impact geologic resources, wetlands, special status species, recreation, visual resources, socioeconomics, or cultural resources, and as such, these resources are not further considered in our cumulative impact analysis. Table 13 below lists the past, present, and reasonably foreseeable projects identified within the geographic scope and within the same timeline as the Project for each resource

considered for cumulative impact analysis. Resources with potential for the Project to contribute to overall cumulative impacts are considered below.

Soils

Construction activities, such as clearing, grading, and excavation, as well as the movement of construction equipment, could result in temporary impacts on soil resources, as described in section B.2. With implementation of the FERC Plan and Procedures, impacts would likely only temporarily effect the immediate workspace areas.

The PennEast Pipeline Project (PennEast Project) would construct various project components (the Lambertville Lateral, launcher site/mainline block valve, and two interconnects) within and adjacent to the Lambertville Compressor Station and would likely overlap in construction schedule as well as geographic scope with the proposed Project. The PennEast Project facilities adjacent to or within the compressor station yard would affect approximately 15.4 acres during construction. Concurrent or consecutive construction schedules could prolong the duration of soil disturbance and thus susceptibility to erosion and invasive species establishment. However, both projects are FERC-jurisdictional projects and would therefore be required to comply with the same mitigation procedures outlined in the Plan and Procedures to prevent erosion, stabilize disturbed areas, and ensuring that areas not covered with gravel or asphalt have density and cover of non-nuisance vegetation that are similar in the disturbed and undisturbed areas. Based on these mitigation measures that the PennEast Project and proposed Project would be required to comply with, we conclude that the proposed Project would contribute minimally during construction to cumulative impacts on soils and would not cumulatively contribute to permanent impacts on soil resources following restoration.

Table 13				
Present and Reasonably Foreseeable Projects Considered for Cumulative Impacts within the Geographic Scope of the Project				
Project Name, Company	Location Relative to Project	Project Description	Project Status	Potential Contribution to Cumulative Impacts
PennEast Pipeline Project (PennEast Project), PennEast Pipeline Company, LLC (FERC Docket No. CP15-558)	a 1.5-mile-long 36-inch-diameter lateral (Lambertville Lateral), a pipeline internal inspection/cleaning device launcher site/mainline block valve, and two interconnects with the Texas Eastern system within the compressor station yard, and a 0.6-mile-long 12-inch-diameter lateral (Gilbert Lateral) within Hunterdon County	New 120-mile-long natural gas pipeline system and 8 new compressor stations	Construction: 2019; Operation: 2019	Soils; Water Resources; Vegetation and Wildlife; Land Use; Air Quality (construction and operation); Noise (construction and operation)
Garden State Expansion Project; Transcontinental Gas Pipe Line Company, LLC (FERC Docket No. CP15-89)	10 miles southeast	new compressor station, new meter and regulating station, and uprating of two existing compressor stations	Construction: 2017; Operation: 2018	Air quality (operation)
Northeast Supply Enhancement; Transcontinental Gas Pipeline Company, LLC (FERC Docket No. CP17-101)	16 miles east	new compressor station	Construction: ongoing; Operation: late 2019	Air quality (operation)
Creekside Preserve, BDNJ Limited, LLC	0.23 mile south	14 single family home subdivision	Construction: ongoing; Operation: unknown	Land Use; Air Quality (construction); Noise (construction)

Water Resources

Construction activities, such as trenching and dewatering, may result in localized impacts on groundwater. Additionally, surface water may be temporarily impacted from construction activities that contribute to stormwater runoff, erosion of sediments, or spills of hazardous materials. No wetlands would be impacted by the proposed Project; therefore, Texas Eastern's Project would not contribute any cumulative impacts on this resource. The PennEast Project would likely overlap in construction schedule and geographic scope with the proposed Project and may contribute cumulatively to impacts on water resources. However, the PennEast Project is a FERC-jurisdictional project that would install erosion control devices as a standard construction practice to minimize impacts on water resources. Based on the limited scope of the proposed Project, the mitigation measures Texas Eastern would implement, including the measures specified in the Plan and Procedures and ESCP Plan, as well as any state or local measures identified in permits, impacts from the Project are not expected to significantly contribute cumulatively to impacts on water resources during construction. No impacts on water resources are anticipated during operation of the proposed Project. Therefore, Texas Eastern's Project would not contribute any cumulative impacts on water resources during operation.

Vegetation and Wildlife

Construction of the Project is expected to have temporary and permanent impacts on vegetation. Construction of the PennEast Project would overlap in construction schedule and geographic scope with the proposed Project and may contribute cumulatively to impacts on vegetation. However, given that impacts on vegetation in the ATWS would be temporary, existing vegetation within the Lambertville Compressor Station is maintained as lawn, and a large portion of the site is already graveled or paved, the proposed Project is not expected to contribute cumulatively to impacts on vegetation.

Disturbance during construction is expected to cause short-term displacement of wildlife from in and near the construction workspace and mortality of wildlife that cannot avoid construction disturbance. The PennEast Project may contribute cumulatively to impacts on wildlife. However, based on the short-term and temporary nature of construction, the industrial nature of the existing Lambertville Compressor Station, and the abundance of similar habitat nearby, we conclude impacts from the Project would not significantly contribute cumulatively to impacts on wildlife.

Land Use

Construction of the Project at the ATWS site would result in temporary impacts on land use while the site is used as a construction staging area and workspace. Project operation would not result in impacts on land use due to the existing industrial nature of the Lambertville Compressor Station that would not be expanded as a result of the

Project. Although construction of the PennEast Project and the Creekside Preserve Project would likely overlap in construction schedule and geographic scope with the proposed Project, operation of the proposed Project would not result in permanent impacts on land use. Therefore, the Project would not contribute cumulatively to impacts on land use and is not evaluated further.

Air Quality

The proposed Project would result in short-term and long-term impacts on air quality as a result of construction and operation, respectively, in the vicinity of the Project, as discussed in section B.8. Construction of the PennEast Project and the Creekside Preserve Project likely overlap in construction schedule as well as geographic scope with the proposed Project. Construction of these projects, including the proposed Project, would involve the use of heavy equipment that would generate emissions of air pollutants and fugitive dust. Construction equipment emissions would result in short-term emissions that would be highly localized, temporary, and intermittent. In order to mitigate fugitive dust emissions, Texas Eastern would implement dust control measures, such as wetting access roads and construction areas. The PennEast Project (also a FERC-jurisdictional project) would also employ common construction practices, such as wetting access roads and construction areas, to mitigate dust. It is unknown if the Creekside Preserve Project developer would employ dust control measures; however, it is generally a common best management practice for construction sites. Given the mitigation measures that would be implemented on the proposed Project and the PennEast Project, and the temporary and intermittent nature of construction-related emissions, the proposed Project would not result in significant cumulative impacts on air quality during construction.

Three projects identified in table 13 (the PennEast Project, Garden State Expansion Project, and the Northeast Supply Enhancement Project) would also contribute cumulatively to impacts on regional air quality during project operation. Section B.8 summarized the results of the model that was used to determine the air quality impacts of the proposed Project modifications as well as the additional ancillary sources of the PennEast Project within the Lambertville Compressor Station. Table 10 indicates that the Project, in addition to the components of the PennEast Project, would not cause or significantly contribute to a degradation of ambient air quality and would result in continued compliance with the NAAQS. The Garden State Expansion Project and the Northeast Supply Enhancement Project would also result in the operation of new compressor stations that would impact regional air quality. However, both of these projects are FERC-jurisdictional projects that also went through state-level air quality permitting, which would require modeling that shows that the projects would not result in a degradation in air quality or an exceedance of the NAAQS. Given that the proposed Project would result in a 83.7 percent decrease in NO₂, which is typically the criteria pollutant that is closest to exceeding the NAAQS, and due to the distance to the nearest

proposed projects (10 miles), the proposed Project is not anticipated to result in significant cumulative impacts on air quality during operation.

Noise

Construction of the Project would result in short-term and permanent impacts on existing noise levels in the Project area. Construction of the Project may occur concurrently with construction of the PennEast Project and the Creekside Preserve Project, and would contribute cumulatively to impacts on noise levels. However, based on the short-term and temporary nature of construction-related activities, impacts from the Project are not expected to significantly contribute to cumulative impacts on noise levels during construction.

The PennEast Project may result in impacts on noise levels during operation due to operation of launcher site, mainline block valve, or the interconnects. The PennEast Project and the proposed Project may contribute cumulatively to noise impacts in the general vicinity of the Lambertville Compressor Station. However, the proposed Project may result in an overall decrease in noise during operation due to the abandonment and removal of existing compressor units and replacement with more modern compressor units at the Lambertville Compressor Station. Therefore, operation of the Project may beneficially contribute to a reduction in cumulative impacts on noise levels in the Project vicinity.

We conclude that the temporary and permanent direct and indirect impacts from construction and operation of the Project, when combined with the effects of projects in the geographic scope shown in table 13 would not result in any significant cumulative impacts on the specific resources discussed above.

C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, system alternatives, and site alternatives. The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same general workspace requirements.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose for the Project cannot be considered as an acceptable replacement for the Project. The second evaluation criteria is feasibility and practicality. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique, or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., significant environmental advantage over the proposed Project). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results

in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

C.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, Texas Eastern would not construct or operate the Project and none of the impacts associated with the Project would occur. However, the Project objectives of providing 60 million cubic feet per day of natural gas to two local New Jersey utilities due to growing demand would not be met. Additionally, Texas Eastern would not be able to meet the New Jersey RACT regulations to reduce NO₂ emissions through the replacement of the two existing Clark turbine engines. The no-action alternative would not meet the Project's purpose and need, and would not result in lower NO₂ emissions. Therefore, we have dismissed this alternative as a reasonable alternative to meet the Project objectives

C.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. System alternatives must provide the same capacity (i.e., 60 million cubic feet of natural gas per day) to the Project shippers as the proposed Project. Texas Eastern evaluated expanding its existing 42-inch-diameter Line 38 pipeline system for about 1.5 miles as a potential alternative to the proposed Project. However, this alternative would not reduce emissions to meet the New Jersey RACT regulations. Therefore, because this alternative would not meet all Project objectives, it was eliminated from further consideration.

C.3 SITE ALTERNATIVES

Texas Eastern evaluated two alternative sites within the footprint of the Lambertville Compressor Station, one in the southwest corner and one to the east near the facility entrance. The proposed southwest location would have required the relocation and replacement of the existing microwave tower. Texas Eastern dismissed the southwest alternative due to the lengthy regulatory process required for new microwave towers. Texas Eastern dismissed the east alternative due to the presence of the facility septic system and the proximity to a nearby ephemeral waterbody and wetlands. Because all disturbed areas of the Project that would remain permanently impacted would occur within the already disturbed footprint of the existing compressor station, additional locations for site alternatives were not evaluated. Therefore, because the impacts

associated with the proposed location are not significant, we did not evaluate site alternatives further.

C.4 CONCLUSION

We received a comment from the EPA regarding the need to evaluate alternatives to the proposed Project, including alternatives not within the jurisdiction of FERC. We reviewed alternatives to Texas Eastern's proposal based on our independent analysis. Although alternatives appear to be technically feasible, no system, or site facility alternatives provide a significant environmental advantage over the Project design. Therefore, we conclude that the proposed Project 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 EA, 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 measures; and
 - d. receive approval in writing from the Director of OEP **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 or abandonment activities**, 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 Project figures. **As soon as they are available, and before the start of construction**, Texas Eastern shall file with the Secretary any revised detailed survey maps/figures 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 Project figures.

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 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 figures and aerial photographs identifying all 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/figures/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to extra workspaces allowed by the Commission's 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 resource mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individuals landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of this authorization and before construction or abandonment begins**, Texas Eastern shall file an

Implementation Plan with the Secretary for review and written approval by the Director of the OEP. Texas Eastern must file revisions to the plan as schedules change. The plan shall identify:

- a. how Texas Eastern would 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 would 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 per facility, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instruction Texas Eastern would 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 would follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for:
 - i. the completion of all required surveys and reports;
 - ii. the environmental compliance training of onsite personnel;
 - iii. the start of construction; and
 - iv. the start and completion of restoration.

7. Texas Eastern shall employ at least one EI. The EI 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. a full-time position, separate from all other activity inspectors;

- e. 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
 - f. 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 **monthly basis until all construction and restoration activities are complete**. On request, these status reports would also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Texas Eastern's 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 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 **before commencing construction or abandonment 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 **before placing the Project into service**. Such authorization would only be granted following a determination that rehabilitation and restoration of the 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 and abandoned 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 or abandonment activities**, Texas Eastern shall file with the Secretary, for review and written approval by the Director of the OEP, a site-specific plan to manage disturbed soils in the previously remediated areas at the Lambertville Compressor Station, developed in consultation with the NJDEP and in compliance with applicable regulations.

13. **Prior to construction or abandonment activities**, Texas Eastern shall consult with the NJDEP regarding appropriate groundwater containment and disposal guidelines and practices, and file the results of this consultation, along with any proposed mitigation measures, with the Secretary, for review and written approval by the Director of the OEP.

14. Texas Eastern shall file with the Secretary noise surveys for the Lambertville Compressor Station **no later than 60 days** after placing the modified station into service to verify that the noise from the existing and proposed new equipment operated at full power load condition does not exceed the previously existing noise levels that are at or above an L_{dn} of 55 dBA at nearby NSAs, and that the noise attributable to the operation of the new units at full power load condition does not exceed an L_{dn} of 55 dBA at any nearby NSAs. If a full power load condition noise survey is not possible, Texas Eastern should file an interim survey at the maximum possible power load **within 60 days** of placing the modified station into service and file the full power load survey **within 6 months**. If the noise from all the equipment operated at full power load condition exceeds the previously existing noise levels or if the total noise attributable to operation of the new units at the station under interim or full power load conditions exceeds an L_{dn} of 55 dBA at any nearby NSA, Texas Eastern should:
 - a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;

- b. install additional noise controls to meet that level **within 1 year** of the in-service date; and
- c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary for review and written approval by the Director of OEP **no later than 60 days** after it installs the additional noise controls.

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Appendix A

State Rare Wildlife Species Potentially Present at the Project or within One Mile of the Project

State Rare Wildlife Species Potentially Present at the Project or within One Mile of the Project					
Species	Site-Based	Within 0.25 Mile	Within 1 Mile	State Status	Project Determination
Birds					
American Kestrel (<i>Falco sparverius</i>)	-	-	X	Threatened	Nests in tree cavities. The Project would not impact forested land; <i>Not affected.</i>
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	X	X	X	Endangered	Primarily feeds on fish and other aquatic animals and typically hunt for prey along large waterbodies. No large waterbodies at the Project and no nests observed during surveys. <i>Not affected.</i>
Black-throated Green Warbler (<i>Dendroica virens</i>)	-	X	X	Special Concern	Nests in woodlands. The Project would not impact forested land; <i>Not affected.</i>
Brown Thrasher (<i>Toxostoma rufum</i>)	-	X	X	Special Concern	Nests in thickets, hedgerows, forest edges, and overgrown clearings in deciduous forests, none of which would be impacted; <i>Not affected.</i>
Cooper's Hawk (<i>Accipiter cooperii</i>)	-	-	X	Special Concern	Nests in woodlands. The Project would not impact forested land; <i>Not affected.</i>
Great Blue Heron (<i>Ardea herodias</i>)	X	X	X	Special Concern	Forages in grasslands and agricultural fields, along with freshwater and saltwater habitats. Could forage in ATWS. Abundant foraging habitat surrounding the Project area. No permanent impacts outside of the existing compressor station fence line and the ATWS would be revegetated. <i>Not adversely affected.</i>
Red-shouldered Hawk (<i>Buteo lineatus</i>)	-	X	X	Endangered	Nests in woodlands. The Project would not impact forested land. <i>Not affected.</i>
Savannah Sparrow (<i>Passerculus sandwichensis</i>)	-	-	X	Threatened	Open habitats and breeds in agricultural fields, grasslands, upland meadows, airports, pastures, and vegetated landfills that ideally provide a mix of short and tall grasses, a thick litter layer, dense ground vegetation, and scattered shrubs, saplings, or forbs. Could forage in ATWS, but not ideal. Abundant foraging habitat surrounds Project area. No permanent impacts outside of existing compressor station fence line and the ATWS would be revegetated. <i>Not adversely affected.</i>
Veery (<i>Catharus fuscescens</i>)	-	X	X	Special Concern	Nests in woodlands. The Project would not impact forested land; <i>Not affected.</i>

State Rare Wildlife Species Potentially Present at the Project or within One Mile of the Project					
Species	Site-Based	Within 0.25 Mile	Within 1 Mile	State Status	Project Determination
Wood Thrush (<i>Hylocichla mustelina</i>)	-	X	X	Special Concern	Nests in woodlands. The Project would not impact forested land. <i>Not affected.</i>
MAMMALS					
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	X	X	X	N/A (Federally Threatened)	Roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Overwinters in caves and abandoned mines. <i>Not likely to adversely affect.</i>
Big Brown Bat (<i>Eptesicus fuscus</i>)	-	-	X	Tracked Species	Hunts for insects over water, in open forests, and along cliff sides. Day roosts typically in deciduous forests, and maternity colonies form beneath loose bark or in tree crevices. Hibernates in underground in caves and mines. No suitable habitat in Project area. <i>Not affected.</i>
REPTILES					
Eastern Box Turtle (<i>Terrapene carolina carolina</i>)	-	X	X	Special Concern	Occurs within a variety of habitats including open woodlands and meadows and typically found close to streams or ponds. The Project would result in temporary impacts on open uplands, with no impacts on wetlands or waterbodies; <i>Not adversely affected.</i>
INVERTEBRATES					
Cobblestone Tiger Beetle (<i>Cicindela marginipennis</i>)	X	X	X	Tracked Species	Inhabit riparian cobble bars and adjacent sand beaches, and larvae burrow in sand beneath, between, and behind cobbles. Project would not impact any riparian cobble bars or sand beaches. <i>Not affected.</i>
SIGNIFICANT WILDLIFE HABITAT					
Potential Vernal Pool Habitat	-	X	X	-	Field surveys did not identify vernal pools within Project workspaces. <i>Not affected.</i>