Office of

Energy Projects

March 2016

Dominion Transmission, Inc. **Docket No. CP15-492-000**

Leidy South Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20246
OFFICE OF ENERGY PROJECTS

In Reply, Refer To:
OEP/DG2E/Gas 3
Dominion Transmission, Inc.
Docket No. CP15-492-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this environmental assessment (EA) for the Leidy South Project proposed by Dominion Transmission, Inc. (DTI) in the above-referenced docket. DTI requests authorization to construct, install, own, operate, and maintain certain facilities located in Clinton, Franklin, and Centre counties, Pennsylvania; Frederick County, Maryland; and Loudoun and Fauquier counties, Virginia, to provide 0.155 billion cubic feet (BCF) per day of natural gas and firm transportation services in the Mid-Atlantic region to improve regional energy security, and to help meet the increasing demand for natural gas to fuel existing and new power generation facilities.

The EA assesses the potential environmental effects of the construction and operation of this 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.

DTI's Leidy South Project involves modifications to six existing DTI compressor stations in Clinton, Franklin, and Centre counties, Pennsylvania; Frederick County, Maryland; and Loudoun and Fauquier Counties, Virginia and construction of one new metering and regulating (M&R) station in Loudoun County, Virginia. Modifications would occur almost entirely on previously disturbed areas.

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; and other interested individuals and groups; newspapers and libraries in the project areas; and parties to this proceeding. 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 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 **April 29, 2016**.

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 (CP15-492-000) with your submission. The Commission encourages electronic filing of comments and has expert staff available to assist you at 202-502-8258 or efiling@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 Code of Federal Regulations [CFR] 385.214)[1]. Only intervenors have the right to seek

[1] See the previous discussion on the methods for filing comments.

rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in the 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 numbers excluding the last three digits in the Docket Number field (i.e., CP15-492-000). 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 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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ABBREVIATIONS AND ACRONYMS

9VAC5	Virginia Administrative Code Title 9 Agency 5
ACHP	Advisory Council on Historic Preservation
AQCR	Air Quality Control Region
ADP	Allegheny Defense Project
AMSL	above mean sea level
APE	area of potential effects
ATWS	additional temporary workspace
BCC	Birds of Conservation Concern
CAA	Clean Air Act of 1970
Certificate	Certificate of Public Convenience and Necessity
CCAN	Chesapeake Climate Action Network
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
COMAR	Code of Maryland Regulations
Commission	Federal Energy Regulatory Commission
dB	decibel
dBA	A-weighted decibel
Discovery Plans	Unanticipated Discoveries and Emergency Procedures Plans
DTI	Dominion Transmission, Inc.
EA	environmental assessment
EIs	environmental inspectors
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESD	emergency shutdown
°F	degrees Fahrenheit
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
hp	horsepower
kW	kilowatt
IPCC	Intergovernmental Panel on Climate Change
LCA	Landscape Conservation Area
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
M&R	metering and regulating
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources

Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
MHT	Maryland Historic Trust
MBTA	Migratory Bird Treaty Act
MMBTU/hr	million British thermal units per hour
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NNSR	Nonattainment New Source Review
NO_2	nitrogen dioxide
NOI	*Notice of Intent to Prepare an Environmental Assessment for the Proposed Leidy South Project, and Request for Comments on Environmental Issues*
NOVEC	Northern Virginia Electric Cooperative
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
NSPS	New Source Performance Standards
NSR	New Source Review
OTR	Ozone Transport Region
PAC	Pennsylvania Administrative Code
PADEP	Pennsylvania Department of Environmental Protection
PAFBC	Pennsylvania Fish and Boat Commission
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
PNDI	Pennsylvania Natural Diversity Inventory
ppm	parts per million
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
PSD	Prevention of Significant Deterioration
PTE	potential to emit
Secretary	Secretary of the Commission
SEI	significant emission increase
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide

SPCC Plan	Spill Prevention Containment and Countermeasure Plan
tpy	tons per year
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGCRP	United States Global Change Research Program
USGS	United States Geological Survey
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historic Resources
VOC	volatile organic compounds

SECTION A – PROPOSED ACTION

A.1 INTRODUCTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the environmental effects of the natural gas pipeline facilities proposed by Dominion Transmission, Inc. (DTI). We[2] prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA, Title 40 of the Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]), and with the Commission's implementing regulations under 18 CFR 380.

On May 15, 2015, DTI filed applications with the Commission in Docket No. CP15-492-000 for the Leidy South Project (Project) under section 7(c) of the Natural Gas Act (NGA) and part 157 of the Commission's regulations. DTI seeks to construct and operate natural gas facilities in Pennsylvania, Maryland and Virginia.

The EA is an important and integral part of the Commission's decision on whether to issue DTI a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

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

No federal or state agencies expressed interest in being a cooperating agency in this environmental review.

A.2 PURPOSE AND NEED

DTI has indicated that the purpose of the Leidy South Project is to provide 0.155 BCF per day of natural gas to the Mid-Atlantic region. The project's customers include Panda Stonewall, LLC (funded by Panda Power Funds); Virginia Power Services Energy Corp., Inc.; and Mattawoman Energy, LLC (funded by Panda Power Funds) (collectively referred to as the "Project Customers"). Panda Stonewall, LLC is proposing to build a 750-megawatt natural gas-fired combined-cycle electric generating power plant (the Panda Stonewall Power Project) located 4 miles south/southeast of Leesburg, Virginia, generating enough electricity to power up to 750,000 homes in the region. To provide the incremental natural gas and firm transportation service, DTI proposes to construct,

[2] "We," "us," and "our" refers to environmental staff of the Office of Energy Projects

install, own, operate, and maintain additional compression or appurtenant facilities at six of DTI's existing aboveground facilities in Pennsylvania, Maryland, and Virginia. In addition, DTI would construct, own, and operate a new M&R Station at the Panda Stonewall Power Project.

Under Section 7 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 bases its decisions on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

A.3 PROPOSED FACILITIES

The Project would involve the installation of new facilities and modification of existing facilities. DTI's proposed Leidy South Project would consist of the facilities described in the following sections. All project construction would take place within existing compressor station areas within DTI's or the Leidy Storage facility property boundaries. Leidy Storage is a partnership owned by DTI, Williams Pipeline, and Spectra Energy. The only exception is construction of the Stonewall M&R Station, which would occur within Panda Stonewall Power Project's property boundaries.

A.3.1 Compression Facilities

- Finnefrock Compressor Station (Clinton County, Pennsylvania).
  - Replace two Ingersoll-Rand units rated at 1,100 horsepower (hp) each with a Solar Taurus 70 compressor unit rated at approximately 10,915 hp with oxidation catalyst;
  - Install a discharge gas cooler;
  - Install a blowdown silencer;
  - Replace the existing 450-kilowatt (kW) generator with a new 555-kW natural gas-fueled generator;
  - Extend an existing compressor station building to house new equipment, with dimensions of approximately 75 feet by 39 feet by 35 feet;
  - Add approximately 1,300 feet of 30-inch discharge pipeline interconnecting with DTI's existing PL-1 pipeline on the DTI or partnership property;
  - Install a secondary control fence around the Finnefrock Compressor Station;
  - Increase stack height of two existing compressor engines;
  - Implement 3 gram/horsepower-hour NOx emission rate at adjacent Leidy Station; and
  - Install a secondary control fence around the adjacent Leidy Station.

- Chambersburg Compressor Station (Franklin County, Pennsylvania).
  - Install a Solar Mars 90 compressor unit rated at 13,220 hp with an oxidation catalyst;
  - Extend an existing compressor station building to house new equipment, with dimensions of approximately 65 by 65 by 25 feet;
  - Extend the existing auxiliary building approximately 40 by 20 by 20 feet;
  - Install a discharge gas cooler;
  - Install a blowdown silencer; and
  - Replace the existing boiler with a new 3.5 million British thermal units per hour (MMBTU/hr) boiler.
- Myersville Compressor Station (Frederick County, Maryland).
  - Install a Solar Mars 100 compressor unit rated at 15,900 hp with oxidation catalyst;
  - Install selective catalytic reduction systems to the existing and new compressor units, along with an aqueous ammonia pump, a 20,000-gallon and a 10,000-gallon aqueous ammonia storage tank, and two aqueous ammonia flow control unit skids;
  - Install a discharge gas cooler;
  - Install a blowdown silencer;
  - Extend an existing compressor station building to house new equipment, with dimensions of approximately 75 by 75 by 40 feet;
  - Replace the existing boiler with a new 5.25 MMBTU/hr boiler; and
  - Replace the existing generator with a 555-kW natural gas-fired generator.
- Leesburg Compressor Station (Loudoun County, Virginia).
  - Install an 8,000-hp electric motor driven compressor;
  - Rework two existing reciprocating engines;
  - Install a discharge gas cooler;
  - Extend the compressor station building with dimensions of approximately 50 by 30 by 40 feet;
  - Install multiple heaters; and
  - Install a power distribution and control building approximately 25 by 25 by 15 feet.

A.3.2 Other Facilities

In addition to the new compression at the facilities described above, the Project would:

- Install a suction filter/separator at the Centre Compressor Station in Centre County, Pennsylvania;
- Install a discharge gas cooler and filter/separator at Quantico Compressor Station in Fauquier County, Virginia; and

  .
- Construct, own, and operate a new M&R station, the Stonewall M&R Station in Loudoun County, Virginia). The M&R station would include: one 3 MMBtu/hr natural gas heater; a filter/separator; two ultrasonic meters; an M&R prefabricated metal building; and a dekatherm building (approximately 15 feet by 15 feet).

  The general location of the Project's facilities is shown in figure A-1.

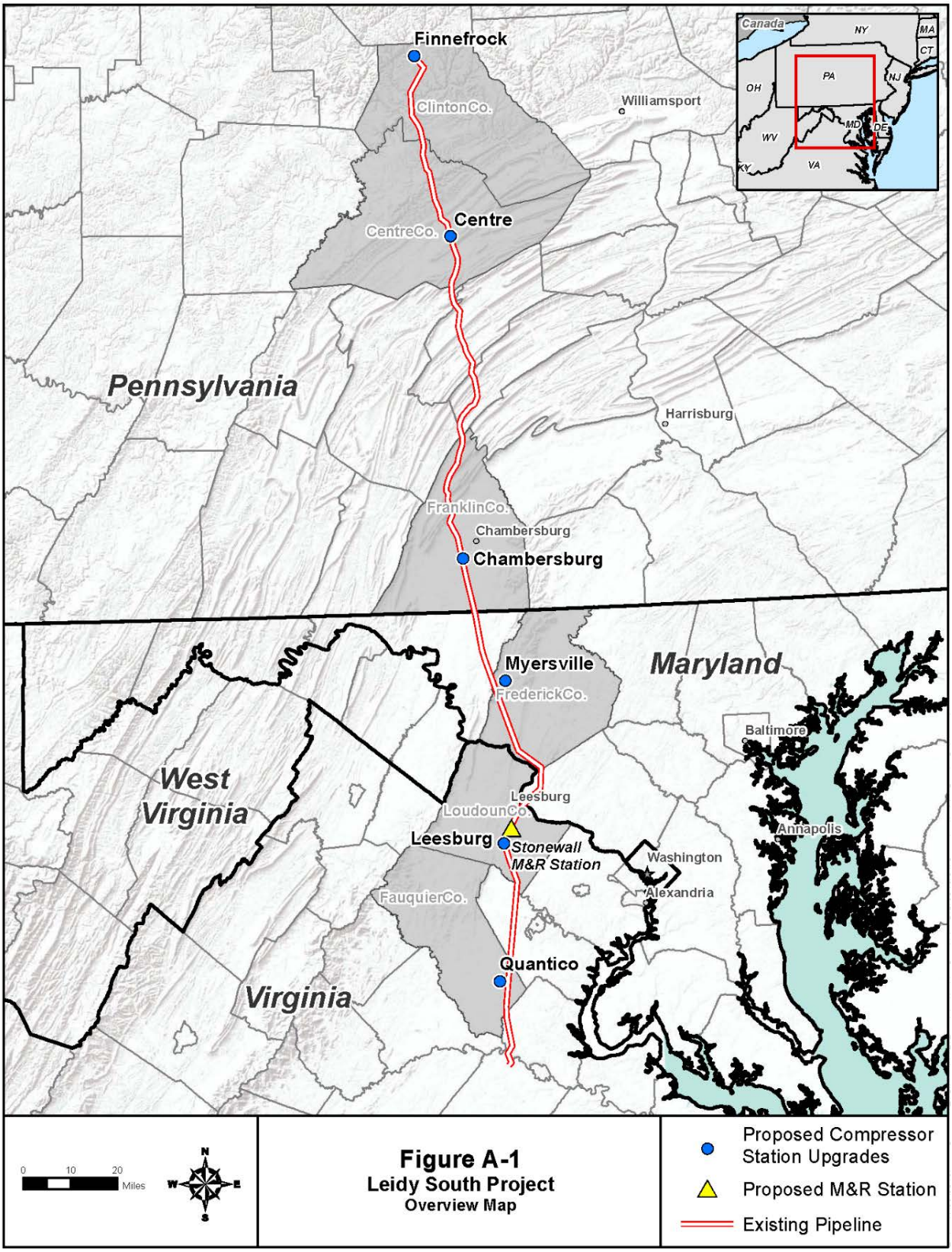

Figure A-1
Leidy South Project
Overview Map

A.4 NONJURISDICTIONAL FACILITIES

Nonjurisdictional facilities are those facilities that are related to the project for the purpose of delivering, receiving, or using the proposed natural gas volumes, and include facilities to be built and owned by other companies, that are not subject to the FERC jurisdiction.

Nonjurisdictional facilities may include laterals or other pipeline-related facilities that may be constructed to allow Project interconnections for the receipt or delivery of the Project's natural gas volumes or electric distribution systems that may be constructed to provide electricity or other services to the Project's facilities. Nonjurisdictional facilities associated with the Project are:

- construction of the Panda Stonewall Power Project, which is a 750-megawatt natural gas-fired combined-cycle electric generating power plant located 4 miles south/southeast of Leesburg, Virginia, generating enough electricity to power up to 750,000 homes in the region; and
- replacement of existing electric transmission line along 6 miles of existing right-of-way by the Northern Virginia Electric Cooperative (NOVEC) to provide additional electric service to the new electric compressor at the Leesburg Compressor Station.

These actions are not under the Commission's jurisdiction; however, in the EA we are providing the public and the Commission with the available information on the associated impacts in order to make a fully informed decision. We present the information with the cumulative impacts analysis in section B.9.

A.5 PUBLIC REVIEW AND COMMENT

On July 23, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Leidy South Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to federal, state, and local government representatives and agencies; elected officials; Native American tribes; environmental and public interest groups; newspapers and libraries in the project area; and parties to this proceeding. We received two comment letters in response to the NOI identifying specific areas of concern. The Allegheny Defense Project (ADP) stated that the Commission must consider connected, cumulative, and similar actions in this environmental review, including Tennessee Gas Pipeline Company's proposed Triad Expansion Project, the Lackawanna Energy Center, and the Panda Stonewall Power Project. Nonjurisdictional facilities and other projects in the area were considered by the Commission staff in the cumulative impacts section of this EA (see section B.9). The Triad Expansion Project and Lackawanna Energy Center were not within the cumulative impacts boundaries for any resource; therefore, they were not included in the cumulative analysis of this EA. ADP also stated that an Environmental Impact Statement would be

necessary rather than an EA and that the indirect effects of Marcellus and Utica shale gas drilling must be assessed. ADP further commented about the impacts of the likely increase in gas drilling in the Marcellus and Utica shale formations. ADP also expressed concerns over the increase in impervious surface and increased noise at the Finnefrock Compressor Station, as well as the resulting impacts on the sensitive ecological resources within and near the Tamarack Swamp Natural Area (TSNA), which is also an Important Bird Area. The Chesapeake Climate Action Network (CCAN) expressed concerns about (1) climate change impacts (direct and indirect), including the indirect effects related to gas drilling, processing, and combustion; (2) the need for a quantitative analysis of greenhouse gases (GHGs) from the Project (using a global warming potential for methane based on Intergovernmental Panel on Climate Change); and (3) consideration of alternatives, including renewable sources of energy.

Regarding ADP and CCAN's suggestions that the environmental document should address the indirect impacts of "development activities in the Marcellus and Utica shale formations", the action before the Commission, which necessitated the analysis in this EA, merely involves transportation facilities for identified sources of natural gas.

The environmental effects resulting from natural gas production are generally not caused by a proposed pipeline (or, in this case, other natural gas infrastructure) project. Typically, once production begins in an area, shippers or end users will support the development of a pipeline to move the produced gas. The ongoing development of the Marcellus shale, which is regulated by the states, continues to drive demand for takeaway interstate pipeline transmission facilities. Many production facilities have already been permitted and/or constructed in the region, creating a network through which natural gas may flow along various pathways to local users or the interstate pipeline system, including DTI's system.

Climate change is addressed in the cumulative impacts section of the EA. The analysis includes a quantitative discussion of the emissions from the Project but maintains the use of a methane global warming potential (GWP) of 25 because this maintains the consistency between this analysis and the basis for all emissions reporting currently compiled by the United States Environmental Protection Agency (EPA) and other agencies in the United States.

As stated previously, the purpose of the Project is to transport 0.155 BCF of additional natural gas to the Mid-Atlantic region. The generation of electricity from renewable energy sources is a reasonable alternative for a review of power generating facilities. Authorizations related to how the region will meet demands for electricity are not part of the application before the Commission and their consideration is outside the scope of this EA. Therefore, because the purpose of the Project is to transport natural gas, and the generation of electricity from renewable energy sources or the gains realized from increased energy efficiency and conservation are not transportation alternatives, they are not considered or evaluated further.

We also received a comment letter from Pennsylvania Department of Environmental Protection (PADEP) in response to our February 24, 2016 Notice of Schedule summarizing potentially applicable DEP-administered permits/authorizations and certifications, including: (1) a Pennsylvania Water Quality Certification (pursuant to section 401 of the Clean Water Act); (2) a National Pollution Discharge Elimination System (NPDES) discharge permit for hydrostatic test water; (3) Chapter 102 Erosion and Sediment Control General Permits; (4) Chapter 105 Water Obstruction and Encroachment Permits; (5) Air Plan Approvals/Operating Permits; (6) conditions of permits that may include further studies/monitoring to prevent adverse water quality impacts or operation and maintenance requirements to ensure compliance with applicable permits; (7) Subpart M of Title 40 Part 61 of the Code of Federal Regulations (40 CFR 61) related to asbestos-containing materials; (8) Pennsylvania Administrative Code (PAC), Title 25, Sections 123.1 and 123.2 related to construction activities; (9) and proper transport and disposal of construction and demolition waste – open burning is not acceptable.

Any of the aforementioned permits/approvals that would be required for the Project are addressed in the EA. Water resources are addressed in section B.3 and air quality is addressed in section B.7.1. The Project would not require a Pennsylvania Water Quality Certification because there would be no planned discharge. NPDES discharge permits would not be required for hydrostatic test water because DTI would truck all test waters to a permitted treatment facility after the testing is completed. The status of Chapter 102 Erosion and Sediment Control General Permits are summarized in Appendix A. A Water Obstruction and Encroachment Permit would not be required because the Project would not occur in or encroach upon any surface water. DTI has applied for Air Plan Approvals for the modifications at the Finnefrock and Chambersburg compressor stations. The status of these permits are included in Appendix A. Any conditions required by DTI in the applicable permits would need to be met in addition to any requirements established by the Commission. No demolition is proposed in this project; therefore, we do not anticipate DTI would encounter any asbestos-containing materials. However, if DTI were to encounter asbestos-containing materials during construction, applicable regulations, including Subpart M to 40 CFR 61 would need to be followed. PAC Title 25, Sections 123.1 and 123.2 are addressed in section B.7.1.1. No open burning has been identified for this project. All wastes (planned or unplanned) must be disposed of according to applicable state and federal regulations.

A.6 CONSTRUCTION, OPERATION, AND MAINTENANCE

DTI would construct, operate, and maintain the proposed Project in compliance with all applicable federal and state permit requirements, regulations, and environmental guidelines. The key relevant federal regulations are those of the United States Department of Transportation (USDOT) under 49 CFR 192 – Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. These regulations

ensure adequate protection for the public and prevent natural gas facility accidents and failures.

DTI anticipates that construction of the Leidy South Project would begin during the summer of 2016 with an in-service date of October 1, 2017. DTI would construct the Leidy South Project consistent with guidelines and recommendation from the United States Army Corps of Engineers, United States Department of Agriculture, Natural Resources Conservation Service, Pennsylvania Department of Environmental Protection (PADEP) (for facilities in Pennsylvania), Maryland Department of the Environment (MDE) (for facilities in Maryland), Virginia Department of Environmental Quality (VDEQ) (for facilities in Virginia), and FERC, particularly FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures).[3] DTI does not currently propose any Erosion and Sedimentation Control (E&SC) Plan deviations from FERC's Plan and Procedures unless deviations of a more stringent nature from state NPDES permit conditions, or conditions from other permits are required. Prior to construction, DTI would also develop a general construction Spill Prevention Containment and Countermeasures (SPCC) Plan to minimize sediment outside of the project area and ensure proper handling of lubricants, fuel, or other potentially toxic materials and prevent spills. These plans would be developed and implemented in compliance with the requirements of the jurisdictional agencies.

During construction, DTI would clear and grade the sites for the aboveground facilities. Erosion control devices would be installed as needed to prevent erosion and offsite impacts in accordance with the FERC's Plan and Procedures and applicable state permit requirements. Access to the aboveground facilities would be provided by existing access roads. After construction, all temporary workspaces would be revegetated in accordance with the FERC's Plan and Procedures.

DTI would use up to four full-time environmental inspectors (EIs) that would be trained in, and responsible to ensure that construction of the Project complies with, the construction procedures and mitigation measures identified in the DTI's applications, the FERC Certificates, other environmental permits and approvals, and environmental requirements in landowner easement agreements. EIs would have peer status with all other activity inspectors, and have the authority to stop activities that violate the environmental conditions of the FERC Certificate, other permits, or landowner requirements, and to order the appropriate corrective action. The EIs would also be responsible for maintaining status reports and training records. The EIs would also be responsible for advising the chief construction inspector when conditions (such as wet weather) make it advisable to restrict construction activities.

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[3] The Plan and Procedures include best management practices for pipeline facility construction to minimize resource impacts. Copies of the Plan and Procedures may be accessed on our website (http://www.ferc.gov/industries/gas/enviro/guidelines.asp).

DTI would conduct training sessions in advance of construction to ensure that all contractor and DTI personnel working on the Project are familiar with the environmental mitigation measures appropriate to their jobs.

A.7 CONSTRUCTION SCHEDULE

Construction is anticipated to commence during the summer of 2016 and is expected to last for approximately 17 months. DTI intends to place Project facilities in-service by October 1, 2017.

A.8 FUTURE PLANS AND ABANDONMENT

DTI has no definitive plans for expansion or abandonment of the Project facilities. Future expansions or abandonment activities would require new, separate applications to the FERC.

A.9 LAND REQUIREMENTS

Construction of DTI's Leidy South Project would temporarily impact 151.6 acres of land during construction, and of this, 39.2 acres would be permanently affected by operation of the proposed facilities. The activities at the existing aboveground facilities would occur entirely within the property boundaries of those facilities. The Stonewall M&R Station would occur within the Panda Stonewall Power Project property boundary.

Table A-1 indicates the amount of impact that would occur at each site.

Table A-1 – Land Affected By Construction and Operation of Proposed Project			
Facility	**County, State**	**Land Affected by Construction (acres)**	**Land Affected by Operation (acres)**
Finnefrock	Clinton County, PA	61.3	10.9
Chambersburg	Franklin County, PA	16.6	5.1
Myersville	Frederick County, MD	11.8	6.0
Leesburg	Loudoun County, VA	20.0	8.2
Centre	Centre County, PA	5.8	4.4
Quantico	Fauquier County, VA	10.1	3.9
Stonewall	Loudoun County, VA	26.0	0.7
Total		151.6	39.2

A.10 PERMITS, APPROVALS, AND REGULATORY CONSULTATIONS

DTI would obtain all necessary permits, licenses, clearances, and approvals related to construction and operation of the Leidy South Project, respectively. The company would provide all relevant permits and approvals to the contractor, who would be required to adhere to applicable conditions. The table in Appendix A summarizes the major anticipated federal, state and county permits for the Leidy South Project.

SECTION B – ENVIRONMENTAL ANALYSIS

Construction and operation of the Project would have temporary, short-term, long-term, and permanent impacts. As discussed throughout this EA, temporary impacts are defined as occurring only during the construction phase. Short-term impacts are defined as lasting between two and five years. Long-term impacts are defined as lasting five years or more. Permanent impacts are defined as lasting throughout the life of the Project. We use the term "Project area" to characterize the geographic scope of direct impacts caused by construction and operation of the proposed facilities. Direct and indirect impacts that may occur are discussed within in each resource subsection and cumulative impacts are included in section B.9.

B.1 GEOLOGY

B.1.1 Geologic Setting

The Finnefrock Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Deep Valleys Section of the Appalachian Plateaus Physiographic Province in Clinton County, Pennsylvania. The section is characterized by very deep, steep-sloped valleys separated by narrow, flat to sloping uplands. The incised valleys can be more than 1,000 feet deep, with steep slopes up to 33 degrees (PADCNR, 2000). The elevation of the Province is between 560 to 2,560 feet above mean sea level (AMSL) and the elevation at the Finnefrock Compressor Station ranges from 1,738 to 1,778 feet AMSL. The bedrock beneath the Finnefrock Compressor Station is comprised of sandstone and siltstone of the Devonian Catskill Formation (Miles and Whitfield, 2001).

The Chambersburg Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Great Valley Section of the Ridge and Valley Physiographic Province in Franklin County, Pennsylvania. The section is characterized by a very broad lowland with gently rolling hills on the north side of the valley eroded into shales and siltstones and a flatter landscape with a lower elevation on the south side of the valley developed on limestone and dolomite. The south side of the valley exhibits some karst topography. Local relief on the north side of the valley may be up to 300 feet and generally less than 100 feet on the south side of the valley (PADCNR, 2000). The elevation of the province is between 140 to 1,100 feet AMSL and the elevation of the Chambersburg Compressor Station ranges from 678 to 726 feet AMSL. The bedrock beneath the Chambersburg Compressor Station is comprised of greywacke and shale of the Ordovician Martinsburg Formation (Miles and Whitfield, 2001).

The Myersville Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Northern Blue Ridge Section of the Blue Ridge Physiographic Province in Frederick County, Maryland. The section is characterized by an anticlinal fold with two prominent ridges (South Mountain and

Catoctin Mountain) formed by Cambrian quartzite of the Chilhowee Group, with a valley floor underlain by a Precambrian gneiss and metamorphosed volcanic rocks (Reger and Cleaves, 2008). The elevation at the Myersville Compressor Station ranges from 543 to 604 feet AMSL. The bedrock beneath the Myersville Compressor Station is comprised of the Catoctin Metabasalt Formation (Maryland Geological Survey, 2003).

The Leesburg Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Mesozoic Lowlands Subprovince of the Piedmont Physiographic Province in Loudoun County, Virginia. The subprovince is characterized by moderate relief and low slopes underlain by Mesozoic sedimentary and igneous rocks (Roberts and Bailey, 2000). The elevation of the subprovince ranges from 200 to 450 feet AMSL and the elevation of the Leesburg Compressor Station ranges from 400 to 449 feet AMSL. Due to the humid climate in the Piedmont Province, a layer of saprolite typically between 6 to 66 feet thick covers the bedrock (College of William and Mary, Department of Geology, n.d.). The bedrock beneath the Leesburg Compressor Station is comprised of a cyclically interbedded sandstone, siltstone, and conglomerate of the Catharpin Creek Formation (United States Geological Survey [USGS], 2007).

The Centre Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Appalachian Mountain Section of the Ridge and Valley Physiographic Province in Centre County, Pennsylvania. The section is characterized by numerous, long, narrow mountain ridges separated by narrow to wide valleys. Ridge tops are several hundred feet higher than those in the adjacent valley, with some ridges differing by more than 1,000 feet (PADCNR, 2000). The bedrock beneath the Centre Compressor Station is comprised of limestone of the Ordovician Benner Formation (USGS, 2007). The elevation of the section range from 440 to 2,775 feet AMSL and the elevation of the Centre Compressor Station ranges from 1,041 to 1,069 feet AMSL.

Planned excavations at the Finnefrock, Chambersburg, Myersville, Leesburg, and Centre Compressor Stations are expected to range between 4 and 10 feet in depth. The depth to bedrock is anticipated to be less than 10 feet below ground surface; however, DTI would use mechanical rock breaking equipment and would not utilize blasting during construction of the Project if bedrock is encountered.

The Quantico Compressor Station upgrades would be within the footprint of the existing compressor station, which is located in the Mesozoic Lowlands Subprovince of the Piedmont Physiographic Province in Fauquier County, Virginia. The subprovince is characterized by moderate relief and low slopes underlain by Mesozoic sedimentary and igneous rocks (Roberts and Bailey, 2000). Due to the humid climate in the Piedmont Province, a layer of saprolite typically between 6 to 66 feet thick covers the bedrock (College of William and Mary, Department of Geology, n.d.). The bedrock beneath the Quantico Compressor Station is comprised of interbedded siltstone and shale of the Newark Supergroup (USGS, 2005). The elevation of the subprovince ranges from 200 to

450 feet AMSL and the elevation of the Quantico Compressor Station ranges from 400 to 449 feet AMSL.

The Stonewall M&R Station is located in the Mesozoic Lowlands Subprovince of the Piedmont Physiographic Province in Loudoun County, Virginia. The subprovince is characterized by moderate relief and low slopes underlain by Mesozoic sedimentary and igneous rocks (Roberts and Bailey, 2000). Due to the humid climate in the Piedmont Province, a layer of saprolite typically between 6 to 66 feet thick covers the bedrock (William and Mary, Department of Geology, n.d.). The bedrock beneath the Stonewall M&R Station is comprised of sandstone and siltstone of the Balls Bluff Formation, with much of the Project area situated above a diabase sheet and dikes (USGS, 2007). The elevation of the subprovince ranges from 200 to 450 feet AMSL and the elevation of the Stonewall M&R Station ranges from 340 to 360 feet AMSL.

Based on the limited ground disturbance at the Finnefrock, Chambersburg, Myersville, Leesburg, Centre, and Quantico Compressor Stations and Stonewall M&R Station sites, the Project would result in minimal impact on geologic resources. Modifications to the Project facilities occur within areas that have been previously disturbed. Site clearing, grading, excavation, and other construction activities are not significant enough to result in changes to the existing geologic conditions in the Project area. Implementation of erosion and sediment controls and restoring the construction work areas to original contours would further prevent impacts on geologic resources. DTI's adherence to the measures contained in FERC's Plan and Procedures would ensure that all disturbed areas at these sites are adequately restored following construction.

B.1.2 Mineral Resources

No mining operations were identified within 0.25 mile of the Finnefrock, Chambersburg, Myersville, Leesburg, Centre, and Quantico Compressor Stations and Stonewall M&R Station sites (Pennsylvania Geological Survey, 2011; MDE, 2013; Virginia Department of Mines, Minerals, and Energy [VADMME], 2015a). No oil and gas wells are located within 1 mile of the Project compressor station locations (MDE, 2013; PADEP, 2015; VADMME, 2015b).

B.1.3 Paleontological Resources

The Project area has a very low potential for discovering significant paleontological resources. The Project area has been previously disturbed and the extent of ground disturbance associated with proposed construction activities is minimal. For these reasons, we find that the Project would not significantly impact paleontological resources.

B.1.4 Geologic Hazards

B.1.4.1 Earthquakes

Historical earthquake records for Centre, Clinton, and Franklin counties, Pennsylvania; Frederick County, Maryland; and Loudoun County, Virginia show no active or inactive surficial Holocene age faults near the Finnefrock, Chambersburg, Myersville, Leesburg, Centre, and Quantico compressor stations and Stonewall M&R Station sites (USGS, 2011).

The peak horizontal acceleration near the Finnefrock, Chambersburg, and Centre Compressor Stations is not anticipated to be more than 4 to 6 percent of gravity, with a 2 percent chance of exceedance in 50 years. The peak horizontal acceleration near the Myersville, Quantico, and Leesburg Compressor Stations and near the Stonewall M&R Station is not anticipated to be more than 6 to 10 percent of gravity, with a 2 percent chance of exceedance in 50 years (Peterson et al., 2014.

According to USGS seismic hazard mapping data (Peterson et al., 2014), it is unlikely that a "major" earthquake of a magnitude that would cause severe or even mildly severe structural damage would occur in central Pennsylvania, northeastern Virginia, or central Maryland in the next 20 to 50 years. Based on the unlikelihood of a major earthquake in the vicinity of the Project facilities, the potential for soil liquefaction is low.

B.1.4.2 Landslides

According to the USGS Digital Representation of Landslide Overview Map of the Conterminous United States (compiled by Radbruch-Hall et al., 1982), the Chambersburg, Leesburg, and Quantico Compressor Stations and the Stonewall M&R Station sites have low landslide incidence rates, and the Finnefrock, Myersville, and Centre compressor station sites have a moderate landslide incidence rate (USGS, 2005). Based on the low to moderate incidence rates, the existing flat terrain of the Project area, and the minimal ground disturbance and earth movement required for the Project, we conclude that there is a low likelihood of landslide hazards impacting the Project.

No blasting is anticipated during construction at the Finnefrock, Chambersburg, Myersville, Leesburg, Centre, and Quantico Compressor Stations and Stonewall M&R Station sites. Planned excavation depths range between 4 and 10 feet. If bedrock is encountered during excavation, the friable to blocky nature of the bedrock would require mechanical rock breaking equipment, such as an excavator equipped with a hydraulic hammer, to break apart the bedrock to achieve the required excavation depth. If blasting is necessary, DTI would be required to file a blasting plan with the Commission prior to conducting such activities.

B.1.4.3 Karst Topography

According to the USGS (2005; 2007), the bedrock beneath the Finnefrock, Chambersburg, Myersville, and Quantico Compressor Stations and the Stonewall M&R Station do not support the formation of karst. USGS national-scale mapping indicates the presence of limestone formations beneath the Centre and Leesburg Compressor Stations can produce karst features. However, karst features have not been identified at or within 1,500 feet of the Centre Compressor Station (Davies et al., 1984). Regional-scale mapping (USGS, 2007) and local information indicates that the Leesburg Compressor Station is underlain by Catharpin Creek Formation (clastic rock) and is located outside of the area with mapped sinkholes in Loudoun County (Loudoun County, 2007). The nearest karst feature is more than 5 miles away from the Leesburg Compressor Station.

B.1.5 Conclusions

Construction and operation of the proposed compressor station modifications and M&R station would not occur within areas of known geologic hazards, nor is the Project itself anticipated to cause geologic hazards. Implementation of the FERC's Plan and Procedures during construction and operation of the Project would minimize or eliminate any significant impacts on geologic resources in the Project area.

B.2 SOILS

The Finnefrock Compressor Station area includes the Ungers, Hustontown, Hazleton-Laidig, Atkins, and Hazleton-Clymer Channery soil series. The Ungers and Hustontown series are deep and moderately well drained to well drained, ranging from 3 to 8 percent slopes. Ungers series has a low potential for water and wind erosion. The Hustontown series has a moderate-low potential for water and wind erosion. The Hazleton-Laidig series and Ungers-Meckesville complex are extremely stony, well drained, and very deep, ranging from 25 to 50 percent slopes. The Hazleton-Laidig series has a low potential for water and wind erosion. The Ungers-Meckesville complex has a moderate-low potential for water erosion and a low potential for wind erosion. The Atkins series is poorly drained and very deep, ranging from 0 to 3 percent slopes, and has a moderate potential for water erosion and a low potential for wind erosion. The Hazleton-Clymer Channery series is extremely stony, deep, and very well drained, ranging from 8 to 25 percent slopes, and has a low potential for water and wind erosion. Ungers and Hustontown series are prime farmland and Atkins series is a soil of statewide importance. Construction activities such as site clearing, grading, and excavation could result in soil erosion, sedimentation, and compaction in localized areas. During construction, approximately 61.3 acres of land would be affected, with all permanent impacts occurring within areas previously affected by the existing facility.

The Chambersburg Compressor Station area includes the Weikert Channery, Bedington Channery, and Blairton Channery soil series. There are three different classes of Weikert channery silt loam found within the Project area, based on amount of channery and differences in slope: Weikert channery silt loam (15 to 25 percent slope), Weikert very channery silt loam (8 to 15 percent slope), and Weikert very channery silt loam (15 to 25 percent slope); all are shallow and well to somewhat excessively drained. Weikert channery silt loam (15 to 25 percent slope) and Weikert very channery silt loam (8 to 15 percent slope) have a low potential for water and wind erosion. Weikert very channery silt loam (15 to 25 percent slope) has a high potential for water erosion and a low potential for wind erosion. There are two classes of Bedington channery silt loam found within the Project area, based on differences in slope: Bedington channery silt loam (3 to 8 percent slope) and Bedington channery silt loam (8 to 15 percent slope); both are very deep and well drained. Both classes of Bedington Channery have a low potential for water and wind erosion. The Blairton Channery series is moderately well drained and moderately deep, ranging from 3 to 8 percent slope, and has a low potential for water and wind erosion. Bedington channery silt loam series (3 to 8 percent slope) is prime farmland, and Bedington channery silt loam (8 to 15 percent slope) and Blairton channery silt loam (3 to 8 percent slope) are soils of statewide importance. During construction, approximately 16.6 acres of land would be affected, with all permanent impacts occurring within areas previously affected by the existing facility. Approximately 11.1 acres of the Project area are currently in row crop agriculture

production, most of which would be returned to agricultural use upon construction completion.

The Myersville Compressor Station includes the Myersville, Catoctin-Spoolsville Complex, Catoctin-Highfield Complex, and Mt. Zion soil series. There are two classes of Myersville silt loam found within the Project area, based on differences in slope: Myersville silt loam (3 to 8 percent slope) and Myersville silt loam (8 to 15 percent slope); both are deep and well drained. Myersville silt loam (3 to 8 percent slope) has a low potential for water and wind erosion. Myersville silt loam (8-15 percent slope) has potential for water erosion and a low potential for wind erosion. The Catoctin-Spoolsville Complex is well drained and deep, ranging from 15 to 25 percent slopes, and has potential for water erosion and low potential for wind erosion. The Catoctin-Highland Complex is well drained and deep, ranging from 25 to 45 percent slopes, and has a very high potential for water and wind erosion. The Mt. Zion Series is moderately well drained and deep, ranging from 3 to 8 percent slopes, and has a low potential for water and wind erosion. Myersville silt loam (3 to 8 percent slopes) is prime farmland and Myersville silt loam (8 to 15 percent slopes) is a soil of statewide importance; however, these soils are located within property occupied by existing compressor station facilities and precluded from future agricultural use. During construction, approximately 11.8 acres of land would be affected, with all permanent impacts occurring within areas previously affected by the existing facility.

The Leesburg Compressor Station includes the Leedsville, Manassas, and Albano soil series. There are two classes of Leedsville cobbly silt loam found within the Project area, based on differences in slope: Leedsville cobbly silt loam (2 to 7 percent slopes) and Leedsville cobbly silt loam (7 to 15 percent slopes); both are very deep and well drained. Leedsville cobbly silt loam (2 to 7 percent slopes) has a low potential for water and wind erosion. Leedsville cobbly silt loam (7 to 15 percent slopes) has a high potential for water erosion and a low potential for wind erosion. The Manassas series is moderately well drained and very deep, ranging from 0 to 7 percent slopes and a low potential for water and wind erosion. The Albano series is poorly drained and deep, ranging from 0 to 2 percent slopes, and has potential for water erosion and low potential for wind erosion. Manassas silt loam (2 to 7 percent slopes) is prime farmland, and Leedsville cobbly silt loam (2 to 7 percent slopes) and Leedsville cobbly silt loam (7 to 15 percent slopes) are soils of statewide importance; however, these soils are located within property occupied by existing compressor station facilities and precluded from future agricultural use. During construction, approximately 20.0 acres of land would be affected, with all permanent impacts occurring within areas previously affected by the existing facility.

The Centre Compressor Station includes Opequon-Hagerstown Complex and Hagerstown soil series. The Opequon-Hagerstown Complex is well drained and shallow, ranging from 3 to 8 percent slopes, and has a low potential for water and wind erosion. The Hagerstown series is well drained and deep to very deep, ranging from 3 to 8 percent

slopes, and has a low potential for water and wind erosion. Hagerstown silt loam (3 to 8 percent slopes) is prime farmland and Opequon-Hagerstown complex (3 to 8 percent slopes) is a soil of statewide importance; however, these soils are located within property occupied by existing compressor station facilities and precluded from future agricultural use. During construction, approximately 5.8 acres of land would be affected, with all permanent impacts occurring within areas previously affected by the existing facility.

The Quantico Compressor Station includes Ashburn and Sowego soil series. The Ashburn series is moderately well drained and moderately deep, ranging from 2 to 7 percent slopes, and has a low potential for water and wind erosion. The Sowego soil series is moderately well drained and deep, ranging from 2 to 7 percent slopes, and has a low potential for water and wind erosion. Ashburn silt loam (2 to 7 percent slopes) is prime farmland. During construction, approximately 10.1 acres of land would be affected, with all permanent impacts occurring within areas previously permanently affected by the existing facility. Approximately 5.5 acres of the Project area is currently in row crop agriculture production, most of which would be returned to agricultural use upon completion of construction.

The Stonewall M&R Station includes Sycoline-Catlett Complex soil series. The Sycoline-Catlett Complex is moderately well drained and shallow to moderately deep, ranging from 7 to 15 percent slopes, and has a low to moderate potential for water erosion and a low potential for wind erosion. The Sycoline-Kelly Complex is somewhat poorly drained, shallow to moderately deep, ranging from 2 to 7 percent slopes, and has a moderate potential for water erosion and a low potential for wind erosion. Kelly silt loam is somewhat poorly drained, moderately deep to deep, ranging from 0 to 2 percent slopes, and has a moderate potential for water erosion and a low potential for wind erosion. Waxpool silt loam is poorly drained and occasionally ponded and deep, ranging from 0 to 2 percent slopes, and has a moderate potential for water erosion and a low potential for wind erosion. Albano silt loam is poorly drained, frequently flooded, and occasionally ponded, moderately deep to deep, ranging from 0 to 2 percent slopes, and has a moderate potential for water erosion and a low potential for wind erosion. During construction, approximately 26.0 acres of land would be affected. The impacts would occur within an area currently being disturbed by construction of the Panda Stonewall Power Project.

With the exception of the Stonewall M&R Station, proposed construction would occur on land that is owned by DTI (or by partnership entities with DTI). The Stonewall M&R Station would be constructed within an easement obtained from Panda Stonewall LLC. Of the proposed facilities involved with the Leidy South Project, only the Finnefrock Compressor Station has any known records for PCB soil contamination. Soils at this Finnefrock Compressor Station were investigated and remediated, as needed, pursuant to a 1990 Consent Order between DTI (formerly CNG Transmission, Inc.) and Pennsylvania Department of Environmental Protection (formerly PaDER). Assessment and remediation work was completed at the Finnefrock Compressor Station in the mid-

1990s. All actions under the Consent Order have been substantially completed as of December 31, 2001.

To minimize and prevent impacts on soil resources, DTI would implement and maintain erosion and sediment control measures consistent with the FERC's Plan and Procedures before and after construction. In the event that PCB contamination of soils or pipe is encountered, DTI has committed to, and is required to, follow the EPA PCB regulations at 40 Code of Federal Regulations 761 and Pennsylvania's Residual Waste Regulations (pertaining to low-level PCB contaminated materials below the Federal Toxic Substances Control Act action thresholds), as well as the Code of Maryland Regulations Title 26, Part 3, Subtitles 13 and 14 and Virginia Hazardous Waste Management Regulations under Chapter 60. When construction is complete, all disturbed areas would be graded to match the original contours and be prepared with either seed, mulch, asphalt, or rock cover to prevent erosion. Based on compliance with the previously described measures, impacts on soil resources from the Project would be adequately minimized.

B.3 WATER RESOURCES

B.3.1 Groundwater

There are no EPA sole source aquifers in the vicinity of DTI's Project area. There is one private well, used for domestic purposes, at the Chambersburg Compressor Station but it is located outside of the proposed construction area. No water wells or springs are present within 150 feet of the construction areas of the remaining Project facilities. No water wells or springs are present within 500 feet of the construction areas of the Centre and Leesburg Compressor Stations where karst topography may be present. No municipal or community water supply wells are located within 150 feet of any project activities at DTI's project areas. No Project facilities are located within wellhead protection areas.

Grindstone Run in Frederick County, Maryland has a designated use as a public water supply. The City of Myersville maintains a public water supply intake on Little Catoctin Creek, a tributary to Catoctin Creek and Grindstone Run, approximately 2.9 miles north (upstream) from the Myersville Compressor Station.

Based on a search of various state and federal environmental databases, no known groundwater contamination occurs at or within 0.25 mile of the Centre, Chambersburg, or Quantico Compressor Stations. Potential groundwater contamination was identified from eight releases within 0.25 mile of the Finnefrock, Leesburg, and Myersville Compressor Stations and the Stonewall M&R Station. Of these eight releases, six have been remediated. One of the remaining events, located at the Leesburg Compressor Station, involved visual detections of engine lubricating oil, used oil, and an unidentified product all released from aboveground storage tanks; however, whether groundwater contamination occurred has not been determined. The other event is a release of motor/lubricating oil in an open well located approximately 0.2 mile from the Myersville Compressor Station project area.

Additional groundwater from available water sources (e.g., municipal water) may be required during construction for fugitive dust suppression and hydrostatic testing of system components and equipment. Dewatering activities may be necessary to remove excess water from excavations during periods of excessive precipitation or a high water table. If dewatering locations are selected (that are not within or immediately adjacent to the construction workspace), they would be sited to minimize offsite impacts. Based on adherence to the FERC's Plan and Procedures and the volumes of groundwater that may be required for dewatering during construction, impacts on Grindstone Run or Catoctin Creek or any other groundwater users in the appropriation area would be sufficiently minimized.

Shallow groundwater could be vulnerable to contamination due to accidental spills of fuels, lubricants, and other petroleum products during construction activities; however,

it is unlikely that Project construction would result in contamination or significant groundwater impacts because the majority of construction would involve shallow, temporary, and localized excavation or grading. The depth to groundwater in the Project area would also be far below structure foundation or excavation depths, making groundwater contamination unlikely. In addition, DTI would prepare and submit to FERC an SPCC Plan prior to the start of construction. This plan would include spill avoidance measures as well as measures to contain and cleanup materials in the event of a release.

DTI would install protective measures around the private wellhead at the Chambersburg Compressor Station as necessary. Specifically, no earth moving, refueling, or hazardous liquids storage would occur within 150 feet of the private well. DTI would further minimize potential impacts to the well by implementing erosion control and water management practices consistent with the FERC's Plan and Procedures. The Project is not likely to have a significant impact on the private well at the Chambersburg Compressor Station. Should project activities cause damage to a supply well or impact supply well quality or quantity, DTI would supply temporary water until the supply well or system can be restored.

All Project components would be constructed in accordance with applicable government regulations, permits, and approvals. Erosion and sediment controls and stormwater management structures would be installed to prior to clearing and grading to protect groundwater resources. Following construction, temporarily disturbed areas would be revegetated to stabilize the soils and facilitate groundwater infiltration. In the event that soils become compacted, DTI would perform decompaction. Based on DTI's proposed minimization measures, acquisition of the appropriate local permits, and implementation and compliance with the FERC's Plan and Procedures, we find that the Project would not result in any significant long-term or permanent impacts on groundwater resources or users of groundwater in the Project area.

B.3.2 Surface Water

No waterbodies would be affected by the project. The Project sites are not located within any designated municipal watersheds, municipal reservoirs, or State Water Protections Areas. No surface waters within, adjacent to, or within the vicinity of six of the seven Project sites are listed as impaired (PADEP, 2014; MDE, 2015; and VDEQ, 2014). One surface water within the vicinity of the Leesburg Compressor Station is included on Virginia's 303(d) list of impaired waters (VDEQ, 2014). The Little River is located 0.75 mile from the Leesburg Compressor Station. Tributaries to the Little River, including Howsers Branch, are in closer proximity to the Leesburg Compressor Station than the Little River, but are not listed as 303(d) surface waters.

DTI would implement measures consistent with FERC's Plan and Procedures as well as its SPCC Plan to prevent secondary offsite impacts to adjacent waterbodies or

waterbodies in the vicinity of the Project sites. Given the fact that Project activities would not impact waterbodies and the protective measures proposed to prevent offsite erosion and sedimentation, we conclude that impacts to waterbodies would be sufficiently minimized, and would not be significant.

B.3.3 Hydrostatic Testing

DTI would hydrostatically test five of the seven Project sites. Two of the Project sites, Centre and Quantico Compressor Stations, would not require hydrostatic testing. Hydrostatic testing is completed to ensure the integrity of the newly installed facility piping. The facility piping would be filled with water and pressurized to the maximum allowable operating pressure. The pressure is monitored for several hours. If a drop in pressure is recorded, then the facility piping would be examined to determine if any leaks have occurred. DTI would obtain 661,500 gallons of water total from municipal sources for the five sites where hydrostatic testing would take place (see table B-1).

Table B-1 – Water Required for Hydrostatic Testing

Facility	Water Required (gallons)
Finnefrock Compressor Station	210,000
Chambersburg Compressor Station	150,000
Myersville Compressor Station	150,000
Leesburg Compressor Station	150,000
Centre Compressor Station	0
Quantico Compressor Station	0
Stonewall M&R Station	1,500

The hydrostatic test water would only be in contact with new pipe and chemical additives would not be used. DTI would haul away and dispose of the test water at an approved and permitted offsite treatment facility. The water would be sourced from municipal sources and therefore would not affect groundwater users in the Project area. For the reasons discussed above, we conclude that the hydrostatic testing of the Project would not have a significant impact on water resources.

B.3.4 Wetlands

Field surveys were conducted in 2014 and 2015. One wetland was identified at the Myersville Compressor Station, and no wetlands were identified at the other six Project sites. The identified wetland was categorized as a palustrine emergent wetland community. The proposed project area at the Myersville Compressor Station avoids the wetland by more than 100 feet and would not cause any impacts to the wetland.

No wetlands would be directly affected by the Project. DTI would implement best management practices consistent with FERC's Plan and Procedures as well as its SPCC Plan to prevent secondary offsite impacts to adjacent wetlands. These measures would include the installation of erosion control devices (such as mulch and erosion mats) and temporary sediment control barriers (such as silt fencing and hay/straw bales). As such,

we conclude that impacts to wetlands would be adequately minimized, and not be significant.

B.4 VEGETATION AND WILDLIFE

B.4.1 Vegetation

B.4.1.1 Existing Vegetation Resources

DTI identified existing vegetation resources during 2014 environmental field surveys in Pennsylvania following *Terrestrial & Palustrine Plant Communities of Pennsylvania 2nd Ed* (Zimmerman et al., 2012). Land cover in Maryland and Virginia was based on *The Natural Communities of Virginia: Classification of Ecological Community Groups* (Fleming and Patterson, 2013). Major upland cover types affected by the Project in Pennsylvania, Maryland, and Virginia include upland forest and open upland as summarized in table B-2.

Table B-2 – Upland Vegetation Cover Types Associated with the Project

Vegetation Community	General Description	Common Species
Pennsylvania		
Upland forest	Dry White Pine Oak Forest	Dominant trees observed in this forest type include eastern white pine and dry-site hardwoods such as chestnut oak, white oak, black oak, scarlet oak, and northern red oak. Other hardwoods that may be present include black gum, sweet birch, white ash, wild black cherry, and American chestnut.
Maryland		
Upland forest	Basic Mesic Hardwood Forest	Dominant trees observed in this forest type include tulip tree, white ash, and northern red oak, white oak, chestnut oak, red hickory, mockernut hickory, bitternut hickory, slippery elm, black-gum, American beech, and black walnut.
Virginia		
Upland forest	Low Elevation Dry and Dry-Mesic Forests and Woodlands	Forest type dominated by Virginia pine, pitch pine, shortleaf pine, chestnut oak, and blackjack oak.
	Northern Acidic Oak-Hickory Forest	Forest type dominated by northern red oak, white oak, and mockernut hickory. American beech, red maple, sugar maple, black gum, and American basswood.
Project-Wide		
Open upland	Non-forested, non-wetland habitats including agricultural lands and existing facilities.	Agriculture lands predominantly used for crop production or pasture/grazing (fallow fields). Existing compression facilities are mowed on a regular basis to suppress woody plant growth. Plant species commonly observed included various perennial cool grass species.

The compressor station, appurtenant, and M&R facilities would be constructed primarily in open upland vegetation cover types. Construction at these facilities would primarily be limited to the existing disturbed facility locations and fall within or immediately adjacent to the previously disturbed, graded, or graveled areas within the existing fence line of the facilities. Tree clearing would be necessary at four of the facilities for construction purposes, and a portion of the project areas would remain permanently cleared of trees for continued operation of the facilities.

Impacts to forest and open upland land cover types are summarized in table B-3.

Table B-3 – Upland Vegetation Affected by the Project (acres)

Facility	Vegetation Cover Type			
	Upland Forest		Open Upland	
	Construction[1]	Operation	Construction[1]	Operation
Finnefrock (PA)	4.0	0.1	57.3	10.4
Chambersburg (PA)	0.5[2]	0.0	16.2	4.8
Myersville (MD)	0.5	0.0	11.3	6.0
Leesburg (VA)	6.0	0.0	14.0	8.2
Centre (PA)	0.0	0.0	5.8	4.4
Quantico (VA)	0.0	0.0	10.1	3.9
Stonewall (VA)[3]	0.0	0.0	26.0	0.7
Project Totals	**11.0**	**0.1**	**140.7**	**38.4**

1 Construction acreages include temporary impacts and permanent (operation) impacts.
2 Trees associated with the Chambersburg facility are found in an agricultural hedgerow and did not conform to a specific natural community (Zimmerman et al., 2012).
3 Open upland areas associated with this facility are classified as previously disturbed and have been cleared and graded as part of an existing project.

B.4.1.2 General Impacts and Mitigation

Upland Forest

The greatest impact on vegetation would be on forested areas due to the length of time required for woody vegetation to attain its preconstruction condition. We received comments concerning the potential Project-related impacts on forest habitat including minimizing impacts to undisturbed forest and maintaining wooded lots to the fullest extent practicable. The construction process includes clearing the site of vegetation and grading the site as necessary for the construction of the compressor station modifications. Direct impacts would include the removal of trees and forest cover at the Finnefrock, Chambersburg, Myersville, and Leesburg compressor station sites, although not all forest within each Project area would be removed. Forest cover at the Chambersburg, Myersville and Leesburg facilities would only be removed in the additional temporary workspaces (ATWS) as necessary for vehicle use, staging areas, and laydown areas. The trees associated with the Chambersburg facility also do not conform to a natural community per *Terrestrial & Palustrine Plant Communities of Pennsylvania 2nd Ed* (Zimmerman et al., 2012), as they form an agricultural hedgerow. To minimize impacts

on upland forest, DTI would utilize other disturbed or maintained areas to the maximum extent practicable prior to clearing forested areas.

DTI would implement measures consistent with the FERC's Plan and Procedures to ensure restoration activities would take place immediately following the end of construction activities. Following construction, DTI would grade sites to match original contours and revegetate with seed mixes appropriate to the local conditions. All disturbed areas would be seeded in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or land management agency. In accordance with the FERC's Plan and Procedures, DTI would monitor disturbed areas to determine the post-construction revegetation success for a minimum of two growing seasons, or until revegetation is considered successful.

Open Land

Open land consists of grasslands, pasture, agricultural land, shrublands, and maintained facility sites. Approximately 37.1 acres of open land would be permanently removed by construction or modification of the various facilities. In general, the impact on remaining open land vegetation would be considered short term. After grading and reseeding of the Project areas, the herbaceous components of the cover type would typically regenerate quickly. Aside from the permanent impacts noted previously, impacts on these cover types during facility operation would be minor as these cover types would be allowed to recover and would not be significantly altered by operation and maintenance activities. The Project would temporarily impact a total of 16.6 acres of agricultural land, and effects of the Project on agricultural land would be minor and short term. Standing or row crops within the facility workspace would be permanently removed, and farming operations would be disrupted for the growing season during the year of construction. Approximately 0.3 acre of agricultural land would be permanently affected by operation of the Project.

These facilities would be constructed primarily within open land where vegetation restoration timeframes would be short term and DTI would follow methods consistent with the FERC's Plan and Procedures. Therefore, we conclude that construction and operation of the Project would not result in a significant impact on vegetation in the Project area.

Noxious Weeds

Noxious weeds would be removed from areas where they have been previously identified prior to the onset of construction activities. Due to the existing disturbance associated with existing facilities and the minimal surface disturbance required for the proposed modifications, it is not anticipated that impacts on vegetation cover would be significant. Surveys for invasive species and noxious weeds were completed as part of the field surveys completed in 2014 and 2015. Johnson grass (*Sorghum halepense*), a

noxious weed, was found at the Chambersburg Compressor Station in Pennsylvania. This species was also noted in an area adjacent to an agricultural field at the Quantico Compressor Station in Virginia.

DTI would eradicate the noxious weed species from the Project sites prior to the onset of construction activities. Although neither noxious weeds nor invasive species were found at any of the other facilities, the potential exists for them to be found within or adjacent to those areas. To minimize the risk of introduction and spread of these species, DTI would restrict construction vehicles to designated work areas and access roads.

B.4.2 Wildlife

The Project would cross upland and wetland habitats that support a diversity of wildlife species. Wildlife species are directly dependent on the existing plant communities and are attracted to an area if suitable cover and/or habitat are present.

B.4.2.1 Existing Wildlife Resources

The proposed facilities would cross two distinct upland vegetation cover types that include upland forest and open upland (i.e., grasslands, pasture, agricultural land, shrublands, and maintained existing facilities). Each of these cover types (i.e., vegetation communities) provides nesting, cover, and foraging habitat for a variety of wildlife species. Table B-4 identifies the terrestrial wildlife species common to these habitats.

Upland Forest

The upland forests in the Project area provide moderate- to high-quality habitat for a variety of mammals, birds, amphibians, reptiles, and invertebrates. Coniferous forest provides thermal cover in the winter, as well as cover from predators, and some avian species prefer this forest type for breeding habitat. Deciduous forests in the Project area are dominated by hard mast-producing tree species such as oak, walnut, and hickory. These forests provide feeding and nesting habitat to a wide variety of species. Predatory species, such as red-tail hawks, American kestrels, and red fox, are also attracted to oak-dominated forests and their edges due to the abundance and diversity of prey species. Mixed forest types dominated by oaks and pines also provide important breeding, foraging, and cover habitat year round. The tree and shrub layers provide food and cover for birds and larger mammals, such as white-tailed deer. Detritus on the forest floor provides food and cover for invertebrates, amphibians, reptiles, and smaller mammals, including squirrel species and the eastern chipmunk.

Open Land

This cover type category includes all non-forested vegetation, such as grasslands, pasture, agricultural land, shrublands, and maintained landscaped areas. Although row

crops generally provide poor to moderate cover habitat, they often provide forage for a variety of species, including grassland birds and other wildlife. Pastures also provide grazing habitat for species such as white-tailed deer. Hayfields, small grains, fallow and old fields, pastures, and idled croplands provide nesting habitats for grassland-nesting birds (United States Department of Agriculture [USDA], 1999). Grasslands and old fields can be utilized as foraging and denning habitat by mammals and also provide nesting and breeding habitat to upland game birds. Shrublands provide sources of food and nesting sites for various birds, as well as cover for invertebrates, reptiles, and amphibians. Open fields and shrub cover provide habitat for small mammal species such as mice, rabbits, and voles, which make them prime hunting grounds for predator species such as foxes and raptors.

Table B-4 – Common Wildlife Species Occurring in Major Habitat Types Affected by the Project [1]

Common Name	Uplands		
	Upland Forest	Open/Agricultural Upland	Maintained Facilities
Mammals			
Red fox	X	--	--
Eastern gray squirrel	X	--	--
Fox squirrel	X	--	--
Eastern chipmunk	X	--	--
Hoary Bat	X	--	--
Big brown bat	X	--	--
Northern long-eared bat	X	--	--
Little brown bat	X	--	--
White-tailed deer	X	X	--
Groundhog	--	X	--
Eastern cottontail	X	X	X
Meadow vole	--	X	--
Least shrew	--	X	--
Norway rat		--	X
Birds			
Common grackle	--	--	X
Canada goose	--	X	X
Savannah sparrow	--	X	--
American robin	--	--	X
Northern bobwhite	--	X	--
American woodcock	--	X	--
Bobolink	--	X	--
Eastern meadowlark	--	X	--
Northern flicker	X	--	--
Black-capped chickadee	X	--	--
Brown creeper	X	--	--

Table B-4 – Common Wildlife Species Occurring in Major Habitat Types Affected by the Project [1]			
	Uplands		
Common Name	Upland Forest	Open/Agricultural Upland	Maintained Facilities
Worm-eating warbler[2]	X	--	--
Blue jay	X	--	--
Dark-eyed junco	X	--	--
Red-breasted nuthatch	X	--	--
Eastern bluebird	X	--	--
Wild turkey	X	--	--
Rose-breasted grosbeak	X	--	--
Blue-winged warbler[2]	X	--	--
Red-tail hawk	X	X	--
American kestrel	X	--	--
European starling	--	--	X
Rock dove	--	--	X
House sparrow	--	--	X
Reptiles			
Eastern box turtle	X	--	--

[1] Modifications at the existing compressor stations and M&R stations would primarily occur within the facility fence line or existing maintained facilities. Construction and operation of new facilities would result in a permanent land use conversion to commercial/industrial. Wildlife found at the facilities would be similar to those identified under the open upland and developed habitat type included in this table.

[2] Birds of Conservation Concern (refer to section B.4.3.1).

Developed Areas

Developed lands in the Project area consist of land uses classified as industrial/commercial and road crossings. These types of lands tend to provide minimal habitat for wildlife species. Wildlife diversity is often limited to species that are adapted to human presence and the associated anthropogenic changes to the landscape, such as paved and landscaped areas.

B.4.2.2 General Impacts and Mitigation

Potential impacts on wildlife from Project construction activities include loss of vegetation and habitat, as well as temporary species displacement and disturbance of wildlife species due to noise from construction and maintenance activities. Construction could result in the mortality of less-mobile animals such as small rodents, reptiles, amphibians, and invertebrates that may be unable to escape the immediate construction area. Mobile species would leave the area and relocate in neighboring suitable habitat. Displacement impacts would be minor and short term as wildlife would be expected to return and colonize post-construction habitats. Project construction would primarily take place in previously disturbed areas, maintained landscaped areas, and areas currently

used for agriculture. These existing areas are not considered high-quality wildlife habitat and wildlife density is likely to be low.

Project construction would require clearing of vegetation from the facility workspace, temporarily decreasing the amount of wildlife habitat and reducing protective cover and foraging habitat in the immediate Project area. Depending on the season, construction could also disrupt bird courting or nesting, including destruction of nests, eggs, and chicks within the construction work area (for further discussion of impacts to migratory birds, see section B.4.3.1). However, these would be short-term impacts (except within the permanently maintained facility boundaries) as all habitats would be allowed to reestablish in temporary construction workspace and ATWS areas, thus remaining available for wildlife habitat and watershed functions. Impacts to forested areas would be considered long-term, as restoration could require decades to reach pre-construction status.

DTI would follow the FERC's Plan and Procedures to ensure restoration activities would take place immediately following construction. Upon completion of construction-related activities, all disturbed areas would be revegetated and restored to previous conditions. Approximately 4.7 acres of maintained, landscaped land and agricultural areas would be permanently converted to developed cover, which would result in minimal habitat loss and impacts on wildlife. Forest cover, totaling approximately 10.5 acres, may be cleared for several facilities. These areas would be revegetated with herbaceous cover, but would result in the permanent displacement of species reliant on forest habitats. To further mitigate impacts, clearing in these areas would be performed outside of the roost season for most bat species and the breeding season for migratory birds (i.e., April through August, for both species). DTI would conduct vegetation clearing only between September 1 and March 31. Areas used for staging or construction activities that are not used for Project operations would be restored as per the FERC's Plan and Procedures. Impacts on species would not be significant.

In conclusion, construction and operation of the Project would result in short- and long-term impacts on wildlife and wildlife habitat. These impacts are expected to be minor given the mobile nature of most wildlife in the area and the availability of similar habitat adjacent to and near the facility boundaries. These impacts would be minimized by implementing the restoration methods outlined in the FERC's Plan and Procedures.

B.4.3 Protected Species

B.4.3.1 Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from 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 (MBTA) (16 U.S. Code 703-711), and bald and

golden eagles are additionally protected under the Bald and Golden Eagle Act (16 U.S. Code 668-668d). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Executive Order 13186 (66 FR 3853) was enacted in 2001 to, among other things, ensure that environmental analyses of federal actions evaluate the impacts of actions on migratory birds. Executive Order 13186 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 United States Fish and Wildlife Service (USFWS). The environmental analysis should further emphasize species of concern, priority habitats, and key risk factors, and that particular focus should be given to population-level impacts.

A variety of migratory bird species, including songbirds and raptors utilize the habitat found within the Project area. USFWS established Birds of Conservation Concern (BCC) lists for various regions in the country in response to the 1988 amendment to the Fish and Wildlife Conservation Act, which mandated USFWS to identify migratory nongame birds that, without additional conservation actions, were likely to become candidates for listing under the Endangered Species Act (ESA). The BCC lists were last updated in 2008.

The potential impacts of the Project on migratory birds, including BCC-listed birds, would include the temporary and permanent loss of habitat associated with the removal of existing vegetation. The greatest potential to impact migratory birds would occur if Project construction activities such as grading, tree clearing, and construction noise take place during the nesting season. This could result in the destruction of nests and mortality of eggs and young birds that have not yet fledged. Construction would also reduce the amount of habitat available for resources such as foraging and predator protection for migratory birds and would temporarily displace birds into adjacent habitats, which could increase the competition for food and other resources. This in turn could increase stress, susceptibility to predation, and negatively impact reproductive success. The temporary loss of upland forest habitat would present a long-term impact for migratory birds that depend on forest cover types. Noise and other construction activities could affect courtship and breeding activities including nesting and the rearing of young. Clearing and grading would also temporarily remove nesting and foraging habitat and could destroy occupied nests resulting in the mortality of eggs and young, unfledged birds, if these activities are done during the nesting season.

Migratory birds, including BCC-listed birds, could also be affected during Project operation, which would include periodic mowing and other facility maintenance activities.

The Finnefrock Compressor Station is located approximately 0.5 mile west of the TSNA, which is recognized by the State of Pennsylvania as containing Important Bird Area (IBA) 29 in Clinton County. The TSNA includes the southern-most naturally

occurring boreal swamp in the state and is comprised primarily of tamarack and boreal conifers. The IBA associated with the TSNA is known to harbor five species of conservation concern: golden-winged warbler (*Vermivora chrysoptera*), magnolia warbler (*Setophaga magnolia*), Canada warbler (*Cardellina canadensis*), northern waterthrush (*Parkesia noveboracensis*), and rose-breasted grosbeak (*P. ludovicianus*). The Quantico Compressor Station lies within the Culpeper Basin IBA in Fauquier County, Virginia. This large IBA extends through seven counties, and is characterized by fairly flat topography leading to a high rate of agricultural use, as well as the growth of prairie-like grasslands. This area supports species such as field sparrow (*Spizella pusilla*), grasshopper sparrow (*Ammodramus savannarum*), eastern meadowlark (*Sturnella magna*), prairie warbler (*Setophaga discolor*), and northern bobwhite (*C. virginianus*), as well as a breeding population of barn owls (*Tyto alba*). Loggerhead shrikes (*Lanius ludovicianus*), upland sandpipers (*Bartramialongicauda*), Henslow's sparrows (*Ammodramus henslowii*), northern harriers (*Circus cyaneus*), and short-eared owls (*Asio flammeus*) have also been found in the Culpeper Basin IBA.

We received comments from the USFWS Pennsylvania Field Office and the VDGIF regarding impacts on migratory bird habitat. DTI has minimized land and vegetation disturbance by utilizing DTI's existing aboveground facilities in siting and Project design decisions. This utilization of previously disturbed areas at its existing aboveground facilities also minimizes impacts to migratory birds. DTI has also agreed to clear vegetation outside of the migratory bird nesting season. DTI would only conduct vegetation clearing between September 1 and March 31. The USFWS Pennsylvania Field Office concurred on April 9, 2015 that these measures would sufficiently minimize impacts on nesting birds.

The Project largely involves modifications to existing facilities, thus minimizing land and vegetation disturbance, and permanent habitat alteration. Restoration would be conducted in accordance with the FERC's Plan and Procedures. As such, we conclude that the loss of forest habitat would not result in population-level impacts on migratory birds in the region. Based on DTI's commitment to conduct vegetation clearing during timeframes that minimize impacts to nesting birds and considering that the Project would involve an incremental expansion of existing facilities, we conclude that impacts on migratory birds (including BCC-listed species) would be minimal and effects on their habitat would be minimized.

B.4.3.2 Federal Threatened and Endangered Species

Federal agencies are required under Section 7 of the ESA, as amended, to ensure that any actions authorized, funded, or carried out by the agency would not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. As the lead federal agency authorizing the Project, FERC is required to consult with USFWS to determine whether federally listed endangered or threatened species or

designated critical habitat are found in the vicinity of the Project, and to evaluate the proposed action's potential effects on those species or critical habitats.

Indiana bat, northern long-eared bat, and dwarf wedgemussel could occur in the Project area. These species, their protection status, and their potential location in the Project area are summarized in table B-5 and discussed in the following sections. Our informal Section 7 consultation and conference with USFWS is summarized in the following sections.

Table B-5 – Federally Listed Species Known or Potentially Occurring Within the Project Area									
Species	**Federal Status**	**Finnefrock (PA)** [1]	**Centre (PA)**	**Chambersburg (PA)**	**Myersville (MD)**	**Leesburg (VA)**	**Quantico (VA)**	**Stonewall M&R (VA)**	**Determination**
Indiana bat	E	X	X	X					NLAA (USFWS PA FO April 9, 2015)
Northern long-eared bat	T	X	X	X	X	X	X		NLAA (USFWS PA FO April 9, 2015) NE (USFWS VA FO April 28, 2015) NE (USFWS Chesapeake FO November 9, 2015)
Dwarf wedgemussel	E						X		NE (USFWS VA FO April 28, 2015)

[1] Additional Pennsylvania Natural Diversity Inventory (PNDI) Reviews were completed in May 2015 (after the northern long-eared bat was officially listed) and December 2015 (after DTI added a secondary fence at Leidy Station to the scope of the Leidy South Project). The reviews did not necessitate additional consultations with the USFWS.

T = Threatened
E = Endangered
NLAA = Not likely to adversely affect
NE = No effect
FO = Field Office

Species under USFWS Jurisdiction

Indiana Bat – The federally endangered Indiana bat is relatively small, with a wingspan of 9 to 11 inches. The Indiana bat hibernates during winter in caves or abandoned mines from October through April. For hibernation, they require cool, humid caves with stable temperatures, under 50 degrees Fahrenheit (°F) but above freezing. The hibernacula typically contain large numbers of bats and often have large rooms and vertical or extensive passages.

When active, the Indiana bat roosts in dead trees, dying trees, or live trees with exfoliating bark. During the summer months, most reproductive females occupy roost sites that receive direct sunlight for more than half the day. Roost trees are generally found within canopy gaps in a forest, fence line, or along a wooded edge. Maternity roosts are found in riparian zones, bottomland and floodplain habitats, wooded wetlands,

and upland communities. Indiana bats forage in semi-open to closed forested habitats, forest edges, and riparian areas (USFWS, 2007).

A minimal amount of tree clearing would be necessary for the Finnefrock and Chambersburg Compressor Stations. DTI would only clear trees between September 1 and March 31. This timing restriction coincides with the beginning of the fall swarming and eventual hibernation season for the species. We find that this Project *may affect, but is not likely to adversely affect* the Indiana bat. The USFWS Pennsylvania Field Office concurred with this determination on April 9, 2015.

Northern long-eared bat –USFWS published the final rule listing the northern long-eared bat as threatened under the ESA on April 2, 2015, with an interim 4d rule; protections for the northern long-eared bat went into effect 30 days later (USFWS, 2015a). On January 14, 2016, USFWS published the final 4(d) rule; this rule went into effect on February 16, 2016. This bat's range includes Pennsylvania, Maryland, and Virginia. This species predominantly overwinters in hibernacula that include caves and abandoned mines. During the summer, this species typically roosts singly or in colonies underneath bark or in cavities or crevices of both live trees and snags. Northern long-eared bats are also known to roost in human-made structures such as buildings, barns, and sheds, as well as under eaves of windows (USFWS, 2015a). Threats to the northern long-eared bat include disease due to the emergence of white-nose syndrome, improper closure of hibernacula, degradation and destruction of summer habitat, and use of pesticides. If northern long-eared bats are present, tree clearing could potentially kill, injure, or disturb breeding or roosting bats. Northern long-eared bats could also be affected by the loss of tree habitat if significant amounts of tree clearing were to occur.

A minimal amount of tree clearing would be necessary for the Finnefrock, Myersville, Leesburg, and Chambersburg Compressor Stations. DTI would only clear trees between September 1 and March 31. This timing restriction coincides with the beginning of the fall swarming and eventual hibernation season for the species. We find that this Project *may affect, but is not likely to adversely affect* the northern long-eared bat. The USFWS Pennsylvania Field Office concurred with this determination on April 9, 2015. The USFWS Chesapeake Bay Field Office stated in a letter dated November 9, 2015 that the project will have no effect on the northern long-eared bat.

On April 28, 2015, the USFWS Virginia Field Office stated that construction activities at the Quantico compressor station would have *no effect* on the northern long-eared bat. However, the consultation response did not address the construction activities at the Leesburg Compressor Station. DTI consulted with the USFWS on March 4, 2016 regarding the Leesburg Compressor Station and received a self-certification letter stating project activities *may affect, likely to adversely affect* the northern long-eared bat. However, DTI would rely on the programmatic Biological Opinion developed by USFWS on January 5, 2016 to fulfill section 7 consultation for this species. As such, **we recommend that:**

- **DTI should complete consultation with the USFWS and provide the Secretary with any correspondence prior to commencing construction at the Leesburg Compressor Station. The USFWS has 30 days from March 8, 2016 (the date USFWS received the consultation) to respond regarding construction activities at the Leesburg Compressor Station. If the USFWS does not respond within 30 days, consultation for this facility is considered complete.**

Dwarf wedgemussel – The dwarf wedgemussel is a small bivalve characterized by a greenish-brown shell with green rays. Historically, the dwarf wedgemussel was found from New Brunswick, Canada south to North Carolina, and was found in 15 major Atlantic coast river systems. Now extinct in Canada, it is found in much lower densities throughout its former range in the United States. The largest remaining populations can be found in the Connecticut River watershed, while small and isolated populations exist in a number of sites in North Carolina (USFWS, 2015b). The species is considered a habitat generalist and can be found in a wide variety of creeks and rivers with a slow to moderate current and a sand, gravel, or muddy bottom, and are often patchily distributed (USFWS, 2015b).

Suitable habitat for this species is not located within or in the vicinity of the Project area for the Quantico Compressor Station. As such, we find that the Project would have *no effect* on the dwarf wedgemussel. The USFWS Virginia Field Office concurred with this determination on April 28, 2015.

B.4.3.3 Bald and Golden Eagle Protection Act

The bald eagle is a large bird of prey whose range covers virtually all of North America. Although no longer federally listed under the ESA, the bald eagle is protected under the BGEPA and MBTA. The BGEPA and MBTA prohibit killing, selling, or harming eagles or their nests, and the BGEPA also protect eagles from disturbances that may injure them, decrease productivity, or cause nest abandonment.

Optimal roosting, foraging, and breeding habitats for the bald eagle include areas near waterbodies, such as lakes, rivers, and forested wetlands. The bald eagle typically prefer large trees for roosting and nesting. The bald eagle can be sensitive to human activity and disturbance and may abandon otherwise suitable habitat if disturbance is persistent (USFWS, 2015c). The bald eagle has the potential to occur in the Project area; however, no eagle nests were identified at the three facilities in Virginia (Watts and Byrd, 2013) and no high quality suitable habitat is present at the four facilities in Pennsylvania and Maryland.

B.4.3.4 State-listed Threatened and Endangered Species

In Pennsylvania, the following three agencies are responsible for protecting threatened and endangered species: 1) the Pennsylvania Game Commission for state-listed birds and mammals; 2) the Pennsylvania Fish and Boat Commission (PAFBC) for state-listed fish, reptiles, amphibians, and aquatic organisms; and 3) the PADCNR for state-listed plants, natural communities, terrestrial invertebrates, and geological features. In Maryland, the Maryland Department of Natural Resources (MDNR) is responsible for protecting the state's threatened and endangered species**,** and administers the state Wildlife and Heritage Service's Natural Heritage Program. In Virginia, the VDGIF and the Virginia Department of Conservation and Recreation oversee the state's threatened and endangered species list.

A discussion of agency consultation, survey results, and proposed minimization for state-listed species potentially occurring in the Project area are discussed below.

Pennsylvania

Two state-listed threatened, endangered, or special concern species could occur at the Chambersburg Compressor Station in Pennsylvania (PNHP, 2014a). A summary of surveys and/or proposed minimization for these species are summarized below.

The limestone petunia is a perennial herb that flowers in late June to early July. Found in mesic forests, bluffs, and roadsides on calcareous soils in the southern third of Pennsylvania, this species can grow to 40 inches in height (PNHP, 2014b). Suitable habitat for this species is not found within the Chambersburg Compression Station Project area. We conclude that no impacts would occur to this species, with which PADCNR concurred on March 25, 2015.

The northern cricket frog is a small diurnal member of the tree frog family. Adult frogs average 0.6 to 1.4 inches in length, and are characterized by rough, warty skin. The species' range extends from Long Island south to the Florida panhandle and west to Texas. In Pennsylvania, it is found typically in the southeast corner of the state. Primarily terrestrial, it finds cover and forages for insects in grasses in riparian areas and along the edges of waterbodies. The northern cricket frog utilizes shallow, sunny ponds that harbor thick vegetation, and can also be found along slow-moving streams (PAFBC, 2015). DTI would contact PAFBC if wetlands, vernal pools, open water areas, streams, ponds, or the area within 300 feet of these water features is to be disturbed by Project activities. DTI conducted spring/summer surveys for this species during the 2015 breeding season to verify presence/absence in the vicinity of the Chambersburg Compression Station Project area. No northern cricket frogs were found in the course of the surveys and the species is likely absent from the Project area. We conclude that no impacts would occur to the northern cricket frog. PFBC concurred with this determination on August 13, 2015.

Maryland

No state-listed threatened, endangered, or special concern species occur at the Myersville Compression Station. The MDNR concurred with this determination on April 9, 2015.

Virginia

One state-listed threatened species (the green floater) could occur at the Leesburg and Quantico Compressor Stations and the Stonewall M&R Station in Virginia (VDGIF, 2014). The green floater is a rare freshwater mussel that ranges from New York to North Carolina. The species is found in pools and eddies with sandy, gravely bottoms in smaller rivers and creeks. It may also be found in the smaller channels of large rivers or small to medium streams (USGS, 2014). Because no in-stream work would be conducted in waterbodies where the species is present or in any related tributaries, the Project would not result in any adverse impacts to green floaters. The VDGIF concurred with this finding on March 31, 2015.

B.4.3.5 General Impacts and Mitigation

In general, impacts on state-listed species would typically be similar to those described for other plant and animal species in sections B.4.1.2 and B.4.2.2. DTI has developed appropriate avoidance and mitigation measures, including timing restrictions, to avoid adverse impacts on any rare plants and wildlife identified within the Project area. Based on the consultations completed and our recommendation above, our evaluation of the Project resulted in a not likely to adversely affect or no effect determination for all the federally or state-listed species. Therefore, we conclude that there would be no significant impacts on special status species.

B.5 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires the FERC to take into account the effects of its undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. Historic properties are prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional, religious, or cultural importance listed or eligible for listing in the National Register of Historic Places (NRHP). DTI provided information, analysis, and recommendations for implementing Section 106 as described by 36 CFR 800.2(a)(3), and outlined in the FERC's regulations in 18 CFR 380.12(f) and in staff's *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects* (December 2002 version). The FERC remains responsible for all determinations of NRHP eligibility and Project effects, and the cultural resources findings disclosed in this EA.

B.5.1 Consultations

Copies of our July 23, 2015 NOI for the Project were sent to a wide range of stakeholders, including federal agencies, and state agencies such as the Pennsylvania Bureau for Historic Preservation (PBHP), Maryland Historic Trust (MHT), Virginia Department of Historic Resources (VDHR), and federally recognized Indian tribes that may have an interest in the Project area. The NOI contained a paragraph about Section 106 of the NHPA, and stated that we use the NOI to initiate consultations with the appropriate State Historic Preservation Officers (SHPO)[4] and to solicit their views and those of other government agencies, tribes, and the public on the Projects' potential effects on historic properties.

B.5.1.1 Contacts With Indian Tribes

In accordance with Section 101(d)(6)(B) of the NHPA and Part 800.2(c)(2)(ii), and the FERC's *Policy Statement on Consultations with Indian Tribes in Commission Proceedings* (Order 635), we consulted on a government-to-government basis with Indian tribes that may attach religious or cultural significance to historic properties in the area of potential effect (APE). Copies of our NOI for this Project were sent to the tribes listed in table B-6. No tribes responded to our NOI. We assume this means that it is unlikely that the Project would have adverse impacts on religious or cultural sites of importance to tribes who historically occupied or used the Project area.

[4] The SHPOs are represented by the PBHP in Pennsylvania, VDHR in Virginia, and MHT in Maryland.

Table B-6 – Indian Tribes Contacted		
Tribes Contacted by the FERC via July 23, 2015 NOI	**Tribes Contacted by DTI via March 19, 2015 Letters**	**Tribal Responses**
Absentee Shawnee Tribe of Oklahoma, c/o Carol Butler	Absentee Shawnee Tribe c/o George Blanchard, Governor, and Carol Butler, & Joseph Blanchard, THPO[1]	No comments filed to date.
Cayuga Nation of New York, c/o Timothy Two Guns	Cayuga Nation, c/o Timothy Two Guns	No comments filed to date.
Delaware Nation of Oklahoma, c/o Jason Ross, Cultural Resources	Delaware Nation, c/o Jason Ross	No comments filed to date.
Delaware Tribe of Oklahoma, c/o Brice Obermeyer, THPO	Delaware Tribe, c/o Brice Obermeyer, THPO	No comments filed to date.
Eastern Shawnee Tribe of Oklahoma, c/o Robin Dushane, THPO	Eastern Shawnee Tribe, c/o Robin Dushane, THPO	No comments filed to date.
Oneida Nation of New York, c/o Laura Misita, Administrator, & Jesse Bergevin, Historian	Oneida Indian Nation of New York, c/o Laura Misita, Administrator,& Jesse Bergevin, Historian	No comments filed to date.
Oneida Tribe of Wisconsin c/o Corina Williams, THPO	Oneida Tribe of Wisconsin c/o Corina Williams, THPO	No comments filed to date.
Onondaga Nation of New York, c/o Anthony Gonyea, Faithkeeper	Onondaga Nation, c/o Tony Gonyea, Faithkeeper	No comments filed to date.
Seneca-Cayuga Tribe of Oklahoma, c/o Paul Barton, THPO	Seneca-Cayuga Tribe, c/o Paul Barton, THPO	No comments filed to date.
Seneca Nation of New York, c/o Scott Abrams,THPO	Seneca Nation of New York, c/o Scott Abrams, THPO	No comments filed to date
Shawnee Tribe of Oklahoma, c/o Ron Sparkman, Chair, & Kim Jumper, THPO	Shawnee Tribe, c/o Ron Sparkman, Chair, & Kim Jumper, THPO	No comments filed to date- .
St. Regis Mohawk Tribe of New York, c/o Arnold Printup, THPO	St. Regis Mohawk Tribe, c/o Arnold Printup	No comment filed to date.
Stockbridge Munsee Community of Wisconsin, c/o Sherry White, THPO	Stockbridge Munsee Community of Wisconsin, c/o Sherry White, THPO	April 6, 2015 email to DTI from Bonney Hartley representing THPO stated that the Project is outside of the tribe's area of interest.
Tonawanda Band of Seneca in New York,c/o Darwin Hill, Chief	Towanda Band of Seneca Indians, c/o Darwin Hill, Chief	No comments filed to date.
Tuscarora Nation of New York, c/o Leo Henry, Chief & Bryan Printup, THPO	Tuscarora Nation, c/o Leo Henry, Chief & Bryan Printup, THPO	No comments filed to date.
THPO = Tribal Historic Preservation Officer		

In addition to FERC's consultation process, DTI communicated with potentially interested Indian tribes. On March 19, 2015, DTI sent letters to the tribes listed in table B-6. The Stockbridge-Munsee Band of the Mohican Nation sent DTI an email dated April 6, 2015, stating that the Project was outside its area of interest and that no further information was needed.

B.5.1.2 Contacts with State Historic Preservation Offices

We sent our NOI for the Project to the SHPOs of Pennsylvania, Maryland, and Virginia. Only the Virginia SHPO responded to our NOI, in a letter dated September 4, 2015, reviewing DTI's cultural resources report.

DTI also contacted the appropriate SHPOs to provide information about the Project and to request comments on cultural resources reports and plans. On March 16, 2015, DTI sent letters about the Project to the MHT and VDHR. A similar letter was sent to PBHP on March 18, 2015. On March 17, 2015, DTI sent the PBHP its draft cultural resources survey report covering facilities proposed in Pennsylvania. In letters dated April 17, 2015, DTI requested that the Pennsylvania, Maryland, and Virginia SHPOs review and comment on its state-specific *Unanticipated Discoveries and Emergency Procedures Plans* (Discovery Plans). On April 17, 2015, DTI sent the VDHR its cultural resources survey report covering facilities in Virginia. On April 27, 2015, MHT acknowledged receipt of a "Project Review Form" submitted by DTI covering facilities proposed in Maryland. DTI submitted its Finnefrock Addendum Survey Report to the PBHP on April 28, 2015. On July 8, 2015, DTI submitted its final Phase I Archaeological Survey Report to the PBHP. DTI sent the PBHP a copy of its Leidy Station Fence Relocation Survey Report on January 11, 2016.

The PBHP provided comments on DTI's cultural resources survey report on March 25, 2015. On May 20, 2015, the MHT wrote its opinions on DTI's Project Review Form. In a letters dated May 22 and September 4, 2015, the VDHR commented on DTI's cultural resources survey report.

B.5.2 Overview and Survey Results

B.5.2.1 Area of Potential Effect

In Resource Report 4 of its application to FERC, DTI defined the direct APE for archaeological resources as the areas of potential ground disturbance. According to table 1.1-2 in Resource Report 1 attached to DTI's application to FERC, this would include a total of 83.8 construction acres in Pennsylvania, about 11.7 construction acres in Maryland, and about 56.1 construction acres in Virginia. The indirect APE for visual impacts on historic (i.e., more than 50 years old) standing structures was defined as 0.5 mile from any proposed Project facilities. We assume that the SHPOs accepted these APE definitions when they accepted DTI's cultural resources reports. We concur with DTI's definition of the APE.

B.5.2.2 Results of Literature Reviews and Site Files Searches

Pennsylvania

There are three existing compressor stations in Pennsylvania where modifications are proposed by DTI, including the Chambersburg Compressor Station (43.5 acres) in Franklin County, the Centre Compressor Station (5.8 acres) in Centre County, and the Finnefrock Compressor Station (205.7 acres) in Clinton County. DTI's cultural resources contractor (R. Christopher Goodwin & Associates Inc. [Goodwin]) conducted a literature review and site file search for the proposed facilities in Pennsylvania, and indicated that eleven previous surveys had been conducted between 1985 and 2009 within 0.5 mile of the locations. Nine of the previously conducted cultural resource surveys overlap the proposed facilities.

One previously recorded archaeological site (36CN198) was identified within 0.5 mile of Finnefrock Compressor Station. This historic archaeological site was recommended as not eligible for listing on the NRHP. According to DTI, while site 36CN198 was originally recorded about 1,727 feet from the existing Finnefrock Compressor Station, it should be inside the project survey area. However, the site was not relocated during Goodwin's October 2014 archaeological survey of the Finnefrock Compression Station tract (Hornum, June 2015).Two previously recorded historic standing structures (both bridges) were identified within 0.5 mile of the Chambersburg Compressor Station at a distance of 2,470 feet and 2,510 feet respectively. The bridges would not be affected by the Project.

Seven previously recorded historic standing structures and one prehistoric archaeological site were identified within 0.5 mile of the Centre Compressor Station (Hornum, February 2015). Five of the sites were originally recorded between 600 and 2,600 feet away from the station. The Furey Farmstead was recorded 300 feet away, and the Penn Central Railroad Spur was recorded 250 feet away; both evaluated as not eligible for the NRHP. The Project should have no effect on those eight previously recorded resources.

Maryland

There is only one existing compressor station in Maryland where modifications are proposed: the Myersville Compressor Station (covering 21.2 acres) in Frederick County. Three previous surveys conducted by the archaeological contractor TRC Environmental Inc. (TRC), on behalf of DTI, were identified by Goodwin as covering the entire compressor station site (Sara and Walters, 2011; Sara and Young, 2012; and Sara and Freedman, 2012). In addition, another survey was conducted near the station by Elizabeth A. Conner Archaeological Inc., on behalf of the Maryland State Highway Administration (Wanner and Conner, 2012).

In 2011, Sara and Walters recorded a historic archaeological farmstead (site 18FR1023) adjacent to the Myersville Compressor Station; however, this site was evaluated as not being eligible for nomination to the NRHP. The Wanner and Conner survey in 2012 recorded a single historic isolated find, also evaluated as not eligible for the NRHP.

Virginia

DTI proposes modifications at two existing compressor stations in Virginia: the Leesburg Compressor Station (covering 70.3 acres) in Loudoun County, and the Quantico Compressor Station (covering 31.4 acres) in Fauquier County. In addition, DTI proposes to construct the new Stonewall M&R (26.0 acres of construction area) in Loudoun County, within the disturbed area of the Panda Stonewall Power Project.

Goodwin identified ten previous archaeological surveys that were conducted in the vicinity of the Leesburg Compressor Station, two of which overlapped the proposed facility. At the Leesburg Compressor Station, previous inventories covered 1.4 acres in 1991, 10.5 acres in 2003, and 0.3 acre in 2004.

Two historic archaeological sites and ten historic architectural sites were previously recorded within 0.5 mile of the Leesburg Compressor Station. These sites are all unevaluated, except for the Negro Mountain Watson Historic District, which was previously determined eligible for the NRHP, and a circa 1870s house that was found not eligible. Archaeological site 44LD460 was originally recorded within the project area but was not relocated during the October 2014 archaeological survey performed by Goodwin on behalf of DTI (Hornum, April 2015). The Rusk Family Cemetery was originally recorded 100 feet away from the station, and the boundary for the Negro Mountain Watson Historic District is 575 feet away. The other previously recorded sites are between 700 and 2,475 feet away from the station, and should not be affected by the Project.

Six previous surveys have been done in the vicinity of the Quantico Compressor Station, four of which overlap the proposed facility. At the Quantico Compressor Station, previous inventories covered 1.7 acres in 1991, 2.1 acres in 2004, 0.8 acres in 2007, and 2.4 acres in 2008.

Two pre-contact archaeological sites and seven historic architectural sites were previously recorded within 0.5 mile of the Quantico Compressor Station. One of the pre-contact archaeological sites and five of the historic architectural sites were previously evaluated as not eligible for the NRHP, while one of the pre-contact archaeological sites (44FQ113) and the Elk Run Rural Historic District were previously evaluated as eligible. Archaeological site 44FQ113 is 1,270 feet away from the station. The other previously recorded archaeological site and the historic architectural sites (except for the Elk Run Rural Historic District and the Lewis Bender Farm) are between 825 and 2,225 feet

distant, and should not be affected by the Project. The Quantico Compressor Station is located within, but near the eastern boundary, of the Elk Run Rural Historic District. There are two contributing resources to the district within 0.5 mile of the station. The Lewis Bender Farm is adjacent to the compressor station, but was evaluated as not eligible for the NRHP. The LLL Farm is 1,390 feet from the station, and was also evaluated as not eligible.

Six previous surveys were completed in the vicinity of the Stonewall M&R Station, two of which overlap the proposed facility. A survey in 2005 (*Phase I Archeological Investigations of the Circa 652 Acre Creekside Areas 4 and 5 Property, Loudoun County, Virginia*) completely covered the approximately 26-acre area planned for the Stonewall M&R Station.

Four pre-contact archaeological sites, seven historic archaeological sites, five multi-component archaeological sites, and ten historic architectural sites were previously recorded within 0.5 mile of the Stonewall M&R Station. All the previously recorded historic architectural sites and 15 archaeological sites have not yet been evaluated for the NRHP. One previously recorded historic archaeological site (44LD1195) was evaluated as eligible for the NRHP, but is located 300 feet away from the station and should not be affected by the Project. One unevaluated historic archaeological site (44LD1326) and a stone wall were originally recorded within or adjacent to the project area. These two sites may have been removed during construction of the Panda Stonewall Power Project. The remainder of the previously recorded resources are located between 365 and 2,555 feet distant from the Stonewall M&R Station.

B.5.2.3 Results of Cultural Resources Inventories

Pennsylvania

Goodwin inspected the proposed facilities in Pennsylvania in October 2014. At the Chambersburg Compressor Station, the survey area of 17.1 acres consisted of the existing station and access road as well as agricultural fields surrounding the station. The pedestrian inventory found no cultural resources.

At the Centre Compression Station, the survey area of 5.7 acres consisted of the existing station and valve site as well as a grassy area between the two locations. The area was covered by a pedestrian inventory and no cultural resources were identified.

The survey area of 60.6 acres at the Finnefrock Compressor Station consisted of the two existing compressor station locations; access roads and pipelines; and areas of open, grassy, or wooded terrain. In addition to the pedestrian inventory, Goodwin conducted seven shovel tests. No cultural resources were identified during the survey (Hornum, June 2015).

In a letter dated March 25, 2015, PBHP concurred with the recommendation made in the February Goodwin report that there would be no impacts on any historic properties within the areas surveyed at the Chambersburg, Centre, and Finnefrock Compressor Stations. In a letter dated July 21, 2015, PBHP also agreed that there would be no effect on above ground historic properties for the Chambersburg, Centre, and Finnefrock Compressor Stations. We agree.

In November 2015, Goodwin examined a proposed expanded fence line at the existing Leidy Station in Clinton County, Pennsylvania. A total of about 36 acres were inspected. Most of this was steep slopes or disturbed areas covered by pedestrian inventory. A total of 24 shovel tests were excavated within a 1.5 acre area. No cultural resources were identified during this survey (Child et al., January 2016). The PBHP has not yet reviewed the supplemental survey report covering this facility.

Maryland

In November 2014, archaeologists from Goodwin conducted a pedestrian reconnaissance of the Myersville Compressor Station. The APE was previously disturbed, and previously surveyed, as discussed previously. No historic properties were identified (Goodwin, April 2015).

In review of DTI's Project Review Form, on May 20, 2015, MHT indicated that there are no historic properties in the APE for facilities proposed in Maryland. We agree with this finding.

Virginia

In October to December 2014, Goodwin studied the proposed facilities in Virginia. The Leesburg Compressor Station survey area, consisting of 20.7 acres, included the existing station, access road, and a wooded area. This facility was inspected using pedestrian reconnaissance. Twenty-one shovel tests were excavated in the wooded area. No cultural resources were identified.

The Quantico Compressor Station survey area, consisting of 10.7 acres, included the existing station, an access road between facilities, and an agricultural field. The facility and agricultural field were inspected using pedestrian reconnaissance. No cultural resources were identified during the survey.

When Goodwin went to inspect the Stonewall M&R Station site, they found the area disturbed by an existing pipeline and on-going construction of the Panda Stonewall Power Project. As discussed above, the parcel containing the Stonewall M&R Station was previously surveyed; therefore, Goodwin concluded that no additional cultural resources investigations were necessary at this location (Stanfield et al., April 2015).

In a letter dated May 22, 2015 reviewing DTI's survey report, VDHR stated that no archaeological resources were identified in the APE in Virginia and no further archaeological surveys were necessary. In addition, impacts on historic architectural sites located within 0.5 mile of the proposed facilities were unlikely and that no further architectural studies were required. We agree with this finding for Leesburg and Quantico Compressor Stations. However, in response to our August 20, 2015 data request, DTI determined that the necessary APE for the Stonewall M&R Station would actually be 26.0 acres, not the 0.67 acre originally identified in the April 2015 draft survey report. As stated above, the entire 26.0-acre APE for the Stonewall M&R Station was previously surveyed in 2005 and no historic properties were found. Therefore, **we recommend that:**

- **DTI should file with the Secretary prior to commencing construction at the Stonewall M&R Station a revised consultation letter and corresponding VDHR concurrence that no historic properties are affected by the modified APE.**

B.5.3 Unanticipated Discovery Plan

DTI included state-specific Discovery Plans in Appendix 4B of Resource Report 4 attached to its application to the FERC. DTI sent copies of the Discovery Plans to the SHPOs of Pennsylvania, Maryland, and Virginia on April 17, 2015. In a letter dated August 12, 2015, PBHP stated that it concurred with DTI's Discovery Plan for Pennsylvania. In an October 1, 2015 email to DTI, MHT indicated that because there are no historic properties that would be affected in the APE in Maryland, there was no need to send a separate letter reviewing the Discovery Plan. VDHR, in letters dated May 22 and September 4, 2015, accepted the Discovery Plan for Virginia. We also found DTI's Discovery Plans acceptable.

B.5.4 Compliance with the National Historic Preservation Act

No traditional cultural properties or properties of religious or cultural importance to Indian tribes have been identified in the APE by DTI, its consultants, the SHPOs, or Indian tribes contacted. Therefore, we have completed compliance with Section 101(d)(6) of the NHPA.

DTI documented the conduct of studies covering its proposed facilities in all three states. DTI's consultant did not identify any new cultural resources, and indicated that the Project should not adversely affect any previously recorded sites within the APE. However, we have not yet completed the process of compliance with Section 106 of the NHPA. The Pennsylvania SHPO has not yet reviewed the January 2016 report of investigations at the Leidy Station. Therefore **we recommend that:**

- DTI **should not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads at the Leidy Station **until**:

  a. DTI files with the Secretary:
     (1) remaining cultural resources survey report(s);
     (2) site evaluation report(s) and avoidance/treatment plan(s), as required; and
     (3) comments on the cultural resources reports and plans from the Pennsylvania SHPO and any interested Indian tribes.

  b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and

  c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies DTI in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE**."

B.6 LAND USE, RECREATION, AND AESTHETICS

B.6.1 Land Use

The existing land use types that would be affected by the Project include open land, forest/woodland, industrial/commercial, and agricultural land. In total, approximately 151.6 acres of land would be disturbed during construction and approximately 39.2 acres for operations. All land disturbances would occur within existing DTI and Leidy Storage facility property boundaries with the exception of the Stonewall M&R Station, which would be constructed within the Panda Stonewall Power Project's property boundaries. The proposed Project would not cross or impact coastal zone management areas. Table B-7 summarizes the land use requirements associated with construction and operation of the Project.

Table B-7– Land Use Affected By Construction and Operation of Proposed Project									
Facility	**County, State**	**Land Use Affected By Construction**				**Land Use Affected By Operations**			
		Open	**Agricultural**	**Forest/ Woodland**	**Commerce/ Industrial**	**Open**	**Agricultural**	**Forest/ Woodland**	**Commerce/ Industrial**
Finnefrock	Clinton County, PA	39.6	0.0	4.0	17.7	0.4	0.0	0.5	10.0
Chambersburg	Franklin County, PA	0.0	11.1	0.0	5.5	0.0	0.3	0.0	4.8
Myersville	Frederick County, MD	0.0	0.0	0.5	11.3	0.0	0.0	0.0	6.0
Leesburg	Loudoun County, VA	7.4	0.0	6.0	6.6	3.9	0.0	0.0	4.3
Centre	Centre County, PA	1.5	0.0	0.0	4.3	0.1	0.0	0.0	4.3
Quantico	Fauquier County, VA	0.0	5.5	0.0	4.6	0.0	0.0	0.0	3.9
Stonewall M&R Station	Loudoun County, VA	0.0	0.0	0.0	26.0	0.0	0.0	0.0	0.7
Total		48.5	16.6	10.5	76.0	4.4	0.3	0.5	34.0

Construction of the Project would temporarily affect approximately 48.5 acres of open land. Impacts on most open land would result from the removal of vegetation and soil disturbance associated with the clearing, grading, and excavation required for compressor station modifications. Open areas disturbed during construction would either receive rock cover/asphalt or a seed bed would be prepared with fertilizer and seeding/mulching as the work is completed. Some open land uses would be allowed to regenerate and return to preconstruction conditions. Operation of the Project would permanently convert 4.4 acres of open land to commercial/industrial use.

Approximately 10.5 acres of forest/woodland land would be temporarily affected during construction. The Project would require some tree clearing, including approximately 4.0 acres of forest/woodland at the Finnefrock Compressor Station, 0.5 acre at the Myersville Compressor Station, and 6.0 acres at the Leesburg Compressor Station. Following construction, disturbed forest/woodland areas would be restored to preconstruction conditions to the extent possible. Some areas of existing forest/woodland would be permanently cleared along the fence line for construction, maintenance, access, and security. Operations would result in long-term impacts by permanently converting approximately 0.5 acre of forest/woodland to commercial/industrial use.

Construction activities at the Chambersburg and Quantico Compressor Stations would temporarily affect approximately 16.6 acres of agricultural lands. Agricultural lands consist of cropland or hay fields in active cultivation. Impacts on agricultural land use would result from vegetation removal and soil disturbance due to clearing, grading, and excavation of the construction work area. To reduce these impacts, DTI would implement measures consistent with the FERC's Plan and Procedures. Following construction, agricultural areas may be maintained as open or allowed to regrow, as determined by DTI. Approximately 0.3 acre within the existing compressor station fence line boundaries would be permanently converted to support additional compression. Effects on agricultural lands would be minimal and short term.

Project construction would temporarily affect 76.0 acres of commercial/industrial land that is confined to the existing compressor station facilities. After construction activities are complete, open areas would either receive rock cover/asphalt or a seed bed would be prepared with fertilizer and seeding/mulching as the work is completed. Operations would permanently affect 34.0 acres.

Existing public roadways and existing compressor station roads would be used to transport equipment, materials, and personnel to each construction site. New roads and modifications to existing roads would not be required.

The Stonewall M&R Station would be a new facility constructed at the site of the existing Panda Stonewall Power Project. DTI is currently under negotiations with Panda Stonewall, LLC for a permanent easement on the property. The Stonewall M&R Station

would require 26.0 acres of existing designated commercial/industrial land for construction and 0.7 acre for operation.

No residences or structures are located within 50 feet of the Project construction work areas. The closest residence to the Project is approximately 600 feet south-southwest of the Finnefrock Compressor Station. Construction activities could create inconveniences for local residences due to fugitive dust and noise, as well as the presence of heavy equipment and construction personnel. However, disturbances would be infrequent, intermittent, and limited to daylight working hours. Fugitive dust emissions would be mitigated by spraying water to dampen the surfaces of dry work areas and/or by the application of other approved dust suppressants as needed.

Based on review of existing comprehensive land use plans, there are no planned residential or commercial developments within 0.25 mile of the Project sites. The closest planned residential development, the Grove at Willowsford, is located approximately 4 miles southeast of the Leesburg Compression Station. The development is currently under the planning and design phase, and an estimated construction start date is unknown at this time.

To minimize impacts on land use, DTI would implement mitigation measures consistent with the FERC's Plan and Procedures. Permanent erosion controls, such as drainage systems and retention basins, would be installed as necessary. The locations of the permanent erosion controls would be included on the construction plans for the facilities. Final grading and restoration of each site would begin soon after the completion of construction activities. The construction work areas surrounding the compressor station upgrades would be graded and restored to match preconstruction contours and be compatible with surrounding drainage systems. Temporary erosion and sedimentation controls would be removed once vegetation cover is established.

Short-term impacts on land use would result primarily from ground disturbance associated with clearing and grading, and subsequent construction activities. All land disturbances would occur within existing DTI and Leidy Storage facility property boundaries with the exception of the Stonewall M&R Station, which would be constructed within the Panda Stonewall Power Project's property boundaries. These areas are already in commercial/industrial use. Impacts would include an increase in local traffic, noise, and dust, as well as the temporary loss of land use and disturbance of the visual landscape. These impacts would be minor and temporary, confined primarily to the duration of construction, and would dissipate or end after the construction area is restored and revegetated. Following construction, the land used for the temporary construction areas would be allowed to revert to prior uses. For these reasons, we do not anticipate impacts on land use to be significant.

B.6.2 Recreation

Based on consultations with local agencies and review of public databases and maps, the Chambersburg, Myersville, and Centre Compressor Stations would not cross any recreational or special interest areas, including designated wilderness areas; national wildlife refuges; national parks; national, state, or local parks; national or state forests; designated scenic highways or byways; or protected rivers or waterbodies. Also, no state-owned or managed properties or public lands open to hunting would be crossed by or are located within 0.25 mile of the Project.

The Kettle Creek Watershed Landscape Conservation Area (LCA) is a Clinton County designated natural heritage area. The portion of the Finnefrock Compressor Station that lies within the Kettle Creek Watershed LCA has been previously cleared, disturbed, and affected by construction to accommodate the existing compressor station and does not contain any park areas or facilities. Indirect impacts on recreational users could occur from noise, dust, and visual impacts from clearing and grading. Impacts on recreational users would be short term and minor, only occurring during construction hours. Construction and operation would not affect public access to recreation areas.

The Finnefrock Compressor Station is located adjacent to Sproul State Forest and approximately 0.5 mile west of the TSNA, both managed by the Pennsylvania Department of Conservation and Natural Resources. Much of the swamp near this site has been previously affected and disturbed as a result of logging, residential and commercial development. Due to the presence of existing facilities and disturbance, the distance from the compressor station to potential recreational users, and the limited amount of additional disturbance, impacts on recreation would be very minor and short term.

The Leesburg and Quantico Compressor Stations are located more than 0.5 mile from designated scenic or recreational areas (such as The Journey through Hallowed Ground National Scenic Byway or the Virginia Byway). Therefore, the Project would not have significant effect on these areas.

A portion of the Philip A. Bolen Memorial Park is located within 0.25 mile of the Stonewall M&R Station, north of the designated construction work area. The 405-acre regional park contains sports facilities and complexes, as well as trails, natural woodlands, picnic areas, and a visitors' center. Construction of the Stonewall M&R Station may result in very minor, short-term visual and noise impacts on recreational users, but these impacts would be temporary and limited to the time of construction. Public access to park facilities would not be prevented by the Project.

Recreational users could be temporarily affected by noise, dust, construction-related traffic, and visual impacts resulting from construction activities, personnel, and equipment. Project impacts on recreational users and areas would be minor, temporary,

and limited to the period of active construction. Following construction, most disturbed areas would be restored or allowed to revert to their former uses and impacts would be minimized by implementing the FERC's Plan and Procedures. DTI would be required to operate the facility in compliance with FERC's noise guideline and any other applicable noise criteria to minimize impacts. Project operation activities would be relatively minor, occurring within existing DTI industrial facilities and boundaries, and would not affect recreational users or public access to recreational areas.

B.6.3 Aesthetics

Construction of aboveground facilities at the Leesburg Compressor Station would include removal of trees and vegetation as well as ground disturbances. Aesthetic impacts would be minor for those travelling the Journey through Hallowed Ground National Scenic Byway on U.S. Highway 15 through Leesburg based on the distance (0.9 mile) and fact that the remaining forest depth (0.3 mile) between U.S. Highway 15 and the planned clearing would not be affected. The compressor station modifications would also be consistent with the existing industrial nature of the landscape and would not represent a significant change in the viewshed.

The construction of a secondary fences at the Finnefrock Compressor Station and adjacent Leidy Station would require the removal of trees along a 20-foot corridor within existing forest lands in the Pennsylvania Wilds Conservation Landscape. The clearing of trees for the secondary fence could affect the visual quality of the landscape in localized areas, however, the area to be cleared is surrounded by additional trees and forested areas on all sides which would minimize visual impacts.

The project modifications at the existing Chambersburg and Myersville Compressor Stations and construction of the Stonewall M&R Station do not occur within or near any local visual resource areas or visually sensitive areas. The Project modifications at these facilities would be similar in appearance and scale to the existing compressor station facilities; therefore no changes to visual resources are anticipated.

The proposed installation of a suction filter/separator and a gas cooler at the Quantico Compressor Station would result in temporary aesthetics impacts for those traveling on State Route 806 (Elk Run Road) Virginia Byway due to removal of vegetation and disturbance of soils. The compressor station modifications would occur within existing industrial areas that have been previously disturbed and would not represent a significant change to the existing landscape and viewshed.

Construction activities and the disturbance of vegetation and soils could result in temporary minor effects on aesthetics. Upon completion of construction, disturbed areas would be restored in accordance with the FERC's Plan and Procedures. To further minimize impacts on visual resources, DTI would add landscaping and vegetative screening to the Project facilities, as needed. The proposed Project modifications and

facilities would be located near areas with existing natural gas infrastructure and would be visually consistent with the industrial appearance of these existing facilities. Permanent changes to the current visual landscape are not anticipated as a result of modifications to existing aboveground facilities beyond what is already experienced at the sites.

B.6.4 Conclusion

Based on the proximity of existing industrial infrastructure and the limited scope of activity, we do not anticipate that the Project would have a significant impact on land use, recreational activities, aesthetics, or coastal zone management areas.

B.7 AIR QUALITY AND NOISE

B.7.1 Air Quality

Air quality in the Project area would be affected by construction and operation of the Leidy South Project. During construction of the Project, short-term emissions would be generated by operation of equipment, land disturbance, and increased traffic from construction workers and delivery vehicles. Operation of the modified compressor stations and new Stonewall M&R Station would result in air emissions increases.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2). These standards incorporate short-term (hourly to daily) levels and long-term (3-month to annual) levels to address acute and chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. Pennsylvania, Maryland, and Virginia have adopted all of the NAAQS. Pennsylvania and Maryland have established ambient air quality standards for other pollutants that are not applicable to the Project because these pollutants would not generated in notable quantities by the Project. The NAAQS are summarized in table B-8.

Table B-8 – National Ambient Air Quality Standards			
Pollutant	**Averaging Period**	**NAAQS**	
		Primary	**Secondary**
SO_2	3-hour [1]	None	0.5 ppm (1300 µg/m^3)
	1-hour [2, 3]	75 ppb (196 µg/m^3)	
PM_{10}	24-hour [4]	150 µg/m^3	150 µg/m^3
$PM_{2.5}$	Annual [5]	12 µg/m^3	15 µg/m^3
	24-hour [6]	35 µg/m^3	35 µg/m^3
NO_2	Annual Mean [7]	53 ppb (100 µg/m^3)	53 ppb (100 µg/m^3)
	1-hour [8]	100 ppb (188 µg/m^3)	None
CO	8-hour [1]	9 ppm (10,000 µg/m^3)	None
	1-hour [1]	35 ppm (40,000 µg/m^3)	None
Ozone	8-hour [9, 10]	0.075 ppm	0.075 ppm
Lead	Rolling 3-month [6]	0.15 µg/m^3	0.15 µg/m^3

1 Not to be exceeded more than once per year.
2 Compliance based on 3-year average of 99th percentile of daily maximum 1-hour average at each monitor within an area.
3 The 1-hour SO_2 standard was effective as of August 23, 2010. The 24-hour and annual average primary standards for SO_2 were revoked.
4 Not to be exceeded more than once per year on average over 3 years.
5 Compliance based on 3-year average of weighted annual mean $PM_{2.5}$ concentrations at community-oriented monitors.
6 Compliance based on 3-year average of 98th percentile of 24-hour concentrations at each population-oriented monitor within an area.
7 Not to be exceeded.
8 Compliance based on 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area.
9 Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area.
10 On October 1, 2015 EPA published a final rule to lower the primary and secondary ozone NAAQS to 0.07 ppm from 0.075 ppm. The final rule was not effective at the time of writing this document.

ppb = parts per billion
µg/m^3 = micrograms per cubic meter
ppm = parts per million

Air quality control regions (AQCRs) are areas established for air quality planning purposes in which implementation plans describe how ambient air quality standards would be achieved and maintained. AQCRs were established by EPA and local agencies, in accordance with Section 107 of the CAA, as a means to implement the CAA and comply with the NAAQS through State Implementation Plans (SIPs). 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 entire AQCR. Each AQCR, or a portion thereof, is designated based on compliance with the NAAQS. AQCR designations fall under three main categories: “attainment” (areas in compliance with the NAAQS); “nonattainment” (areas not in compliance with the

NAAQS); or "unclassifiable." Unclassifiable areas are treated as attainment areas for the purpose of permitting a stationary source of pollution. Areas that have been designated nonattainment but have since demonstrated compliance with the ambient air quality standard(s) are designated "maintenance" for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS pollutant.

All of Pennsylvania and Maryland, and the northern counties of Virginia within the Washington, D.C. metropolitan area (including Loudoun County, Virginia) are part of the Northeast Ozone Transport Region (OTR) as designated in the CAA. This OTR (42 USC §7511c) includes eleven northeastern states in which ozone transports from one or more states and contributes to a violation of the ozone NAAQS in one or more other states. States in this region are required to submit a SIP, stationary sources are subject to more stringent permitting requirements (including precursors such as nitrogen oxides [NO_x] and volatile organic compounds [VOC]), and various regulatory thresholds are lower for the pollutants that form ozone, even if they meet the ozone NAAQS.

EPA as well as state and local agencies have established a network of ambient air quality monitoring stations to measure ambient concentrations of criteria pollutants across the United States. The data are then used by regulatory agencies to compare the air quality of an area to the NAAQS. Frederick County, Maryland and Loudoun County, Virginia are designated marginal nonattainment for ozone. All other project areas are designated attainment for all criteria pollutants.

GHGs occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. These gases are the integral components of the atmosphere's greenhouse effect that warms the earth's surface and moderates day/night temperature variation. In general, the most abundant GHGs are water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone. EPA has defined GHGs to be the following six well-mixed GHGs, finding that the presence of these GHGs in the atmosphere may endanger public health and public welfare through climate change: CO_2, methane, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs are regulated but there are no ambient air quality standards for GHGs.

The Project would generate GHG emissions from construction and operations. The principle GHGs that would be emitted by the Project are CO_2 and methane. Emissions of GHGs are quantified and regulated in units of carbon dioxide equivalents (CO_2e). The CO_2e unit of measure takes into account the GWP of each GHG. The GWP is a ratio relative to CO_2 that is based on the properties of the GHG's ability to absorb solar radiation as well as the residence time within the atmosphere. Thus, CO_2 has a GWP of 1, methane has a GWP of 25, and N_2O has a GWP of 298, according to EPA's GHG mandatory reporting program.

B.7.1.1 Permitting/Regulatory Requirements

The CAA is the basic federal statute governing air pollution. The provisions of the CAA that are potentially relevant to the Project are discussed in the following sections.

Prevention of Significant Deterioration

Proposed new or modified air pollutant emissions sources must undergo a New Source Review (NSR) permitting process prior to construction or operation. Through the NSR permitting process, local, state, and federal regulatory agencies review and approve project construction plans, regulated pollutant increases or changes, emissions controls, and various other details. The three basic categories of NSR permitting are Prevention of Significant Deterioration (PSD), Nonattainment New Source Review (NNSR), and minor source NSR. Separate procedures have been established for federal preconstruction air permit review of large proposed projects in attainment areas versus nonattainment areas. Federal preconstruction review for affected sources located in attainment areas is called PSD. This process is intended to keep new or modified major air emission sources from causing existing air quality to deteriorate beyond acceptable levels. Federal preconstruction review for affected sources located in nonattainment areas is commonly referred to as NNSR, which has more stringent thresholds and requirements than PSD. Projects for which pollutants are not subject to PSD or NNSR may be subject to minor source NSR, which is the minor source permitting process for the state or local jurisdictional agency. Minor source NSR ensures compliance with the state regulations discussed later in this section.

PSD regulations (40 CFR 52.21) define a major source as any source type belonging to a list of named source categories that have a potential to emit (PTE) of 100 tons per year (tpy) or more of any regulated pollutant or 250 tpy for sources not among the listed source categories. These are referred to as the PSD major source thresholds. Of the compressor stations that would have new air emission sources installed under the Leidy South Project (i.e., Finnefrock, Chambersburg, and Myersville), only the Finnefrock Compressor Station is an existing PSD major source (i.e., has an existing PTE that is greater than the major source thresholds). Table B-9 summarizes the existing and post-project PTE for the two minor sources (Chambersburg and Myersville compressor stations).

Table B-9 – Summary of Existing and Post-Project PTE					
Pollutant	**Annual Existing Facility PTE (tpy)**		**Annual Post-Project Facility PTE (tpy)**		**PSD/Title V Major Source Thresholds (tpy)**
	Chambersburg Compressor Station	**Myersville Compressor Station**	**Chambersburg Compressor Station**	**Myersville Compressor Station**	
CO	70.3	5.2	73.0	6.3	250/100
NO_x	58.4	23.4	87.8	24.3	250/100 250/25
VOC	10.1	6.5	16.0	14.4	250/50 250/25
PM_{10}	9.4	2.8	17.4	18.4	250/100
$PM_{2.5}$	9.4	2.8	17.4	18.4	250/100
SO_2	2.1	0.3	3.9	4.2	250/100
Total HAPs	1.3	0.9	2.1	2.1	25
GHGs (CO_2e)	76,218	53,892	152,978	161,881	NA
NA = Not Applicable					

As shown in table B-9, the post-project PTE for the Chambersburg and Myersville Compressor Stations are below major source thresholds; therefore, these stations would remain minor sources under PSD and would not be subject to PSD review.

Modifications to the Finnefrock Compressor Station are subject to the PSD regulations if the project's emission increase is greater than the significant emission increase (SEI). The Project emissions increase at Finnefrock would not exceed the SEIs for any PSD pollutants, as shown in table B-10, and would not be subject to PSD permitting.

Table B-10 –Finnefrock Compressor Station Post-Project PTE and Emission Increase				
Pollutant	**Emission Increase (tpy)**	**PSD Significant Emission Increase (tpy)**	**Post Project PTE (tpy)**	**Title V Major Source Threshold (tpy)**
CO	2.2	100	217.6	100
NO_x	21.5	40	532.6	100
VOC	5.3	40	65.5	50
PM_{10}	5.9	15	30.5	100
$PM_{2.5}$	5.9	10	26.0	100
SO_2	1.3	40	5.0	100
Total HAPS	NA	NA	28.5	25
GHGs (CO2e)	NA	NA	188,737	NA

PTE = Potential to emit
CO = carbon monoxide
NO_x = nitrogen oxides
VOC = volatile organic compounds
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SO_2 = sulfur dioxide
HAPS = hazardous air pollutants
GHGs = greenhouse gases
CO_2e = carbon dioxide equivalent
NA = Not Applicable

The potential impact on protected Class I areas must also be considered in the PSD review process; however, no facilities under the Leidy South Project are subject to PSD. Therefore, Class I area impact analyses are not required. In addition, the closest Class I area to the Finnefrock, Chambersburg, and Myersville Compressor Stations (Shenandoah National Park) is more than 80 kilometers away.

Nonattainment New Source Review

In nonattainment areas, a separate procedure has been established for federal preconstruction air permit review of certain large proposed projects, known as NNSR. NNSR applicability is determined separately and independently from PSD review. The applicability of the NNSR permitting program is based on the major source status of the facility and emissions increase from the Project. A physical modification or a change in the method of operation of an existing major source is subject to NNSR if the alteration would result in a significant emission increase of affected pollutants. Each NNSR pollutant and its precursor(s) are reviewed individually and compared to the applicable major source thresholds to determine major source status on a pollutant-by-pollutant basis.

The entire state of Pennsylvania is located in the OTR. Sources in Pennsylvania are, therefore, subject to more stringent mitigation measures for permitting for ozone precursors (NO_x and VOC). Frederick County, Maryland is classified as marginal nonattainment for ozone and is also in the OTR. Table B-11 shows the existing and post-project PTE for each affected compressor station.

Table B-11 – NNSR Major Source Evaluation for Existing Equipment and Proposed Modifications							
Pollutant	**Annual Existing Facility Potential to Emit (tpy)**			**Annual Post-Project Facility Potential to Emit (tpy)**			**Major Source Threshold (tpy)**
	Finnefrock Compressor Station	**Chambersburg Compressor Station**	**Myersville Compressor Station**	**Finnefrock Compressor Station**	**Chambersburg Compressor Station**	**Myersville Compressor Station**	
NO_x	597.1	58.4	--	532.6	87.8	--	100
VOC	60.9	10.1	--	65.5	16.0	--	50
NO_x	--	--	23.4	--	--	24.3	25
VOC	--	--	6.5	--	--	14.4	25

NO_x = nitrogen oxides
VOC = volatile organic compounds

As shown in table B-11, the Chambersburg and Myersville Compressor Stations are and would remain minor sources under NNSR; however, the Finnefrock Compressor Station is currently a major source under the NNSR permitting program. As such, the Project emissions increase must be compared to the NNSR SEI thresholds to determine if the Project is subject to NNSR permitting. The emissions increases at the Finnefrock Compressor Station for NOx (21.5 tpy) and VOC (5.3 tpy) are below the NNSR significant emission increase threshold (40 tpy). Therefore, Project emissions increase at the Finnefrock Compressor Station is below the NNSR SEIs. As such, the Project would not trigger NNSR permitting.

Title V Operating Permit

Title V of the CAA requires states to establish an air operating permit program. The requirements of Title V are outlined in 40 CFR 70 and the permits required by these regulations are often referred to as Part 70 permits. If a facility's PTE is equal to or greater than the criteria pollutant or hazardous air pollutants (HAP) thresholds, the facility is considered a major source. The major source threshold level for an air emission source is 100 tpy for criteria pollutants. The major source HAP thresholds for a source are 10 tpy of any single HAP or 25 tpy of all HAPs in aggregate. Sources with an existing Title V permit or new sources obtaining a Title V permit for non-GHG pollutants are required to address GHGs if the source has the potential to emit 100,000 tpy CO_2e. Only the Finnefrock Compressor Station is a Title V major source (for CO, NO_x, VOC, and HAPs). The PTE for GHGs at Finnefrock is over 100,000 tpy CO_2e; therefore, the facility may be subject to additional requirements for GHGs under the Title V permitting program.

New Source Performance Standards

The NSPS, codified in 40 CFR 60, require new, modified, or reconstructed sources to control emissions as specified in the applicable source category provisions

Subpart JJJJ (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*) would apply to the auxiliary generators at the Finnefrock and Myersville Compressor Stations. Subpart JJJJ would limit these engines to 100 hours per year to allow for maintenance, readiness, and non-emergency activities and emission limits (2.0 gram/brake horsepower-hour [g/bhp-hr] for NO_x, 4.0 g/bhp-hr for CO, and 1.0 g/bhp-hr for VOC) as well as record keeping and reporting requirements. DTI would meet these emission limits by either (1) purchasing a certified engine or (2) purchasing a non-certified engine and performing routine compliance testing. Subpart KKKK (*Standards of Performance for Stationary Combustion Turbines*) applies to the natural gas-fired turbines at the Finnefrock, Chambersburg, and Myersville Compressor Stations. These turbines would be subject to an NO_x emissions limit of 25 parts per million (ppm) at 15 percent oxygen (ppm at 15 percent O_2) or 150 nanograms per joule of useful output (1.2 pounds per megawatt-hour) with the turbine operating at or greater than 75 percent

of peak load. Each of the new gas turbines would be a Solar Turbine equipped with "SoLoNOx" lean pre-mix combustor with an emission guarantee of 15 ppm NO_x at 15 percent O_2. In addition, a selective catalytic reduction system would be installed on the exhaust of the proposed new turbine at the Myersville Compressor Station to reduce NO_x emissions to 5 ppm at 15 percent O_2. Subpart KKKK also requires a fuel emission standard or a fuel sulfur standard equivalent to potential SO_2 emissions of 0.060 pound per million British thermal units. The natural gas fuel used at each station meets this requirement. The new turbines would also be subject to record keeping and reporting requirements of this subpart.

National Emission Standards for Hazardous Air Pollutants

The NESHAPs, codified in 40 CFR 61 and 63, regulate the emissions of HAPs from existing and new sources. The emission sources included in the Project would not emit pollutants regulated under 40 CFR 61; therefore, these NESHAP regulations would not apply. The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of 40 CFR 63 NESHAP (Part 63). Part 63 regulates HAP emissions specific source types. The Finnefrock Compressor Station is considered as a major source of HAPs while the Chambersburg and Myersville Compressor Stations are considered as area (minor) sources of HAPs. Subpart YYYY (*National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*) applies to the new turbine at the Finnefrock Compressor Station; however, on August 18, 2004, EPA issued a Stay of Implementation on 40 CFR 63 Subpart YYYY for lean premix gas-fired turbines and diffusion flame gas-fired turbines as EPA considers delisting them from the Rule. Currently, the turbine would only be subject to the general permitting and notification requirements under 40 CFR 63, Subpart A. Subpart ZZZZ, (*National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*), would apply to the auxiliary generators at the Finnefrock and Myersville Compressor Stations. Since each of these auxiliary generators would meet the definition of an emergency generator, the units would be subject to only the initial notification requirements of Subpart ZZZZ (as well as meeting the requirements of NSPS Subpart JJJJ).

General Conformity

The General Conformity Rule is codified in 40 CFR 93, Subpart B, Determining Conformity of General Federal Actions to State and Federal Implementation Plans. The lead agency for any project that requires federal action must evaluate the applicability of the General Conformity Rule for emission-generating activities generated in nonattainment or maintenance areas.

A General Conformity Determination must be completed by the lead federal agency if a federal action is likely to result in direct and indirect emissions (construction

and operation) that would exceed the General Conformity applicability threshold levels of the pollutant(s) for which an air basin is in nonattainment or maintenance.

The estimated Project construction emissions in each nonattainment/maintenance area would be below the applicable General Conformity thresholds; therefore, a General Conformity Determination is not required. See table B-12 in section B.7.1.2 Impacts and Mitigation for the estimated construction emissions from the Project.

State Regulations

In addition to federal regulations, Pennsylvania, Maryland, and Virginia have their own regulations that DTI would need to comply with during construction and operation of the Project.

Pennsylvania

Air pollution control regulations are promulgated in PAC, Title 25, Article III (Chapters 121 through 145) and administered by PADEP. The Pennsylvania facilities and construction activities would be subject to state regulations, including but not limited to, the following:

- PAC Title 25, Section 123.1-123.2 (*Standards for Contaminants – Fugitive Emissions*) requires that fugitive emissions be minimized through reasonable actions to prevent particulate matter (PM) from becoming airborne;
- PAC Title 25, Section 123.13-123.14 (*Standards for Contaminants – Particulate Matter Emissions*) limits PM emissions from various sources including combustion units;
- PAC Title 25 Section 123.21-123.25 (*Standards for Contaminants – Sulfur Compound Emissions*) limit sulfur compound emissions from combustion units as well as other processes;
- PAC Title 25 Section 123.31 (*Standards for Contaminants – Odor Emissions – Limitations*) establishes limitations on malodorous air contaminants from any source;
- PAC Title 25 Section 123.41-123.46 (*Standards for Contaminants – Visible Emissions – Limitations*) establishes opacity limitations;
- PAC Title 25, Section 127.12(a)(5) (*Construction, Modification, Reactivation and Operation of Sources*) requires that air plan approval applications show that the emissions from a new source would be the minimum attainable through the use of the best available technology; and
- PAC Title 25, Section 129.14 (*Standards for Sources – Miscellaneous Sources – Open burning operations)* establishes restrictions on open burning.

Maryland

Maryland state air quality regulations are codified in the Code of Maryland Regulations (COMAR) Title 26, Subtitle 11. The Maryland facilities and construction activities would be subject to state regulations, including but not limited to, the following:

- COMAR 26.11.09.05 (*Visible Emissions)* regulates visible emissions from fuel burning equipment;
- COMAR 26.11.06.08 (*Nuisance*) prohibits air pollution that may cause a nuisance;
- COMAR 26.11.06.09 (*Odors*) prohibits air pollution that may cause an odor;
- COMAR 26.11.07 (*Open Fires*) regulates open burning activities; and
- COMAR 26.11.20 (*Mobile Sources*) regulates emissions from ships and motor vehicles.

Virginia

Virginia Administrative Code (VAC), Title 9, Agency 5 regulates air pollution within Virginia and is administered by the VDEQ. The Leidy South Project involves the addition of one small stationary sources of operational air emissions; the heater at the Stonewall M&R Station. Therefore, the potentially applicable regulations to the Leidy South Project would be limited to those that apply to the heater and those that apply to construction related activities. These may include, but are not limited to, to the following:

- VAC Title 9 Agency 5 (9VAC5) Chapter 50, Part II, Article 1 (*Standards of Performance For Visible Emissions and Fugitive Dust/Emissions*) regulates fugitive dust emissions from construction and operation as well as visible emissions;
- 9VAC5 Chapter 50, Part II, Article 2 (*Odorous Emissions*) prohibits the emission of nuisance odors;
- 9VAC5 Chapter 50, Part II, Article 4 (*Stationary Sources*) establishes requirements for stationary emission sources including best available control technology (BACT) for minor NSR permit approvals;
- 9VAC5 Chapter 60, Part II, Article 5 (*Toxic Pollutants from New and Modified Sources*) established toxic air pollutant impact guidelines and BACT for toxic air pollutants;
- 9VAC5 Chapter 80, Part II, Article 5 and 6 (*Permits for New and Modified Stationary Sources and State Operating Permits*) establish state (minor) stationary source permitting requirements;
- 9VAC5 Chapter 130 (*Regulation for Open* Burning) regulates open burning activities; and

- 9VAC5 Chapter 40, Part II Article 41 (Emission Standards For Mobile Sources) establishes emission control and visible emission standards for mobile sources (including motor vehicles).

B.7.1.2 Impacts and Mitigation

The Project would produce air pollutant emissions from construction and operation.

Construction Impacts and Mitigation

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic could also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., NO_x, CO, VOC, SO_2, PM_{10}, and $PM_{2.5}$) and GHGs. Construction emissions are presented in table B-12, broken down per calendar year.

Table B-12 – Project Construction Emissions									
Project Area	**Year**	**Emissions (tpy)**							**General Conformity Threshold (tpy)**
		NO_x	**VOC**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	
Finnefrock Compressor Station	2016	5.1	0.5	7.2	<0.1	7.2	1.3	1,040.0	--
	2017	6.7	0.9	14.2	<0.1	14.3	2.5	1,320.0	--
Centre Compressor Station	2016	0	0	0	0	0	0	0	--
	2017	1.5	0.24	1.4	<0.1	1.7	0.4	250.0	--
Chambersburg Compressor Station	2016	5.1	0.6	9.6	<0.1	3.9	0.8	1,064.0	--
	2017	2.1	0.3	5.3	<0.1	6.3	1.0	460.0	--
Myersville Compressor Station	2016	2.5	0.4	5.8	<0.1	2.5	0.5	479.0	100 (NOx), 50 (VOC)
	2017	6.1	0.8	13.3	<0.1	5.1	1.1	1,182.0	100 (NOx), 50 (VOC)
Leesburg Compressor Station	2016	5.1	0.5	7.2	<0.1	3.3	0.7	1,040.0	100 (NOx), 50 (VOC)
	2017	6.7	0.9	14.2	<0.1	6.4	1.3	1,320.0	100 (NOx), 50 (VOC)
Quantico Compressor Station	2016	0	0	0	0	0	0	0	--
	2017	1.5	0.2	1.4	<0.1	1.7	0.4	250.0	--
Panda Meter Station	2016	0	0	0	0	0	0	0	--
	2017	1.5	0.2	1.8	<0.1	1.9	0.3	303.0	--
Project Total	2016	17.8	2.0	29.8	<0.1	16.9	3.3	3623.0	--
	2017	26.1	3.6	51.6	<0.1	37.4	7.0	5085.0	--

These emissions represent the combined emissions of construction equipment combustion, on-road vehicle travel, off-road vehicle travel, and earthmoving fugitives. Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for each area of the Project. Emission factors from EPA's AP-42 and EPA's Motor Vehicle Emissions Simulator (MOVES) emission modeling software were utilized to estimate vehicle emissions.

Construction of the Project would occur over a 17-month period beginning in May 2016. Project construction emissions would be small and would result in short-term impacts at the location of the construction activity. Construction would be subject to state regulations for minimizing dust. Once construction activities in an area are completed, fugitive dust and construction equipment emissions would subside. Conditions after completion of construction would transition to operational-phase emissions after commissioning and initial startup of the Project. Open burning is not

planned for project construction but is governed by state regulations to reduce impacts on nearby areas.

Operational Impacts and Mitigation

Modifications to the Finnefrock, Chambersburg, and Myersville Compressor Stations as well as the construction of the Stonewall M&R Station would result in new operational air emission sources. The Stonewall M&R Station would include fugitive equipment leaks from such things as valves and piping connections as well as a small (3 MMBtu/hr) natural gas fired heater. As such, the Stonewall M&R Station operational air emissions would equate to less than 1.4 tpy of any criteria pollutant and 1,600 tpy CO2e of GHGs. These emissions are not expected to have a significant impact on ambient air quality. The compressor station modifications at Finnefrock, Chambersburg, and Myersville would result in notable operational emissions. As a result, air dispersion modeling was performed to determine the ambient air quality impacts from these emissions. Tables B-13 through B-15 summarizes the impacts of these operational emissions.

Table B-13 – Air Quality Impact Analysis at the Finnefrock Compressor Station

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Impact (Modeled + Background) ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
CO	8-hour	639	570	1209	10,000
	1-hour	1213	570	1783	40,000
NO_2	Annual	90	3.6	93.6	100
	1-hour	187.6	Hourly Data	187.6	188
PM_{10}	24-hour	31.2	27	58.2	150
$PM_{2.5}$	Annual	1.5	6.2	7.7	12.0
	24-hour	6.5	16	22.5	35
SO_2	3-hour	2.0	28	30	1,300
	1-hour	1.88	23	24.9	195

Table B-14 – Air Quality Impact Analysis at the Chambersburg Compressor Station					
Pollutant	**Averaging Period**	**Maximum Modeled Concentration ($\mu g/m^3$)**	**Background Concentration ($\mu g/m^3$)**	**Total Impact (Modeled + Background) ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
CO	8-hour	141	1,500	1,641	10,000
	1-hour	181	1,700	1,881	40,000
NO_2	Annual	9.4	4.4	14	100
	1-hour	109	36	146	188
PM_{10}	24-hour	15	27	42	150
$PM_{2.5}$	Annual	10.5	10.0	11.5	12.0
	24-hour	9.3	25	34	35
SO_2	3-hour	5.2	43	48	1,300
	1-hour	5.4	31	36	195

Table B-15 – Air Quality Impact Analysis at the Myersville Compressor Station					
Pollutant	**Averaging Period**	**Maximum Modeled Concentration ($\mu g/m^3$)**	**Background Concentration ($\mu g/m^3$)**	**Total Impact (Modeled + Background) ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
CO	8-hour	1.1	1,500	1,501	10,000
	1-hour	4.4	1,700	1,704	40,000
NO_2	Annual	0.08	4.4	4.5	100
	1-hour	8.3	36	44	188
PM_{10}	24-hour	0.9	27	28	150
$PM_{2.5}$	Annual	0.06	9.6	9.7	12.0
	24-hour	0.5	26	27	35
SO_2	3-hour	1.4	43	44	1,300
	1-hour	2.4	31	33	195

As shown, the proposed modifications to these compressor stations would not cause or significantly contribute to an exceedance of an ambient air quality standard. The modeled impacts from the Finnefrock Compressor Station for NO_2 and Chambersburg Compressor Station for $PM_{2.5}$ are close to the NAAQS. It is important to note that there are several conservative assumptions used in NAAQS modeling such as, using PTE (maximum emission rates operating 24 hours per day 7 days per week), including background concentrations that are already close to the NAAQS but presumed to represent the existing air quality, modeling existing equipment in addition to the new proposed equipment, and using the facility fenceline as ambient air (instead of the property line). These assumptions are intended to make the results conservative (high) to ensure protection of public health and welfare.

GHG emissions would also be generated from the operation of the Leidy South Project. These emissions would not result in a direct impact but would contribute to indirect impacts through climate change. The direct and indirect GHG emissions from

the Project are summarized in table B-16. The indirect impact of these emissions are discussed in section B.9.3 Climate Change.

Table B-16 – Project Operational Greenhouse Gas Emissions		
Direct or Indirect	**Facility/Source**	**CO_2e (tpy) [1]**
Direct	Finnefrock	42,220
Direct	Chambersburg	76,760
Direct	Myersville	107,990
Direct	Total Direct	226,970
Indirect	Combustion of 0.155 BCF/day	3,312,378
Indirect	Total Indirect	3,312,378

[1] These emissions represent the operation emissions due to the Project. Existing compressor station potential emissions are not included.

CO_2e = carbon dioxide equivalent

B.7.2 Noise

Construction and operation of the Project would affect the local noise environment in the Project areas. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound 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, in the calculation of the L_{dn}, late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq}.

In 1974, EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. This

document provides information for state and local governments to use in developing their own ambient noise standards. 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 Projects at noise sensitive areas (NSAs), such as residences, schools, or hospitals. Due to the 10 dBA nighttime penalty added prior to calculation of the L_{dn}, for a facility to meet the L_{dn} 55 dBA 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. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half the loud.

Some state and local jurisdictions have quantitative noise limits. Maryland noise regulations limit the day and night sound levels (L_d and L_n) of receiving properties based on its classification. For continuous noise sources such as compressor stations, the L_n limits are more restrictive in order to account for greater human sensitivity to noise at night. The applicable L_n limits in Maryland are 75 dBA (industrial), 62 dBA (commercial), and 55 dBA (residential). Maryland noise regulations also limit L_{dn} to 64 dBA at commercial properties and 55 dBA for residential properties. For construction, the noise standard in Maryland is 90 dBA during daytime hours.

Frederick County, Maryland noise regulations establish permissible sound levels from industrial sources at any adjacent property. The permissible sound levels are based on the receiving property classification and are summarized in table B-17.

Table B-17 – Maximum Permitted Industrial Sound Pressure Levels in Frederick County, Maryland (dBA)

Sound Measured to:	Decibels Continuous Slow Meter Response		Impact Fast Meter Response	
	Limited Industrial District	General Industrial District	Limited Industrial District	General Industrial District
Residential District	55	55	60	60
Commercial District	64	64	70	75
Limited Industrial District lot, adjacent to noise source	70	75	80	--

The Frederick County noise regulation does not apply to temporary construction activities between 7 a.m. and 7 p.m.

Based on the Maryland and Frederick County noise regulations, the most restrictive noise limits for the Myersville Compressor Station would be 55 dBA L_{dn} (residential property lines) and 64 dBA L_{dn} (commercial property lines). The FERC criterion of 55 dBA L_{dn} applies at the residence. Therefore, in the unusual situation of a

house set back on a very large parcel of land, the FERC sound limit could be satisfied at the house and the Maryland noise limit exceeded at the property line. In addition, non-residential properties that are not considered NSAs under the FERC noise guideline may be the closest receiving property to the noise source, for which only the Maryland noise limits would apply.

Loudoun County, Virginia noise regulations also establish permissible noise levels at receiving properties based on land use classification. These levels are summarized in table B-18.

Table B-18 – Sound Level Limits in Loudoun County, Virginia		
Property Type	**Daytime Sound Level (dBA)**	**Nighttime Sound Level (dBA)**
Residential	55	50
Commercial	60	55
Industrial	70	65

In addition to noise requirements, the Commission, under 18 CFR Part 380.12(k)(v)(B), requires that operation of compressor stations not result in any perceptible increase in vibration. State and local regulations may also prohibit perceptible vibration at the receiving property. If operation of the proposed compressor stations results in perceptible vibration, the Commission would require DTI to investigate the cause and could require mitigation to reduce the vibration.

B.7.2.1 Existing Noise Conditions

The existing conditions near the four compressor stations that would have new compression installed (i.e., Finnefrock, Chambersburg, Myersville, and Leesburg) vary. The facilities are generally located in suburban to rural land use. Finnefrock and Leesburg are surrounded by wooded areas while Chambersburg and Myersville have a mixture of wooded and open land. Existing noise sources around the compressor stations include roadways/traffic and natural noise (such as wildlife). The existing noise levels at each station were estimated based on ambient noise surveys. The results of these surveys are included in section 7.2.2.

B.7.2.2 Impacts and Mitigation

Construction Noise Impacts and Mitigation

Construction of the facilities would involve operation of general construction equipment and noise would be generated during the installation of the Project components. Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition. Noise levels would increase in the immediate vicinity of the

construction activities; however, the noise would be localized and short term. The Project would last approximately 17 months. Nighttime noise levels are not expected to increase during construction because construction activities would generally be limited to daylight hours.

Maryland noise regulations limit construction noise during daytime hours to 90 dBA. Typical construction equipment would generate 90 dBA at less than 50 feet. Because no NSAs would be located within 50 feet of construction activities, the Project is not expected to exceed the Maryland noise requirement.

Operational Noise Impacts and Mitigation

Noise would generally be produced on a continuous basis at the compressor stations by the compressor units and associated equipment. Noise analyses were completed for the four compressor stations with additional compression (i.e., Finnefrock, Chambersburg, Myersville, and Leesburg). The results of the noise analyses are summarized in table B-19.

Table B-19 – Compressor Station Predicted Sound Levels						
Project Component	**NSA**	**Distance/ Direction (feet)**	**Calculated Existing L_{dn} (dBA)**	**Additional Compressor Contribution L_{dn} (dBA)**	**Total L_{dn} (dBA)**	**Noise Increase (dBA)**
Finnefrock Compressor Station	S1	700/SSW	51.0	43.4	51.7	0.7
	S4	800/SSE	51.0	41.4	51.5	0.5
	S5	950/SE	51.5	40.4	51.8	0.3
Chambersburg Compressor Station	S1	800/ESE	51.8	40.4	52.1	0.3
	S3	1,000/S	52.5	38.4	52.7	0.2
	S4	700/SW	52.2	41.4	52.5	0.3
	S6	1,100/W	51.4	37.4	51.6	0.2
	S7	1,100/W	44.7	37.4	45.4	0.7
Myersville Compressor Station	S1	1,100/NW	48.3	40.4	49.0	0.7
	S5	1,100/SW	46.8	38.4	47.4	0.6
	P1	600/NW	47.7	48.4	51.1	3.4
	P2	600/NE	59.4	48.4	59.7	0.3
	P3	300/S	56.6	50.4	57.5	0.9
	P4	350/W	50.3	50.4	53.4	3.1
Leesburg Compressor Station	S3	800/E	49.3	40.4	49.8	0.5
	S6	1,100/ESE	48.9	38.4	49.3	0.4
	P1	450/WNW	47.5 [2]	39.0 [2]	48.1 [2]	0.6
	P2	350/NNE	44.6 [2]	40.0 [2]	45.9 [2]	1.3
	P3	1400/ESE	46.6 [2]	29.0 [2]	46.7 [2]	0.1
	P4	1300/SSW	38.5 [2]	31.0 [2]	39.2 [2]	0.7

[1] NSAs with "S" designation are noise sensitive areas such as residences. Those with a "P" designation are property line locations for evaluation of applicable state or local noise requirements.
[2] All values for these locations are the sound equivalent (L_{eq}) levels.

Those NSAs in table B-19 with an "S" designation are residences at which the FERC guideline limits noise attributable from the compressor station to 55 dBA L_{dn}. As shown above, the predicted noise levels after the Project are less than 55 dBA L_{dn} at the nearest NSAs. At Myersville, the predicted noise levels at the property line locations are below 55 dBA L_{dn} for residential properties (P1 and P4) and 64 dBA L_{dn} for commercial properties (P2 and P3). At the Leesburg Compressor Station, the predicted noise levels at the property line are less than 50 dBA L_{eq}. Therefore, the modified compressor stations would comply with the applicable FERC/state/local noise guidelines. Additionally, the estimated noise increase at the nearby NSAs (residences) from compressor station modifications would be less than 1 dBA, which is below the 3 dBA threshold of noticeable difference for humans.

The noise analyses account for noise control measures, including insulation of an acoustically treated compressor building, mufflers, equipment specific maximum noise levels, and a noise barrier. To ensure that the actual noise levels resulting from operation of the modified compressor stations meet our noise criteria, **we recommend that:**

- **DTI should file noise surveys with the Secretary no later than 60 days after placing each expanded compressor station (i.e., Finnefrock, Chambersburg, Myersville, and Leesburg) in service. If a full load condition noise survey is not possible, DTI should provide an interim survey at the maximum possible horsepower load and provide the full load survey within 6 months. If the noise attributable to the operation of all of the equipment at the compressor station, under interim or full horsepower load conditions, exceeds an L_{dn} of 55 dBA at any nearby NSAs, DTI should file a report on what changes are needed and should install the additional noise controls to meet the level <u>within 1 year</u> of the in-service date. DTI should confirm compliance with the above requirement by filing a second noise survey with the Secretary <u>no later than 60 days</u> after it installs the additional noise controls.**

In addition to normal operational noise, there may also be sources of noise due to maintenance or emergency operation. Specifically, emergencies and maintenance activities involve blowdowns (depressurizing/emptying station equipment to remove natural gas). Based on information from DTI, the blowdowns at the Project compressor stations are based solely on operational need and are thus highly variable and may be silenced or unsilenced.

There are two types of blowdowns: unit blowdowns and station blowdowns. Unit blowdowns are used for shutting down units or during unit startup. All new compressor units being installed on this Project would have unit blowdown silencers designed to meet 60 dBA at 50 feet. Station blowdowns are designed to vent all main gas piping within the station. Station blowdowns may occur as part of the emergency shutdown (ESD) system or for maintenance. Annual testing of the ESD system is currently conducted. The Project modifications would not change the intensity or frequency of these tests.

Construction equipment for the Projects would be operated on an as-needed basis. NSAs near the construction areas may experience an increase in perceptible noise but the effect would be temporary and local. As a result, the Project would not result in significant noise impacts at nearby NSAs.

Operation of the Project compressor and meter stations would not exceed the FERC noise criterion. Noise from planned or unplanned blowdown events could exceed the noise criteria but would be infrequent and of relative short duration. Based on the

analyses conducted, mitigation measures proposed, and our recommendations, we conclude that operation of the Project would not result in significant noise impacts on nearby NSAs.

B.8 RELIABILITY AND SAFETY

The pressurization of natural gas at a compressor station involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiant, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The modifications to the existing Finnefrock, Chambersburg, Leesburg, and Myersville Compressor Stations, appurtenant facilities, and the Stonewall M&R Station must be designed, constructed, operated, and maintained in accordance with USDOT Minimum Federal Safety Standards under 49 CFR Part 192. The regulations describe safety requirements for pipeline facilities and the transport of natural gas, and are intended to ensure adequate protection for the public and to prevent facility accidents and failures, including emergency shutdowns and safety equipment. USDOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) establishes national policy, sets and enforces standards, provides education, and conducts research to ensure that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level.

Title 49 CFR Parts 192.163 through 192.173 specifically addresses design criteria for compressor stations, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency. The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for an accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane has an auto-ignition temperature of 1,000 degrees Fahrenheit 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 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.

B.8.1 Safety Standards

USDOT is mandated to provide pipeline safety under Title 49 USC Chapter 601. 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 pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline

incidents. This work is shared with state agency partners and others at the federal, state, and local level. USDOT provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. A state may also act as USDOT's agent to inspect interstate facilities within its boundaries; however, USDOT is responsible for enforcement actions. USDOT pipeline standards are published in Title 49 CFR Parts 190-199. Part 192 specifically addresses natural gas pipeline safety issues.

Under a *Memorandum of Understanding on Natural Gas Transportation Facilities* (Memorandum) dated January 15, 1993, between USDOT and FERC, USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by USDOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. FERC accepts this certification and does not impose additional safety standards other than USDOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert USDOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction.

FERC also participates as a member of USDOT's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

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

DTI’s construction and operation of the modified compressor stations and M&R station would represent a minimum increase in risk to the public. DTI would comply with all requirements of USDOT, OSHA, and other applicable regulations, standards, and guidelines for safety. This would include compliance with applicable design standards and codes, construction provisions as mandated, and operation procedures and standards. We are confident that with implementation of the required design criteria for these facilities, they would be constructed and operated safely.

B.9 CUMULATIVE IMPACTS

The eastern United States have been affected by human activity for over 15,000 years beginning with indigenous peoples who lived in large settlements and associated satellite villages. Today approximately 27 million people reside in Pennsylvania, Maryland, and Virginia. Although the region has been substantially affected by human activity, valuable natural resources remain. The EPA indicates that there are about 1.7 million acres of upland forest in these same counties.

In accordance with NEPA, we identified other actions located in the vicinity of the Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by CEQ, a cumulative effect is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions. In this analysis, we consider the impacts of past projects within the regions of influence as part of the affected environment (environmental baseline) which was described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered. Actions located outside the regions of influence are generally not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Project.

As described in the environmental analysis section of this is EA, constructing and operating the Project would temporarily and permanently impact the environment. The Project would impact geology, soils, water resources, vegetation, wetlands, wildlife, cultural resources, visual resources, air quality, noise, and some land uses. However, we conclude that these impacts would not be significant. We also conclude that nearly all of the project-related impacts would be contained within previously disturbed areas. For example, erosion control measures consistent with the FERC's Plan and Procedures would keep disturbed soils within work areas. For other resources, the contribution to regional cumulative impacts is lessened by the expected recovery of ecosystem function. For example, the Project would temporarily impact 10.5 acres of forested woodlands; however, permanent impacts from the project would be limited to the 0.5 acre needed for operation. The remaining 10.0 acres would be allowed to return to forest. This is in contrast with other large-scale development projects in which forested land is permanently converted to uplands or commercial/industrial land. Similarly, vegetative communities would be cleared, but restoration would proceed immediately following construction. We determined that visual impacts would be minimal at any discrete location from the Project.

Based on the impacts of the Project as identified and described in this EA and consistent with CEQ guidance, we have determined that the following resource-specific regions of influence are appropriate to assess cumulative impacts:

- As no wetlands or waterbodies are affected by the Project, we did not consider these resources in this analysis. Impacts on geology, soils, vegetation, and wildlife would be largely contained within or adjacent to proposed Project workspaces. Therefore, for these resources we evaluated other projects/actions within the HUC 12[5] sub-watersheds of the Project facilities.
- Impacts on cultural resources would also be largely contained within or adjacent to proposed Project workspaces. Therefore, we evaluated other projects/actions that overlapped with known cultural features potentially affected by the Project.
- Temporary impacts on air quality, including fugitive dust, would be largely limited to areas immediately around active construction. Long-term impacts on air quality would be largely contained within about a 30-mile radius. We evaluated other projects/actions that overlap in time and location with construction activities and those with potentially significant long-term stationary emission sources within a 30-mile radius of the Project.
- Long-term impacts on NSAs were evaluated by identifying other stationary source projects with the potential to result in significant noise that would affect the same NSAs within 0.5 mile of the Project compressor stations. None were identified near the Project compressor station modifications; therefore, we did not consider long-term cumulative noise impacts further in this analysis.
- Land use and aesthetics impacts are highly localized. Therefore, we evaluated projects/actions that are within 0.5 mile of the Project.

Appendix B identifies the present and reasonably foreseeable projects or actions that occur within the regions of influence. These projects were identified by a review of publicly available information; aerial and satellite imagery; consultations with federal, state, and local agencies/officials and development authorities; and information provided by DTI and concerned citizens.

In addition to the geographic relationship between the Project and other projects in the area, we also consider the temporal relationship between the Project and other projects in the area. DTI proposes to begin construction during the summer of2016 and end with the in-service date of October 1, 2017. As discussed in section A and summarized below, the majority of impacts associated with the Project would occur during construction and most resources (with exceptions) would return to pre-construction conditions after construction. Thus, construction-related cumulative impacts could occur if other projects in the regions of influence would impact the same resources

[5] Drainage basins in the United States are divided and sub-divided at four different levels and each assigned a unique hydrologic unit code (HUC) consisting of eight digits based on these four levels.

within these timeframes. Additionally, permanent impacts resulting from the operation of the Project could contribute to a cumulative impact in the regions of influence.

Erecting permanent residential and other aboveground structures and facilities would result in the permanent loss of vegetation and associated wildlife habitat; displacement of wildlife; loss of soil and land use; alteration of surface and groundwater flow and aesthetic characteristics; and could temporarily and/or permanently increase dust, and impact noise and air quality. Several residential and commercial development projects were identified in our analysis. However, these developments were located several miles from the Project and do not have the potential to cumulatively impact these resources. Further, the Project impacts on these resources are largely temporary and therefore would not result in a significant cumulative impact.

Based on the fact that all work would be completed at existing facilities, implementation of the FERC's Plan and Procedures, and DTI's adherence to our recommendations, we find that the impacts of the Project would be highly localized. Furthermore, the impacts of the Project would only contribute incrementally to a cumulative impact in the region of influence. As a result, the scope of our analysis is consistent with the magnitude of the aforementioned environmental impacts.

We have determined, based on the impacts of the Project (as described in this EA), that the impacts of the Project on geology, soils, groundwater, wetlands, vegetation and wildlife, and cultural resources when added to the impacts of other present and reasonably foreseeable future actions would not result in a significant cumulative impact on these resources. It is important to note that although the Stonewall M&R Station would be located on the Panda Stonewall Power Project site, the area of the Stonewall M&R Station was already cleared for the 101-acre power plant. As such, the Stonewall M&R Station would not significantly contribute to any cumulative impacts on these resources.

Cumulative impacts on land use and aesthetics, air quality, noise and climate change could occur and are discussed further.

B.9.1 Land Use and Aesthetics

The cumulative impact analysis area for land use and aesthetics has been identified as within 0.5 mile of the proposed construction areas for the Project. The Panda Stonewall Power Project, NOVEC transmission line replacement project, Tioga Expansion (Finnefrock Compressor Station), Leidy Compressor Station, and Dominion Cove Point M&R Station Project are located within the region of influence and have been considered as part of this analysis.

Table B-20 – Cumulative Impacts to Land Use within 0.5 Mile of Project Areas		
Facility	**Operational Acres**	
	Total	**Forest/Woodland**
Finnefrock – Leidy Station Project	10.9	0.5
Finnefrock –Total (including Leidy South Project)	29.3 [1]	29.3 [1]
Leidy Station	76.3 [1]	76.3 [1]
Chambersburg	5.1	0.0
Myersville	6.0	0.0
Leesburg Compressor Station	8.2	0.0
NOVEC Transmission Line	0.0 [2]	0.0 [2]
Dominion Cove Point M&R	0.0 [2]	0.0 [2]
Centre	4.4	0.0
Quantico	3.9	0.0
Stonewall M&R Station	0.7	0.0
Panda Stonewall Power Project	101	71.5 [1]

[1] Based on Google Earth Aerial Imagery. Where possible, wooded acres are based on previous imagery prior to the project (Panda Stonewall). For Finnefrock and Leidy compressor stations, all open or industrial land is conservatively assumed to have previously been forested land.
[2] Estimate based on the scope of the potential project.

The proposed Project would not result in significant changes to or cumulative impacts on existing land use designations.

The Finnefrock and Leidy compressor stations are co-located on a property that encompasses approximately 105.6 acres of operational footprint (industrial facility and open land) with only 0.5 acre of forest permanently affected by the Project.

The NOVEC transmission line replacement would involve the replacement of existing power poles with taller ones in the same location. The construction would occur within the existing right-of-way; therefore, no clearing is expected for this project and no additional operational land requirements are anticipated. The Dominion Cove Point M&R Project would occur on land already used for natural gas transmission facilities.

The Panda Stonewall Power Project is currently under construction on a 101-acre site, located four miles south of Leesburg, Virginia. According to a fact sheet on its web site, the Loudoun County Board of Supervisors approved a rezoning of the property from Residential to Industrial, as well as a special exception to allow Panda to develop this property. Throughout the rezoning and special exception processes, the Board of Supervisors considered a variety of impacts that this project would have on the community (https://www.loudoun.gov/DocumentCenter/View/116861). The Leidy South Project would not significantly contribute to the cumulative land use change impacts at the Panda Stonewall Power Project site because the Stonewall M&R Station would be located on a previously disturbed area, requiring only 0.67 acre for operation.

If the projects are constructed within the same timeframe, cumulative recreation impacts could occur due to temporary access restrictions or limitations that would reduce recreation opportunities near the projects. Cumulative impacts on recreation would be minimal and eliminated when construction is complete.

B.9.2 Air Quality and Noise

Other projects/actions within the regions of influence would involve the use of heavy equipment that would temporarily increase traffic, dust, and air emissions. Additionally, when completed, the energy, residential, commercial, industrial, and other developments in the regions of influence would permanently increase air emissions. The combination of these effects would add to a cumulative impact on air quality in the region.

Emissions from construction equipment would be primarily restricted to daylight hours and would be minimized through applicable equipment emission standards. Because the construction emissions would be short-term, intermittent, and highly localized, cumulative impacts would depend on the type and location of construction activities occurring at the same time. The majority of these effects would be mitigated by the large geographical area over which the various projects are located. Construction air emissions from the Project are not expected to have a significant impact on air quality in the region.

Operation of the Project would result in long-term air emissions from the combustion of natural gas as well as fugitive natural gas leaks. The compressor modifications at the Finnefrock, Chambersburg, and Myersville Compressor Stations would be appreciably large enough to require air construction and operating permits. However, air dispersion modeling summarized in section B.7.1.1 demonstrates that the air quality impacts from the compressor stations in addition to existing conditions (background) would not cause or significantly contribute to a violation of a NAAQS. Based on estimated emissions for these stations and the other facilities identified in the region of influence, we have determined that this cumulative impact on air quality during the operation of the Project would not be significant.

The modifications to the Leesburg Compressor Station do not involve any new air emission sources and operation of the Stonewall M&R Station would generate a small amount of emissions (roughly 1 tpy or less for any criteria pollutants – assuming maximum operation continuously for the entire year). Although the Stonewall M&R Station emissions would be generated on the same property as the Panda Stonewall Power Project, these emissions are negligible relative to those of the power plant. The Panda Stonewall Power Project is a PSD major source with PTE of at least 159.0 tpy NO_x, 143.6 tpy CO, and 105.2 tpy PM_{10}. As part of the PSD permitting process the Panda Stonewall Power Project was modeled and demonstrated compliance with the NAAQS. The analysis included a background concentration that was added to the

modeled concentration to account for other sources not directly simulated in the model. As such, the Stonewall M&R Station emissions are not expected to significantly contribute to a cumulative effect on air quality in the area.

The Project and other projects in the area would generate noise during construction; however, this noise would be temporary disturbances to noise receptors in the vicinity of the projects. Noise impacts during the construction phase would also be localized and would attenuate quickly as the distance from the noise source increases; therefore, noise impacts, at any one location would be limited and short term. Because the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases, cumulative impacts associated with the Project, including operation of the new and modified compressor stations, would not result in significant cumulative impacts because no noise generating projects were identified within 0.5 mile of the Project compressor stations. The Stonewall M&R Station would be located adjacent to the Panda Stonewall Power Project. However, the Stonewall M&R Station would be an insignificant long-term (operational) noise source compared to the Panda Stonewall Power Project and would not contribute significantly to the cumulative noise impacts. The noise impacts from the proposed compressor station modifications, as discussed in section B.7.2.1 would be below the applicable noise regulations and would not produce a noticeable increase in noise at nearby NSAs.

B.9.3 Climate Change

Climate change is the change in climate over time, whether due to natural variability or as a result of human activity, and cannot be represented by single annual events or individual anomalies. For example, a single large flood event or particularly hot summer is not an indication of climate change, while a series of floods or warm years that statistically change the average precipitation or temperature over years or decades may indicate climate change.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international, multi-governmental scientific body for the assessment of climate change. The United States is a member of the IPCC and participates in the IPCC working groups studying various aspects of climate change. The leading United States scientific body on climate change is the United States Global Change Research Program (USGCRP). Thirteen federal departments and agencies participate in the USGCRP, which began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990 (GCRA). The USGCRP coordinates and supports United States participation in the IPCC assessments.

The IPCC and USGCRP have recognized that:

- globally, GHGs have been accumulating in the atmosphere since the beginning of the industrial era (circa 1750);
- combustion of fossil fuels (e.g., coal, petroleum, and natural gas), combined with agriculture and clearing of forests, is primarily responsible for the accumulation of GHGs;
- anthropogenic GHG emissions are the primary contributing factor to climate change; and
- impacts extend beyond atmospheric climate change alone, and include changes to water resources, transportation, agriculture, ecosystems, and human health.

In May 2014, the USGCRP released the Third National Climate Assessment, a comprehensive report on climate change and its impacts in the United States. The report describes the effects of global change on different regions of the United States (e.g., Northeast) and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health. These efforts are intended to fulfill the Congressional mandate of the GCRA. Although climate change is a global concern, for this analysis, the focus is on the cumulative impacts of climate change in the Project area.

The USGCRP's report notes the following observations and projections of environmental impacts that may be attributed to climate change in the Northeast region:

- between 1895 and 2011, temperatures in the Northeast increased by almost 2 °F and precipitation increased by approximately 5 inches, or more than 10 percent;
- by the 2080s, if GHG emissions continue to increase, warming of 4.5 °F to 10 °F is projected while warming ranges from about 3 °F to 6 °F are projected if global emissions were reduced substantially;
- coastal flooding has increased due to a rise in sea level of approximately 1 foot since 1900;
- the Northeast has experienced a greater recent increase in extreme precipitation than any other region in the United States; between 1958 and 2010, the Northeast saw more than a 70 percent increase in the amount of precipitation falling in very heavy events;
- the frequency, intensity, and duration of heat waves is expected to increase, with larger increases under higher emissions;
- under the scenario of continued increases in emissions, much of the southern portion of the region, including New Jersey, is projected by mid-century to experience more than 60 additional days per year above 90 °F compared to the end of last century. This will affect the region's vulnerable populations, infrastructure, agriculture, and ecosystems;

- although less certain than temperature increase projections, winter and spring precipitation is projected to increase, especially but not exclusively in the northern part of the region and the frequency of heavy downpours is projected to continue to increase as the century progresses;
- seasonal drought risk is also projected to increase in summer and fall as higher temperatures lead to greater evaporation and earlier winter and spring snowmelt; and
- sea level rise along most of the coastal Northeast is expected to exceed the global average rise (which is projected to rise 1 to 4 feet by 2100) due to local land subsidence, with the possibility of even greater regional sea level rise if the Gulf Stream weakens as some models suggest.

Direct and indirect GHG emissions from the Project are summarized in section B.7.1.2. These emissions would not have any direct impacts on the environment in the Project area. Currently there is no standard methodology to determine how the Project's relatively small incremental contribution to GHGs would translate into physical effects on the global environment. However, we acknowledge that operation of Leidy South Project would result in the distribution and consumption of about 0.155 BCF per day of natural gas. As discussed earlier, a primary objective of the Project is to supply natural gas to the Panda Stonewall Power Project. Although natural gas may have higher upstream GHG emissions than coal, the total lifecycle GHG emissions from electricity production using natural gas is lower than that of electricity from coal (United States Department of Energy, 2014). While the proposed Project would represent an incremental increase in GHG emissions, we do not believe its cumulative effect would contribute significantly to climate change.

Commentors stated that the EA should address the impact of construction vehicle emissions (specifically black carbon) on climate change. According to EPA, black carbon (BC) has a short atmospheric lifetime, relative to GHGs. Thus, the location of emissions releases is a critical determinant of BCs impacts. (EPA, 2012) Because construction activities would occur for a relatively short duration in any one area, would cease when project construction is complete, and would be small in magnitude (estimated $PM_{2.5}$ emissions from construction activities are 3.3 tons in 2016 and 7.0 tons in 2017, of which only a fraction would be BC), the BC emissions would not have a significant impact on climate change.

B.9.4 Conclusion

The proposed Project would have a minimal impact on the resources discussed. DTI would minimize impacts by utilizing previous cleared/developed land whenever possible and all construction and operating project areas would be within the property boundaries of existing industrial facilities. Geology and soils would be minimally

affected by the construction and operation of the Project and the other projects in the area. The Project would have no direct water resource impacts and the other projects in the area would have or have had minimal water resource impacts. In addition, DTI would also implement measures consistent with the FERC's Plan and Procedures to minimize potential for water, soils, and geology impacts. As discussed previously, the Project and other projects in the area would have or have had minimal cumulative impacts because the other projects are predominately outside the cumulative impact area and those projects in the area are likely to occur in areas that are already developed. As a result, no significant cumulative impacts are anticipated.

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SECTION C – ALTERNATIVES

In accordance with NEPA, we evaluated alternatives to DTI's proposed action to determine whether they would be preferable to constructing the Project as proposed. Our evaluation criteria for selecting potentially preferable alternatives are:

- technical and economic feasibility and practicality;
- significant environmental advantage over the proposed action; and
- ability to meet the objectives of the proposed action (i.e., providing additional capacity to transport 0.155 BCF per day of natural gas capacity to areas of demand in the Mid-Atlantic region).

Our evaluation of alternatives is based on project-specific information provided by the applicant, affected landowners, and other concerned parties; publicly available information; our consultations with federal and state resource agencies; and our expertise and experience regarding the siting, construction, and operation of natural gas transmission facilities and their potential impact on the environment.

Evaluation Process

Through environmental comparison and application of our professional judgement, 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, GIS data, aerial imagery) and assume the same right-of-way widths and general workspace requirements. Where appropriate, we also use site-specific information (e.g., field surveys or detailed designs). Our environmental analysis and this evaluation consider quantitative data (e.g., acreage or mileage) and uses common comparative factors such as total length, amount of collocation, and land requirements. Our evaluation also considers impacts on both the natural and human environments. These impacts were described in detail in section B of this EA. Because the alternatives represent mostly alternative locations for natural gas facilities, the specific nature of these impacts on the natural and human environments would generally be similar to the impacts described in section B. In recognition of the competing interests and the different nature of impacts resulting from an alternative that sometimes exist (i.e., impacts on the natural environment versus impacts on the human environment), we also consider other factors that are relevant to a particular alternative and discount or eliminate factors that are not relevant or may have less weight or significance.

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 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.

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 from the current set of landowners to a new set of landowners.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. In section B, we evaluated each environmental resource potentially affected by the Project and concluded that constructing and operating the Project would not significantly impact these resources. Consistent with our conclusions, the value gained by further reducing the (not significant) impacts of the Project when considered against the cost of relocating the route/facility to a new set of landowners was also factored into our evaluation.

C.1 NO ACTION ALTERNATIVE

Under the no-action alternative, modifications to existing compression or appurtenant facilities would not be constructed and the Project objectives to provide additional natural gas supplies and firm transportation services would not be met. The facilities would continue to operate under current conditions and the environmental impacts identified in this EA would not occur. If the Project is not built, DTI's customers would likely seek alternatives to meet increasing demand of natural gas supplies, which could include the construction and operation of other facilities. Because of the minimal footprint of the proposed action, we conclude that it is likely that the other facilities that would need to be constructed to replace the Project, would have equal or greater impacts. Therefore, the no action alternative would not offer a significant environmental advantage over the proposed Project.

C.2 SYSTEM ALTERNATIVES

The purpose of identifying and evaluating system alternatives is to determine whether the environmental impacts associated with the construction and operation of the proposed Project could be avoided or reduced by using existing, modified, or other

proposed facilities rather than constructing new facilities. A viable system alternative must be technically and economically feasible and practicable, and must satisfy interconnect requirements and the anticipated in-service date (i.e., October 2017) to meet the Project Customers' needs.

C.2.1 Existing Systems

The existing DTI PL-1 pipeline and Columbia Gas Transmission's pipeline system are located adjacent to the Panda Stonewall Power Project, and are the only existing interstate natural gas pipelines in the Project area that could be considered for modification or expansion. Columbia Gas Transmission's existing pipeline system would likely require the construction of approximately 40 miles of new pipeline connections in order to meet capacity and natural gas demand at the power station. Assuming at least 10 acres of impact per mile of construction, this system modification would impact over 400 acres, compared to the Project's total impact of about 152 acres. The construction and expansion of existing pipeline facilities to supply natural gas would not provide a significant, environmental advantage over the proposed Project; therefore, they are not considered viable alternatives.

C.2.2 Modified Systems

DTI performed hydraulic modeling of its systems to determine if looping the existing pipeline could be used to reduce the rate of pressure drop in the pipe due to friction, and thereby increase the throughput capacity of the pipeline rather than increasing compression. In order to provide the additional capacity required on the PL-1 pipeline system to maintain pressures required to allow DTI to provide its customers contractual deliveries at the agreed upon pressures, approximately 68 miles of 24-inch- and 36-inch-diameter looping of PL-1 in six counties in Pennsylvania, Maryland, and Virginia would be required to replace the need for additional compression at the existing Finnefrock, Chambersburg, Myersville, and Leesburg Compressor Stations.

The land requirements for the construction of 68 miles of pipeline are summarized in table C-1.

Table C-1 – Alternative Looping Facilities Land Requirements

State	County	Acres Affected
Pennsylvania	Tioga and Potter	153.9
	Franklin	284.9
Maryland	Frederick	184.3
Leesburg	Montgomery and Loudoun	196.4

As shown in the table, the land requirements for looping would be much greater than those impacts from providing additional compression at existing compressor

facilities. Therefore, looping would not provide a significant environmental advantage over the Project.

C.2.3 Compressor Station Site Alternatives

The additional compression required for the Project could be provided by construction of four new compressor station facilities in greenfield or undeveloped areas. This would increase the extent of land disturbance and impacts on all resources, require additional land acquisition, and result in the long-term conversion of existing private, agricultural, forest, or open land into industrial use. The proposed Project modifications occur at existing compressor stations and occur in previously disturbed areas that have already been converted to industrial use and maintained lawn areas. The construction of new compressor station facilities would not provide an environmental advantage over the proposed modifications to the existing Finnefrock, Chambersburg, Myersville, and Leesburg Compressor Stations.

C.2.4 Conclusion

We reviewed alternatives to DTI's proposal based on our independent analysis. During our review, we received no alternatives from stakeholders. Our analysis concludes that no system or facility alternatives provide a significant environmental advantage over the Project. Based on these findings we conclude that the proposed action is the preferred alternative that meets the Project's stated objectives.

SECTION D – STAFF CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if DTI constructs and operates the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures listed below, approval of the Project would not constitute a major federal 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 DTI.

1. Dominion Transmission, Inc. (DTI) 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. DTI must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);

    b. justify each modification relative to site-specific conditions;

    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

    d. receive approval in writing from the Director of Office of Energy Projects (OEP) **before using that modification**.

2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during the construction and operation activities of the project. This authority shall allow:

    a. the modification of conditions of the Order; and

    b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

3. **Prior to any construction**, DTI shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (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 removal work shall be as described in the EA, as supplemented by filed maps and/or alignment sheets. **As soon as they are available, and before the start of construction**, DTI shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than

1:6,000 with station positions for all work sites approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

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

   This requirement does not apply to extra workspace allowed by the FERC's Plan and Procedures and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

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

   a. implementation of cultural resources mitigation measures;

   b. implementation of endangered, threatened, or special concern species mitigation measures;

   c. recommendations by state regulatory authorities; and

   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of this authorization and before construction begins,** DTI shall file an Implementation Plan with the Secretary for review and written approval by the Director of the OEP. DTI must file revisions to the plan as schedules change. The plan shall identify:

   a. how DTI 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 DTI 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 spread, 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 DTI 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 DTI's organization having responsibility for compliance;

g. the procedures (including use of contract penalties) DTI 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. Beginning with the filing of its Implementation Plan, DTI 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 will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

   a. an update on DTI'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, and their cost;

   e. the effectiveness of all corrective actions implemented;

f. a description of any landowner/resident complaints that 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 DTI from other federal, state, or local permitting agencies concerning instances of noncompliance, and DTI's response.

8. **Prior to receiving written authorization from the Director of the OEP to commence construction of any project facilities,** DTI shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

9. DTI 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.

10. **Within 30 days of placing the authorized facilities in service**, DTI shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities would be consistent with all applicable conditions; or

    b. identifying which of the Certificate conditions DTI 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.

11. DTI shall complete consultation with the USFWS and provide the Secretary with any correspondence **prior to commencing construction at the Leesburg Compressor Station.** The USFWS has 30 days from March 8, 2016 (the date USFWS received the consultation) to respond regarding construction activities at the Leesburg Compressor Station. If the USFWS does not respond within 30 days, consultation for this facility is considered complete.

12. DTI shall file with the Secretary **prior to commencing construction** at the Stonewall M&R Station a revised consultation letter and corresponding VDHR concurrence that no historic properties are affected by the modified APE.

13. DTI **shall not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads at the Leidy Station **until**:

    a. DTI files with the Secretary:
        (1) remaining cultural resources survey report(s);

(2) site evaluation report(s) and avoidance/treatment plan(s), as required; and

(3) comments on the cultural resources reports and plans from the Pennsylvania SHPO and any interested Indian tribes.

b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and

c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies DTI in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

14. DTI shall file noise surveys with the Secretary **no later than 60 days** after placing each expanded compressor station (i.e., Finnefrock, Chambersburg, Myersville, and Leesburg) in service. If a full load condition noise survey is not possible, DTI shall provide an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at the compressor station, under interim or full horsepower load conditions, exceeds an L_{dn} of 55 dBA at any nearby NSAs, DTI shall file a report on what changes are needed and should install the additional noise controls to meet the level **within 1 year** of the in-service date. DTI shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days after it installs the additional noise controls**.

SECTION E – REFERENCES

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Appendix A

Environmental Permits, Approvals, and Consultations Required for the Project

Appendix A – Environmental Permits, Approvals, and Consultations Required for the Project			
Administering Agency	**Permit/Consultation**	**Date Submitted/ *Anticipated Submittal***	**Date Received/ *Anticipated Receipt***
Federal			
FERC	Section 7 of the Natural Gas Act – Certificate of Public Convenience and Necessity	May 15, 2015	*March 2016*
USFWS	Compliance with Section 7 of the Endangered Species Act, Migratory Bird Treaty Act, Fish and Wildlife Coordination Act, and Bald and Golden Eagle Protection Act	PA: March 2, 2015	April 9,2015
		MD: March 3, 2015	November 9, 2015
		VA: Leesburg & Stonewall: March 3, 2015	August 25, 2015
		VA: Quantico: April 20, 2015	April 28, 2015
		VA: Stonewall Project area Revision *February 2016*	VA: Stonewall Project area Revision *April 2016*
ACHP	Comment on Undertaking Under Section 106 of National Historic Preservation Act (NHPA)	March 30, 2016 FERC finding of no effect	No ACHP comment necessary
Tribal Historic Preservation Office – Various Native American Group Contacts	Consultation with Federally Recognized Native American Groups	March 18, 2015	*None to date; April 2016*
Commonwealth of Pennsylvania			
PA PNDI	PNDI Project Environmental Review Tool - Rare, Threatened, and Endangered Species Consultation (native wild plants, terrestrial invertebrates, significant natural communities, and geologic features)	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]
PA DCNR	PNDI Project Environmental Review Tool - Rare, Threatened, and Endangered Species Consultation (native wild plants, terrestrial invertebrates, significant natural communities, and geologic features)	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]
PA DCNR	Rare, Threatened and Endangered Species Consultation Letter/ Limestone Petunia Impact Review – Chambersburg Compressor Station	March 2, 2015	March 25, 2015
PFBC	PNDI Project Environmental Review Tool - Rare, Threatened, and Endangered Species Consultation (fish, reptiles, amphibians, and aquatic organisms)	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]	December 2, 2014 May 19, 2015 [1] December 30, 2015 [2]
	Rare, Threatened and Endangered Species Consultation	March 3, 2015	March 12, 2015

Appendix A – Environmental Permits, Approvals, and Consultations Required for the Project			
Administering Agency	**Permit/Consultation**	**Date Submitted/ *Anticipated Submittal***	**Date Received/ *Anticipated Receipt***
	Letter/ Northern Cricket Frog Impact Review		
	Northern Cricket Frog Study Plan Approval	May 26, 2015	May 29, 2015
	Northern Cricket Frog Survey Report	August 3, 2015	Concurrence with No Impact – August 13, 2015
PGC	PNDI Project Environmental Review Tool - Rare, Threatened, and Endangered Species Consultation (wild birds and mammals)	December 2, 2014 & May 19, 2015[1]	December 2, 2014 & May 19, 2015[1]
PBHP	NHPA Section 106 Consultations and PA History Code Cultural Resources Review -	March 17, 2015 draft cultural resources survey report.	March 25, 2015 SHPO Comments
		April 28, 2015 Finnefrock Compressor Station Survey Addendum	May 27, 2015 SHPO Comments
		July 8, 2015 Final Cultural Resources Survey Report	July 21, 2015 (historic structures) SHPO Comments
		January 11, 2016	*March 2016*
Stockbridge- Munsee Community Band of Mohican Indians	NHPA Section 106 Consultation	March 19, 2015	April 6, 2015
PADEP	Air Quality General and Operating Permits and Plan Approval	May 15, 2015	Finnefrock – *June 2016* Chambersburg – Air Plan Approval 28-03045A issued January 11, 2016
State of Maryland			
MDE	NOI/NPDES Stormwater	*March 2016*	*May 2016*
MDNR	Threatened and Endangered Species Consultations	March 3, 2015	April 9, 2015
MDE	Air Permit to Construct/Permit to Operate	May 15, 2015	*Second Quarter 2016*
MHT	NHPA – Section 106 Consultation / Concurrence	March 16, 2015	May 20, 2015

Appendix A – Environmental Permits, Approvals, and Consultations Required for the Project			
Administering Agency	**Permit/Consultation**	**Date Submitted/ *Anticipated Submittal***	**Date Received/ *Anticipated Receipt***
	Unanticipated Discoveries and Emergency Procedures Plan for Maryland	April 17, 2015	October 1, 2015
Commonwealth of Virginia			
VDGIF	Fish and Wildlife Coordination Act	March 3, 2015	March 31, 2015
	Additional filing for Stonewall project area revision	October 26, 2015	*February 2016*
VDCR	Virginia Natural Heritage Coordination	March 3, 2015	March 26, 2015
	Additional filing for Stonewall project area revision	October 26, 2015	*February 2016*
VDHR	NHPA Section 106 Consultations	April 17, 2015 draft survey report	May 22, 2015 SHPO Comments
Local			
Clinton County Conservation District, Pennsylvania	Erosion and Sediment Control Plan Review/ Erosion and Sediment Control General Permit (ESCGP)	*March/April 2016*	*July 2016*
Centre County Conservation District, Pennsylvania	Erosion and Sediment Control Plan Review/ESCGP	*March/April 2016*	*July 2016*
Franklin County Conservation District, Pennsylvania	Erosion and Sediment Control Plan Review/ ESCGP	*February 2016*	*May 2016*
Frederick County, Maryland	Grading and Erosion and Sediment Control Plan Review	*March 2016*	*June 2016*
Loudoun County, Virginia	Erosion and Sediment Control Plan Review	*February/March 2016*	*June 2016*

[1] Second PNDI done for PA aboveground facilities because the northern long eared bat was officially listed after the first. Second PNDI did not result in any new consultations required.

[2] Third PNDI done for the new fence to be added at Leidy Station. Third PNDI did not result in any new consultations required.

ACHP = Advisory Council on Historic Preservation
EPA = Environmental Protection Agency
FERC = Federal Energy Regulatory Commission

Appendix A – Environmental Permits, Approvals, and Consultations Required for the Project			
Administering Agency	**Permit/Consultation**	**Date Submitted/ *Anticipated Submittal***	**Date Received/ *Anticipated Receipt***
MDE = Maryland Department of the Environment MDNR = Maryland Department of Natural Resources MHT = Maryland Historical Trust PADCNR = Pennsylvania Department of Conservation and Natural Resources PADEP = Pennsylvania Department of Environmental Protection PBHP = Pennsylvania Bureau for Historic Preservation PGC = Pennsylvania Game Commission PNDI = Pennsylvania Natural Diversity Inventory USACE = US Army Corps of Engineers USFWS = United States Fish and Wildlife Service VDEQ = Virginia Department of Environmental Quality VDGIF = Virginia Department of Game and Inland Fisheries VDCR = Virginia Department of Conservation and Recreation VDHR = Virginia Department of Historic Resources			

Appendix B
Potential Cumulative Projects

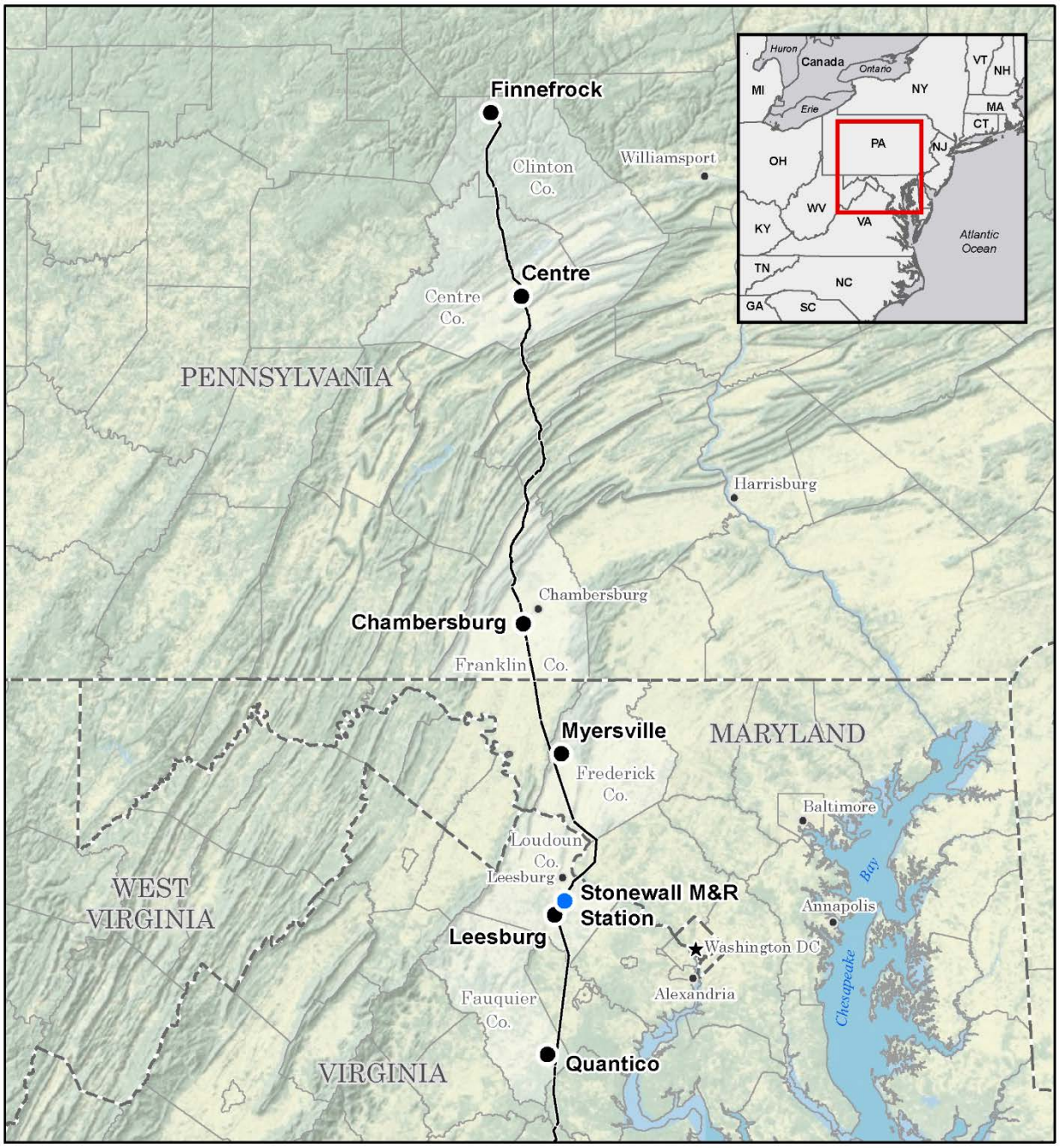
Appendix B – Potential Cumulative Projects in the Project Vicinity					
Project Name	**Approximate Distance (miles)**	**Status**	**Description**	**Anticipated Project Construction Timeline**	**Resources Potentially Impacted**
Clinton County, Pennsylvania					
Atlantic Sunrise Pipeline	3 miles ESE of Finnefrock	Under Design/ Permitting	Loop on existing gas pipeline, part of pipeline expansion by Transcontinental Gas Pipeline Company through central Pennsylvania	2015-2017	Air Quality
Tioga Area Expansion Project	Onsite at Finnefrock	Completed	Modifications to Finnefrock Compressor Station which involved no additional operational acres.	Completed	Land use, Soils, Water, Air Quality
First Quality Tissue Plant	29 miles SE of Finnefrock	Under Design/ Permitting	Equipment modifications at existing plant	In planning process, construction timeline unknown at this time.	Air Quality
Leidy Station	Adjacent	Completed	Existing compressor station consisting of thirteen compressors driven by natural gas fired reciprocating engines. Total installed horsepower is 23,800	Completed	All
Tioga County, Pennsylvania					
Swepi LP/Thomas 808 Well Site	22 miles NE of Finnefrock	Under construction	Installation of compressor engine, dehydration unit, heaters, and storage tank	Construction timeline unknown at this time.	Air Quality

Appendix B – Potential Cumulative Projects in the Project Vicinity					
Project Name	**Approximate Distance (miles)**	**Status**	**Description**	**Anticipated Project Construction Timeline**	**Resources Potentially Impacted**
Cameron County, Pennsylvania					
GKN Sinter Metals Plant	21 miles NNW of Finnefrock	Under construction	Modification to finishing lines at existing plant	Construction timeline unknown at this time.	Air Quality
Endeavour Operating Corp. Well	20 miles W of Finnefrock	Under construction	Installation of compressor engine, dehydration unit, heaters, and storage tank	Construction timeline unknown at this time.	Air Quality
Micron Research Facility	21 miles NNW of Finnefrock	Under construction	Installations of carbon bake furnaces and mixing process at existing facility.	Construction timeline unknown at this time.	Air Quality
Lycoming County, Pennsylvania					
RS SVC Okome-Schoolhouse Road Well	24 miles E of Finnefrock	Completed	Relocate and operate three engines	2014-2015	Air Quality
Pennsylvania General Energy Compressor Station 729	28 miles ESE of Finnefrock	Under construction	Installation of compressor engines, dehydration unit, reboilers, and storage tanks	Construction timeline unknown at this time.	Air Quality
Franklin County, Pennsylvania					
Letterkenny Army Depot Expansions/Projects	8 miles NE of Chambersburg	Under Construction	$32 million rocket motor treatment facility is currently under construction, Building 350 will expand by approximately 1 acre to provide maintenance on military equipment	Currently under construction in 2015	Air Quality

Appendix B – Potential Cumulative Projects in the Project Vicinity					
Project Name	**Approximate Distance (miles)**	**Status**	**Description**	**Anticipated Project Construction Timeline**	**Resources Potentially Impacted**
Torcomp USA, LLC	8 miles NE of Chambersburg	Complete	New 16,400-square-foot manufacturing facility, $1.6 million project is expected to result in the creation of 70+ jobs within the next three years	Completed	Air Quality
Fil-Tec, Inc.	10 miles SE of Chambersburg 25 miles N of Myersville	Under Construction	New 45,000-square-foot manufacturing facility	2014 - 2015	Air Quality
Columbia Gas Greencastle Compressor Station	10 miles SSW of Chambersburg 24 miles NW of Myersville	Under Design/ Permitting	Replacement of gas turbine & emergency generator	In planning process, construction timeline unknown at this time.	Air Quality
Adams County, Pennsylvania					
Columbia Gas Adams County (Gettysburg) Compressor Station	29 miles E of Chambersburg	Under Design/ Permitting	Replacement of gas turbine & emergency generator	In planning process, construction timeline unknown at this time.	Air Quality
Loudoun County, Virginia					
Dominion Cove Point M&R Station	0.3 miles SE of Leesburg 5 miles SW of Stonewall	Under Design/Permitting	Modifications to existing M&R in Loudoun County, part of larger Cove Point Liquefaction Project	Oct. 2014-late 2017	Land Use and Air Quality

Appendix B – Potential Cumulative Projects in the Project Vicinity					
Project Name	**Approximate Distance (miles)**	**Status**	**Description**	**Anticipated Project Construction Timeline**	**Resources Potentially Impacted**
Panda Power Funds' Panda Stonewall Power Project	Onsite at Stonewall	Under Construction	A new 750 megawatt combined cycle generating station. Expected to be complete in 2017.	March 2015-September 2017	All
NOVEC transmission line replacement project	Adjacent to Leesburg	Planning	Replace existing power line within the same right-of-way. Poles would be replaced in the same location as existing poles but would be 52 feet compared to the existing 47.5 feet.	2015 – May 2017	All
Note: A portion of the service provided by the Leidy South Project would be provided to Mattawoman, LLC as marketable transportation capacity on the natural gas interstate system. To the extent the capacity is used by Mattawoman, LLC at its proposed facility in Prince George's County, no cumulative impacts would be expected from a power station in Prince George's County, Maryland, because it is geographically located more than 40 miles away and outside the region of influence considered for this analysis.					

Appendix C
Aerial Maps



0 25 50 Miles

1:2,500,000

Source: Copyright:© 2013 National Geographic Society, i-cubed
Sources: Esri, USGS, NOAA

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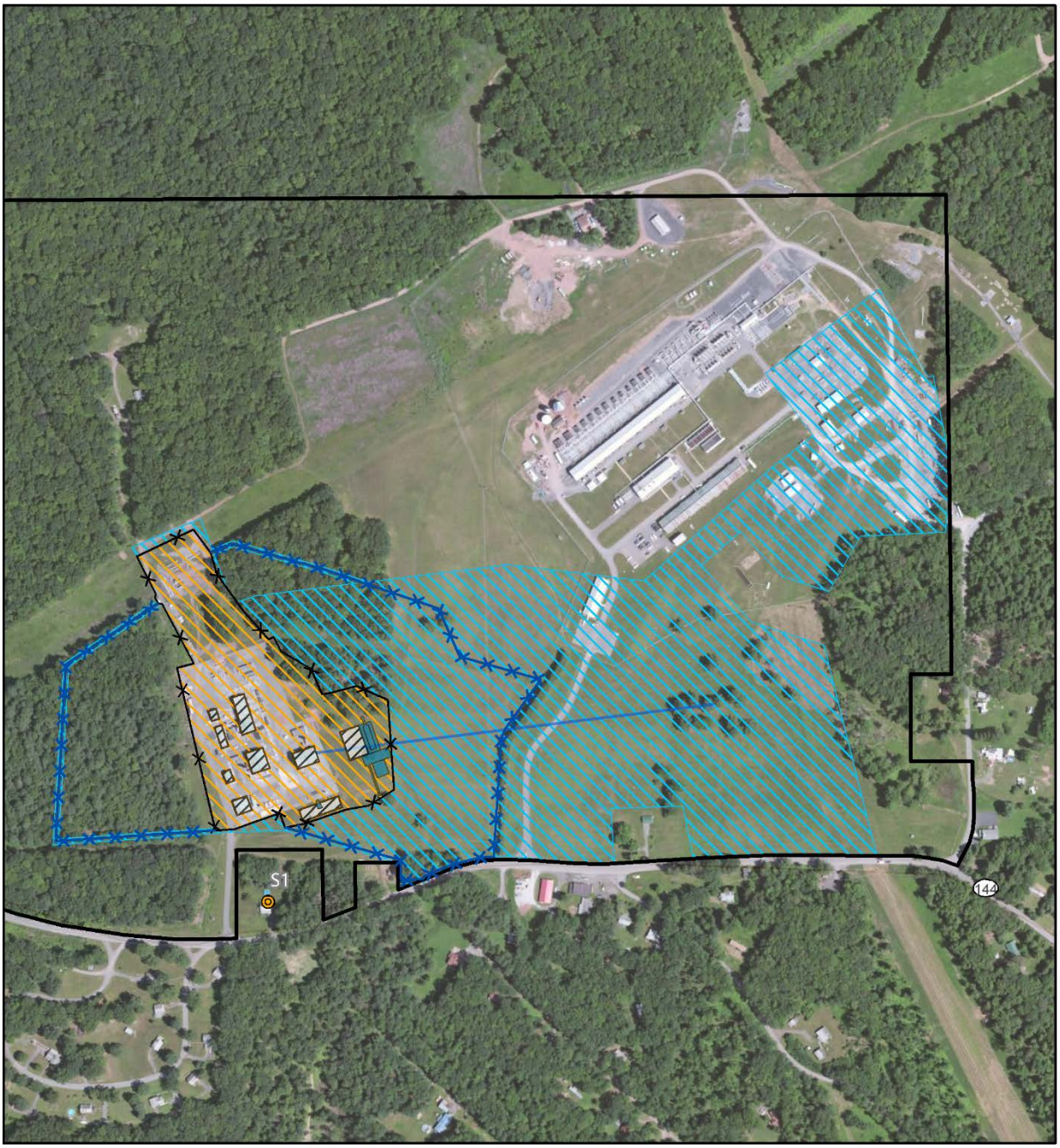
Proposed M&R Station

Proposed Compressor Station Upgrades

Existing Pipeline

DTI Leidy South Project Location Map

Pennsylvania, Maryland, and Virginia



0 250 500 750 Feet

1:6,000

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 7/1/2011.

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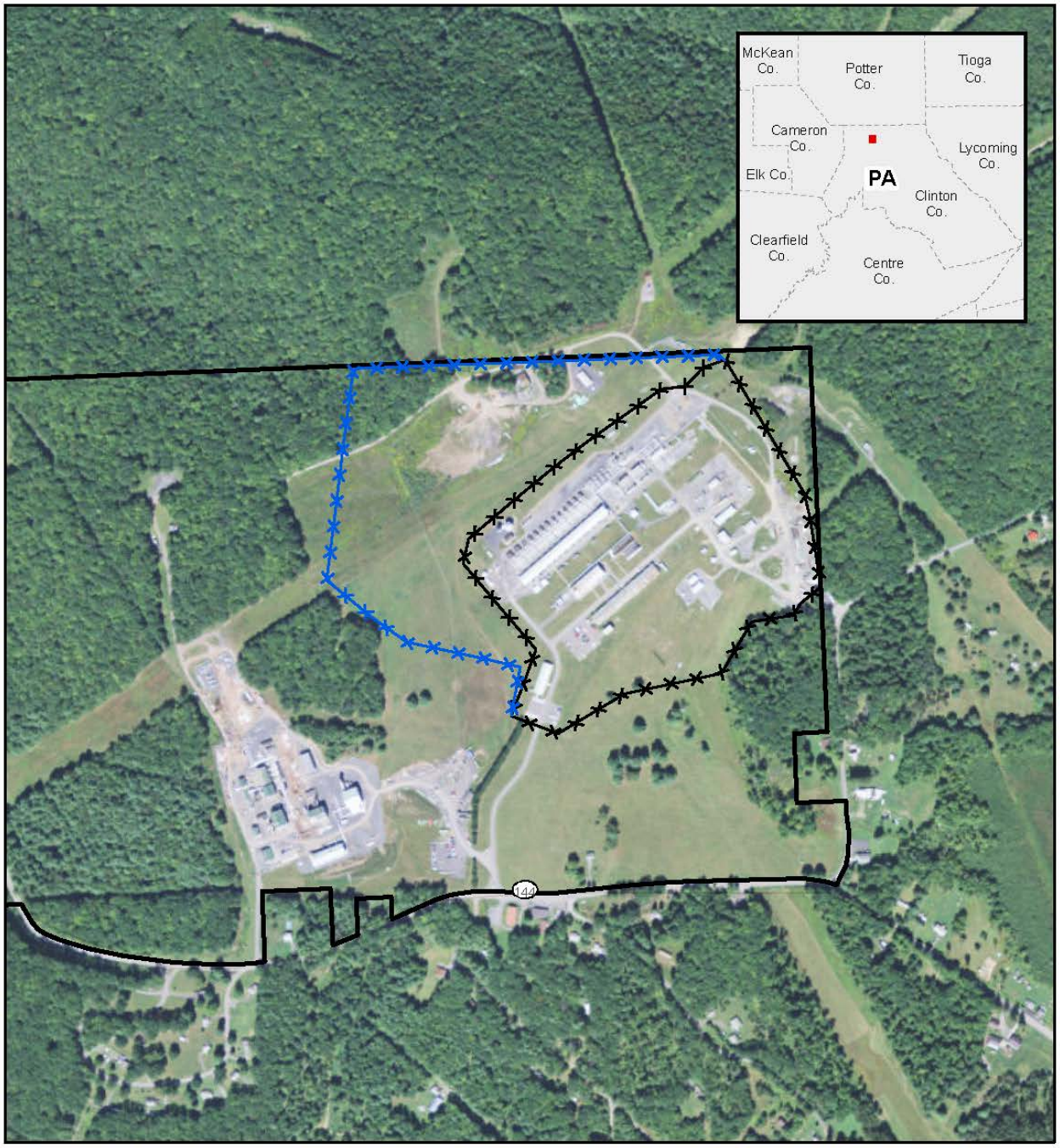
- Property Boundary
- Fence
- Existing Facilities
- Proposed Facilities
- Secondary Fenceline
- Proposed Discharge Pipe
- Workspace
- ATWS
- Nearest Noise-Sensitive Area

Finnefrock Compressor Station

Dominion Leidy South

Clinton Co., Pennsylvania



0 1,000 Feet

1:10,000

Source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, E&E 2014

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Property Boundary

Existing Leidy Station Fence

Proposed New Fenceline

Leidy Compressor Station

Dominion Leidy South

Clinton Co., Pennsylvania

0 100 200 300 400 500 Feet

1:4,000

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 4/14/2011.

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Property Boundary
Fence
Existing Facility
Proposed Facility
Proposed Relocated Fence
Workspace
ATWS
Nearest Noise-Sensitive Area

Chambersburg Compressor Station

Dominion Leidy South
Franklin Co., Pennsylvania

0 100 200 300 400 500 Feet

1:4,500

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 4/14/2011.

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- Property Boundary
- Fence
- Existing Road
- Existing Facilities
- Proposed Facilities
- Workspace
- ATWS
- Nearest Noise-Sensitive Area

Myersville Compressor Station

Dominion Leidy South

Frederick Co., Maryland

N

0 100 200 300 400 500 Feet

1:4,000

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 4/14/2011.

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Property Boundary
Fence
Existing Facilities
Proposed Facilities
Workspace
ATWS
Nearest Noise-Sensitive Area

Leesburg Compressor Station

Dominion Leidy South
Loudoun Co., Virginia

0 100 200 300 400 Feet

1:3,000

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 6/18/2010.

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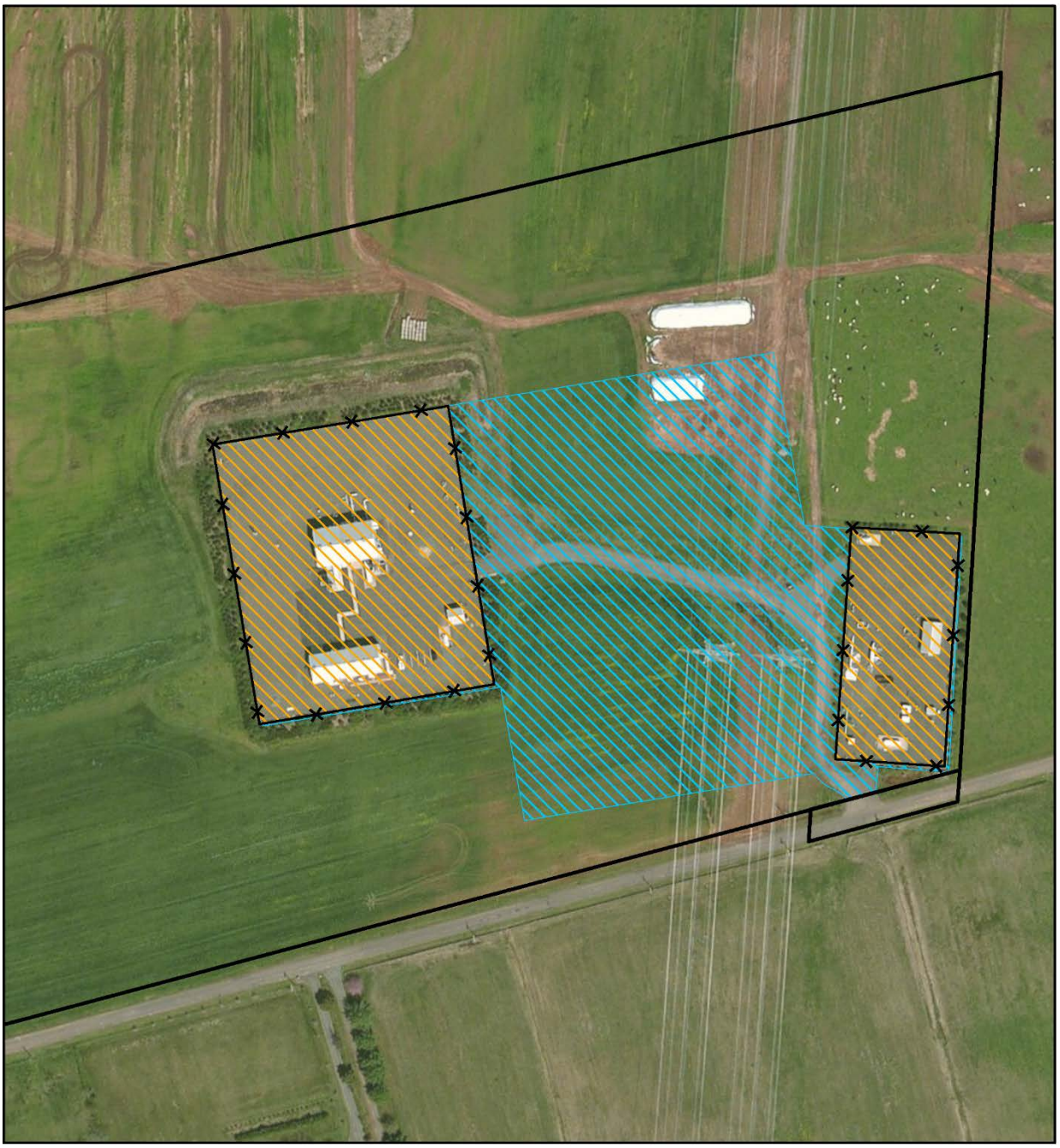
Property Boundary
Fence
Existing Facilities
Proposed Facilities
Workspace
ATWS

Centre Compressor Station

Dominion Leidy South
Centre Co., Pennsylvania



0 100 200 300 400 Feet

1:3,000

Aerial Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 4/14/2011.

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Property Boundary
Fence
Existing Facilities
Proposed Facilities
Workspace
ATWS

Quantico Compressor Station

Dominion Leidy South
Fauquier Co., Virginia

GENERAL NOTES AND COMMENTS

SYM.	DATE	BY	REVISION INFORMATION	PROJECT/TASK	APP.

SEAL

ORIGINAL CONSTRUCTION INFORMATION

PROJECT/TASK:		
DRAWN	JPE	8/27/2015
CHECKED:		
APP. FOR REV.		
APP. FOR CONST.		
SCALE	NA	

FOR:
TITLE: PANDA / STONEWALL M&R
PLOT PLAN
LIMIT OF DISTURBANCE

TOWN:	COUNTY: LOUDOUN, VA	GROUP	DWG. NO	REV
DIR/FILE:		PD	Z8100	0

Appendix D
List of Preparers

LIST OF PREPARERS

Federal Energy Regulatory Commission

Jeudy, Harry – Environmental Project Manager – Proposed Action; Land Use, Recreation and Aesthetics; Air Quality and Noise; Reliability and Safety; Alternatives; Polychlorinated Biphenyls; and Cumulative Impacts

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