



**Federal Energy
Regulatory
Commission**

**Office of
Energy Projects**

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Transcontinental Gas Pipe Line Company, LLC

Docket No. CP15-527-000

New York Bay Expansion Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas Branch 4
Transcontinental Gas Pipe Line
Company, L.L.C.
Docket No. CP15-527-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this environmental assessment (EA) for the New York Bay Expansion Project (Project) proposed by Transcontinental Gas Pipe Line Company, LLC (Transco) in the above-referenced docket. Transco requests authorization to construct, replace, and operate natural gas pipeline facilities located in Chester County, Pennsylvania, Richmond County, New York, and Middlesex and Essex Counties, New Jersey. This Project would enable Transco to modify existing facilities and replace existing pipeline to transport an additional 115 million cubic feet of natural gas per day.

The Project would involve the following activities at existing aboveground facilities in the specified towns and municipalities:

- Uprate Compressor Station 200 from 30,860 horsepower (hp) to 33,000 hp (East Whiteland Township, Chester County, Pennsylvania) and uprate a unit of Compressor Station 303 from 25,000 hp to 27,500 hp (Roseland Borough, Essex County, New Jersey);
- Add 11,000 hp of electric-driven compression to Compressor Station 207 (Old Bridge Township, Middlesex County, New Jersey);
- Install various appurtenances and modifications at three meter and regulation (M&R) stations in East Brandywine Township (Chester County, Pennsylvania), Sayreville Borough (Middlesex County, New Jersey) and Staten Island Borough (Richmond County, New York), including setting up a temporary M&R station during construction in Staten Island Borough.

In addition, Transco proposes to replace three segments of its 42-inch-diameter Lower New York Bay Lateral pipeline, totaling 0.25 mile, and uprate the lateral pipeline's operating pressure from 960 to 1000 pounds per square inch in Middlesex County, New Jersey.

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

The EA has been placed in the public files of the FERC and is available for public viewing on the FERC's website at 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 Conference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Copies of the EA have been mailed 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; libraries in the Project area; and parties to this proceeding.

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 your comments are properly recorded and considered prior to a Commission decision on the proposal, it is important that the FERC receives your comments in Washington, DC on or before **May 4, 2016**.

For your convenience, there are three methods you can use to submit your comments to the Commission. In all instances, please reference the Project docket number (CP15-527-000) with your submission. The Commission encourages electronic filing of comments and has dedicated eFiling expert staff available to assist you at (202) 502-8258 or efiling@ferc.gov.

- (1) You may file your comments electronically by using the [eComment](#) feature, which is located on the Commission's website at www.ferc.gov under the link to [Documents and Filings](#). An eComment is an easy method for interested persons to submit brief, text-only comments on a project;
 - (2) You may file your comments electronically by using the [eFiling](#) feature, which is located on the Commission's website at 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 will be asked to
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select the type of filing you are making. A comment on a particular project is considered a “Comment on a Filing”; or

(3) You may file a paper copy of your comments at the following address:

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

Although your comments will be considered by the Commission, simply filing comments will not serve to make the commentor a party to the proceeding. Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission’s Rules of Practice and Procedures (18 CFR 385.214).¹ Only intervenors have the right to seek rehearing of the Commission’s decision.

Affected landowners and parties with environmental concerns may be granted intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which would not be adequately represented by any other parties. **You do not need intervenor status to have your comments considered.**

Additional information about the Project is available from the Commission’s Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on “General Search,” and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP15-527). 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 <http://www.ferc.gov/docs-filing/esubscription.asp>.

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

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TECHNICAL ACRONYMS AND ABBREVIATIONS

AQCR	Air Quality Control Region
ATWS	additional temporary workspace
BMPs	best management practices
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
CZMA	Coastal Zone Management Act
dBA	decibels on the A-weighted scale
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
FERC Plan	<i>FERC Upland Erosion Control, Revegetation, and Maintenance Plan</i>
FERC Procedures	<i>FERC Wetland and Waterbody Construction and Mitigation Procedures</i>
GHG	greenhouse gases
GWP	global warming potential
HCA	high consequence areas
hp	horsepower
L _{dn}	day-night averaged sound level
L _{eq}	24-hour equivalent sound level
LNyB	Lower New York Bay
MMcf	million cubic feet
M&R	meter and regulation
MP	milepost
National Grid	The Brooklyn Union Gas Company, d/b/a National Grid New York
NAAQS	National Ambient Air Quality Standards
NGA	Natural Gas Act
NJDEP	New Jersey Department of Environmental Protection
NOI	Notice of Intent to Prepare an Environmental Assessment for the Proposed New York Bay Expansion Project and Request for Comments on Environmental Issues
NO _x	nitrogen oxides
NRCS	National Resources Conservation Service
NPL	National Priority List
NSA	noise sensitive area

NYSDEC	New York State Department of Environmental Conservation
OEP	Office of Energy Projects
PADEP	Pennsylvania Department of Environment Protection
PDCNR	Pennsylvania Department of Conservation and Natural Resources
PCB	polychlorinated biphenyl
PEM	palustrine emergent wetland
PFO	palustrine forested wetland
PM ₁₀	particles with an aerodynamic diameter less than or equal to 10 microns
PM _{2.5}	particles with an aerodynamic diameter less than or equal to 2.5 microns
psig	pounds per square inch gauge
SESCP	Transco's Project-Specific Soil Erosion and Sediment Control Plan
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compounds

A. PROPOSED ACTION

1. Introduction

On July 8, 2015, Transcontinental Gas Pipe Line Company, LLC (Transco) filed an application with the Federal Energy Regulatory Commission (FERC or Commission) in Docket No. CP15-527-000. Transco seeks a Certificate of Public Convenience and Necessity (Certificate) under Sections 7(c) and 7(b) of the Natural Gas Act (NGA) to construct, replace, and operate natural gas pipeline facilities. Transco proposes the New York Bay Expansion Project (Project) to modify existing facilities and replace existing pipeline to transport an additional 115 million cubic feet (MMcf) per day.

The Project would involve the following activities at existing aboveground facilities in the specified towns and municipalities:

- uprate Compressor Station 200 from 30,860 horsepower (hp) to 33,000 hp (East Whiteland Township, Chester County, Pennsylvania) and uprate a unit of Compressor Station 303 from 25,000 hp to 27,500 hp (Roseland Borough, Essex County, New Jersey);
- add 11,000 hp of electric-driven compression to Compressor Station 207 (Old Bridge Township, Middlesex County, New Jersey); and
- install various appurtenances and modifications at three meter and regulation (M&R) stations in East Brandywine Township (Chester County, Pennsylvania), Sayreville Borough (Middlesex County, New Jersey) and Staten Island Borough (Richmond County, New York), including setting up a temporary M&R station during construction in Staten Island Borough.

In addition, Transco proposes to replace three segments of 42-inch-diameter pipeline, totaling 0.25 mile, and uprate the pipeline's operating pressure from 960 to 1000 pounds per square inch gauge (psig) in Middlesex County, New Jersey.

We¹ prepared this environmental assessment (EA) in compliance with the requirements of the National Environmental Policy Act of 1969, the Council on Environmental Quality regulations for implementing this Act under Title 40 of the Code of Federal Regulations Parts 1500-1508 (40 CFR 1500-1508), and the Commission's implementing regulations under 18 CFR 380.

The assessment of environmental impacts is an integral part of FERC's decision on whether to issue Transco a Certificate to construct, modify, 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 would result from the proposed action;
- assess reasonable alternatives to avoid or minimize adverse effects on the environment; and
- identify and recommend mitigation measures, as necessary, to minimize environmental impacts.

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

The EA will be used by the Commission in its decision-making process to determine whether to authorize Transco's proposal. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds the Project is in the public convenience and necessity.

2. Purpose and Need

According to Transco, the Project would enable Transco to provide an additional 115 MMcf per day of firm transportation service to the Brooklyn Union Gas Company, d/b/a National Grid New York ("National Grid") to meet its supply needs for the 2017/2018 winter heating season.

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 decision on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed Project.

3. Public Review and Comment

In accordance with the Commission's regulations, Transco contacted all landowners and public officials whose constituents may be affected by the proposed construction. On July 21, 2015, the Commission issued its *Notice of Application* for the Project. This notice solicited comments on environmental and non-environmental matters pertaining to Transco's proposed Project. Ten motions of intervention were received; however, no environmental issues were raised in response to this notice.

On October 8, 2015, the Commission issued its *Notice of Intent to Prepare an Environmental Assessment for the Proposed New York Bay Expansion Project and Request for Comments on Environmental Issues* (NOI)². The NOI was sent to about 440 individuals, organizations, federal and state agency representatives, county and local government agencies, elected officials, the local newspaper and library, and property owners adjacent to the pipeline to be replaced and within 0.5 mile of the compressor stations to be modified. The NOI requested written comments from the public on the scope of analysis for the EA. The public scoping period closed on November 8, 2015.

In response to the NOI, we received comments from the New Jersey Department of Environmental Protection, the New Jersey State Historic Preservation Office, the Pennsylvania Department of Environmental Protection, and two citizens. The primary issues raised by the commentors were permits required for natural gas transmission construction projects in each state, specific questions for Transco regarding the operation of the facilities, and concerns about a possible interconnect to a liquefied natural gas terminal.

² The NOI was published in the Federal Register (Vol. 80, No. 199) on October 15, 2015.

4. Proposed Facilities

The Project would consist of construction or upgrades at three existing compressor stations and three M&R stations; installation of a temporary M&R station; and the replacement of 0.25 mile of noncontiguous pipeline, all described in more detail below. Figures 1 and 2 show the overall Project location, and table A-1 summarizes the Project activities and locations. Overview and detailed location maps are included in appendices A and B.

4.1 Pipeline Facilities

The Lower New York Bay (LNYB) Replacements would involve the replacement of three noncontiguous segments of 42-inch-diameter pipeline totaling 0.25 mile of the existing LNYB Lateral Mainline in Middlesex County, New Jersey. The replacement pipeline would be installed adjacent to the existing pipeline within the existing right-of-way at an offset of 25 feet, except where soil conditions and a stream crossing require a 35-foot offset. The milepost (MP) locations of the replacement segments would be as follows:

- Segment 1, MP 10.00 to MP 10.22;
- Segment 2, MP 10.30 to MP 10.30; and
- Segment 3, MP 10.38 to MP 10.42.

Following the installation of the replacement segments and their placement into service, the existing pipeline would be removed.

4.2 Aboveground Facilities

Compressor Station 303

At Compressor Station 303 in Essex County, New Jersey, Transco would uprate the Unit 1 motor from 25,000 hp to 27,500 hp and re-wheel it to handle the additional anticipated flows. There would be no ground-disturbing activities; all work would take place inside the existing compressor station building.

Compressor Station 207

At Compressor Station 207 in Middlesex County, New Jersey, the Project activities would consist of the installation of a new electric motor-driven compressor unit, gas coolers, and yard piping to connect the facilities. The 11,000 hp compressor unit would be installed adjacent to the existing compressor building, increasing the total station horsepower from 15,400 to 26,400 hp. The coolers would be utilized to counteract increased gas temperatures due to the additional horsepower.

Compressor Station 200

At Compressor Station 200 in Chester County, Pennsylvania, Project activities would consist of uprating the total station horsepower from 30,860 to 33,000 hp by utilizing existing capacity at the station.

In addition, two remote actuators would be attached to the existing regulators on the mainline pipeline within the station property, requiring the excavation of the immediate area surrounding the regulator valves. Once actuators are installed and tested, the area would be filled and graded.

The existing driveway would support construction access; open upland areas onsite would serve as temporary workspace and all work would take place within the limits of the Compressor Station 200 property and fence lines.

Narrows M&R Station

At the Narrows M&R Station in Richmond County, New York, Project activities would include the replacement of existing infrastructure at the M&R station to allow the station capacity to increase by an additional 50 MMcf per day. The proposed modifications include replacing the inlet and outlet headers and station isolation valves outside the building, as well as piping, valves, and fittings within the building.

The work on the outlet header would take place in an area of the existing building that is built subgrade and within the hillside. The work on the inlet header would take place on the front of the building facing Clifton Avenue. The work on the inlet and outlet valves would take place in the valve yard between the building and Clifton Avenue. The subgrade station inlet and outlet valves would be excavated, isolated, and replaced. Subgrade headers would be excavated, isolated, and removed using standard construction practices. The new larger subgrade headers would be installed and backfilled. A new remote terminal unit building would be situated within the current fenced property limits.

An outage would be required in order to accommodate the work at the M&R station. This outage would disable Transco's ability to meter and regulate gas delivered to National Grid at the Brooklyn Regulator Vault (downstream of the Narrows M&R Station). This inability to measure during the outage would necessitate temporary metering upstream of the M&R station, proposed to take place at the Staten Island Heaters site.

Temporary M&R Station at Staten Island Heaters

A temporary metering and regulating skid is proposed to be installed at the Staten Island Heaters, also within Richmond County, while the Narrows M&R Station is out of service during construction, which is estimated to take 6 months. The M&R skid would be placed within the existing heater site fence and tied in to the existing infrastructure. Upon completion of the work at the Narrows M&R Station, the temporary skid would be removed and the piping re-installed.

Morgan M&R Station

At the Morgan M&R Station in Middlesex County, New Jersey, Transco would install regulators to limit overpressure of existing infrastructure to ensure the 960 psig maximum allowable operating pressure of the existing meter facilities could be maintained. A regulator skid with a pre-fabricated building would be installed upstream of the existing metering inlet header and would require modification of associated yard piping. In addition, the existing 42-inch valve upstream on the pig receiver would be replaced.

An outage of the Morgan M&R Station would be required to accommodate the installation of the skid and pig receiver valve. Transco would work with the customer, New Jersey Natural, to schedule this outage.

Downingtown M&R Station and Mainline Bypass

Modifications would be made at the Downingtown M&R Station in Chester County, Pennsylvania, including the installation of a mainline bypass of Transco's existing Mainline "A." The

proposed 30-inch bypass piping would directly connect the existing 30-inch-diameter Mainline “A” with the 42-inch-diameter Mainline “A,” as both these pipelines currently terminate at the pig launcher/receiver. This bypass would eliminate the flow constraints at this facility and allow for a much larger volume to be delivered to Compressor Station 200. Two 30-inch over-pressure protection valves would also be installed on the bypass lines, and the existing 24-inch crossover piping connecting Mainline “A” and Mainline “C” would be modified to accommodate the proposed bypass line tie-in.

Facility	Proposed Activities	Town(s)	County	State
Compressor Station 303	Uprate Unit 1 from 25,000 hp to 27,500 hp and rewheel the unit	Roseland Borough	Essex	New Jersey
Compressor Station 207	Add 11,000 hp to the station by installing one electric driven compression unit; install new transformer; add gas cooling	Old Bridge Township	Middlesex	New Jersey
Compressor Station 200	Uprate total station hp from 30,860 hp to 33,000 hp; install 2 actuators on mainline regulators	East Whiteland Township	Chester	Pennsylvania
Narrows M&R Station	Modify existing M&R infrastructure	Staten Island Borough	Richmond	New York
Temporary Offsite M&R at Staten Island Heaters	Install temporary metering and regulating skid upstream of Narrows M&R	Staten Island Borough	Richmond	New York
Morgan M&R Station	Install pressure regulating skid; modify station valves and yard piping	Sayreville Borough	Middlesex	New Jersey
Downingtown M&R Station and Mainline Bypass	Install 30-inch bypass piping adjacent to the station, modifications to valves and yard piping	East Brandywine Township	Chester	Pennsylvania
LNYB Lateral Pipeline	Replace approximately 0.25 mile of 42-inch-diameter pipeline in three locations; uprate lateral from 960 psig to 1000 psig	Old Bridge Township & Sayreville Borough	Middlesex	New Jersey

5. Land Requirements

The proposed Project involves activities at existing facilities and existing rights-of-way. As a result, there would be less than 1 acre increase in the land required for operation of Transco’s facilities. Land requirements of the Project for total construction and for additional operational impacts are summarized below in table A-2.

Included in the construction impacts are two temporary access roads and modifications to one permanent access road, shown in Appendix B. Transco would access the LNYB Replacement portion of the Project using local roads to Ernston Road, and then an existing dirt road as temporary access for construction. At Compressor Station 207, an existing temporary dirt access road situated adjacent to the station property would be utilized for construction at this location, temporarily impacting 2.48 acres. An additional 0.24 acre would be permanently impacted at Compressor Station 207 for the construction of a

permanent driveway. Finally, at the Downingtown M&R Station, an existing landowner driveway which is used as a permanent access road would be permanently widened to accommodate Project construction. At all other facilities, local roads and existing station driveways would be utilized without improvements, including at the Temporary Offsite M&R Station at Staten Island Heaters.

The Project proposes to use four contractor yards, also summarized with construction impacts below in table A-2. At Compressor Station 200, a 6.84-acre parcel of the station's property (labeled "Contractor Yard 1" in Appendix B) would be used as a contractor yard for construction at both Compressor Station 200 and the Downingtown M&R Station and Mainline Bypass. An adjacent offsite cleared parcel of 5.5 acres is proposed as Contractor Yard 2 for construction at Compressor Station 207. Contractor Yard 3 is a 5.93-acre graveled site in Old Bridge Township, New Jersey, that would serve the LNYB Replacement portion of the Project. Finally, 2.30 acres adjacent to Staten Island Heaters would serve as Contractor Yard 4 for construction at both the Temporary Offsite and the Narrows M&R Stations.

Table A-2 Summary of Land Requirements for the Project			
Facility	Town(s), State	Land Affected During Construction (acres) ^a	Land Newly Affected During Operation (acres) ^b
Aboveground Facilities			
Compressor Station 303	Roseland Borough, New Jersey	0 ^c	0
Compressor Station 207 (including Contractor Yard 2)	Old Bridge Township, New Jersey	24.02 ^d	0.59
Compressor Station 200 (including Contractor Yard 1)	East Whiteland Township, Pennsylvania	20.93	0
Narrows M&R Station	Staten Island Borough, New York	1.16	0.01
Temporary Offsite M&R Station at Staten Island Heaters (including Contractor Yard 4)	Staten Island Borough, New York	2.91	0
Morgan M&R Station	Sayreville Borough, New Jersey	1.25	0.01
Downingtown M&R Station and Mainline Bypass	East Brandywine Township, Pennsylvania	1.97	0.06
Pipeline Facilities			
LNYB Replacement (including Contractor Yard 3)	Sayreville Borough and Old Bridge Township, New Jersey	14.05	0.00
Project Totals		66.29	0.67
^a	Construction impacts include contractor yards and temporary access roads. More detailed breakdowns are presented in the Land Use section in tables B-7 and B-8.		
^b	Operational impacts describe the proposed new permanent footprint and do not include the existing easements or aboveground facilities.		
^c	No ground disturbance is proposed at Compressor Station 303.		
^d	Acreage of facility; a subset of this acreage would be disturbed for yard piping modifications.		

6. Construction Schedule and Workforce

Transco proposes to begin construction at Compressor Station 207 in December 2016, and to begin the remainder of the Project components in April-May of 2017. Overall construction is anticipated to be completed within an 8-11 month period with a target in-service date of November 1, 2017. Transco states that standard construction operating hours would be 7:00 a.m. to 7:00 p.m., Monday through Saturday.

Table A-3 Construction Schedule Summary			
Facility	Estimated Construction Duration (months)		Average Manpower Required
	Total	Peak ^a	
Compressor Station 303	3	2	19
Compressor Station 200	3	2	19
Compressor Station 207	9	7	50
Morgan M&R Station	1	1	21
Narrows M&R Station	2.5	1.75	30
Temporary Offsite M&R Station at Staten Island Heaters	1	1	25
Downingtown M&R Station, Mainline Bypass	2	1	35
LNYB Replacements	2	1	42

^a Peak duration assumes 100% workforce and equipment use; non-peak months are assumed to require approximately one-third of the labor/equipment

7. Construction, Operation, and Maintenance Procedures

Transco would construct, operate, and maintain the proposed Project in compliance with the U.S. Department of Transportation (USDOT) regulations under 49 CFR 192 - *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and all other applicable federal and state permit requirements, regulations, and environmental guidelines.

For the LNYB Replacement, Transco would use conventional overland construction techniques for large diameter pipelines to install the new pipe and place it into service, after which Transco would remove the existing pipe. A new trench paralleling the existing line would be excavated. The new pipe would be strung, bent and welded together, inspected, then lowered into the trench and backfilled. Subsequently, hydrostatic pressure test would be performed on the new replacement segments. The gas in the existing pipeline would then be evacuated and the existing line would be cut and tied in to the newly installed replacement segments. The decommissioned pipeline would then be excavated and removed, with the old pipe cut into sections and disposed of per applicable state and local regulations. The disturbed areas would be cleaned up and restored to previous conditions. The pipeline replacements would require a single construction spread that would proceed along the pipeline right-of-way in one continuous operation for installation and then again for removal.

At the aboveground facilities, Transco would clear and grade the relevant portion of each property to prepare for construction. Erosion control devices would be installed to prevent erosion and offsite impacts. Access to the aboveground facilities would be provided by existing public and private access roads and the temporary access roads described above in section A.5. Any soils excavated for

foundations of the aboveground facilities at Compressor Station 207 would be compacted in place, and any excess soil would be used elsewhere onsite. After construction, any disturbed area that is not covered in gravel or asphalt would be restored and revegetated.

7.1 Environmental Compliance and Monitoring

Transco has adopted the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan), and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures)³ without modifications. Transco would also implement Project-Specific Soil Erosion and Sediment Control Plans (SESCPs) to be submitted to the applicable state or county soil conservation districts for review and approval. The finalized SESCOs would be provided to FERC prior to construction.

In addition, Transco has developed several environmental management plans, described further in this EA, which would apply to this Project:

- *Spill Plan for Oil and Hazardous Materials* (Spill Plan) to prevent incidental soil contamination during construction;
- *Waste Management Procedures*, which includes an *Unanticipated Discovery of Contamination Plan* to respond to potential soil and groundwater contamination encountered during construction;
- *PCB Sampling and Disposal Plan* (PCB Plan) for handling of historic contamination of PCBs (polychlorinated biphenyls); and
- *Fugitive Dust Control Plan* for managing dust generated during construction.

Transco would utilize at least one full-time environmental inspector (EI) during construction of the Project. The EI would be on site during construction activities to ensure compliance with the construction procedures contained in Transco's standard plan, the Project-Specific SESCOs, and FERC's Plan and Procedures. The EI's responsibilities include:

- ensuring compliance with applicable federal, state, and local environmental permits;
- ordering corrective actions for acts that violate the environmental conditions of the Commission's Certificate, or any other authorizing document;
- ensuring compliance with site-specific construction and restoration plans or other mitigation measures and landowner agreements; and
- maintaining construction status reports.

Transco would conduct environmental training sessions in advance of and during construction to ensure that all individuals working on the Project are familiar with the environmental mitigation measures appropriate to their jobs and the EI's authority.

7.2 Waterbody and Wetland Crossings

Transco proposes to cross the waterbodies at Compressor Station 207 and at the LNYB Replacement using open cut dry ditch methods, either the dam and pump crossing method or the flume crossing method. In the former, temporary dams, typically consisting of sandbags or plastic sheeting are installed upstream and downstream of the waterbody crossing. Following dam installation, appropriately

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>).

sized pumps are used to dewater and transport the stream flow around the construction work area and trench. In the latter method, use of flume(s) allows trenching and pipeline installation primarily under dry conditions without significant disruption of water flow, minimizing downstream turbidity. In both methods, the flow through the construction work area is restored after completion of pipeline installation, backfill of the trench, and initial restoration of stream banks.

The proposed Project requires both the installation of pipeline and removal of pipeline in wetlands for the LNYB Replacement portion. Operation of construction equipment through wetlands would be limited to only that necessary for each stage of pipeline installation (e.g., clearing, trenching, etc.). Wetland crossing methods would be determined based on site-specific conditions and in accordance with the FERC Procedures. Topsoil would be segregated in unsaturated wetlands in the area of the trenchline to preserve the seed bank and allow for successful revegetation. In some cases, site-specific conditions may not support construction equipment; therefore, construction mats would be used to minimize disturbances to wetland hydrology and maintain soil structure. In saturated wetlands where soils are unstable, temporary work surfaces of timber or travel pads would be installed adjacent to the pipeline trench. Construction would proceed in saturated wetlands, except topsoil would not be segregated due to the saturated, unconsolidated, conditions.

7.3 Operations and Maintenance

Transco would continue to operate and maintain the facilities proposed to be upgraded in this Project in the same manner as current facilities are operated. Onsite staff are present at Compressor Stations 200 and 207, and the system is monitored remotely from Transco's Gas Control Center in Houston, Texas. Compressor Station 303 is unmanned and fully automated. Personnel would continue to perform routine checks of all facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment and grounds. Vegetation within the fenced portion of the stations would continue to be mowed as needed. Transco would continue to maintain a 100-foot-wide permanent right-of-way along the route of the 42-inch-diameter pipeline replacement.

8. Non-jurisdictional Facilities

Occasionally, projects have associated facilities that are constructed in support of the Project, but do not come under the jurisdiction of the FERC. Such non-jurisdictional facilities are often constructed upstream or downstream of the jurisdictional facilities for the purpose of delivering, receiving, or using the proposed gas volumes, or may include utilities necessary for aboveground facility operation.

At the Narrows M&R Station there is a potential for a non-jurisdictional tie-in facility associated with National Grid. At this time National Grid has not determined its design, location, or installation timing of this potential facility. National Grid would construct an extension of its existing low pressure system terminating at the Transco property boundary, where Transco would tie in a new exhaust gas recovery system, which is being proposed to reduce the amount of gas presently vented from the Narrows M&R facility.

9. Permits and Approvals

Transco would obtain all necessary permits, licenses, clearances, and approvals related to construction and operation of the Project. The company would provide all relevant permits and approvals to the contractor, who would be required to adhere to applicable requirements. Table A-4 lists federal and state permits related to construction and operation of the Project. Transco would be responsible for obtaining all applicable permits for its Project regardless of whether they appear in the table or not.

Table A-4 Permits, Approvals, and Consultations for the Project		
Agency	Permit/Approval/Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity	Submitted July 2015
U.S. Army Corps of Engineers	404 Clean Water Act Nationwide Permit 12 (Lower New York Bay Lateral Facilities)	Submitted 1/20/16; response pending
U.S. Fish and Wildlife Service, State Field Offices (USFWS)	Endangered Species Act – Section 7 Consultation	Pennsylvania request for concurrence submitted 6/10/15; clearance received 7/17/15
	Transco Categorical Exemption in place for minor activities	New Jersey Survey Report submitted 10/16/15 USFWS concurrence received 11/13/15
State – New York		
New York State Department of State	Coastal Zone Management Act Consistency (coordinated with New York City Department of City Planning)	Submitted 11/2/15 Consistency Approval received 1/28/16
New York Natural Heritage Program	Endangered Species Clearance	Consultation submitted 5/27/15; response received 6/19/15
New York State Department of Environmental Conservation	State Pollutant Discharge Elimination System (SPDES) General Permit for Storm Water Discharges from Construction Activity/Storm Water Pollution Prevention Plan	To be submitted 1st Quarter 2016
New York State Department of Environmental Conservation	SPDES Hydrostatic Test Water Permit /Notification of Withdrawal and Discharge Locations for Water Used in Hydrostatic Testing	To be submitted 2nd Quarter 2016
New York State Historic Preservation Office	Section 106 National Historic Preservation Act	Categorical Exemption in place for minor activities
State – New Jersey		
New Jersey Department of Environmental Protection (NJDEP), Natural Heritage Program	Rare, Threatened and Endangered Species Consultation	Consultation request submitted on 5/27/15; response received 6/16/15
New Jersey State Historic Preservation Office	Section 106 National Historic Preservation Act	Consultation requests submitted on 6/18/15 (additional temporary workspace at LNYB Replacements); clearance received 7/2/15 Consultation on entire New Jersey portions of Project; concurrence received 12/14/15
NJDEP, Division of Land Use	Waterfront Development Permit (Coastal Zone Management Act) – Exemption Request for Morgan M&R	Submitted 11/2/15; exemption request received 12/22/2015
NJDEP, Division of Land Use	Freshwater Wetlands Act General Permit 2 (utility)/10A (minor rd) Individual Freshwater Wetlands Permit	Compressor Station 207 submitted 1/12/16, LNYB Replacements submitted 1/12/16

Table A-4 Permits, Approvals, and Consultations for the Project		
Agency	Permit/Approval/Consultation	Status
NJDEP, Division of Land Use	Flood Hazard Act Individual Permit General Permit 8 (Utility Line)	Compressor Station 207 submitted 1/12/16, LNYB Replacements submitted 1/12/16
NJDEP, Division of Water Quality	Water Allocation, Permit by Rule, or Short Term Permit (volume/duration dependent)	Compressor Station 207 to be submitted 1st Quarter 2016, LNYB Replacements to be submitted 3rd Quarter 2016
NJDEP, Division of Water Quality	New Jersey Pollutant Discharge System (NJPDES) Discharge to Surface Water – Construction Dewatering Discharge	Compressor Station 207 to be submitted 1st Quarter 2016, LNYB Replacements to be submitted 3rd Quarter 2016
NJDEP, Division of Water Quality	NJPDES Discharge to Groundwater – Construction Dewatering Discharge	Compressor Station 207 to be submitted 1st Quarter 2016, LNYB Replacements to be submitted 3rd Quarter 2016
NJDEP, Division of Water Quality	NJPDES Stormwater - Construction	Compressor Station 207 to be submitted 1st Quarter 2016, LNYB Replacements to be submitted 3rd Quarter 2016
NJDEP, Bureau of Nonpoint Pollution Control	NJPDES General Permit – Hydrostatic Test Water Discharge	Compressor Station 207 to be submitted 1st Quarter 2016, LNYB Replacements to be submitted 3rd Quarter 2016
State – Pennsylvania		
Pennsylvania Fish and Boat Commission	Rare Species Clearance – Reptiles/Amphibians/Fisheries Restrictions	Clearance received via Pennsylvania Natural Diversity Inventory (PNDI)
Pennsylvania Game Commission	Rare Species Clearance – Mammals	Clearance received via PNDI Receipt
Pennsylvania Department of Conservation and Natural Resources	Rare Species Clearance - Plants	Consultation request submitted on 5/27/15; clearance received 6/29/15
Pennsylvania Department of Environment Protection	Chapter 102 National Pollutant Discharge Elimination System Hydrostatic Test Water Discharge General Permit (PAG-10)	To be submitted 1st Quarter 2016
Pennsylvania Department of Environment Protection	Chapter 102 SESC Plan (to be kept onsite during construction activities)	Minor Permit Modification required for Compressor Station 200 existing ESCGP-2, to be submitted 1st Quarter 2016
Pennsylvania Historic Preservation Office	Section 106 National Historic Preservation Act	Categorical Exemption in place for minor activities
Local		
Freehold Soil Conservation District (New Jersey)	Soil Erosion and Sediment Control Plan	Compressor Station 207 submitted January 2016, LNYB Replacements submitted February 2016

B. ENVIRONMENTAL ANALYSIS

The environmental consequences of constructing and operating the Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. As discussed throughout this EA, temporary impacts are defined as occurring only during the construction phase. Short-term impacts are defined as lasting up to 3 years. Long-term impacts would eventually recover, but require more than 3 years. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

1. Geology

The proposed Project is underlain by the Upland and Lowland Sections of the Piedmont Physiographic Province and the Embayed Section of the Coastal Plain Physiographic Province (NJGS, 2003; USGS, 2015).

The Piedmont Province in New Jersey and southeast Pennsylvania is characterized by a low rolling plain predominantly underlain by sedimentary and igneous rocks from the Triassic through Jurassic age (240 to 140 million years ago) (NJGS, 2003), and bands of metamorphic bedrock. Local relief is typically less than 300 feet, with some maximum local elevations of about 600 feet (PCDNR, 2015).

The boundary of the Coastal Plain Province occurs along the Fall Line where bedrock of the Piedmont Province meet the unconsolidated Cretaceous-age Coastal Plain sediments. The Coastal Plain is predominantly underlain by Lower Cretaceous to Miocene age (90 to 100 million years ago) unconsolidated sediments, including sands and clays. The Coastal Plain in the Project area consists of a seaward dipping wedge of sediments. The Coastal Plain is comprised of terraced lowlands to hills, ranging in elevation from sea level to 400 feet (NJGS, 2003).

The landscape in the Project area has been shaped by multiple glacial events. The predominant unconsolidated surficial geologic units in the Project area are late Wisconsin-age glacial till and more recent salt marsh/estuarine deposits. Bedrock underlying the Project area in Essex County, New Jersey would consist of the Jurassic-age Towaco Formation (sandstone, siltstone, and silty mudstone). In southeast Pennsylvania, bedrock would consist of the Chickies Formation (quartzite, quartzite schist, and slate), the Cambrian-age Ledger Formation (dolomite), and the Antietam and Harpers Formations (quartzite and schist). Surficial geology underlying the Project area in Middlesex County, New Jersey would consist of the Magothy Formation (fine- to coarse-grained sand cross-stratified with carbonized wood, colorless mica, and carbonaceous clay). Bedrock underlying the Richmond County, New York Project area would include dense igneous rocks the Palisade Diabase Sill (dense rock composed of plagioclase feldspar, augite, and quartz) and the Raritan Formation sediments (clay, silty clay, sand, and gravel) (USGS, 2015).

1.1 Mineral Resources

Extraction of mineral resources within the Project area is limited to non-fuel resources. Transco's review of the U.S. Mines Data Set identified only one active mining operation within 0.25 mile of the Project area. Compressor Station 207 in Middlesex County is adjacent to an active sand and gravel mine.

However, construction at Transco's Compressor Station 207 would take place within previously disturbed areas on Transco property and as such would not directly or indirectly affect adjacent mining operations. No other active, inactive, closed, or permitted mineral resource mining operations were identified within 0.25 mile of the Project area.

1.2 Geologic Hazards

Geologic hazards are natural physical conditions that can result in damage to land or structures, and injury to the public. Potential geologic or other natural hazards for the Project may include seismic hazards, landslides, flash flooding, and dissolution of soluble bedrock, such as limestone or gypsum, resulting in collapse or subsidence of the ground surface (MSHA, 2014).

Seismic Hazards

No quaternary faults exist in the vicinity of the Project area according to the United States Geological Survey (USGS) Quaternary Fault and Fold database of the United States (USGS, 2006).

The USGS earthquake hazard program (USGS, 2014) mapping shows that seismicity in terms of peak ground acceleration within the Project area is between 10 to 20 percent gravity for the 2-percent probability of return period in 50 years. These values represent light to moderate ground shaking with little to no associated damage, and low potential for soil liquefaction to occur.

There are no recent faults that cross or are present in the immediate vicinity of the Project, and the near-flat terrain renders the Project area negligible for slope instability and landslides.

Land Subsidence and Karst Terrain

Ground subsidence is a lowering of the land surface elevation that results from changes that take place underground. Common causes of land subsidence include dissolution of limestone in areas of karst terrain, collapse of underground mines, and the pumping of water, oil, and gas from underground reservoirs. Underground mines and pumping of oil or gas does not take place in the vicinity of Project facilities. Karst terrain is not present or not likely to occur within the majority of the Project area with the exception of Downingtown M&R Station and Compressor Station 200. These facilities are in areas where fissures, tubes, and caves generally less than 1,000 feet long and 50 feet or less vertical extent could occur (National Atlas, 2015). Additionally, the Pennsylvania Department of Conservation and Natural Resources (PDCNR) identifies several areas as "surface depressions" within and adjacent to Compressor Station 200 which could represent surficial collapse (PDCNR, 2015). However, operation of Compressor Station 200 has not been adversely affected by karst topography or subsidence to date. No sinkholes have been identified within 0.25 mile of the Project area.

Based on the lack of significant collapse hazards, underground mines, and pumping of oil and gas in and around the proposed Project area, impacts on the Project facilities or adjacent land due to groundsoil land subsidence and karst terrain are not anticipated.

Flash Flooding

Flash flood events are less common in the northeastern United States compared to other regions; however, flash flooding is possible on streams in the Project area. Portions of the Project area could be impacted by flash floods where the route crosses or is in proximity to streams. The greatest potential for flash flooding is associated with tropical storms, which are usually accompanied by significant

precipitation over a short period of time. As such, the potential for flash flooding to occur and significantly impact construction or operation of the Project facilities is low.

1.3 Blasting

According to the USDA Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (NRCS, 2015), areas of shallow bedrock could be found in the Downingtown M&R Station Project area. However, planned construction activities would take place within the limits of existing Transco existing rights-of-way, and as such the necessity for blasting is not expected. If blasting is found to be necessary, Transco states that Project-specific blasting plans would be developed in coordination with the appropriate agencies that address pre- and post-blast inspections and monitoring; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Transco would also use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas. **We recommend that:**

- **Prior to any blasting, Transco should file its Project blasting plan with the Secretary of the Commission (Secretary) for the review and written approval of the Director of the Office of Energy Projects (OEP).**

Given the geologic conditions within the Project area, and the fact that most construction would take place within existing Transco facilities and rights-of-way, we do not anticipate that Project facilities would be compromised due to seismicity, ground rupture, soil liquefaction, subsidence, flash flooding, or landslides and that the proposed facilities would result in no impact on geologic resources.

2. Soils

Soil types that occur within the Project area were identified by the NRCS Soil Survey Geographic Database (NRCS, 2015). As discussed, construction would take place within existing facility boundaries and rights-of-way that have been previously disturbed. Approximately, 70.75 acres would be temporarily impacted during construction and 0.67 acre would be affected during operation of Project facilities.

Temporary impacts would result from direct soil disturbance due to clearing, grading, excavation, and soil compaction from heavy construction equipment traveling over the work areas. Temporary soil resource impacts would occur only during the construction period and/or post-construction monitoring. Impacts may include reduction of soil quality from the intermixing of topsoil and subsoil and soil settling or slumping. Depending on soil conditions, impacts could also include loss of excavated soil through water and wind erosion, soil compaction from construction equipment, and mixing of wetland topsoil and subsoil. The characteristics of soil types, vegetation cover, and slope are also important factors in determining whether the potential exists for these construction-related impacts to occur. Additional soil-related impacts from construction and operation could include the potential to encounter acid-producing soils, which could impact water resources (discussed below).

2.1 Erosion, Runoff, and Sediment Control

Most impacted soils in the Project area have low to moderate erosion potential based on soil characteristics and slope. The soils with the highest erosion potential are found at Compressor Station 200 in Chester County, Pennsylvania, where ground-disturbing activities would be limited to excavation of the immediate area surrounding the regulator valves. To minimize or avoid potential impacts from soil

erosion and sedimentation to nearby waterbodies, Transco would utilize erosion and sedimentation control devices in accordance with its Soil Erosion and Sediment Control Plan (SESCP) and FERC's Plan during construction. Temporary erosion controls, including interceptor diversions and sediment filter devices (including, but not limited to, hay bales and silt fences) would be installed prior to or immediately following any clearing activities, based on site-specific conditions.

Temporary erosion control devices would be inspected on a regular basis as well as after each rainfall event of 0.5 inch or greater to ensure that the controls are functioning properly. In addition, Transco would perform the following to minimize impacts on soils:

- minimize the quantity and duration of soil exposure;
- protect critical areas during construction by reducing the velocity of and redirecting runoff;
- install and maintain erosion and sediment control measures during construction;
- reestablish vegetation as soon as possible following final grading; and
- inspect and maintain erosion and sediment controls as necessary until final stabilization is achieved.

2.2 Acid-Producing Soils

The Project area for Compressor Station 207, the Morgan M&R Station, and the LNYB Replacements are located on the Magothy formation, an acid-producing soil (NJGS, 2009). Prior to construction in the Project area, Transco would conduct pH testing to determine the location of acid-producing soils. Because of the ability of acid producing soils to impact water quality, alter natural communities, and impact the facilities, if acid-producing conditions are encountered Transco may employ mitigations measures including topsoil dressing and extensive liming.

2.3 Soil Contamination

The proposed Project involves construction to existing facilities in proximity to areas of known contamination. An Environmental Data Resources, Inc. (EDR) database search report was acquired for the Project area around each facility (EDR, 2015a-i). Transco also provided information regarding soil contamination on its properties. Areas of possible soil contamination within the Project area were identified on the Compressor Station 200, the Mainline 'A,' the Narrows M&R Stations, the LNYB Replacement, and the Compressor Station 207 Project sites.

Compressor Station 200

Areas of historic soil contamination were identified within the Compressor Station 200 property area. A comprehensive site-wide assessment and soil remediation was performed by Transco in the 1990s to remove these sources of contamination. Soil contaminants included PCBs, hydrocarbon, mercury, and heavy metals. Following the remediation and removal of all contamination, the Pennsylvania Department of Environmental Protection (PADEP) issued a release letter on March 24, 1998, indicating no further action was required.

Downingtown M&R Station and Mainline Bypass

Areas of historic PCB contamination were identified within the Downingtown M&R Station. The property was remediated in the mid-to-late 1990s. In a letter dated October 22, 2002, the PADEP stated that Transco had fulfilled its obligations under their Consent Order and Agreement, dated April 1, 1992, which indicates that no further action is required by the PADEP.

Narrows M&R Station

Areas of historic PCB contamination were identified within the Narrows M&R property area. In a letter to the New York State Department of Environmental Conservation (NYSDEC) dated December 9, 2002, Transco stated that a field response was initiated with maximum input from the NYSDEC in order “to mitigate any further spread of the limited contamination at this site.” This letter references an earlier correspondence from the NYSDEC dated October 21, 2002, which terminated an existing cleanup agreement under the Voluntary Cleanup Program. Transco stated that it had completed written documentation of all steps in the Voluntary Cleanup Program, as verbally agreed to at the beginning of the cleanup activities.

LNYB Replacements

The LNYB Pipeline Replacement Project area is shown to traverse the northwest corner of the Global Sanitary Landfill National Priority List (NPL) site boundary (USEPA ID NJD063160667). Contaminants such as trichloroethylene, benzene, chloroform, and methylene chloride are recorded as buried within the landfill and existing within the landfill produced leachate. According to representatives of Golder Associates, the consultant for the responsible parties, and representatives of the U.S. Environmental Protection Agency (USEPA) Region II, Transco’s right-of-way was relocated and directed into clean path around 1995 (USEPA, 2016; Golder, 2016).

Additionally, Transco states that the LNYB Lateral, among other areas, previously received pipeline liquids containing PCBs from other interstate natural gas transmission companies. Transco monitored the affected areas in accordance with the USEPA Compliance Monitoring Program followed by the 1998 PCB Mega-Rule/Amendment. As of the early 2000s, PCB concentrations in the affected areas diminished to levels below those requiring monitoring by the Mega-Rule/Amendment. However, during pipeline abandonment and replacement construction activities, Transco would adhere to its PCB Plan, which includes procedures for sampling removed pipe, any entrained liquids, and if needed, soils. The PCB Plan also includes procedures to determine the appropriate disposal methods, and measures to ensure adequate worker safety.

Remaining Project Areas

According to Transco, information available in the EDR reports, and correspondence with USEPA Region II representatives, areas of possible soil contamination were not identified on or adjacent to Compressor Station 207, Compressor Station 303, the Morgan M&R Station, or the Temporary Offsite M&R Station at the Staten Island Heaters.

At any of the Project sites, inadvertent spills or leaks of fuels, lubricants, or coolant from construction equipment could adversely affect soils. The impacts of such releases are typically minor because of the low frequency and small volumes of spills and leaks. Transco would implement the measures in its Spill Plan to prevent spills of any material that may contaminate soils, and to ensure that inadvertent spills are contained, cleaned up, and disposed of in an appropriate manner.

To minimize or avoid impacts on soils, Transco proposes to adopt and implement soil mitigation procedures during construction and operation of the Project in its site-specific SESCOs. The SESCOs would incorporate FERC’s Plan and Procedures requirements and additional best management practices (BMPs) following *Pennsylvania Erosion and Sediment Pollution Control Program Manual*, the *Standards for Soil Erosion and Sediment Control in New Jersey* and the *New York Standards and Specifications for Erosion and Sediment Control* (PADEP, 2012; NJDA, 2014; NYDEC, 2005). Should Transco encounter unanticipated contaminated soils during construction, it would evaluate and treat

impacted soils in accordance with its Unanticipated Discovery of Contamination Plan, its PCB Sampling and Disposal Plan, and applicable federal and state requirements. With Transco's implementation of these plans, we conclude that impacts on soils in the Project area would be minimized.

3. Water Resources and Wetlands

3.1 Groundwater

The Mainline Facilities in Chester County, Pennsylvania, cross two geologic formations that are encompassed by the Piedmont and Blue Ridge carbonate-rock principal aquifer. Groundwater movement within such aquifers occurs through secondary openings in the rock, such as faults, bedding planes, and other partings that have been enlarged by dissolution (USGS, 2009). Groundwater depths in the Chester County Project area are reported at a depth of approximately 20 feet below ground surface (Pennsylvania State University, 2007; USGS, 2014). The Project area in Middlesex County, New Jersey are underlain by the Northern Atlantic Coastal Plain principal unconsolidated aquifer system which consists of stacked and hydraulically connected aquifers and intervening semi-confining units (Trapp and Horn, 1997). The Richmond County, New York, Project area are underlain by the Upper Glacial Aquifer and Lower Sand Aquifer which are recharged almost entirely from surface infiltration of precipitation. However, the drinking water supply for Staten Island is provided entirely by the New York City surface-water reservoir system (Soren, 1988).

The USEPA defines Sole Source or Principal Source Aquifers as those aquifers which supply at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas typically have no alternative drinking water source(s) that could be physically, legally, and/or economically supplied to all those who depend on the aquifer for their potable water supply (USEPA, 2015a). The portions of the Project within New Jersey are entirely within an area designated by the USEPA in 1988 as the New Jersey Coastal Plain Sole Source Aquifer (USEPA, 2015b).

No private drinking water wells or springs are within 150 feet of the proposed Project construction areas. The existing access roads associated with the LNYB Replacements and Compressor Station 207 enter into Community wellhead protection areas. The remaining Project area would not cross or be within 150 feet of any wellhead protection areas.

Minor, temporary impacts on groundwater infiltration could occur as a result of tree, herbaceous vegetation, or scrub-shrub vegetation clearing within the Compressor Station 200 and LNYB Replacement Project area. Clearing of vegetation known to enhance groundwater infiltration and minimize surface runoff could result in some minor, temporary impacts on local aquifer recharge; however, following completion of construction activities, Transco would restore and revegetate cleared areas to pre-construction conditions to the maximum extent practicable.

Accidental spills of fuels, lubricants, and other petroleum products could occur during construction activities. The potential for this impact would be avoided or minimized by the proper implementation of the Project's Spill Plan, which details preventative measures that would be followed to avoid a hazardous waste spill as well as mitigation measures that would be followed to immediately contain and clean up a spill, should one occur. With the implementation of the Project's Spill Plan, as well as the measures in the FERC Plan and Procedures, we conclude that impacts on groundwater would be adequately minimized.

Groundwater Contamination

The proposed Project involves construction to existing facilities in proximity to areas of known groundwater contamination. An EDR database search report for potential groundwater contamination was acquired for each Project area (EDR, 2015a-i). These data identified possible groundwater contamination on or near the LNYB Replacement and the Compressor Station 207 Project area.

The LNYB Replacement would traverse the northwest corner of the Global Sanitary Landfill NPL site boundary. The EDR listing for the landfill indicates that the depth to the surficial aquifer is approximately 4.5 feet below the original ground surface. Contaminants such as trichloroethylene, benzene, chloroform, and methylene chloride are recorded as buried within the landfill and existing within the leachate. The majority of the landfill is underlain by the Amboy Stoneware Clay. However, this layer of clay is absent under the current right-of-way and in the northwest corner of the landfill, which allows contaminants to reach the Old Bridge Sand Aquifer (EDR, 2015e). According to the New Jersey Department of Environmental Protection's (NJDEP) Geoweb interactive map (NJDEP, 2016), the landfill is the source of known groundwater contamination which extends in a downgradient direction to the south and southeast from the northern boundary of the landfill. Reported contaminants include tetrachloroethene, lead, arsenic, chlorobenzene, and other metals. A large groundwater contamination plume is also shown on the Geoweb site originating from the northeast of the Project area extending over a portion of the Project area. Reported contaminants include benzene, trichloroethylene, tetrachloroethene, vinyl chloride, and other volatile organic compounds. These areas of groundwater contamination are characterized on the Geoweb site as Groundwater Classification Exception Areas. These exception areas are designated "only when constituent standards are not or will not be met due to (1) natural ground water quality; (2) localized effects of a permitted discharge (e.g., effluent limits above the constituent standards with discharge outside the plume/capture zone); (3) part of a pollution remedy conducted pursuant to an ACO [administrative consent order] or other Department oversight mechanism or program; or (4) an Alternate Concentration Limit approved pursuant to the New Jersey Pollutant Discharge Elimination System" (NJDEP, 1998). Transco states that it anticipates submitting a permit application for the LNYB Replacements later in 2016 to NJDEP for construction dewatering discharge to surface water; however, as NJDEP noted in a comment letter dated November 23, 2015, any discharge of contaminated water would require additional permit(s). Based on the information available in the EDR report and on the NJDEP Geoweb interactive map, and the potential for contact with contaminated groundwater during Project construction dewatering activities, **we recommend that:**

- Prior to construction of the LNYB Replacements, Transco should consult with the NJDEP regarding appropriate groundwater containment and disposal guidelines and practices, and file the results of this consultation with the Secretary.**

At Compressor Station 207, the EDR report identified two proximate NPL sites, the boundaries of which occur near the proposed access road. The Evor Phillips NPL has records of contamination by direct discharge and burial of drums including numerous explosive and/or hazardous substances. The Ciba Specialty Chemicals NPL has records of contamination by dumping and discharge to sewers of numerous hazardous chemicals. The listings for the two NPL sites indicate that the depth to aquifer ranges from approximately 3 feet to 60 feet below ground surface. Both facilities have documented groundwater contamination. According to the NJDEP Geoweb interactive map (NJDEP, 2016), the origin points for both facilities are over 2,000 feet to the west of the Project area's potential limits of disturbance. Based on the distances and information provided by USEPA Region II representatives, it is unlikely that construction activities would take place within or disrupt known contaminated areas.

Areas of known groundwater contamination were not identified in or near the Downingtown M&R Station and Morgan M&R Station Project area. While no known groundwater contamination was

identified on the remaining Project sites, several records of potential groundwater contamination were identified in their vicinities.

Transco's pipeline construction and trench dewatering activities could encounter shallow surficial aquifers with known contamination of organics and metals. If Transco encounters contaminated groundwater during construction, it would implement the procedures in its Unanticipated Discovery of Contamination Plan, which includes identifying hazardous materials, testing, and disposing of the contaminated media according to appropriate state and federal regulations.

3.2 Surface Water

Six waterbodies are present within the Project limits of disturbance. No sensitive or high-quality surface waters would be impacted by the Project, nor are they listed as Section 303(d) waters (USEPA, 2015). Table B-1 provides the milepost, feature name, waterbody, state water quality classification, fisheries classification, flow regime, approximate waterbody width, pipeline crossing length, proposed method of crossing (if applicable), timing restrictions, and anticipated construction crossing period.

Compressor Station 207 is located within the watershed of the Sayreville Water Department Community Water Supply, which serves over 40,000 people, with 1 surface water source and 11 groundwater sources; however, the primary water source is surface water (USEPA, 2013). The Downingtown M&R Station is located within the watershed of the Downingtown Water Authority, which serves a population of 9,850 people; surface water is the only source of water utilized by the Water Authority (USEPA, 2013). No surface water public water systems are present in the vicinity of the Morgan M&R Station, LNYB Replacements, and Staten Island Project components. There are no public water systems in the defined watershed for Compressor Station 200 (USEPA, 2013).

Floodplains

Compressor Station 303 and the Temporary Offsite M&R Station at Staten Island Heaters are both situated within Zone AE mapped floodplains (100-year floodplain), while the remaining sites are outside any mapped areas or within Zone X, minimal to moderate flood hazard, between the 100- and 500-year floodplain or above the 500-year floodplain (FEMA, 2006a and b; 2007a-c; 2010a-c)

As work at Compressor Station 303 would take place inside an existing building, no flooding has historically impacted this area. Flooding also has not impacted the Staten Island Heaters site where the Temporary Offsite M&R Station would be located. There are no major waterbodies in the vicinity of the temporary Heaters site and the work would take place within a gravel undeveloped lot.

As NJDEP noted in a comment letter dated November 23, 2015, the New Jersey Flood Hazard Area Control Act may apply to portions of the Project. Transco reported that it submitted Flood Hazard Act permit applications to NJDEP for Compressor Station 207 and the LNYB Replacements in January 2016.

Across the Project area, Transco would implement its BMPs for construction and restoration which would avoid, minimize, and/or mitigate impacts on the Project area during rain events, including the following:

- limiting the amount of vegetation cleared during construction to the minimum amount necessary for safe construction;
- controlling of erosion and sedimentation through installation of appropriate erosion and sedimentation facilities within and at the limits of the Project workspace; and

- maintaining erosion control devices post-construction to ensure successful revegetation of the construction area.

Restoration and revegetation of temporarily impacted areas would comply with the FERC Plan and Procedures as well as state and federal regulations and monitoring requirements. Areas of temporary construction workspace would be restored to pre-construction contours after construction, which is not anticipated to result in increased flood elevations or encroachment within floodways.

Hydrostatic Testing

Transco would hydrostatically test all pipelines in accordance with USDOT pipeline safety regulations. Hydrostatic testing involves filling the pipeline facilities with water and pressurizing the pipeline facilities above their maximum allowable operating pressure. The pressure in the facilities is then monitored for several hours. If a drop in pressure is recorded, then the pipeline facilities would be examined to determine if any leaks have occurred. Table B-2 indicates the location of the test section, approximate water volume required for testing, discharge location, and discharge rate. Permits from the NJDEP, Division of Water Resources, Bureau of Water Allocation, and NYSDEC would be required for withdrawal.

Transco would dispose the water used for hydrostatic testing through an energy dissipating device, such as hay/straw bales, before discharging it into a well-vegetated, upland area and directing it to the original water basin. The discharge through the dissipation device and upland area would minimize erosion. Transco would follow the measures contained in the FERC Procedures and all applicable federal, state, and local regulations. Transco would not use chemical additives in the hydrostatic test water.

For the reasons discussed above, we conclude that the hydrostatic testing of the Project would not have a significant impact on water resources.

Table B-2
Proposed Hydrostatic Test Water Source and Discharge Locations

Facility	Town, State	Hydrostatic Test Water Source	Quantity of Water	Method of Discharge
Compressor Station 303	Roseland Borough, New Jersey	No test water required		
Compressor Station 207	Old Bridge Township, New Jersey	Municipal water transported to site by truck	175,000 gallons	Discharge onsite
Compressor Station 200	East Whiteland Township, Pennsylvania	No test water required		
Narrows M&R Station	Staten Island Borough, New York	Municipal water transported to site by truck	2,000 gallons	Discharge at Contractor Yard 4
Temporary Offsite M&R Station at Staten Island Heaters	Staten Island Borough, New York	Municipal water transported to site by truck	1,500 gallons	Discharge onsite
Morgan M&R Station	Sayreville Borough, New Jersey	Municipal water transported to site by truck	500 gallons	Discharge water to be hauled by truck
Downingtown M&R Station and Mainline Bypass	East Brandywine Township, Pennsylvania	Municipal water transported to site by truck	4,000 gallons	Discharge water to be hauled by truck
LNYB Replacements	Old Bridge Township & Sayreville Borough, New Jersey	Municipal water transported to site by truck	100,000 gallons	Discharge onsite

Table B-1
Surface Waterbodies Crossed or Otherwise Impacted by the Project

Milepost	Waterbody Name	State Water Quality Classification	Flow Regime	Classification by FERC ^a	Waterbody Width (feet) ^b	Proposed Crossing Method	Construction Timing Window
Compressor Station 207 (Old Bridge Township, New Jersey)							
NA	Unnamed Ditch	Unclassified	Ephemeral	Minor	6	Dry open cut	June 1 through November 30
NA	Unnamed Ditch	Unclassified	Ephemeral	Minor	3	Does Not Cross Centerline	June 1 through November 30
NA	Unnamed Ditch	Unclassified	Intermittent	Minor	4	Does Not Cross Centerline	June 1 through November 30
LNYB Mainline Replacement (Sayreville Borough and Old Bridge Township, New Jersey)							
MP 10.04	Cheesequake Creek UNT	FW2-NT/SE1 ^d	Perennial	Intermediate	20	Dry open cut ^c	June 1 through November 30
MP 10.04	Cheesequake Creek UNT	FW2-NT/SE1 ^d	Ephemeral	Minor	7	Does Not Cross Centerline	June 1 through November 30
MP 10.04	Cheesequake Creek UNT	FW2-NT/SE1 ^d	Intermittent	Minor	2	Does Not Cross Centerline	June 1 through November 30
^a Minor (<10 feet); Intermediate (>10 - <100 feet); ^b Approximate, measured from top of bank. ^c Dry open cut for both new pipe installation and old pipe removal ^d New Jersey Water Quality Classifications FW2-NT - Freshwater Two; non-trout SE1 waters designated uses 1. Shellfish harvesting in accordance with N.J.A.C. 7:12; 2. Maintenance, migration and propagation of the natural and established biota; 3. Primary contact recreation; and 4. Any other reasonable uses. NA Not applicable UNT unnamed tributary							

Waterbody Construction and Mitigation Procedures

Construction at aboveground and pipeline facilities would result in some minor, temporary impacts on surface waterbodies crossed by the Project. Transco proposes to use a dry open-cut waterbody crossing method (dam and pump or flume) for Compressor Station 207 and LNYB Replacements, as presented in Table B-1. At the LNYB Replacement locations, Transco would remove the existing pipe and offset the new pipe by 35 feet at the waterbody crossing.

Impacts could occur as a result of in-stream construction activities or construction activities along the banks and slopes adjacent to streams. Aquatic habitat modification, increased sedimentation, turbidity, decreased dissolved oxygen concentrations, release of chemical and nutrient pollutants from sediments, and introduction of chemical contaminants such as fuel or lubricants could result from clearing and grading stream banks, in-stream trenching, trench dewatering, backfilling, or heavy machinery operation, storage, or refueling. Transco would implement the FERC Procedures to minimize adverse impacts on surface waterbodies.

Transco would also maintain compliance with all applicable federal, state, and local regulations and permits, consistent with the measures outlined in its SESCO. Whenever possible, construction activities at stream crossings would be conducted during low-flow periods to minimize sedimentation and turbidity, stream bank disturbances, and limit the time necessary to complete in-stream construction.

Measures designed to minimize the effects of erosion and impacts on waterbodies and downstream resources include:

- avoidance of stripping vegetation along stream banks until the time of crossing, and utilizing equipment bridges, mats, and pads, when necessary and where possible;
- permanent and temporary erosion control measures to protect streams from erosion;
- installation of temporary timber mat or portable prefabricated equipment bridges for access along the right-of-way to reduce turbidity and sedimentation impacts;
- equipment bridges designed to accommodate normal to high stream flow, and would be maintained to prevent restriction of water flow during construction;
- state-approved BMPs which would border spoil piles near minor or intermittent waterbodies to prevent the spoil from entering into the waterbody;
- once pipe has been placed into a trench, immediate replacement of excavated material and restoration of stream banks and stream beds to pre-construction contours to the maximum extent practicable;
- limitation to 24 to 48 hours for the duration of in-stream construction activities to install the new pipe and remove the old pipe segment;
- revegetation of stream banks and riparian areas in accordance with the FERC Plan and Procedures and the SESCO;
- discharge of water pumped out of trenches during trench dewatering through filter bags and/or other energy dissipation device in order to reduce the rate of water flow and prevent scouring from runoff, as detailed in the SESCO; and
- storage of hazardous materials, chemicals, lubricating oils, and fuels used during construction no less than 100 feet from surface waterbodies or wetlands as outlined in Transco's Spill Plan and the FERC Procedures.

With the implementation of Transco's Spill Plan and SESCO, the FERC Plan and Procedures, and measures required in waterbody construction permits, impacts on waterbodies would be sufficiently minimized.

3.3 Wetlands

Field surveys by Transco identified 16 palustrine emergent (PEM) wetlands in the Project area, of which nine are crossed or adjacent to the LNYB Pipe Replacement, one borders Contractor Yard 3 (for the LNYB Replacement), and six are in the Project area of the Compressor Station 207. Three of the wetlands associated with the LNYB Replacements and one of the wetlands at Compressor Station 207 Project site have a palustrine forested (PFO) component associated with the wetland complex. Table B-3 below indicates the verified or estimated amount of construction and operational impacts that would occur on wetlands in the Project area.

Table B-3 Wetland Resources Crossed or Otherwise Impacted by the Project						
Feature ID	Approximate Milepost	Wetland Type ^a	Proposed Crossing Method	Approximate Crossing Length (feet)	Temporary Impacts (acres)	Operational Impacts (acres) ^b
Pipeline Facilities – LNYB Replacements						
MI-W002	NA – Access Rd	PEM	Open Cut	0	0	NA
MI-W003	10.42	PEM	Open Cut	0	0	NA
MI-W004	10.42	PEM	Open Cut	187	<0.1	NA
MI-W005	10.42	PEM	Open Cut	234	0.1	NA
MI-W006		PFO	Open Cut	12	<0.1	NA
MI-W010	10.05-10.08 10.10-10.12 10.17-10.19	PEM/PFO	Open Cut	1,390	1.5	0.2
MI-W011	10.11	PEM/PFO	Open Cut	125	0.1	0
MI-W012A & B	10.21	PEM	Open Cut	60	<0.1	NA
MI-W013	10.13	PEM	Open Cut	0	0	NA
Totals					1.8 ^c	0.2
^a Cowardin Wetland Types: PEM - palustrine emergent; PFO - palustrine forested						
^b There would be no operational impacts on PEM wetlands as these wetlands would revert back to the same type following construction. Operational impacts on PFO wetlands in this column reflect potential for selective thinning of trees within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating.						
^c These numbers were obtained via using more precise measurements of acreage, and the sums differ from what would result from adding the above rows because of rounding.						

Vegetation associated with the PEM wetlands includes: common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), *Setaria* sp., giant goldenrod (*Solidago gigantea*), rough goldenrod (*Solidago rugosa*), common mugwort (*Artemisia vulgaris*), marsh horsetail (*Equisetum palustre*), spikerush (*Eleocharis palustris*), highbush blueberry (*Vaccinium corymbosum*), green bulrush (*Scirpus atrovirens*), purple loosestrife (*Lythrum salicaria*), woolgrass (*Scirpus cyperinus*), and path rush (*Juncus tenuis*).

Four PFO wetlands are present within the LNYB Replacement survey area, and one PFO wetland is present within Compressor Station 207 property. Of the five PFO wetlands, four are part of a wetland complex with both PEM and PFO components. Vegetation associated with the PFO wetlands includes: red maple (*Acer rubrum*), river birch (*Betula nigra*), common buckthorn (*Rhamnus cathartica*), Japanese knotweed (*Polygonum cuspidatum*), black locust (*Robinia pseudoacacia*), blackgum (*Nyssa sylvatica*),

highbush blueberry, arrowwood (*Viburnum dentatum*), *Carex* sp., deertongue grass (*Dichanthelium clandestinum*), rough goldenrod, and sweet pepperbush (*Clethra alnifolia*).

Transco has indicated that 0.23 acre of PEM wetlands is present in Contractor Yard 2 at Compressor Station 207, and 0.2 acre of PFO wetlands is present at Contractor Yard 3 for the LNYB Replacements, both in Old Bridge Township, New Jersey. However, Transco has committed to avoiding any impacts on these wetlands. At Contractor Yard 3, Transco would not clear any trees and thus avoid impacts on PFO wetlands. At both contractor yards, Transco would protect wetlands by using highly visible flagging or signs to mark the boundaries; ensuring that slope breakers do not direct water into wetlands; parking overnight and/or fueling all equipment at least 100 feet from wetland boundaries; storing hazardous materials, including chemicals, fuels, and lubricating oils, more than 100 feet from wetland boundaries; performing concrete coating activities beyond 100 feet of wetlands, unless the location is an existing industrial site designated for such use; operating pumps within 100 feet of a wetland boundary would utilize appropriate secondary containment systems to prevent spills; and bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils would have appropriate secondary containment systems to prevent spills.

In accordance with Transco's SESCOs and the FERC Procedures, topsoil would be segregated in unsaturated wetlands in the area of the trenchline. Pipe stringing and fabrication may take place within the wetland adjacent to the trench, or adjacent to the wetland in a designated additional temporary workspace (ATWS). In saturated wetlands where soils are unstable, temporary work surfaces of timber or travel pads would be installed adjacent to the pipeline trench. Construction would proceed in saturated wetlands, except topsoil would not be segregated due to the saturated, unconsolidated conditions. Pipe stringing and fabrication may take place within the wetland adjacent to the trench, or adjacent to the wetland in a designated ATWS.

Typical measures to minimize impacts on wetlands include limiting the amount of equipment and use of ATWS in and adjacent to wetlands; restoring wetland contours; and conducting follow-up monitoring to ensure each wetland becomes re-established successfully. Transco would also follow all applicable federal, state, and local regulations regarding wetland impacts and follow BMPs outlined in its SESCO. Additional minimization measures include the following:

- erosion controls would be placed as required along the downslope edge of the construction right-of-way and surrounding construction ATWS to minimize impacts on adjacent wetlands;
- erosion and sedimentation barriers would be properly installed and maintained throughout construction to prevent disturbed soils and sediment from migrating into adjacent undisturbed wetland areas;
- trench plugs would be installed in upland slopes adjacent to wetlands to prevent trench erosion and at the edges of the wetland to prevent subsurface drainage along the pipeline;
- sedimentation during trench-dewatering activities would be controlled by discharging trench water into well-vegetated uplands and/or temporary sediment basins or filter bags, as appropriate;
- to minimize erosion and promote revegetation within the wetland, stump removal would only be allowed directly over the trench or where stumps create a safety hazard;
- permanent erosion controls, including terraces, interceptor diversion devices, riprap, and vegetation cover would be utilized on adjacent upland areas to minimize long-term sedimentation of the wetlands;
- energy dissipation devices may be installed at the down-slope end of surface water diversion devices to prevent erosion off the right-of-way into wetlands;
- no permanent erosion controls would be installed within wetland boundaries because they could alter hydrology; and

- hazardous materials, chemicals, lubricating oils, and fuels used during construction would be stored in upland areas at least 100 feet from wetland boundaries.

The majority of the wetlands impacted by the Project would be restored and allowed to revert to pre-existing conditions after construction is complete. As allowable under the FERC Procedures, a corridor centered on the pipeline up to 10 feet wide in all wetlands would be maintained in an herbaceous state. No permanent impacts would occur to PEM wetlands given they would be restored to their previous state once construction is complete. For PFO wetlands, a 30-foot corridor centered on the pipeline would be maintained, and trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating would be selectively removed. This would result in a permanent conversion to PEM wetland.

Transco proposes to purchase wetland mitigation credits to address the permanent conversion of any PFO wetland within the Monmouth Watershed Management Area. Otherwise, a cash contribution pursuant to the NJDEP Mitigation Checklist would be proposed.

Given Transco's commitment to the measures identified in the FERC Plan and Procedures and Transco's Spill Plan and SESCO, and its adherence to other relevant permits, impacts on wetlands during construction and operation would be sufficiently minimized.

4. Vegetation, Fisheries, and Wildlife

4.1 Vegetation

Four vegetation communities occur within the Project area – open land/meadow (18.3 acres), wetland (2.2 acres), forest/woodland (3.1 acres), and developed (47.4 acres) land. Table B-4 indicates the amounts of each vegetation community within the Project area by facility.

Most of the Project area is developed, which consists of industrial, commercial, or paved land uses. All of the Project components consist of some portion of developed land, including the existing Transco compressor stations, meter stations, and existing access roads. Open land also occurs throughout the Project area and consists of agricultural land, unimproved pastures, and existing utility rights-of-way. No protected or sensitive habitat types occur within the Project area.

Impacts on vegetation as a result of the Project would include short-term temporary, long-term temporary, or permanent disturbances. Short-term temporary impacts are associated primarily with the preparation of the construction workspace, where impacts would last through construction until the subsequent completion of successful restoration. Potential impacts include compaction of soils by construction equipment, trampling/crushing of herbaceous plants, removal of herbaceous and woody plant cover, and removal of root stock. Areas that are already vegetated with grasses or early successional species would be restored after the conclusion of construction activities. The short-term temporary disturbance areas would provide forage and habitat for wildlife within three years following successful reclamation.

Table B-4 Habitat/Vegetation Type within the Project Area			
Facility (Town, State)	Habitat Type/Name	Acres of Area Impacted	
		Construction (Temporary) ^a	Operation (Permanent) ^b
Aboveground Facilities			
Compressor Station 303 ^c (Roseland Borough, New Jersey)	Developed	0	0
	Subtotal	0.00	0.00
Compressor Station 207 ^d (Old Bridge Township, New Jersey)	Forest	2.7	0.3
	Wetland	0.2 ^e	0
	Open Land	5.3	0
	Developed	15.8	0.3
	Subtotal	24.0	0.6
Compressor Station 200 ^c (East Whiteland Township, Pennsylvania)	Developed	14.1	0
	Open Land	6.8	0
	Subtotal	20.9	0
Morgan M&R Station (Sayreville Borough, New Jersey)	Developed	0.5	<0.1
	Open Land	0.8	0
	Subtotal	1.3	<0.1
Narrows M&R Station (Staten Island Borough, New York)	Developed	1.2	<0.1
	Subtotal	1.2	<0.1
Temporary M&R at Staten Island Heaters ^c (Staten Island Borough, New York)	Developed	2.9	0
	Subtotal	2.9	0
Downingtown M&R Station, Mainline Bypass (East Brandywine Township, Pennsylvania)	Open Land	1.3	0
	Developed	0.7	0.1
	Forest	<0.1	<0.1
	Subtotal	2.0	0.1
Pipeline Facilities			
LNYB Replacements (Old Bridge Township and Sayreville Borough, New Jersey)	Forest	0.4	0
	Wetland	1.8	0
	Open Land	4.1	0
	Developed	1.9	0
	Subtotal	8.2	0
LNYB Contractor Yard 3 (Old Bridge Township, New Jersey)	Wetland	0.2 ^e	0
	Developed	5.8	0
	Subtotal	6.0	0
Project Totals		66.3	0.7
^a Includes temporary construction workspace, temporary access roads, and limits of existing facilities to be modified. ^b Describes new operational impacts beyond existing facility limits and rights-of-way. ^c No ground disturbance proposed at Compressor Station 303. ^d Includes associated contractor yard. ^e Wetlands present at contractor yards would be avoided as described in section B.3.3.			

The long-term temporary disturbance areas would be associated primarily with areas where temporary workspace impacted trees or shrub areas. These areas would be allowed to revert to their pre-existing conditions; however, they involve slower growing vegetation. The length of recovery time would depend on the sensitivity of the plant communities, the timing and extent of the disturbance, precipitation in the years following construction, and the geographic and topographic locations. Vegetation management may be required within areas in the event that post-construction monitoring identifies unsuccessful revegetation.

Construction associated with the LNYB Replacements would require a typical construction right-of-way width of 100 feet. The replacements would be made adjacent to the existing pipeline within the existing permanent easement. In accordance with the FERC Plan, Transco would annually maintain a 10-foot-wide cleared permanent right-of-way in upland areas and maintain the entire 40-foot-wide permanent right-of-way every three years. Transco would annually maintain a 10-foot-wide cleared permanent right-of-way through wetlands in accordance with the FERC Procedures. In addition, trees within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Vegetation within the fenced boundaries of Compressor Stations 200, 303, and 207 would continue to be mowed as needed.

Transco would avoid tree removal to the maximum extent practicable. As detailed above, those areas that would become permanent right-of-way would be maintained as herbaceous. In addition to following the FERC Plan, Transco would consult with the NRCS and the County Conservation Districts to obtain guidance specific to Pennsylvania, New Jersey, and New York and obtain recommendations for seed mixtures and soil amendments to be used during restoration of disturbed areas.

Transco would implement strategies to minimize the spread of exotic and invasive plant species following construction. Management and control measures include:

- following the measures contained in the FERC Plan to assure that soil movement and the associated movement of non-native seeds are minimized;
- using techniques that minimize the time that bare soil is exposed and thus minimize the opportunity for exotic species to become established; and
- monitoring the disturbed sites following construction to assure that revegetation with suitable cover seed mixes has been successful and that invasive or exotic species have not become established.

Implementation of measures in FERC's Plan and Procedures would promote revegetation at Project sites following construction. Transco would revegetate all temporary construction areas in accordance with its SESCP after construction is complete. Therefore, we conclude that the Project would not result in any significant impacts on vegetation.

4.2 Wildlife

As discussed in section B.4.1, the proposed Project area consist of wetland, open land, forest, and developed land. Although wildlife can occur in any of these habitats, the most valuable wildlife habitat is the least disturbed by human activity (i.e. forest/woodland and portions of open land that are undisturbed).

No sensitive wildlife habitats (National Wildlife Refuges, National Park Service Wilderness Areas, or other state-managed properties) are present in the Project area. The forested upland areas of the Project provide habitat for a number of wildlife species and consist of small portions located within the limits of Compressor Station 207 and adjacent to the LNYB Replacement Project sites. The different vegetation layers present from the canopy to the leaf litter support a variety of wildlife species. Upland forests in this area support mammals such as the white-tailed deer, raccoon, and gray squirrel, and birds such as scarlet tanager, ruffed grouse, American woodcock, and wood thrush.

Open land includes all non-forested vegetated areas that are not in agricultural production and includes existing utility rights-of-way and unimproved pastures. This vegetation class is present at the Downingtown M&R Station and Mainline Bypass, Compressor Station 200, and within the LNYB Replacements corridor. Open land may provide habitat for least weasel, woodchuck, coyote, northern

coal skink, southeastern five-lined skink, common garter snake, eastern earthsnake, North American racer, milksnake, eastern whip-poor-will, and Olympia marble.

Potential impacts on wildlife include habitat loss and construction-related ground disturbance and noise. Some less mobile individuals could be inadvertently injured or killed by construction equipment. However, more mobile species such as birds and mammals would relocate to other suitable nearby habitat once construction activities begin. The temporary disturbance of local habitat would not have a population-level impact on wildlife because the amount of habitat disturbed represents a small portion of the available habitat throughout the Project area. Given that vegetation cover and forage habitats are relatively abundant in the surrounding areas to the Project and the fact the majority of the Project's current land uses are existing facilities, impacts on wildlife resources would be minimal. Therefore, we conclude that the Project would not have a significant impact on wildlife.

4.3 Aquatic Resources

As indicated in Table B-5, six streams in New Jersey would be impacted by construction of the proposed Project. No freshwater waterbodies in Pennsylvania or New York, or marine or estuarine waterbodies would be crossed or otherwise impacted by the Project.

In New Jersey, the general classification applied to freshwaters of the state is "FW" by NJDEP. Water located wholly within state or federal land or special holdings are typically classified as "FW1"; all other surface freshwaters are classified as "FW2." Waters are then classified according to their suitability to support trout. Freshwaters that are generally not suitable for trout because of their physical, chemical, or biology characteristics are given a non-trout, or "NT," designation (NJDEP, 2011). The FW2-NT waters crossed by Project are warmwater fisheries. Five FW2-NT waters are located within the proposed Project area; however, only one intermittent stream would be crossed by the LNYB Replacements from MP 10.002 to MP 10.166. Table B-5 indicates the representative fish species in the Project area.

Common Name	Scientific Name
American Shad	<i>Alosa sapidissima</i>
Black Crappie	<i>Pomoxis nigromaculatus</i>
Brown Bullhead	<i>Ameiurus nebulosus</i>
Carp	<i>Cyprinus carpio</i>
Chain Pickerel	<i>Esox niger</i>
Northern Pike	<i>Esox lucius</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Bluegill	<i>Lepomis macrochirus</i>
Walleye	<i>Sander vitreus vitreus</i>
Yellow Perch	<i>Perca flavescens</i>

All waterbodies identified in New Jersey are non-trout streams, which are designated as warm water fisheries and not subject to additional restrictions under the state Flood Hazard Area regulations (NJDEP, 2011). The New Jersey Natural Heritage Program did not identify any listed aquatic species of special concern and the Project area does not support significant fisheries of commercial value. There is also no designated essential fish habitat in the Project area (NOAA, 2015).

It is anticipated that impacts on fisheries associated with construction and operation of Project facilities would be temporary and only associated with the pipeline replacement activities. Temporary,

short-term impacts on fisheries associated with pipeline construction activities may be caused by increased sedimentation and turbidity; temperature changes due to removal of vegetation cover over streams; introduction of water pollutants; or entrainment of fish. No permanent long-term effects on water temperature, dissolved oxygen, pH, benthic invertebrates, or fish communities are expected to occur as a result of the construction or operation of the pipeline or aboveground facilities.

To minimize impacts on fisheries resources and aquatic habitat, construction activities for the Project would adhere to the guidelines outlined in the FERC Procedures. Additionally, Transco would implement its Spill Plan to prevent and contain, if necessary, accidental spills. Key components of the Spill Plan include limiting or prohibiting fuel storage, refueling, and maintenance of construction equipment within 100 feet of any stream or wetland. Transco would further minimize impacts on fisheries by implementing BMPs at all stream crossings as defined in the Project-specific SESCO developed in coordination with the NJDEP and local conservation districts.

Waterbody crossing timing restrictions are prescribed in the FERC's Procedures to minimize impacts on warmwater fisheries during sensitive times of the year; this specifically includes limiting in-stream work to the period between June 1 and November 30. Additionally, the NJDEP may also require construction time windows for waterbody crossings depending on the water quality classification and fish species present. For these reasons, we conclude that the Project would not have a significant impact on fishery resources.

4.4 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. Most migratory birds are protected under the Migratory Bird Treaty Act (16 U.S. Code 703-711) and bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S. Code 668-668d). The Migratory Bird Treaty Act, 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 goals, ensure that environmental analyses of federal actions evaluate the impacts of actions on migratory birds, emphasizing species of concern, priority habitats, key risk factors, and giving particular focus to population-level impacts.

The Project would involve construction of new facilities and expansion of existing facilities, which necessitate clearing of vegetation at locations as previously described, resulting in both temporary and permanent impacts on vegetation. Bird species known as United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern (USFWS 2008) within the vicinity of the Project such as American bittern, American oystercatcher, bald eagle, black skimmer, black rail, black-billed cuckoo, blue-winged warbler, Canada warbler, cerulean warbler, fox sparrow, golden-winged warbler, gull-billed tern, horned grebe, hudsonian godwit, kentucky warbler, least bittern, peregrine falcon, pied-billed grebe, prairie warbler, prothonotary warbler, purple sandpiper, red knot, red-headed woodpecker, rusty blackbird, saltmarsh sparrow, seaside sparrow, short-eared owl, snowy egret, upland sandpiper, wood thrush, and worm eating warbler could lose potential breeding habitat as would other migratory bird species that use the same habitat. Clearing of vegetation can also result in colonization or expansion of invasive plant species altering remaining habitat.

Most impacts associated with the Project are expected to be temporary in nature and are not expected to significantly affect the resident or migratory bird populations located within the Project vicinity. Construction of the Project within the open land and former agricultural land would avoid fragmenting large contiguous tracts of wildlife habitat by utilizing existing facilities, previously disturbed

open land, and other previously disturbed habitats. Forest interior habitats would not be affected as only a portion of trees at Compressor Station 207 would be removed for the proposed coolers, and fragmentation effects are not expected.

The NJDEP recommended that mechanical trimming or removal of trees not take place during the nesting season (considered March 15 through July 31). However, if the trees are checked for nesting and no nests are observed, the NJDEP permits non-mechanical tree trimming during that time. The USFWS New Jersey Field Office concurred that the removal of trees and scrub/shrub outside of this timeframe would protect migratory birds (correspondence dated November 13, 2015). Transco has committed to the removal of trees and shrub outside of the bird nesting season to avoid impacts on migratory birds.

The Project would permanently remove 3.1 acres of forest habitat, mostly around Compressor Station 207. Given the amount of habitat removal proposed, Transco's proposed minimization measures, and the existing disturbed nature of the majority of the habitats that would be impacted, we conclude that construction and operation of the Project would not result in significant or population level impacts on migratory bird species within the Project area.

4.5 Threatened, Endangered, and Other Special Status Species

Federal agencies are required under Section 7 of the Endangered Species Act, 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, the FERC is required to consult with the 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.

Four wetlands that could support the federally threatened bog turtle are present within 300 feet of the Compressor Station 200 Project area, but are not otherwise impacted by the Project. Transco conducted a Phase I bog turtle habitat assessment on April 18, 2014, and determined that these wetlands did not have the combination of soils, vegetation, and hydrology typical of habitat occupied by bog turtles. Given no changes in the condition of the site have occurred since the survey, we determine that activities proposed at Compressor Station 200 would *not affect* the bog turtle. The USFWS Pennsylvania Field Office concurred on July 17, 2015. If, as is currently planned, Project activities at this facility go beyond July 17, 2017 (the term of the concurrence), Transco has agreed to contact the USFWS for an updated concurrence on the bog turtle.

Summer habitat for the federally threatened northern long-eared bat is also present within the Project area. Therefore, Transco performed summer surveys between August 5 and August 12, 2015. No northern long-eared bats were detected during the surveys. Therefore, we have determined that activities associated with the Project are *not likely to adversely affect* the northern long-eared bat and no further Section 7 consultation is required for this species in New Jersey. The USFWS concurred with this determination on November 15, 2015. The USFWS stated that if tree clearing within the Project site is not completed prior to August 12, 2017, the USFWS should be contacted again. Transco has agreed to this recommendation and its currently proposed schedule would meet this clearing window.

The federally threatened and New Jersey endangered Atlantic loggerhead turtle is documented within 1 mile of the Morgan M&R Project site (NJDEP, June 16, 2015). Suitable habitat for this species includes coastal habitats from bays and estuaries to the clear waters of reefs. No habitat for the Atlantic loggerhead turtle exists on the Project site. Given the water's edge is approximately 250 feet from the Project site; habitat and physical barriers at the site, which include railroad tracks, large rocks on the

shore, trees and shrubbery between the site and the shore; and the level of current disturbance at the site, *no effect* would occur on this species as a result of Project implementation.

The Pennsylvania Natural Diversity Inventory indicates that several sensitive plant species could occur within the Project area, including serviceberry, Elliot's beardgrass, shining panic-grass, small-whorled pagonia, stagger-bush, possum-bush, southern red oak, and netted chainfern. A survey was conducted at Compressor Station 200 site in May 2014; no suitable habitat and no individuals were identified. Given no changes in the condition of the site have occurred since the survey, we find that no impact is likely to these species. The PDCNR concurred with this determination on June 29, 2015, and also stated that no further coordination is needed with PDCNR for this Project. Transco has agreed to re-consult with the agency if Project activities are not completed by June 29, 2017, the term of the concurrence. Given the currently proposed schedule, we anticipate that Transco will need to re-consult with the PCDNR.

The Information for Planning and Conservation system (USFWS 2015) identified three listed species that could occur at the New York facilities – the threatened piping plover, endangered roseate tern, and threatened northern long-eared bat. However, both Project sites in New York consist of developed areas containing developed, low quality, unsuitable habitat for these species. Although habitat quality for the northern long-eared bat is low at both sites, three to four trees would be removed from the Narrows M&R site. This amount of clearing is below the 1 acre exemption under the Section 4(d), of the Endangered Species Act, rule for this species. We find there would be *no effect* on listed species for the New York portion of the Project.

The NJDEP State Forestry Services was contacted to determine if any rare wildlife species or wildlife habitat would be impacted by the Project. Two state-threatened, four state endangered, two species of special concern, and one rare species were documented within 1 mile of Compressor Station 303. Given that Project activity would occur within the facility buildings only, no impacts are expected on these species.

Within 1 mile of the Project area in Middlesex County New Jersey, four state threatened species (osprey, yellow-crowned night heron, black-crowned night-heron, and pine barrens treefrog), one state endangered (bald eagle), and five species of special concern (glossy ibis, least bittern, little blue heron, snowy egret, and wood thrush) have been documented. The bald eagle, and state threatened osprey and yellow-crowned night-heron have been documented within 1 mile of Compressor Station 207. No foraging or nesting habitat for these three species exists on the Project site. About 2.7 acres of forest habitat would be removed at Compressor Station 207 during the non-nesting season; this effectively eliminates the potential for any impacts on bird species that could be in the Project area during the nesting season. These three species, as well as the Atlantic loggerhead turtle (see discussion above), and the five above-referenced species of special concern in New Jersey have been documented within 1 mile of the Morgan M&R Project site. Although limited nesting habitat could occur onsite, the existing disturbance and activity at the site would deter nesting. Furthermore, Transco would not clear during the nesting season, eliminating any potential impacts on nesting birds. Although the bald eagle could forage or roost nearby, the highly mobile nature of this and any other bird species would eliminate the potential for any impact on this or other sensitive bird species.

Small amounts of wetland and forest habitat (totaling about 2.2 acres) would be impacted by the LNYB Replacements; however, the majority of the habitat is considered open and developed (4.7 acres). Bald eagle, black-crowned night-heron, osprey, glossy ibis, snowy egret, and state threatened pine barrens tree frog have been documented within 1 mile of this Project area. Given marginal wetland habitat is present, the black-crowned night-heron, glossy ibis, and snowy egret could forage or nest in this area. However, the noise and disturbance from construction would likely cause these species to disperse. No

impacts on nesting birds would occur given Transco's seasonal clearing restriction. The pine barrens tree frog occurs within Atlantic white cedar swamps and pitch pine lowlands that are carpeted with dense mats of sphagnum moss. No suitable habitat is present in the Project area for this species.

The NYSDEC, Division of Fish, Wildlife, and Marine Resources provided information regarding rare or state listed animals and plants within the Narrows M&R and Temporary Offsite M&R/Staten Island Heaters Project sites. The least bittern, pied-billed grebe, and southern leopard frog have been documented within 0.25 mile of the Project sites. The southern leopard frog has been documented within the Bloomfield wetlands, which is 0.2 mile west of the Project site. No trees occur on these Project sites, therefore no habitat for these species occurs within the Project area. Given the distance, previous disturbance, and isolated Project area within fenced facilities, these species are unlikely to be impacted by Project implementation.

We conclude that impacts on state listed and sensitive species would be minimized via the implementation of seasonal clearing restrictions and the measures contained in FERC's Plan and Procedures. We also find that seasonal vegetation removal restrictions would sufficiently minimize impacts on sensitive bird species, and that effects on state listed or special status species would be sufficiently minimized.

5. Land Use and Visual Resources

Construction of the Project would impact land use at existing facilities and along an existing pipeline as described below. Land use types affected by the Project include industrial, open land, forest, wetland, and private road/residential. Tables B-76 and B-8 summarize the acreage of each land use that would be affected during construction and operation of the Project.

The Project would affect a total of 70.72 acres of land during construction, including the pipeline construction rights-of-way, ATWS areas, contractor yards, access roads, and existing aboveground facilities. Following construction, almost all of that land would be restored to pre-construction uses. Only 0.67 acre of new impact would be maintained for operation of Transco's facilities, most of which would result from the expansion of Compressor Station 207.

The Project does not cross and is not within 0.25 mile of any of the following special land uses:

- national parks, monuments, preserves, memorials, battlefields, military parks, cemeteries, recreation areas, seashores, lakeshores, rivers, parkways, trails, and other designations (NPS, 2013; USGS, 2015);
- Indian reservations, National Wildlife Refuges, or National Wilderness Areas (USFWS, 2015; USFS, 2013; USGS, 2015); or
- county public conservation lands (Pennsylvania State University, 2015 and NJDEP, 2015c).

A total of 16 residences or residential structures are located within 50 feet of the proposed Project construction workspace, summarized in table B-6. Transco developed construction plans for the affected residences within 50 feet of proposed construction work areas (Appendix C). We have reviewed the plans and find them satisfactory. We encourage affected residences to review these plans and provide comments on the EA for possible incorporation in final site-specific residential construction plans.

In residential areas, the greatest impacts associated with construction and operation of pipeline facilities are typically temporary disturbances during construction and restrictions preventing construction

of permanent structures within the permanent right-of-way during operation. Temporary construction impacts on residential areas include inconveniences caused by noise and dust generated by construction equipment, personnel, and boring of roads or driveways; traffic congestion; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetation screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or wells and other utilities; and removal of aboveground structures such as fences, sheds, or trailers from within the right-of-way.

Description of residential and other land uses around the Project sites are found further below for each facility.

Table B-6 Structures within 50 Feet of Construction Work Areas		
Facility (Town, State)	Structure Type	Distance to Project (feet)
Narrows M&R Station (Staten Island Borough, New York)	Single house	3
	Single house	20
Morgan M&R Station (Sayreville Borough, New Jersey)	Single house	10
LNYB Replacement (Sayreville Borough and Old Bridge Township, New Jersey)	Condominium development of 10 structures	38
	Apartment complex of 3 structures	32

Table B-7 Construction Impacts on Land Use Types (Pipeline) ^a							
Facility	Wetland	Forest	Residential	Open Land	Private Road	Industrial	Total
LNYB Mainline Replacement (Sayreville Borough and Old Bridge Township, New Jersey)							
Pipeline	1.77	0.37	-	3.80	-	-	5.94
ATWS	-	-	-	0.26	-	-	0.26
Access Roads	-	-	-	-	1.92	-	1.92
Contractor Yard 3	- ^b	-	-	-	-	5.75	5.93
Totals	1.77	0.37	0	4.06	1.92	5.75	13.87
^a Pipeline replacement would occupy the same easement, therefore there would be permanent no land use impacts although up to 0.2 acre of PFO wetlands would convert to PEM wetlands (see section B.3.3)							
^b Transco would avoid impacts on wetlands at contractor yards (see section B.3.3)							

Table B-8
Construction and Operation Impacts on Land Use Types (Aboveground Facilities)

Facility	Wetland		Forest		Residential		Open Land		Private Road		Industrial		Total	
	Const	Oper	Const	Oper	Const	Oper	Const	Const	Const	Oper	Const	Oper	Const	Oper
Compressor Station 303 (Roseland Borough, New Jersey) ^a														
Station	-	-	-	-	-	-	-	-	-	-	-	-	- ^b	-
Compressor Station 207 (Old Bridge Township, New Jersey)														
Station	0.01	-	2.60	0.19	-	-	-	-	-	-	13.17	0.16	15.78	0.35
Contractor Yard 2	- ^c	-	-	-	-	-	5.30	-	-	-	-	-	5.30	-
Access Roads	-	-	0.14	0.14	-	-	-	-	2.48	-	0.10	0.10	2.72	0.24
Compressor Station 200 (East Whiteland Township, Pennsylvania) ^a														
Station	-	-	-	-	-	-	-	-	-	-	14.09	-	14.09	-
Contractor Yard 1	-	-	-	-	-	-	6.84	-	-	-	-	-	6.84	-
Narrows M&R Station (Staten Island Borough, New York) ^{ba}														
Station	-	-	-	-	-	-	-	-	-	-	1.16	0.01	1.16	0.01
Temporary Offsite M&R Station at Staten Island Heaters (Staten Island Borough, New York) ^a														
M&R Station	-	-	-	-	-	-	-	-	-	-	0.61	-	0.61	-
Contractor Yard 4	-	-	-	-	-	-	-	-	-	-	2.30	-	2.30	-
Morgan M&R Station (Sayreville Borough, New Jersey) ^a														
M&R Station	-	-	-	-	-	-	0.80	-	-	-	0.45	0.01	1.25	0.01
Downingtown M&R Station and Mainline Bypass (East Brandywine Township, Pennsylvania)														
M&R Station	-	-	-	-	-	-	-	-	-	-	0.48	-	0.48	-
Pipeline ^d	-	-	-	-	-	-	1.36	-	-	-	-	-	1.36	-
Access Road Expansion	-	-	0.01	0.01	-	-	-	-	0.12	0.05	-	-	0.13	0.06
Totals		0.00	2.75	0.34	0.00	0.00	14.30	0.00	2.60	0.05	36.79	0.28	52.02	0.67

Notes:

Operation impacts describe the incremental increase in operational footprint and do not include existing operations of Transco facilities.

^a These existing facilities would require no new access roads.

^b Acreage of existing facility, no ground disturbance proposed at Compressor Station 303.

^c Transco would avoid impacts on wetlands at contractor yards (see section B.3.3).

^d Bypass piping to be installed outside of M&R Station within existing pipeline easement.

5.1 Land Use by Facility

Descriptions of land uses around each Project area site are presented below, including nearby recreation, proximate contaminated sites, and consistency with the Coastal Zone Management Act (CZMA) as relevant.

Compressor Station 303

Compressor Station 303 is an existing facility in Roseland Borough, New Jersey, surrounded principally by industrial-use and commercial-use properties as well as the West Essex Park which is immediately adjacent to the station. There are multiple known contaminated sites in the vicinity of the facility; however, as no ground-disturbing activities would take place, there would be no impact on nor from contamination (EDR, 2015i).

The 1,360-acre West Essex Park is owned and maintained by the Essex County Department of Parks, Recreation, and Cultural Affairs. The park is primarily a wetland preserve and remains undeveloped; however, there is a golf driving range and miniature golf environmental center, fishing areas, trails, and a local birdwatching spot (Essex County Department of Parks, Recreation, and Cultural Affairs, 2015). All station modifications would take place within the confines of the existing compressor station and building; no impacts would occur on the West Essex Park during construction.

Compressor Station 207

The existing Compressor Station 207 is located in an industrial area in the Township of Old Bridge, New Jersey, near the border with the Borough of Sayreville. The station property boundary is adjacent to industrial and commercial properties, and the closest residences are over 0.25 mile away. There are no recreational facilities identified within 0.25 mile of the facility. As described in the EA section B.3.1 (groundwater), the station is proximate to an NPL site and other actively remediated sites with known groundwater contamination, but no impacts are expected (EDR, 2015h).

Compressor Station 200

The Compressor Station 200 is a facility that has been operating in East Whiteland Township, Pennsylvania, for several decades. It is surrounded by a medium-density mix of commercial, agricultural, and residential land uses. The closest residences include single-family houses and townhomes located in the Malvern Hunt Subdivision, discussed further under the EA section B.7.2 (noise). There are no recreational facilities identified within 0.25 mile of the facility. The station itself was historically remediated for PCB contamination, described in EA section B.2.3 (soils). The station is within 0.5 mile of an NPL site and other known groundwater contamination sites, but no impacts are expected as the groundwater as plumes do not extend under the station property (EDR, 2015g).

Narrows M&R Station

The existing Narrows M&R Station is situated in an urban area of mixed residential, commercial, and industrial uses in Staten Island Borough, New York. About 600 feet from the station is the Alice Austen House Park, which includes kayak/canoe launch sites, Buono Beach, and the historic Alice Austen House (New York City Department of Parks & Recreation, 2015). All construction activities would take place within the existing fence of the station; therefore, no impacts would occur on this recreation area and cultural site.

Just outside the existing fence line are residences, 3 feet and 20 feet away, which would be impacted by construction at the site (see table B-6 for a list of all affected residences). As mentioned above, Transco developed construction plans for these affected residences (included in Appendix C).

There are 4 known contaminated sites under remediation within 0.5 mile, although they are not expected to impact or be impacted by the Project (EDR, 2015c). The station itself was historically remediated for PCB contamination, described in EA section B.2.3, above.

The Narrows M&R Station and Staten Island Heaters are located within the boundaries of the New York coastal zone and therefore subject to the CMZA (New York State Department of State, 2015). On November 2, 2015, Transco submitted a CZMA Consistency Assessment for both sites to the Office of Planning and Development at the New York Department of State. Transco received consistency approval on January 28, 2016.

Temporary Offsite M&R Station at Staten Island Heaters

The Staten Island Heaters is situated in an urban area of mostly commercial and industrial uses in Staten Island Borough, New York. Several contaminated sites within 0.25 mile have been regulated for handling or generating hazardous materials in the past but are no longer active (EDR, 2015f). Next to the facility is a private trapshooting club (Staten Island Sports Club, 2016). Approximately 0.25 mile north of the facility is Old Place Creek Park, 69.74 acres of critical tidal and sub-tidal wetlands that is managed by the New York State Office of Parks, Recreation, and Historic Preservation (NYSDEC, 2015).

The Staten Island Heaters site would be used as a Temporary Offsite M&R Station while the Narrows M&R Station would be offline, estimated to be approximate 6 months, and the adjacent parcel would be utilized as a temporary contractor yard. All construction activities would take place within the existing fences of industrial facilities and are consistent with the CZMA (see Narrows M&R Station above); therefore, land use impacts would be temporary and minimal.

Morgan M&R Station

The existing Morgan M&R Station is situated in an urban area of mixed residential and commercial land uses in Sayreville Borough, New Jersey, abutting New Jersey Route 35. The closest residence is 10 feet from the station and would be impacted by construction at the site. As mentioned above, Transco developed a construction plan for this affected residence (included in Appendix C).

There are two recreation areas near this Project area, each about 0.25 mile from the Morgan M&R Station, Cheesequake State Park, and Raritan Bay Waterfront Park. Cheesequake State Park is a 386-acre site that supports camping, hiking, fishing, picnicking, boating, and other various outdoor activities (NJDEP, 2015a). The Raritan Bay Waterfront Park is operated by the Middlesex County Park Department and built on the edge of the Raritan Bay. Facilities available at the park include baseball, softball, and soccer ball fields, bocce courts, a playground, wall/bikeway, nature study area, and a scenic overlook/performance gazebo (Middlesex County, 2015). All construction activities would take place within the existing fence of the station; therefore, no impacts would occur on these recreation areas.

Several contaminated sites were identified within 0.5 mile of the Morgan M&R Station, including one area under federal review and one gas station with ongoing cleanup (EDR, 2015b). We reviewed the state contamination database and found no active plumes beneath the station (NJDEP, 2015b). Therefore we conclude this Project site would not impact or be impacted by any existing sources of contamination.

Coastal Zone Management in New Jersey is addressed in the Waterfront Development Law, where jurisdiction encompasses 500 feet landward of mean high water. The Morgan M&R Station is approximately 245 feet landward of the mean high water line of Raritan Bay and therefore subject to New Jersey's Waterfront Development law (NJDEP, 2015b). On November 2, 2015, Transco submitted a Waterfront Development Law Waiver Request for the proposed activities at the Morgan M&R Station to the NJDEP and received an exemption on December 22, 2015.

Downingtown M&R Station and Mainline Bypass

The existing Downingtown M&R Station is situated in a medium-density residential neighborhood in East Brandywine Township, Pennsylvania. The adjacent Mainline Bypass would take place in the existing easement (open land) which runs parallel to Blakely Road and across 4 residential driveways. No residences are within 50 feet of the proposed construction area and no recreational facilities were identified within 0.25 mile of the facility.

One remediated contaminated site was identified within 0.5 mile of the Project activities, and is not expected to impact or be impacted by the Project (EDR, 2015a). The station itself was historically remediated for PCB contamination, as described above in EA section B.2.3.

LNYB Replacement

The LNYB mainline segments to be replaced are located in an area of forest and wetlands between a residential neighborhood and a remediated NPL site. The closest residences are condominiums and apartment buildings starting at 35 feet from the pipeline and would be impacted by construction at the site. As mentioned above, Transco developed construction plans for these affected residences, which we find adequate. There are no recreational facilities identified within 0.25 mile of the pipeline replacements.

As described in EA section B.3.1, the station is proximate to an NPL site and other sites with known groundwater contamination, and we recommend continued consultation with the NJDEP regarding appropriate groundwater containment and disposal.

The LNYB Replacements are situated near a tidally influenced wetland complex; however, Project activities would take place at a distance of greater than 800 feet from mean high water and therefore are not subject to the Waterfront Development Law and the CZMA.

5.2 Visual Resources

Temporary visual impacts would occur from construction equipment and activity in the viewshed and from the removal of trees and shrubs during construction at a subset of the construction locations. Proposed activities at the following Project facilities would have negligible to no impact on visual resources as any ground-disturbing would be limited to within existing fence lines of existing facilities and would not include the removal of trees or shrubs: Compressor Station 303 (Roseland Borough, New Jersey), Compressor Station 200 (East Whiteland Township, Pennsylvania), Temporary M&R Station at Staten Island Heaters (Staten Island Borough, New York), Morgan M&R Station (Sayreville Borough, New Jersey), and all contractor yards.

Activities at the Narrows M&R Station (Staten Island Borough, New York), and at Compressor Station 207 (Old Bridge Township, New Jersey) would include the removal of existing trees at or near the stations. At the Narrows M&R Station, trees within the existing fence line would be removed and a new

building would be erected; given the density of development in the area, this impact would be visible to nearby residences and property owners.

At Compressor Station 207, about 2.74 acres of forest would be cleared for construction at Transco's existing property, however most of this clearing and construction would not likely be visible from nearby public roads (Bordentown Ave, Water Works Road, or Cheesequake Road).

The LNYB Replacements (Old Bridge Township & Sayreville Borough, New Jersey) and activities at the Downingtown M&R Station (East Brandywine Township, Pennsylvania) would result in temporary visual impacts from open trenching and clearing of forest from construction areas. At the Downingtown M&R Station, the installation of the mainline bypass would disturb 0.13 acre of land in Transco's existing easement and be readily visible along Blakely Road. The visual effects resulting from installation of the LNYB piping would be most noticeable within the forested wetlands around the existing pipeline and from the few residences which abut the existing pipeline easement. Following completion of construction, the landscape would be recontoured and revegetated as near to pre-construction conditions as possible.

The Project would not be located within any federal, state, or locally designated scenic areas. All proposed activities would take place at existing aboveground facilities or involve the replacement of existing pipeline within the same permanent easement, therefore we anticipate visual impacts of the Project would be temporary and minimal.

6. Cultural Resources

Transco provided "Categorical Exemptions" with the Pennsylvania and New York State Historic Preservation Offices (SHPO) covering the activities in those states, which stipulate certain minor construction activities not requiring further review or which would have no effect on cultural resources, and which Transco would utilize, as applicable. We have therefore determined that no historic properties would be affected by the Project in these states.

Transco contacted the New Jersey SHPO on June 18, 2015, regarding the extra work space associated with the pipeline replacement. On July 2, 2015, the SHPO concurred that there would be no historic properties affected by use of the extra work space. Transco also contacted the SHPO on June 25, 2015, regarding Contractor Yard 2 at Compressor Station 207; and on November 2, 2015, regarding the remaining Project components in New Jersey. On December 14, 2015, the SHPO concurred that there were no historic properties affected within the Project area. We agree and have determined that no historic properties would be affected by the Project in New Jersey.

Because construction activities would be limited to previously disturbed areas, no contact with Native American tribes was undertaken. Transco provided a plan to address the unanticipated discovery of historic properties and human remains during construction. We requested minor revisions to the plan. Transco provided a revised plan which we find acceptable.

7. Air Quality and Noise

7.1 Air Quality

Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated by operation of equipment, land disturbance, and increased traffic from worker and delivery vehicles. Operation of modified Compressor Stations 303, 207, and 200 would result in minimal long-term air emissions, as presented below.

Existing Air Quality

Ambient air quality is protected by federal and state regulations. The USEPA established National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.⁵ Primary standards protect human health, including the health of sensitive subpopulations, such as children, the elderly, and those with chronic respiratory problems. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings. NAAQS have been developed for sulfur dioxide (SO₂), particulate matter with a diameter of 10 microns or less (PM₁₀), PM with a diameter of 2.5 microns or less (PM_{2.5}), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, and lead, and include levels for short-term (acute) and long-term (chronic) exposures. However, ozone is not a pollutant emitted into the air. It is formed from a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight. Consequently, emissions of NO_x and VOCs are regulated by the USEPA as “precursors” to the formation of ozone. New York, New Jersey, and Pennsylvania have adopted the majority of the USEPA’s NAAQS, but also apply their own standards respectively per New York Codes, Rules and Regulations Title 6 Part 257; New Jersey Administrative Code 7:27-13; and Pennsylvania Code Title 25 Chapter 131.

Air quality control regions (AQCRs) are areas established by the USEPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant-by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas. Chester County, Pennsylvania is part of the Metropolitan Philadelphia Interstate AQCR. Essex and Middlesex Counties, New Jersey and Richmond County, New York are part of the New Jersey-New York-Connecticut Interstate AQCR.

In addition, New York, New Jersey, and Pennsylvania are included in the Ozone Transport Region. This region, established under the Clean Air Act as amended in 1977 and 1990, includes 11 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. Emissions in this region are subject to more stringent permitting requirements and various regulatory thresholds are lower for the pollutants that form ozone, even if they meet the ozone NAAQS.

⁵ The current NAAQS are listed on USEPA’s website at <http://www.epa.gov/air/criteria.html>.

The USEPA and state and local agencies have established a network of ambient air quality monitoring stations to measure and track the background concentrations of criteria pollutants across the United States. These data are then used by regulatory agencies to compare the air quality of an area to the NAAQS. All four counties in the Project area are in nonattainment for ozone and in maintenance for PM_{2.5}. In addition, Essex and Richmond Counties are in maintenance for CO. For all other pollutants, the Project area counties are in attainment or unclassified.

The USEPA now defines air pollution to include the mix of six long-lived and directly emitted greenhouse gases (GHGs), finding that the presence of the following GHGs in the atmosphere may endanger public health and welfare through climate change: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. As with any fossil-fuel fired Project or activity, the Project would contribute GHG emissions. The principle GHGs that would be emitted by the Project are CO₂, CH₄, and N₂O. No fluorinated gases would be emitted by the Project. GHG emissions are quantified and regulated in units of CO₂ equivalents (CO_{2e}). The CO_{2e} takes into account the global warming potential (GWP) of each GHG. The GWP is a ratio relative to CO₂ of a particular GHG's ability to absorb solar radiation as well its residence time within the atmosphere. Thus, CO₂ has a GWP of 1, CH₄ has a GWP of 25, and N₂O has a GWP of 298.⁶ In compliance with the USEPA's definition of air pollution to include GHGs, we have provided estimates of GHG emissions for construction and operation, as discussed throughout this section. Impacts from GHG emissions (i.e., climate change) are discussed further in section B.9.

Permitting/Regulatory Requirements

The Clean Air Act is the basic federal statute governing air pollution. Title V of the Act requires a federal Operating Permit for major sources of criteria pollutants. The Pennsylvania and the New Jersey Departments of Environmental Protection have authority to implement the Title V permit program within their respective states. Compressor Station 200 currently operates under Permit No. 15-00017, issued by the Pennsylvania Department of Environmental Protection in May 2015, and is a Title V major source. Compressor Stations 303 and 207 are not considered major sources as their compressors are driven by electric motors.

On November 8, 2010, the USEPA signed a rule that finalizes reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of carbon dioxide equivalents (CO_{2e}) per year to report annual emissions of specified GHGs from various processes within the facility. Construction emissions are not covered under the GHG Reporting Rule, but are expected to be well below the 25,000 metric tons reporting threshold. Operational emissions from Compressor Stations 200, 207, and 303 are expected to be reported to the USEPA.

The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. The lead federal agency must conduct a conformity determination if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the General Conformity Applicability threshold levels of the pollutant(s) for which an air basin is designated nonattainment or maintenance. Conforming activities or actions should not, through additional air pollutant emissions:

⁶ These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the USEPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

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

The General Conformity Rule entails both an applicability analysis and a subsequent conformity determination, if triggered. A General Conformity Determination must be completed when the total direct and indirect emissions of a project would equal or exceed the specified pollutant thresholds on a calendar year basis for each nonattainment or maintenance area.

As noted earlier, the Project would be located in a nonattainment and maintenance area. Areas designated as nonattainment or maintenance for ozone need to be evaluated for VOC and NO_x precursors, and areas designated as nonattainment or maintenance areas for PM_{2.5} need to be evaluated for PM_{2.5}, NO_x, and SO₂. Table B-9 presents the General Conformity Applicability thresholds, expressed in tons per year (tpy), for the relevant nonattainment or maintenance areas and the precursor pollutants. The incremental increases in operational emissions are already permitted through the state agencies and are therefore not considered for the General Conformity applicability analysis. As a result, these applicability thresholds are compared only to the construction emissions, tabulated below in table B-10, and would not be exceeded in any non-attainment or maintenance area. Therefore, a General Conformity Determination is not required.

NAAQS Status	Pollutant	Tons/Year	Relevant Counties
Ozone non-attainment areas	VOC	25	Each county in Project area
	NO _x	25	Each county in Project area
PM _{2.5} maintenance areas ^a	PM _{2.5}	100	Each county in Project area
	SO ₂	100	Each county in Project area
CO maintenance areas	CO	100	Essex and Richmond Counties

^a The threshold for NO_x in PM_{2.5} maintenance areas is 100 tons per year, less than the threshold for ozone severe non-attainment areas.

In a comment letter dated August 11, 2015, the PADEP noted that any construction or earthmoving activities must comply with *25 Pennsylvania Code* 123.1 and 123.2 which require that reasonable measures must be taken to minimize airborne dust nuisances from construction activities, any dirt drag-out onto paved streets must be promptly removed, and any airborne dust generated from construction activities may not visibly cross off-property. These regulations would apply to the modifications proposed at Compressor Station 200.

Construction Air Emission Impacts

Construction of the Project would result in short-term, localized increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Construction emissions would also include indirect emissions attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., NO_x, CO, VOC, SO₂, and PM₁₀). Estimated construction emissions are presented for each facility in table B-10 and subtotaled by county.

These emissions present the combined emissions of construction equipment combustion, on-road vehicle travel, off-road vehicle travel, and earthmoving fugitives.

Table B-10 Emissions From Construction of the Project by AQCR								
Facility ID	Total Site Emissions (tons/year)							
	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	VOC	GHG	HAPs
New Jersey-New York-Connecticut Interstate AQCR								
Narrows M&R Station	1.4	13.1	0.01	7.0	1.08	0.35	280	0.01
Temporary Offsite M&R Station at Staten Island Heaters	0.5	4.1	0.00	3.1	0.51	0.12	94	0.00
Compressor Station 207	10.3	38.7	0.03	67.1	10.68	1.68	2,070	0.07
Morgan M&R Station	0.5	3.1	0.00	1.9	0.33	0.11	109	0.00
LNYB Replacements	3.1	13.6	0.01	20.9	3.31	0.50	635	0.02
Compressor Station 303	0.6	0.9	0.0	3.6	0.57	0.09	107	0.01
AQCR Subtotal	16.4	73.4	0.05	103.6	16.5	2.85	3,294	0.11
Metropolitan Philadelphia Interstate AQCR								
Downingtown M&R Station and Mainline Bypass	1.3	6.5	0.00	3.4	0.66	0.25	276	0.01
Compressor Station 200	2.3	13.9	0.01	16.5	2.60	0.46	456	0.02
AQCR Subtotal	3.7	20.5	0.01	19.9	3.26	0.71	732	0.03
Project Totals	20.1	93.9	0.06	123.5	19.72	3.55	4,027	0.16

The volume of fugitive dust generated by surface disturbance and vehicle travel on unpaved roads would be dependent upon the area disturbed and the type of construction activity, along with the soil's silt and moisture content, wind speed, and the nature of vehicular/equipment traffic. The fugitive dust emissions from construction equipment on unpaved roads included in the table assume no mitigation, so actual emissions would be lower than shown. Transco has developed an acceptable *Fugitive Dust Control Plan* identifying several mitigation measures it would implement to reduce construction emissions and fugitive dust, including:

- using water at the construction sites as necessary to reduce fugitive dust;
- paving/grading roadways and maintaining them, where possible;
- removing spilled or tracked dirt/materials from paved streets;
- limiting vehicle speeds to 15 miles per hour during construction on unsurfaced roads;
- covering open-bodied haul trucks, as appropriate; and
- installing gravel/stone entrances in transition from unpaved to paved roads to limit sediment transport.

There is a potential for asbestos containing coatings to be present in some existing pipelines to be replaced as part of the LNYB Replacement which represents a potential hazard to air quality in the vicinity of construction during pipe removal. Transco has committed to testing the pipe coating at a certified lab for analysis by polarized light microscopy (e.g., PLM USEPA 600/R-93/116) prior to performing any coating removal required for a pipeline cut or re-coat. If the lab results indicate the presence of asbestos at 1 percent or greater, Transco would utilize a licensed asbestos contractor for the coating removal procedure and adhere to all Occupational Safety and Health Administration and USEPA

requirements and engineering practices. All removed coating, regardless of asbestos content, would be collected and disposed of properly at a facility permitted to accept the material.

Once construction activities are completed, fugitive dust and construction equipment emissions would terminate and ambient air quality would return to current levels. Total Project construction emissions would result in short-term, localized impacts on air quality during construction. Based on our analysis and Transco's proposed mitigation measures, construction of the Project is not expected to cause, or significantly contribute to, a violation of any applicable ambient air quality standard.

Operation Air Emission Impacts

The Project does not include the installation of any new primary stationary point sources of air pollutants although further discussion of the emissions at the three compressor stations follows.

At Compressor Station 200, the increase in certificated horsepower may result in some increase in air emissions over current operations as Transco would be able to run all 13 of its reciprocating-engine compressor units at their full capacities at the same time; however, this does not necessarily represent an increase over previous emissions. Additional horsepower capacity was added to engines at Compressor Station 200 a decade ago in the form of turbochargers⁷ to improve air emissions and to conform to Pennsylvania's Reasonably Available Control Technology program. Despite the increase in horsepower available, Transco's operations were limited by the previously certificated capacity and, as a result, at least one of the 13 units is now offline at any given time. Compressor Station 200's current Title V permits the emissions from the operation of all 13 units as part of the total facility's potential to emit, summarized below in table B-11, and therefore represent the maximum operating emissions from the entire station.

Source	Total Site Emissions (tons/year)						
	NO _x	CO	SO ₂	Total PM	VOC	HAPs	GHG
Reciprocating compressor units (all 13)	1,276.01	1,211.98	0.62	50.00	633.80	373.65	54,973
Auxiliary units	3.45	4.1	0.00	0.04	0.41	0.23	29
Other equipment	2.48	2.05	52.57	0.19	2.80	0.00	54
Fugitive emissions	-	-	-	-	4.43	0.00	4,973
Compressor Station Totals	1,281.94	1,218.13	53.19	50.23	641.44	373.97	60,030

In contrast, at Compressor Station 303, the compressors are electrically driven, thus the increase in certificated horsepower would not result in an increase in operational emissions.

Similarly, Transco avoided air impacts by selecting electric-driven compressor units for the expansion of Compressor Station 207 and therefore not contributing to air emissions from the facility. However, the expansion of Compressor Station 207, including the installation of additional blowdown facilities, may result in additional fugitive emissions or blowdowns of transmission-quality natural gas. Though it is not possible to fully determine the amount of blowdowns due to future maintenance or emergencies, an estimate of these fugitive emissions are presented below in table B-12.

⁷ These modifications to Compressor Station 200 were filed with FERC under docket number CP95-78-000.

Table B-12 Fugitive and Blowdown Emissions Compressor Station 207							
Source	Total Site Emissions (tons/year)						
	NO _x	CO	SO ₂	Total PM	VOC	HAPs	GHG
Fugitives and blowdowns	-	-	-	-	6.22	0.00	4,245

Potential impacts on air quality associated with operation of the Project would be minimized by adherence to all applicable federal and state regulations. Based on the discussion above, we conclude that emissions from operating the Project facilities would not have significant impacts on local or regional air quality.

7.2 Noise

The Project would contribute to noise in the Project area during construction and operation. Due to natural and anthropogenic influences such as weather conditions, seasonal vegetation cover, and human activity, the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the year.

Noise levels are expressed as decibels on the A-weighted scale (dBA) to put more emphasis on frequencies in the range that humans hear best, thereby mimicking the human ear. Two measurements that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq24}) and day-night sound level (L_{dn}). The L_{eq24} is the level of steady sound with the same total energy as the time-varying sound of interest, averaged over a 24-hour period. However, because noise levels are perceived differently depending on length of exposure and time of day, the L_{dn} takes into account the duration and time the noise is encountered. Specifically, the L_{dn} is the L_{eq24} plus 10 dBA added to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for people's greater sensitivity to sound during the night. 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, the USEPA 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. The USEPA 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 a proposed project 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 as loud.

Additionally, the State of New Jersey's Noise Control Act of 1971 includes the promulgation of noise control standards for stationary commercial and industrial sources. Continuous noise between 7:00 a.m. and 10:00 p.m. must remain below 65 dBA at any residential property line, and continuous noise between 10:00 p.m. and 7:00 a.m. must remain below 50 dBA at any residential property line. In order to comply with the New Jersey regulation, Transco's compressor stations that are being modified for the proposed Project would operate on a 24-hour basis and should be designed to meet a sound level of 50 dBA L_{eq} at the residential property line.

Sayreville Borough and Old Bridge Township also have additional noise regulations which apply to Compressor Station 207. Police Regulations for the Borough of Sayreville (Chapter V, Section 5.3: Noise, in the Sayreville Supp. No. 1, dated February 2003) state that the noise generated by the station shall not exceed a nighttime A-weighted sound level of 50 dBA at any residential property, and the noise of the facility should not exceed the maximum permissible unweighted octave-band sound pressure levels promulgated in the requirement which are the same found in N.J.A.C. 7:29. The Land Development Ordinance of the Township of Old Bridge [Section 4.a (“Performance Standards,” pages 7-35 and 7-37)], state that the noise generated by a facility should not exceed 50 dBA outside of the lot on which the use or source of sound is located, either daytime or nighttime, and the noise of the facility should not exceed the allowable maximum unweighted octave-band sound pressure levels promulgated in the requirement which are the same found in N.J.A.C. 7:29.

The Township of East Whiteland, Pennsylvania has a noise ordinance that may be applicable to Compressor Station 200 (ARTICLE II, Noise and Nuisances [Ordinance No. 133-2001, adopted 4-17-2001]). The noise ordinance states that no person, firm, or business shall operate a machine or device that equals or exceeds 10 dB over background noise level, 65 dBA during daytime hours, nor 60 dBA during the hours of 9:00 p.m. to 7:00 a.m. (i.e., nighttime hours) at any adjacent property boundary.

Construction Noise

Construction of the facilities would involve operation of general construction equipment, and noise would be generated during the installation of the Project components. Construction noise would be highly variable because the types of equipment in use at a construction site changes with the construction phase and the types of activities. The noise from construction activities may be noticeable at nearby NSAs; however, noise would be localized and short-term, and construction equipment would be operated on an as-needed basis during the short-term construction period. 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. Further, nighttime noise levels would not increase during construction because construction activities would be limited to daylight hours. Therefore, construction noise would not result in significant noise impacts on residents or the surrounding communities.

Operational Noise

Operation of compressor stations generates noise from the compressors and associated equipment. Operational noise from the three proposed modified compressor stations at their existing full capacities were measured at nearby NSAs. Transco conducted a noise analysis for each of the proposed modifications to predict sound levels from the sources, predict total sound levels, and determine noise increases at the nearby NSAs.

Compressor Station 303

Transco conducted an ambient noise survey at Compressor Station 303 in January 2013 and identified four NSAs surrounding the compressor station including one home, two parts of a recreation area, and a medical center. The nearest NSA is 580 feet northwest with the nearest residence at 1,100 feet southwest of the station. The existing and estimated noise levels at each NSA as a result of the Project are presented below in table B-13. As shown in table B-13, the estimated noise level attributable to the modified compressor station would remain below our 55 dBA L_{dn} criterion. Further, the estimated noise increase above ambient at the nearby NSAs would be 0.4 dB, which is unlikely to be perceivable.

Table B-13 Noise Analysis for Compressor Station 303				
NSA Description	Distance (feet) and Direction of NSA	Existing Noise from Station L _{dn} (dBA)	Estimated Noise from Station after Project L _{dn} (dBA)	Increase Above Existing (dB)
Residences at the end of Dixon Lane	1,100 (SW)	48.4	48.8	0.4
Outside recreation area for the Essex County Environmental Center	970 (WNW)	42.4	42.8	0.4
Welcome Center and Administration Building for the Essex County Environmental Center	580 (NW)	49.7	50.1	0.4
Roseland ambulatory surgery center	850 (E)	48.2	48.6	0.4

Compressor Station 207

Transco conducted a post-construction noise survey in January 2015 after its most recent modifications to Compressor Station 207. Transco identified three sets of residential NSAs proximate to the station; the nearest residence is 1,700 feet west-northwest. The existing and estimated noise levels at each NSA as a result of the Project are presented below in table B-15. As shown below, the estimated noise increase at the nearby NSAs would be between 4.1 and 5.3dB, which would be noticeable, but meets our noise criteria of an L_{dn} of 55 dBA.

Table B-15 Noise Analysis for Compressor Station 207					
NSA Description	Distance (feet) and Direction of NSA	Existing Ambient L _{dn} (dBA)	Existing Noise from Station L _{dn} (dBA)	Estimated Noise from Station after Project L _{dn} (dBA)	Increase Above Existing (dB)
Residences along Bordentown Amboy Parkway	1,700 (WNW)	54.0	34.8	40.1	5.3
Residences at Bordentown Amboy Parkway and Sophie Street	1,850 (NW)	48.5	33.9	39.2	5.3
Residences on Jonathan Ct	1,900 (ESE)	49.1	35.4	39.5	4.1

^a As measured sound data at NSAs were influenced by noise outside of the station, these values represent estimates calculated from sound measurements closer to Compressor Station 207. The environmental sounds that contributed to the measured levels were principally vehicle traffic.

Compressor Station 200

Transco conducted a post-construction noise survey in December 2009 after its most recent modifications to Compressor Station 200 when the station was operating 12 units for a total of 30,265 hp (current certificated capacity is 30,860 hp). At that time, noise levels from the station were shown to decrease, attributable to the installation of noise mitigation measures during 2008 – 2009 as was part of a capital maintenance project at the Compressor Station 200. Transco confirmed that no additional NSAs

have been constructed or otherwise identified since these modifications. Transco identified four sets of residential NSAs surrounding the compressor station. The nearest residence is 450 feet west of the station, representing the closest of a number of single family homes. The existing and estimated noise levels at the closest NSAs as a result of the Project are presented below in table B-14.

NSA Description	Distance (feet) and Direction of closest NSA	Existing Noise from Station L_{dn} (dBA)	Estimated Noise from Station after Project L_{dn} (dBA)	Increase Above Existing (dB)
Residences on Cameron Court	1,000 (S)	53.3	53.6	0.3
Residences on Kingston Circle	450 (W)	54.8	55.1	0.3
Residences on Elliston Court	600 (SW)	51.8	52.1	0.3
Residences on N. Bacton Hill Road at Old Valley Road.	1,700 (N)	52.4	52.7	0.3

As shown in the table, the estimated noise level attributable to the modified compressor station would slightly exceed our criteria of an L_{dn} of 55 dBA at the closest of several residences on Kingston Circle. Transco estimates that the noise increase at the nearby NSAs would be 0.3 dB based on a scaled increase in horsepower. However the uprate of horsepower at this station would mean concurrently running all 13 compressor units, representing an additional unit for which noise is not expected to scale proportionately with horsepower. Therefore, in addition to exceeding the criteria as estimated, we also expect this to be an underestimate of actual noise.

As shown in the noise analysis above, Transco would be in compliance with the applicable state, and local noise regulations for Compressor Stations 207, 303, and 200. However, to ensure that the noise attributable to operation of all three of the modified compressor stations would not exceed our Federal noise criteria of an L_{dn} of 55 dBA at the nearby NSAs, **we recommend that:**

- **Transco should file noise surveys with the Secretary no later than 60 days after placing the modified Compressor Stations 200, 207, and 303 in service. If a full load condition noise survey is not possible, Transco 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 modified compressor stations at full or interim power load conditions exceed an L_{dn} of 55 dBA at any nearby NSAs Transco should file a report on what changes are needed and should install the additional noise controls to meet the level within 6 months of the in-service date. Transco should 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.**

Specifically to ensure that the noise attributable to operation of the modified Compressor Station 200 would not exceed an L_{dn} of 55 dBA at the nearby NSAs, **we recommend that:**

- **Prior to construction at Compressor Station 200, Transco should file with the Secretary, for the review and written approval of the Director of the OEP, a plan that indicates measures it would implement to reduce noise from the station should**

a post construction survey reveal, as estimated, that the noise attributable to the operation of all of the equipment at the modified compressor station at full or interim power load conditions exceeds an L_{dn} of 55 dBA at any nearby NSAs.

M&R Stations

M&R stations have the potential to generate noise, notably from the regulating valves. The modifications at the Downingtown M&R Station are not expected to increase operational noise levels. However the sound level of the operations at the Morgan and Narrows M&R Stations may increase as a result of the Project. Transco conducted a sound survey of the Narrows M&R Station in October 2015, and estimated the potential noise increase from the Project at the nearby NSAs are presented below in table B-16. Transco also estimated the potential noise at the new Morgan M&R Station at the closest NSA, presented in table B-17. The contributions to noise from the M&R stations at nearby NSAs are expected to be below our 55 dB L_{dn} criteria.

Table B-16 Noise Analysis for the Narrows M&R Station						
NSA Description	Distance (feet) and Direction of NSA	Existing Ambient L_{dn} (dBA) ^a	Contribution from Existing Station L_{dn} (dBA) ^a	Estimated Contribution after Project L_{dn} (dBA)	Estimated Total Noise after Project L_{dn} (dBA)	Increase Above Existing (dB)
Residence	70 (E)	55.8	48.6	50.1	56.8	1.0
Residential Building	120 (SW)	55.3	42.7	44.9	55.7	0.4
Residence	200 (SE)	58.3	38.1	40.3	58.6	0.1

^a As measured sound data at NSAs were influenced by noise outside of the station, these values represent estimates calculated from sound measurements closer to the Narrows M&R Station.

Table B-17 Noise Analysis for the Morgan M&R Station					
NSA Description	Distance (feet) and Direction of NSA	Estimated Ambient L_{dn} (dBA)	Estimated Contribution from Existing Station after Project L_{dn} (dBA)	Estimated Total Sound after Project L_{dn} (dBA)	Increase Above Existing (dB)
Residence	240 (NNW)	50.0	46.5	51.6	1.6

Based on the noise analyses above and our recommendations, we conclude that the Project would not result in significant noise impacts on residents and the surrounding communities.

8. Reliability and Safety

The transportation of natural gas by pipeline 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 major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

The USDOT pipeline standards are published in 49 CFR Parts 190-199. For example, Part 192 specifically addresses natural gas pipeline safety issues, prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates compressor station design, 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 a natural gas pipeline emergency.

The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Facilities associated with Transco's Project must be designed, constructed, operated, and maintained in accordance with Transco's standards, including the provisions for written emergency plans and emergency shutdowns. Transco would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

8.1 Class Areas

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

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

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

Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.2 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. Preliminary class locations for the Project have been determined based on the relationship of the pipeline centerline to other nearby structures and manmade features.

The proposed Project would not change the class locations of the existing facilities, described below in table B-18.

Table B-18 Summary of Class Locations for the Project		
Facility	Town(s), State	Class Locations
Aboveground Facilities		
Compressor Station 303	Roseland Borough, New Jersey	Class 2
Compressor Station 207	Old Bridge Township, New Jersey	Class 1
Compressor Station 200	East Whiteland Township, Pennsylvania	Class 2 and Class 3
Narrows M&R Station	Staten Island Borough, New York	Class 3
Temporary Offsite M&R Station at Staten Island Heaters	Staten Island Borough, New York	Class 3
Morgan M&R Station	Sayreville Borough, New Jersey	Class 3
Downingtown M&R Station and Mainline Bypass	East Brandywine Township, Pennsylvania	Class 3
Pipeline Facilities		
LNYB Replacement	Sayreville Borough and Old Bridge Township, New Jersey	Class 1 and Class 3

8.2 High Consequence Areas

The Pipeline Safety Improvement Act of 2002 required operators to develop and follow a written integrity management program that contained all the elements described in 49 CFR 192.911 and addressed the risks on each transmission pipeline segment. Specifically, the law establishes an integrity management program which applies to all high consequence areas (HCAs).

The USDOT has published rules that define HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to

minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for the USDOT to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method an HCA includes:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius⁸ is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle⁹; or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.

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

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

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

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The USDOT regulations specify the requirements for the integrity management plan at Section 192.911.

In the proposed Project all aboveground facilities, including the Temporary Offsite M&R Station as well as the pipeline replacement, are within HCAs.

9. Cumulative Impacts

Cumulative impact is the combined impact on environmental resources resulting from two or more projects occurring simultaneously or within a short time of one another and in the same vicinity. Although the individual impact of the separate projects might be minor, the additive or synergistic effects from multiple projects could be significant.

As outlined in the previous sections, impacts from the proposed New York Bay Expansion Project would be principally limited to the duration of construction (estimated to be 8-11 months in 2017) and the immediate vicinity of the construction sites. At the LNYB Replacement and Compressor Station 207 expansion in Middlesex County, New Jersey, the duration of impacts may extend through a period of restoration (estimated to be a 1-3 years) to account for revegetation in construction workspaces.

Therefore for purposes of this analysis, we considered 0.25 mile from each Project component as the region of influence in which impacts have the potential to be cumulative. The effects of more distant

⁸ The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in psig multiplied by the square of the pipeline diameter in inches.

⁹ The potential impact circle is a circle of radius equal to the potential impact radius.

projects are not assessed because their impacts are expected to be localized and limited to their respective project areas, and would not contribute (or not contribute significantly) to the impact resulting from the New York Bay Expansion Project.

Only one reasonably foreseeable Project in this region of influence was identified through consultation with the county planning districts (Conwell, 2015 and Piersol, 2015), a proposed commercial development about 0.15 mile south of Compressor Station 200 in Chester County, Pennsylvania (Chester County, 2016).

Short-term impacts from this 15.70-acre development may include increased traffic by heavy machinery and workers, construction noise, and potential for erosion into waterbodies from ground-disturbing activities. Long-term impacts may include land use conversion to industrial / commercial use, increased impervious surface cover altering local hydrologic conditions, and permanent removal of forest, vegetation, and wildlife habitat. The activities of the Project in Chester County would contribute only to short-term cumulative impacts and only if the construction windows were to overlap. Regardless, construction at Compressor Station 200 would require 3 months and an average crew of 19 workers to modify yard piping on a small portion of the facility property, contributing little to area traffic, noise, or erosion. Therefore we conclude the Project would not significantly contribute to any cumulative impacts.

10. 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 are not indications 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 is the leading international, multi-governmental scientific body for the assessment of climate change. The United States is a member of the Intergovernmental Panel on Climate Change and participates in the Intergovernmental Panel on Climate Change working groups to develop reports. The leading U.S. scientific body on climate change is the U.S. Global Change Research Program (USGCRP).

In May 2014, the USGCRP issued a report, *Climate Change Impacts in the United States*, summarizing the impacts that climate change has already had on the United States and what projected impacts climate change may have in the future (USGCRP, 2014). The report includes a breakdown of overall impacts by resource and impacts described for various regions of the United States. Although climate change is a global concern, for this cumulative analysis, we focus on the potential cumulative impacts of climate change in the Project area. The USGCRP's report notes the following observations of environmental impacts that may be attributed to climate change in the Northeast region:

- average temperatures have risen about 2 °F between 1895 and 2011 and are projected to increase another 1 to 8 °F over the next several decades, with more frequent days above 90 °F;
- areas that currently experience ozone pollution problems are projected to experience an increase in the number of days that fail to meet the NAAQS;
- an increase in health risks and costs for vulnerable populations due to projected additional heat stress and poor air quality;
- precipitation has increased by about 5 inches and winter precipitation is projected to increase 5 to 20 percent by the end of the century;

- extreme/heavy precipitation events have increased more than 70 percent between 1958 and 2010 and are projected to continue to increase;
- sea levels have risen about 1 foot since 1900 and are projected to continue increasing 1 to 4 feet by 2100 stressing infrastructure (e.g. communications, energy, transportation, water and wastewater);
- severe flooding is likely to occur more frequently;
- crop damage from intense precipitation events, delays in crop plantings and harvest, and heat stress negatively affect crop yields;
- invasive weeds may become more aggressive;
- a change in range, elevation, and intra-annual life cycle events of vegetation and wildlife species; and
- an increase in carrier habitat and human exposure to vector-borne diseases (e.g. Lyme disease, West Nile, dengue fever, or Zika virus).

The GHG emissions associated with construction and operation of the Project are discussed in more detail in section B.7.1. The GHG emissions from other nearby projects are unknown. Emissions of GHGs from the proposed Project and other regional projects would not have any direct impacts on the environment in the Project area. Currently, there is no standard methodology to determine how a project's relatively small incremental contribution to GHGs would translate into physical effects on the global environment. However, Transco has selected electric-driven compressor units for the expansion at Compressor Station 207, which avoids the majority of GHG emissions associated with compressor stations and minimizes the Project's contribution. We conclude that the Project would not contribute significantly to GHG emissions or climate change.

C. ALTERNATIVES

We considered alternatives to the proposed action to determine if any were reasonable and preferable to the proposed action. Alternatives discussed in this section include the no-action alternative and system alternatives, including a looping alternative. The evaluation criteria we used for our alternatives analysis are:

- meeting the objectives of the Project;
- technical and economic feasibility and practicability; and
- significant environmental advantage over the proposed Project.

1. No-Action Alternative

The no-action alternative would result in not implementing the proposed action and would avoid the potential environmental impacts associated with the Project; however, the Project objectives would not be met. National Grid would likely seek alternative proposals to transport the requested volumes of natural gas. Although a Commission decision to postpone or deny the proposed action would either delay or avoid the environmental impacts addressed in this EA, other natural gas projects could be constructed to provide a substitute for the natural gas supplies offered by Transco. Such actions could result in impacts similar to or greater than the proposed Project, and would likely not meet the Project's purpose and need within the proposed timeframes. Therefore, we are not recommending it.

2. System Alternatives

System alternatives make use of existing or modified natural gas transmission systems to meet the stated objective of the proposed action. The point of identifying and evaluating system alternatives is to determine if the potential environmental impact associated with the construction and operation of the proposed facilities could be avoided or minimized by using another pipeline system or modifying an existing system. Environmental considerations with system alternatives include, but are not limited to, new right-of-way requirements, land use effects, and stream and wetland disturbances. While modifications or additions to existing systems could result in environmental impact, this impact may be less, the same, or more than associated with the proposed Project.

We did not identify any other pipeline system that could meet the Project objective of providing existing customers with additional capacity from and to specific receipt and delivery points on the Transco system. The proposed system modifications were selected to minimize environmental impacts to the greatest extent possible while using existing rights-of-way to limit the need for construction on undisturbed lands.

We considered an alternative that would utilize pipeline looping on the Transco system to eliminate the proposed horsepower additions at Compressor Stations 200, 303, and 207, but would require 22 miles of looping in addition to modifications at three additional aboveground facilities. This alternative would result in a substantial land disturbance with related environmental impacts and an expansion of Transco's operating footprint. As it provides no obvious advantage over the environmental impacts of the proposed Project, and likely would result in considerable additional impacts, we are not analyzing it further and are not recommending it.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis contained in this EA, we have determined that if Transco constructs the proposed facilities in accordance with its application, filed supplements, and 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. If the Commission certifies the proposed Project, we recommend that the Commission Order include the following specific conditions:

1. Transco 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. Transco must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of the OEP before using that modification.**
2. The Director of the OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation 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**, Transco shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Transco shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Transco's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Transco's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate

future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

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

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

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

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days prior to the start of construction,** Transco shall file an Implementation Plan with the Secretary for review and written approval by the Director of the OEP. Transco must file revisions to the plan as schedules change. The plan shall identify:
 - a. how Transco will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Transco will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned (per spread), and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Transco will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);
 - f. the company personnel (if known) and specific portion of Transco's organization having responsibility for compliance;

- g. the procedures (including use of contract penalties) Transco will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
7. Beginning with the filing of its Implementation Plan, Transco 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 Transco efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Transco from other federal, state, or local permitting agencies concerning instances of noncompliance, and Transco's response.
8. **Prior to receiving written authorization from the Director of the OEP to commence construction of any Project facilities**, Transco shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
9. Transco must receive written authorization from the Director of the OEP **before placing the Project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
10. **Within 30 days of placing the authorized facilities in service**, Transco shall file an affirmative statement with the Secretary, certified by a senior company official:
- a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Transco 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. **Prior to any blasting activities**, Transco shall Transco should file its Project blasting plan with the Secretary for the review and written approval of the Director of the OEP.
12. **Prior to construction of the LNYB Replacements**, Transco shall consult with the NJDEP regarding appropriate groundwater containment and disposal guidelines and practices, and file the results of this consultation with the Secretary.
13. Transco shall file noise surveys with the Secretary **no later than 60 days** after placing each of the modified Compressor Stations 200, 207, and 303 in service. If a full load condition noise survey is not possible, Transco 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 the new or modified compressor stations at full or interim power load conditions exceeds 55 dBA L_{dn} at any nearby NSAs, Transco should file a report on what changes are needed and should install the additional noise controls to meet the level within 6 months of the in-service date. Transco should 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.
14. **Prior to construction at Compressor Station 200**, Transco shall file with the Secretary, for the review and written approval of the Director of the OEP, a plan that indicates measures it would implement to reduce noise from the station should a post construction survey reveal, as estimated, that the noise attributable to the operation of all of the equipment at the modified compressor station at full or interim power load conditions exceeds an L_{dn} of 55 dBA at any nearby NSAs

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F. LIST OF PREPARERS

Kragie, S. Xiah – Project Manager, Land Use, Air and Noise, Safety, Alternatives, Cumulative Impacts

M.A., Geochemistry, 2013, Columbia University

M.P.H., Global Environmental Health, 2008, Emory University

B.S., Civil & Environmental Engineering, B.S., Economics, 2006, University of Maryland, College Park

Boros, Laurie – Cultural Resources

B.A., Anthropology/Archaeology, 1980, Queens College, City University of New York

Fox-Fernandez, Nancy – Surface Water, Wetlands, Vegetation, Fisheries, and Wildlife

M.S., Natural Resources: Wildlife, 2006, Humboldt State University

B.A., Psychology, 1993, Skidmore College

Rodgers, J. Keith – Geology, Groundwater, Soils, and Contaminated Sites

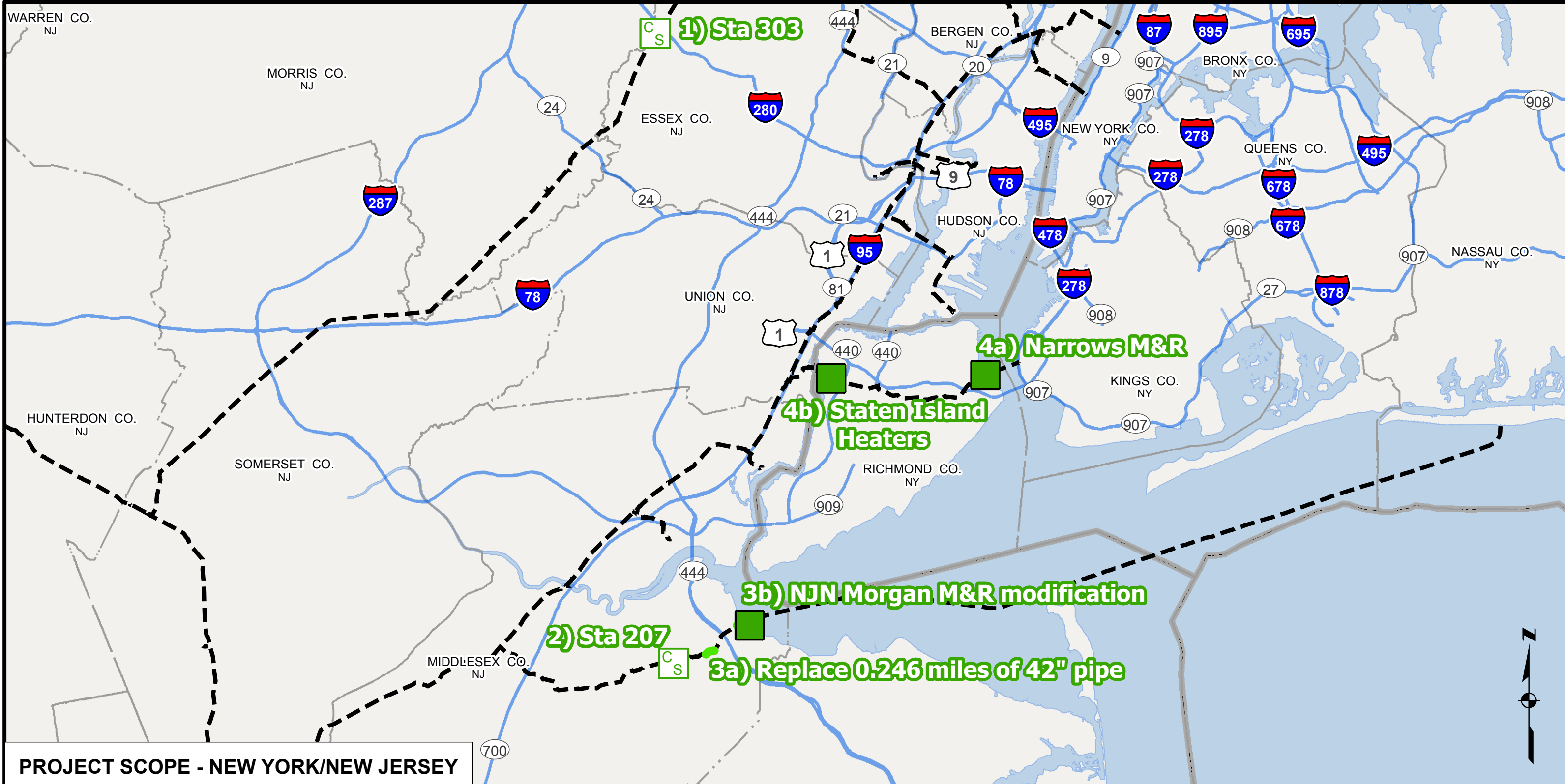
Professional Geologist, 2008, North Carolina Board for the Licensing of Geologists

M.E., Master of Engineering in Water Resources, 2008, University of Arizona

B.S., Geological Sciences, 2004, Virginia Tech

APPENDIX A

Project Overview Maps



PROJECT SCOPE - NEW YORK/NEW JERSEY

- 1) Station 303 - Essex County, NJ
 - a. Re-gear unit #1 and uprate from 25,000 HP to 27,500 HP
- 2) Station 207 - Middlesex County, NJ
 - a. Add 11,000 HP by installing one electric driven compression unit w/gas cooling
- 3) Uprate the LNBL to 1000 psig
 - a. Replace 0.246 miles of 42" piping *see Inset
 - b. NJN Morgan M&R modification
- 4) Narrows M & R - Richmond County, NY
 - a. Modifications to station piping
 - b. Install temp. meter/regulating skid

Legend

PIPELINE

- - - - - TRANSCO MAINLINES
- — — — — PIPE REPLACEMENTS

PROJECT

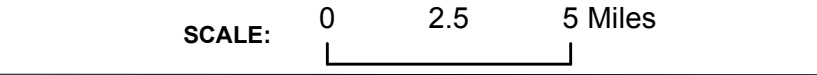
- CS COMPRESSOR STATION
- FACILITY MODIFICATION

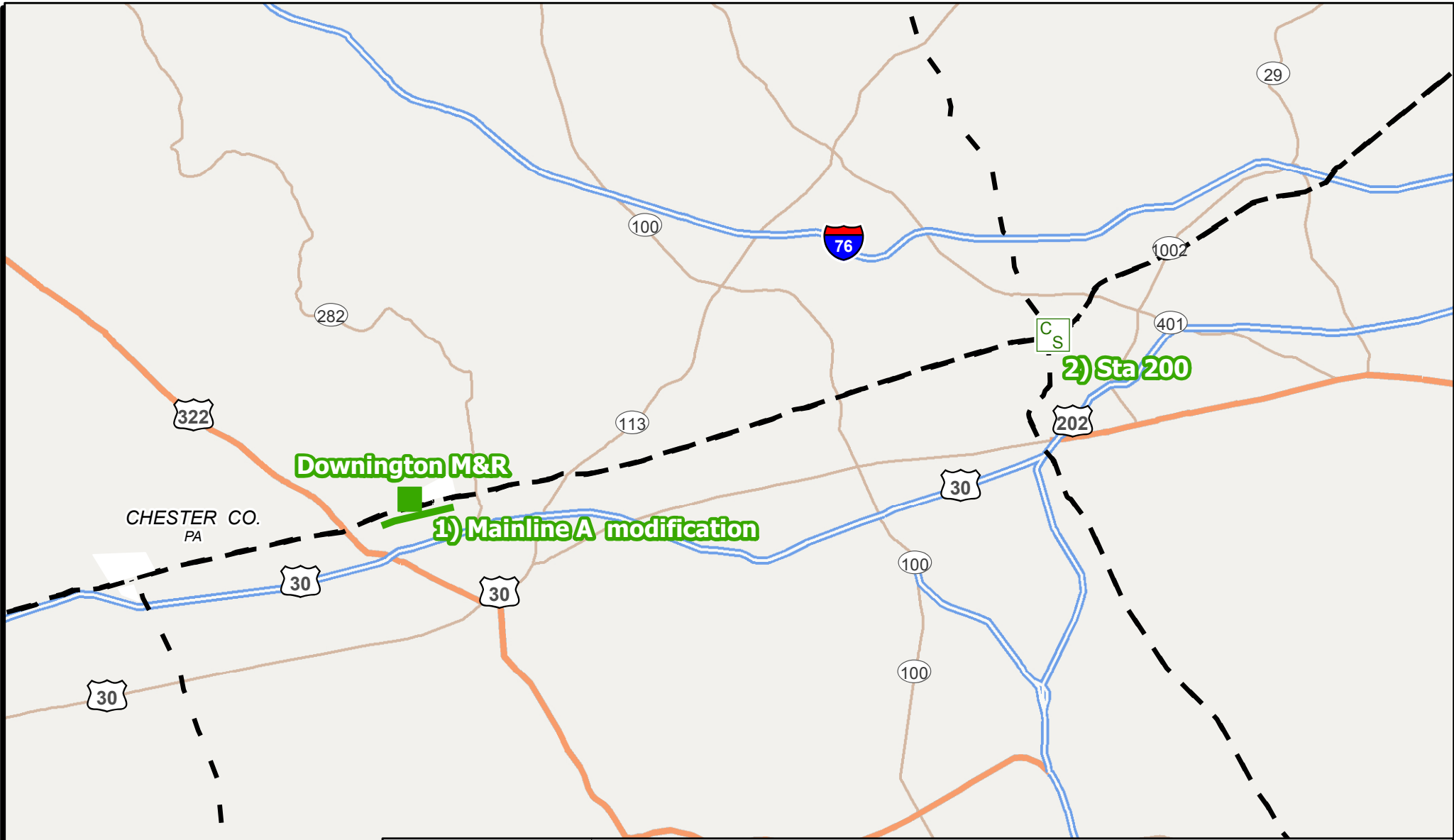
LAND BASE

- — — — — STATE LINE
- - - - - COUNTY BOUNDARIES

New York Bay Expansion Project Location Map (New York/New Jersey)

**ENGINEERING AND CONSTRUCTION - MAPPING DEPT
HOUSTON, TEXAS.**





PROJECT SCOPE - PENNSYLVANIA

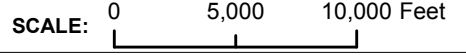
- 1) Mainline A Modification - Bypass modification near Downingtown M & R - Chester County, PA
- 2) Station 200 - Chester County, PA
 - a. Uprate station HP by 2,140 (33,000 HP Total)

Legend	
PIPELINE	
 TRANSCO MAINLINES
 PIPE REPLACEMENTS
PROJECT	
 COMPRESSOR STATION
 FACILITY MODIFICATION

New York Bay Expansion Project Location Map (Pennsylvania)



**ENGINEERING AND CONSTRUCTION - MAPPING DEPT
HOUSTON, TEXAS.**



APPENDIX B

Site-Specific Maps of the Pipeline Route and Facilities for the Project



**Downingtown
M&R Mainline
"A" Bypass**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, Mapmy India, © OpenStreetMap contributors

<p>Map Location</p>	<p>Legend</p> <p> Approximate Limits of Disturbance</p> <p>0 90 180 Feet</p>	<p>Transcontinental Gas Pipe Line Company New York Bay Expansion</p> <p>Downingtown M&R Mainline "A" Bypass East Brandywine Township, PA Attachment 3 Aerial Project Location Map</p>	<p>AECOM 125 Rock Road Horsham, PA 19044 Phone: 215.315.4150</p> <p>Appendix A June 2015 Project #: 60342576</p>
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Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

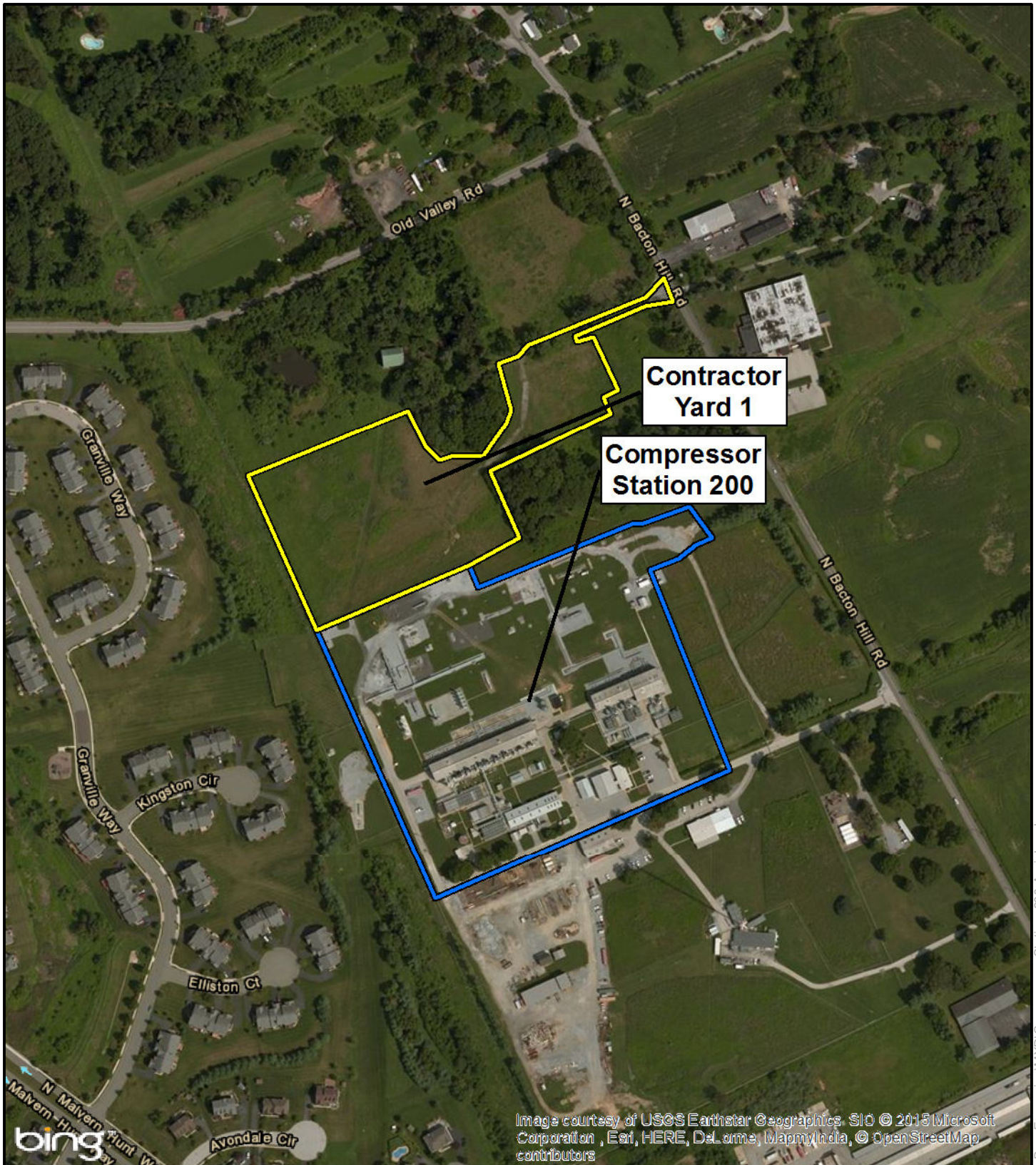
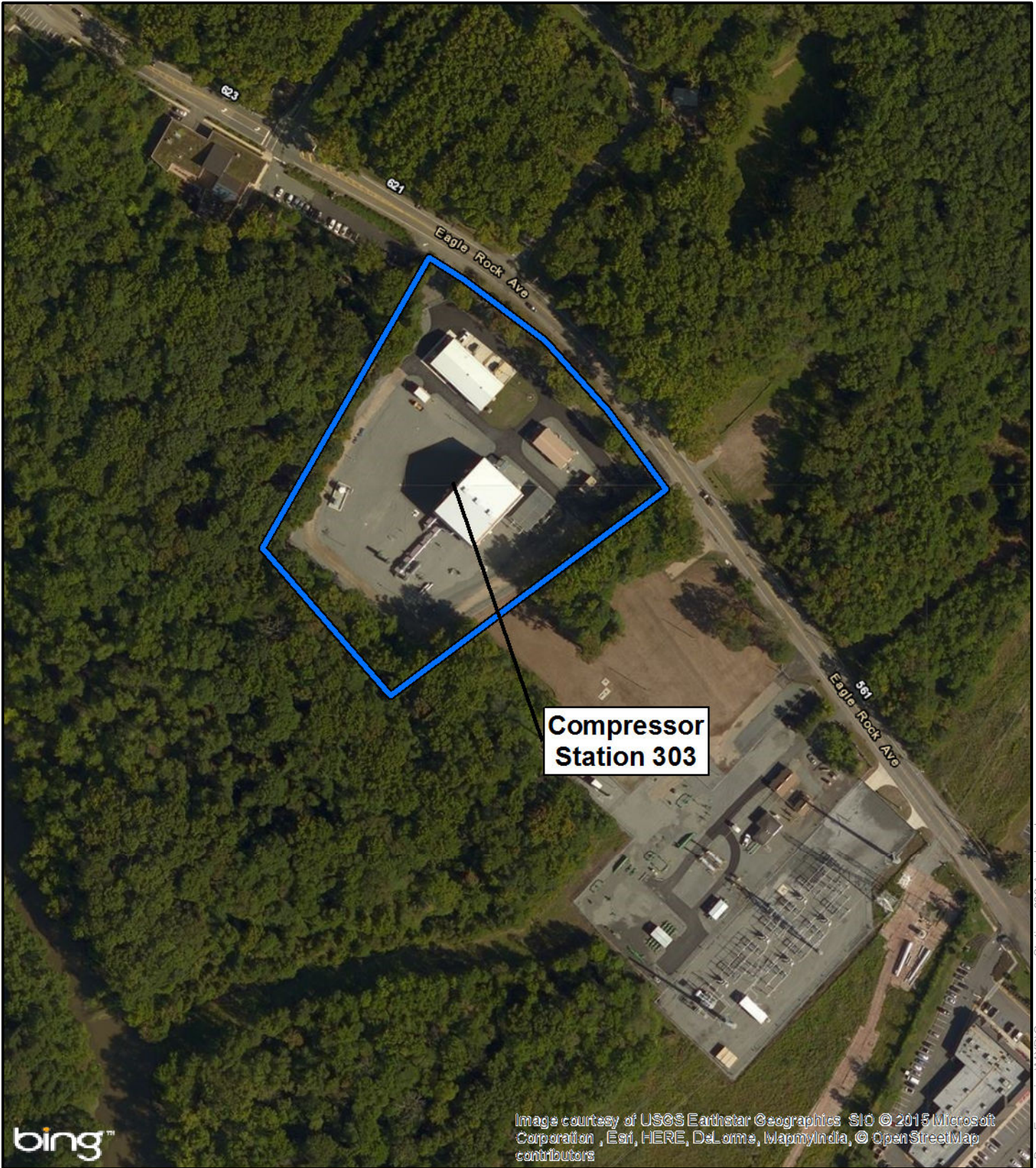


Image courtesy of USGS Earthstar Geographics, SIO © 2013 Microsoft Corporation, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

<p>Map Location</p>	<p>Legend</p> <ul style="list-style-type: none"> Approximate Limits of Disturbance Contractor Yard 1 <p>0 250 500 Feet</p>	<p style="text-align: center;">N</p> <p>Transcontinental Gas Pipe Line Company New York Bay Expansion</p> <p>Compressor Station 200 East Whiteland Township, PA</p> <p>Attachment 3 Aerial Project Location Map</p>	<p style="text-align: center;">AECOM</p> <p style="text-align: center;">125 Rock Road Horsham, PA 19044 Phone: 215.315.4150</p> <hr/> <p style="text-align: center;">Appendix A</p> <hr/> <p style="text-align: center;">June 2015</p> <hr/> <p style="text-align: center;">Project #: 60342576</p>
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Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

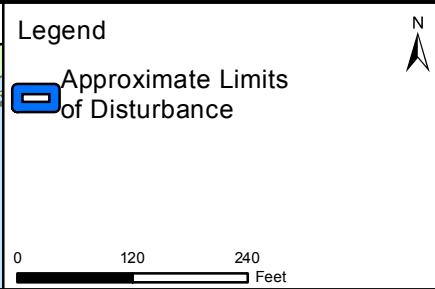
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Compressor Station 303

bing™

Image courtesy of USGS Earthstar Geographics, SIO © 2015 Microsoft Corporation, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors



Transcontinental Gas Pipe Line Company
New York Bay Expansion

Compressor Station 303
Roseland Borough, New Jersey

Attachment 3
Aerial Project Location Map

AECOM
125 Rock Road
Horsham, PA 19044
Phone: 215.315.4150

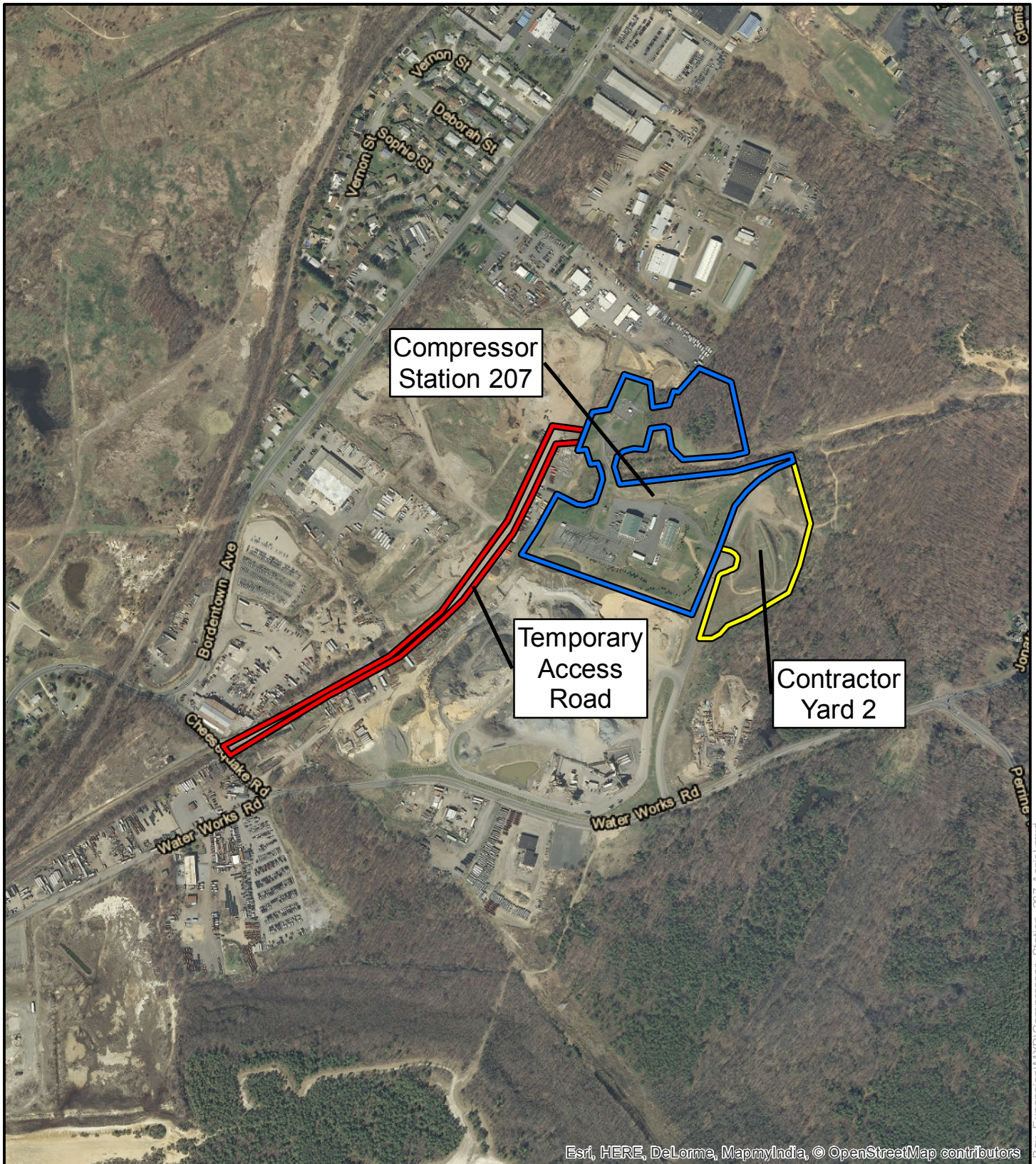
Appendix A

June 2015

Project #: 60342576

Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

Path: Y:\Projects\Williams\New_York_Bay_Expansion\WXD\Compressor_Station_303-Aerial.mxd



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors



Legend

- Approximate Limits of Disturbance
- Contractor Yard 2
- Temporary Access Road

0 375 750 Feet

Transcontinental Gas Pipe Line Company
New York Bay Expansion

Compressor Station 207
Old Bridge Township, New Jersey

Attachment 3
Aerial Project Location Map

AECOM
125 Rock Road
Horsham, PA 19044
Phone: 215.315.4150

Appendix A

June 2015

Project #: 60342576

Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

Path: Y:\Projects\Williams\New_York_Bay_Expansion\WXD\Compressor_Station_207-Aerial.mxd



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors



Legend


- Approximate Limits of Disturbance
- Municipality

0 80 160
Feet

Transcontinental Gas Pipe Line Company

New York Bay Expansion
Morgan M&R Station
Sayreville Borough, New Jersey

Attachment 3
Aerial Project Location Map


 125 Rock Road
 Horsham, PA 19044
 Phone: 215.315.4150

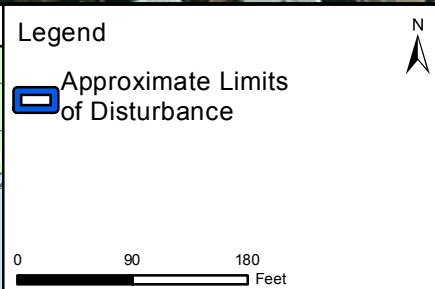
Appendix A

June 2015

Project #: 60342576

Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

Path: Y:\Projects\Williams\New_York_Bay_Expansion\WXD\Morgan_MandR-Aerial.mxd



Transcontinental Gas
Pipe Line Company
New York Bay Expansion

Narrows M&R Station
Staten Island Borough, New York

Attachment 3
Aerial Project Location Map

AECOM
125 Rock Road
Horsham, PA 19044
Phone: 215.315.4150

Appendix A

June 2015

Project #: 60342576

Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, Mapmy India, © OpenStreetMap contributors



Legend

- Contractor Yard 4
- Temporary Offsite M&R at Staten Island Heaters

0 105 210 Feet

N

Transcontinental Gas
Pipe Line Company
New York Bay Expansion

Temporary Offsite M&R at
Staten Island Heaters
Staten Island Borough, New York
Attachment 3
Aerial Project Location Map

AECOM

125 Rock Road
Horsham, PA 19044
Phone: 215.315.4150

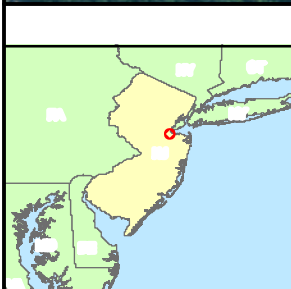
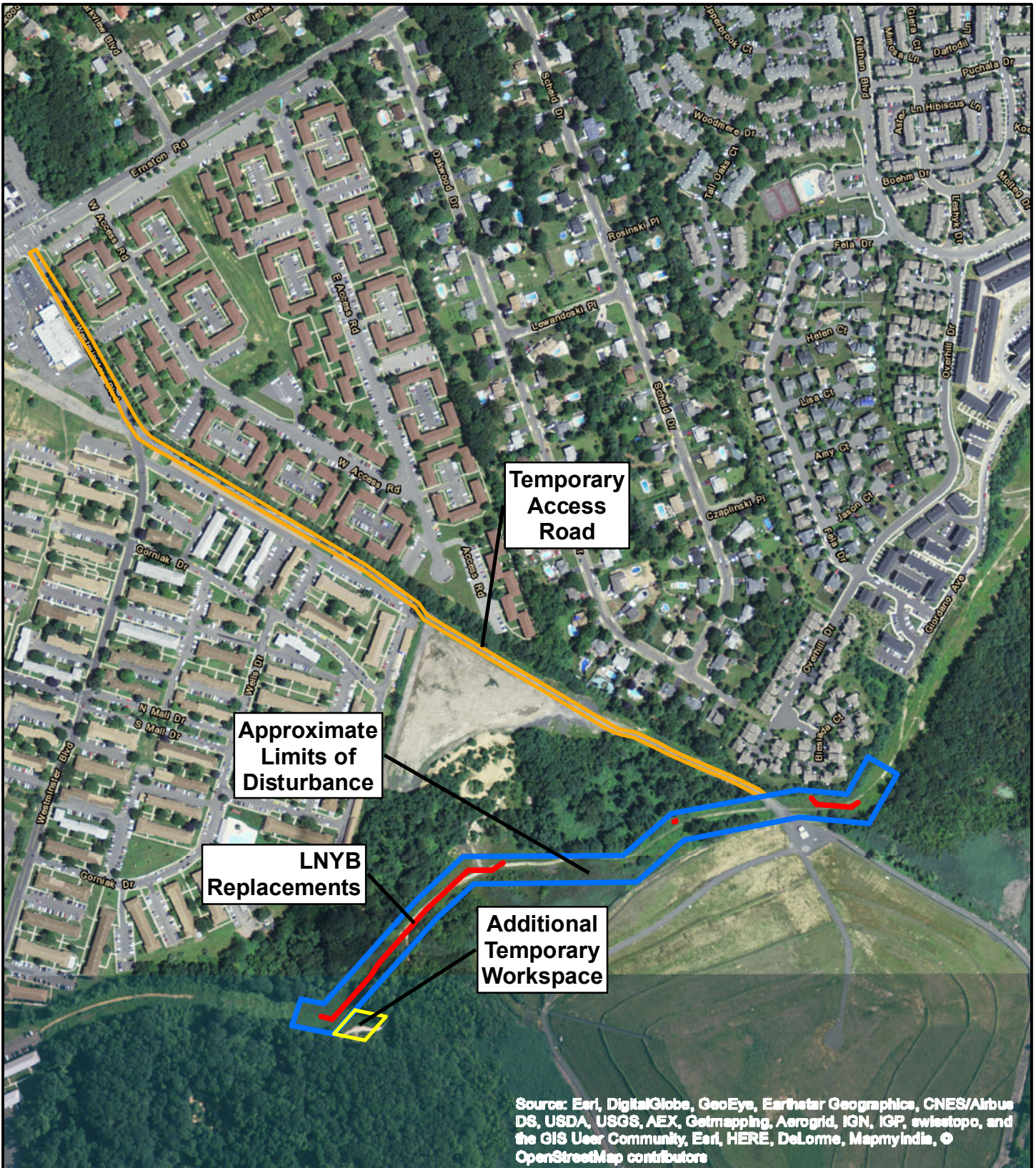
Appendix A

June 2015

Project #: 60342576

Map Projection: State Plane NJ, NAD83, US Feet.
Image Source: NAIP, 2013

Path: Y:\Projects\Williams\New_York_Bay_Expansion\MXD\Staten_Island_Heaters-Aerial.mxd




AECOM



Image courtesy of USGS Earthstar Geographics, © 2015 Microsoft Corporation, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors



Legend

 Approximate limits of property parcel.

Actual disturbance would remain on graveled portion. No trees would be removed for construction.

0 120 240 Feet

Transcontinental Gas Pipe Line Company
New York Bay Expansion

LNYB Contractor Yard
Old Bridge Township, New Jersey

Attachment 3
Aerial Project Location Map

AECOM

125 Rock Road
Horsham, PA 19044
Phone: 215.315.4150

Appendix A

June 2015

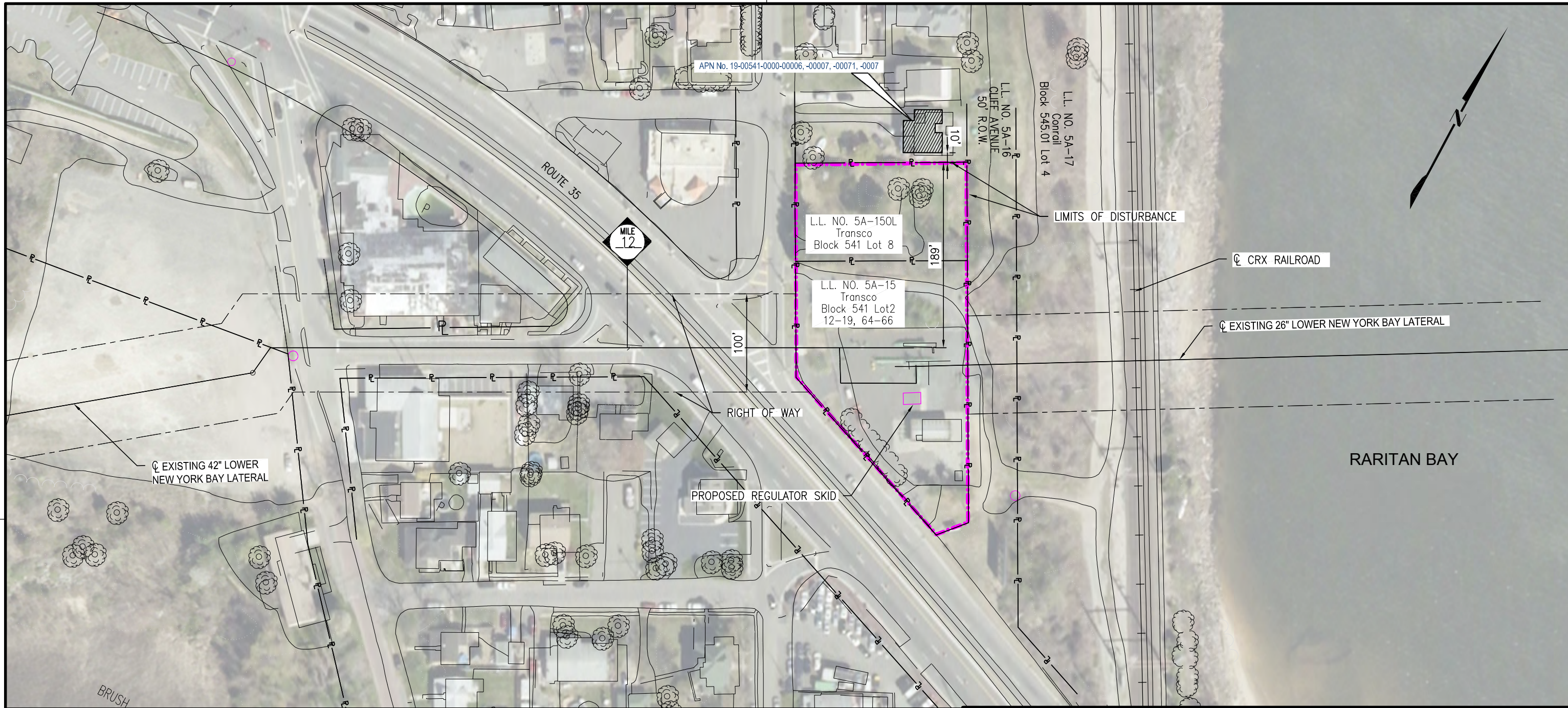
Project #: 60342576

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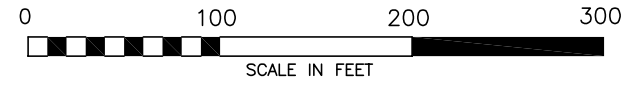
APPENDIX C

Construction Plans for Residences within 50 feet of the Project



- NOTES:**
- CONSTRUCTION TECHNIQUES TO BE USED TO MINIMIZE IMPACT TO THIS RESIDENCE ARE DENOTED ON SHEET 1 OF THIS DRAWING. CONSTRUCTION TECHNIQUES INCLUDE REDUCED PIPELINE SEPARATION (N), DRAG SECTION (D), WORKING OVER EXISTING PIPELINE (W), PIPELINE CROSSOVERS (C), REDUCED CONSTRUCTION RIGHT-OF-WAY (R).
 - EXCAVATION OF THE PIPELINE TRENCH WILL NOT BE INITIATED UNTIL THE PIPE IS READY FOR INSTALLATION. THE PIPELINE TRENCH SHALL BE BACKFILLED IMMEDIATELY UPON COMPLETION OF THE PIPELINE INSTALLATION.
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 - ALL FEATURES WITHIN THE CONSTRUCTION WORK AREA OR LIMITS OF DISTURBANCE SHALL BE REMOVED EXCEPT AS NOTED ON THE DRAWING. MATURE TREES AND LANDSCAPING WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA MAY BE SAVED UNLESS NECESSARY TO REMOVE FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT.
 - CONTRACTOR SHALL MAINTAIN RESIDENTIAL ACCESS AT ALL TIMES. IF APPLICABLE, CONTRACTOR SHALL PROVIDE PRIOR NOTICE TO COMPANY WHEN THE EXISTING DRIVEWAY IS PLANNED TO BE OPEN CUT. COMPANY SHALL THEN NOTIFY THE PROPERTY OWNER(S). DRIVEWAY ACCESS MAY BE TEMPORARILY CLOSED FOR THE PIPELINE INSTALLATION, STEEL PLATES SHALL BE USED ACROSS THE OPEN TRENCH IF NOT BACKFILLED DURING SAME WORK DAY.
 - THE APPLICABLE CONSTRUCTION SECTION FOR EACH PROPERTY IS DENOTED. REFER TO THE DRAWING "TYPICAL RESIDENTIAL CONSTRUCTION CROSS SECTIONS".
 - THIS PROPERTY

<input type="checkbox"/> (DOES)	<input type="checkbox"/> (DOES NOT)	HAVE A SEPTIC SYSTEM
<input type="checkbox"/> (DOES)	<input type="checkbox"/> (DOES NOT)	HAVE A WATER WELL
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
 - A MOBILE WATER TRUCK WILL BE USED TO CONTROL DUST ON THE R.O.W. AS NEEDED.



LEGEND

	PROPOSED REGULATOR SKID		CONSTRUCTION SAFETY FENCE
	EXISTING 42" & 26" MLLBC "C"		RESIDENTIAL STRUCTURE WITHIN 50' OF CONSTRUCTION
	EXISTING TGPL R/W		SINGLE TREE
	PROPERTY LINE		TREE LINE
	ROAD R/W		EXISTING FENCE
	LIMITS OF DISTURBANCE		SANITARY SEWER
			WATER LINE
			UTILITY POLE

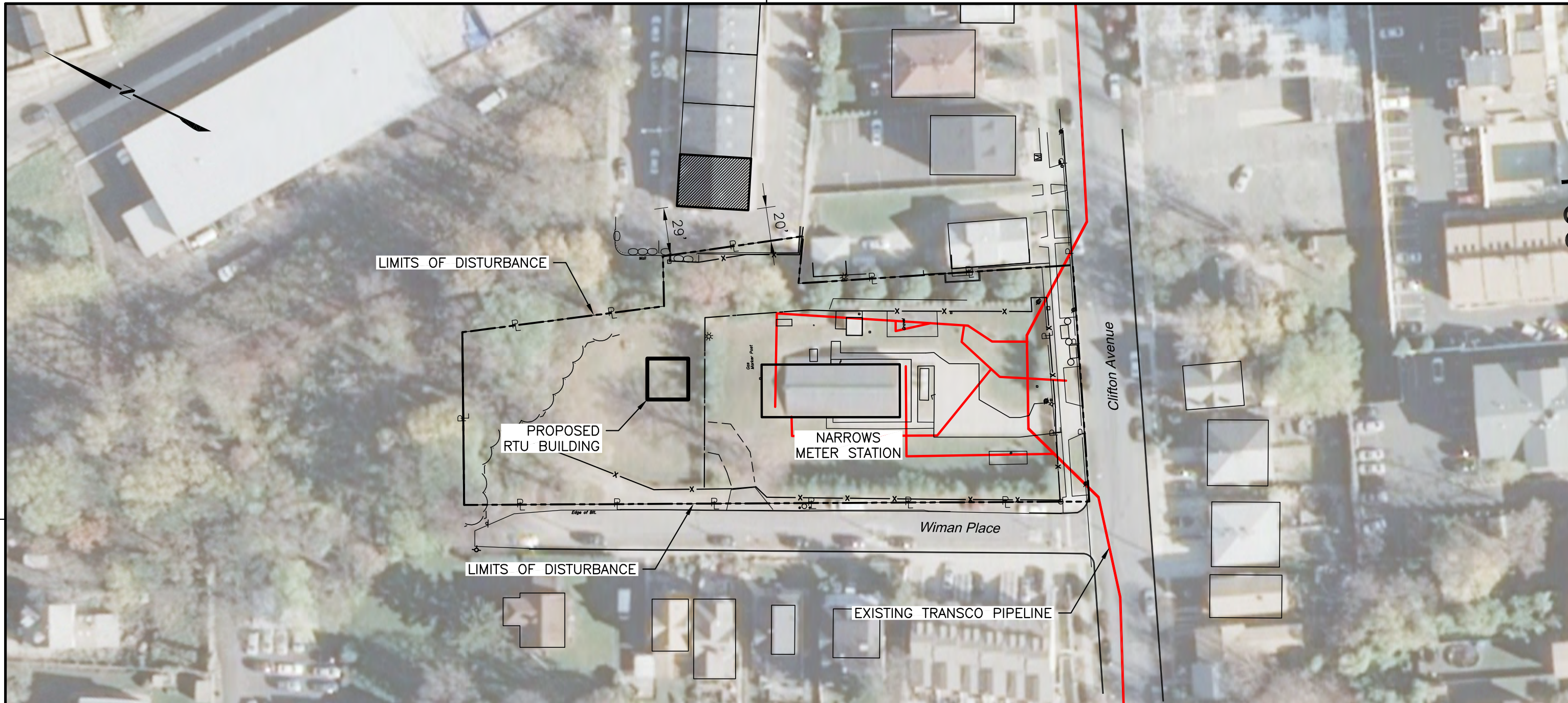
SAFETY FENCE LOCATION

0' TYP. LIMITS OF DISTURBANCE

SAFETY FENCE

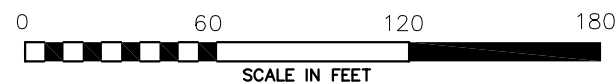
THE LOCATION OF THE SAFETY FENCES SHOWN IN THE PLAN IS APPROXIMATE AND ADJUSTED FOR CLARITY. SAFETY FENCES LOCATED NEAR THE LIMITS OF DISTURBANCE SHALL BE INSTALLED AT THE LIMIT LINE AS SHOWN ABOVE.

DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC RESIDENTIAL CONSTRUCTION PLAN N.Y. LOWER BAY PROJECT – MORGAN M & R STATION FOR THE PROPERTY OF APN No. 19-00541-0000-00006, -00007, -00071, -0007 MIDDLESEX COUNTY, NEW JERSEY						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: ALART	DATE: 05-19-2015	ISSUED FOR BID:	SCALE: 1" = 100'
A	06-19-2015	AW	ISSUE FOR FERC	1174844	CR	CR	CHECKED BY: CR	DATE: 06-19-2015	ISSUED FOR CONSTRUCTION:	
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NOTES:

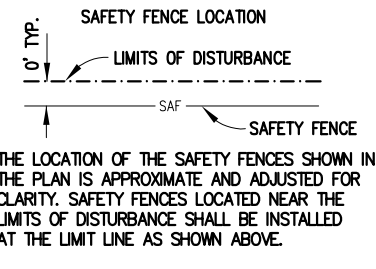
1. CONSTRUCTION TECHNIQUES TO BE USED TO MINIMIZE IMPACT TO THIS RESIDENCE ARE DENOTED ON SHEET 1 OF THIS DRAWING. CONSTRUCTION TECHNIQUES INCLUDE REDUCED PIPELINE SEPARATION (N), DRAG SECTION (D), WORKING OVER EXISTING PIPELINE (W), PIPELINE CROSSOVERS (C), REDUCED CONSTRUCTION RIGHT-OF-WAY (R).
2. EXCAVATION OF THE PIPELINE TRENCH WILL NOT BE INITIATED UNTIL THE PIPE IS READY FOR INSTALLATION. THE PIPELINE TRENCH SHALL BE BACKFILLED IMMEDIATELY UPON COMPLETION OF THE PIPELINE INSTALLATION.
3. LANDOWNER SHALL BE NOTIFIED ONE (1) WEEK PRIOR TO EXCAVATION OF PIPELINE TRENCH.
4. CONSTRUCTION SAFETY PERIMETER FENCING SHALL BE INSTALLED AND MAINTAINED ALONG THE WORK AREA. "SEE LOCATION DETAIL THIS SHEET. REMOVE AFTER RESTORATION IS COMPLETE."
5. ALL FEATURES WITHIN THE CONSTRUCTION WORK AREA OR LIMITS OF DISTURBANCE SHALL BE REMOVED EXCEPT AS NOTED ON THE DRAWING. MATURE TREES AND LANDSCAPING WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA MAY BE SAVED UNLESS NECESSARY TO REMOVE FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT.
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7. THE APPLICABLE CONSTRUCTION SECTION FOR EACH PROPERTY IS DENOTED. REFER TO THE DRAWING "TYPICAL RESIDENTIAL CONSTRUCTION CROSS SECTIONS".
8. THIS PROPERTY
 - (DOES) (DOES NOT) HAVE A SEPTIC SYSTEM
 - (DOES) (DOES NOT) HAVE A WATER WELL
 - _____
 - _____
9. A MOBILE WATER TRUCK WILL BE USED TO CONTROL DUST ON THE R.O.W. AS NEEDED.



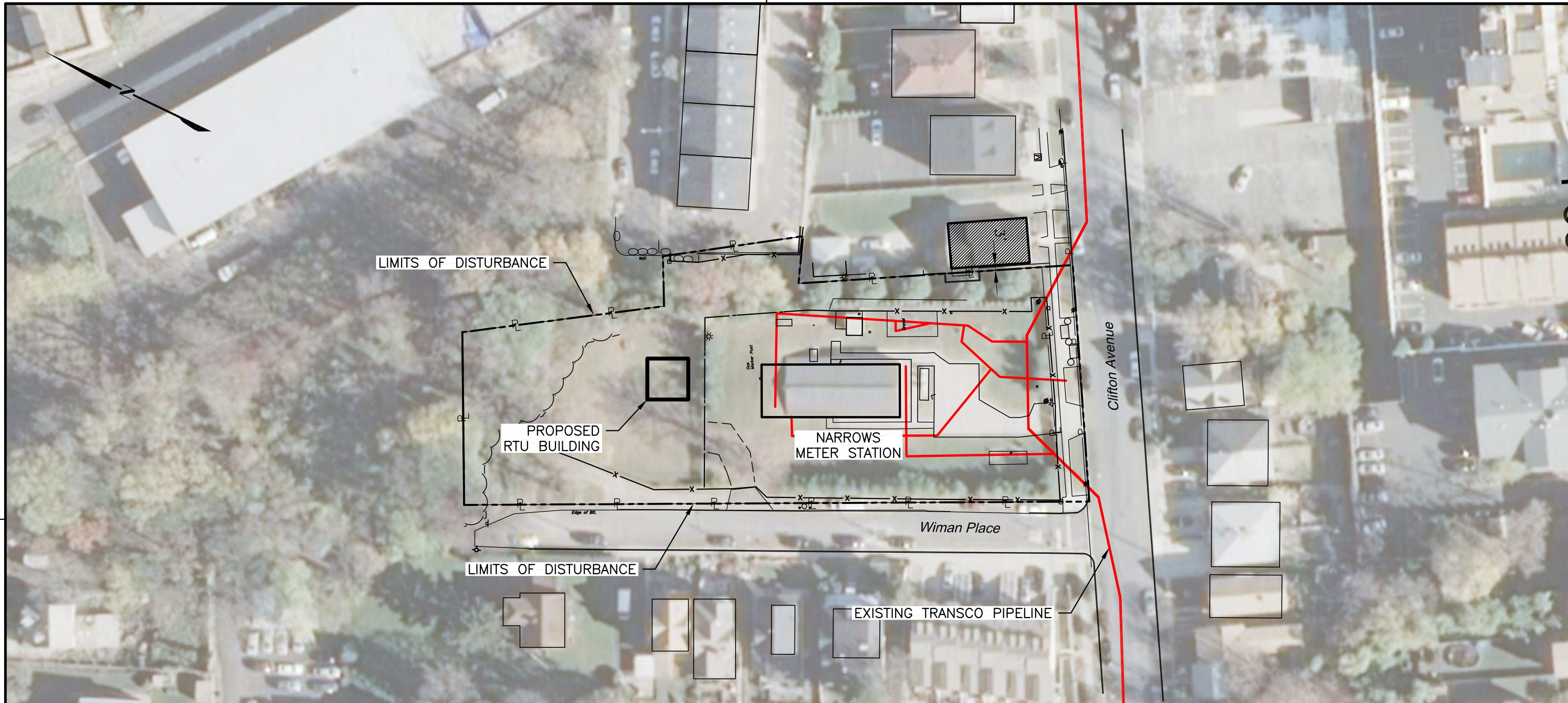
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO REVISION

LEGEND

- EXISTING PIPELINE
- - - - - EXISTING TGPL R/W
- P — PROPERTY LINE
- - - - - ROAD R/W
- - - - - LIMITS OF DISTURBANCE
- SAF — CONSTRUCTION SAFETY FENCE
- RESIDENTIAL STRUCTURE WITHIN 50' OF CONSTRUCTION
- SINGLE TREE
- TREE LINE
- X — EXISTING FENCE
- S — SANITARY SEWER
- W — WATER LINE
- o UP UTILITY POLE



DRAWING NO. X		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC RESIDENTIAL CONSTRUCTION PLAN PROPOSED NARROWS M & R MODIFICATIONS PROPERTY OF STATEN ISLAND (5)-02827-0089 RICHMOND COUNTY, NEW YORK				
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: ALART DATE: 06/18/2015	SCALE: 1" = 60'
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- NOTES:**
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- THIS PROPERTY
 - (DOES) (DOES NOT) HAVE A SEPTIC SYSTEM
 - (DOES) (DOES NOT) HAVE A WATER WELL
 - _____
 - _____
- A MOBILE WATER TRUCK WILL BE USED TO CONTROL DUST ON THE R.O.W. AS NEEDED.



FOR DISCUSSION PURPOSES ONLY
SUBJECT TO REVISION

LEGEND	
<ul style="list-style-type: none"> —— EXISTING TGPL PIPELINE ----- EXISTING TGPL R/W —— P —— PROPERTY LINE ----- ROAD R/W - - - - - LIMITS OF DISTURBANCE 	<ul style="list-style-type: none"> —— SAF —— CONSTRUCTION SAFETY FENCE RESIDENTIAL STRUCTURE WITHIN 50' OF CONSTRUCTION SINGLE TREE TREE LINE — X — EXISTING FENCE — S — SANITARY SEWER — W — WATER LINE o UP UTILITY POLE

SAFETY FENCE LOCATION

0' TYP. ↓

LIMITS OF DISTURBANCE

↑ SAF SAFETY FENCE

THE LOCATION OF THE SAFETY FENCES SHOWN IN THE PLAN IS APPROXIMATE AND ADJUSTED FOR CLARITY. SAFETY FENCES LOCATED NEAR THE LIMITS OF DISTURBANCE SHALL BE INSTALLED AT THE LIMIT LINE AS SHOWN ABOVE.

DRAWING NO. X	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC RESIDENTIAL CONSTRUCTION PLAN PROPOSED NARROWS M & R MODIFICATIONS PROPERTY OF STATEN ISLAND (5)-02827-0138 RICHMOND COUNTY, NEW YORK														
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- NOTES:**
- CONSTRUCTION TECHNIQUES TO BE USED TO MINIMIZE IMPACT TO THIS RESIDENCE ARE DENOTED ON SHEET 1 OF THIS DRAWING. CONSTRUCTION TECHNIQUES INCLUDE REDUCED PIPELINE SEPARATION (N), DRAG SECTION (D), WORKING OVER EXISTING PIPELINE (W), PIPELINE CROSSOVERS (C), REDUCED CONSTRUCTION RIGHT-OF-WAY (R).
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- THIS PROPERTY
 - (DOES) (DOES NOT) HAVE A SEPTIC SYSTEM
 - (DOES) (DOES NOT) HAVE A WATER WELL
 -
 -
- A MOBILE WATER TRUCK WILL BE USED TO CONTROL DUST ON THE R.O.W. AS NEEDED.



LEGEND

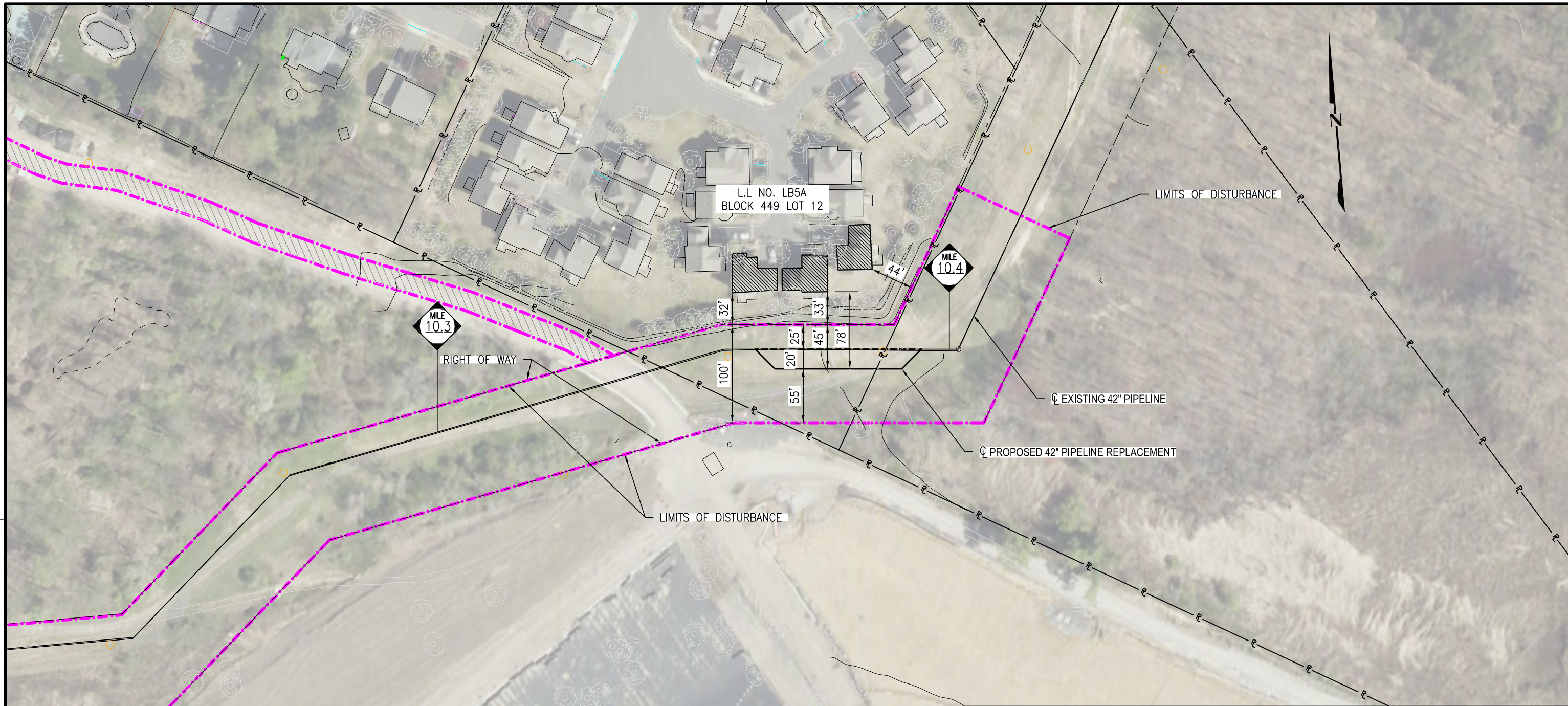
— SAF —	CONSTRUCTION SAFETY FENCE
▨	RESIDENTIAL STRUCTURE WITHIN 50' OF CONSTRUCTION
⊙	SINGLE TREE
—	TREE LINE
X	EXISTING FENCE
S	SANITARY SEWER
W	WATER LINE
○ UP	UTILITY POLE

SAFETY FENCE LOCATION

0' TYP. LIMITS OF DISTURBANCE SAFETY FENCE

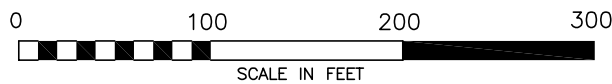
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DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC RESIDENTIAL CONSTRUCTION PLAN NEW YORK BAY EXPANSION PROJECT PROPOSED 42" LOWER NEW YORK BAY REPLACEMENTS FOR THE PROPERTY OF L.L. NO. LB6-19LOL MIDDLESEX COUNTY, NEW JERSEY						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: ALART	DATE: 05-19-2015	ISSUED FOR BID:	SCALE: 1" = 100'
A	06-24-2015	AvV	ISSUE FOR FERC	1174844	CR	CR	CHECKED BY: CR	DATE: 06-19-2015	ISSUED FOR CONSTRUCTION:	SHEET 1
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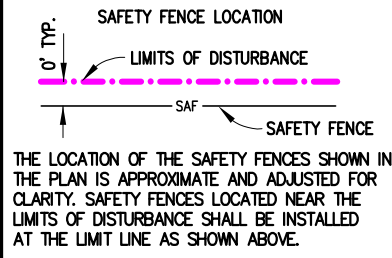
NOTES:

1. CONSTRUCTION TECHNIQUES TO BE USED TO MINIMIZE IMPACT TO THIS RESIDENCE ARE DENOTED ON SHEET 1 OF THIS DRAWING. CONSTRUCTION TECHNIQUES INCLUDE REDUCED PIPELINE SEPARATION (N), DRAG SECTION (D), WORKING OVER EXISTING PIPELINE (W), PIPELINE CROSSOVERS (C), REDUCED CONSTRUCTION RIGHT-OF-WAY (R).
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 - (DOES) (DOES NOT) HAVE A WATER WELL
 - _____
 - _____
9. A MOBILE WATER TRUCK WILL BE USED TO CONTROL DUST ON THE R.O.W. AS NEEDED.



LEGEND

- SAF — CONSTRUCTION SAFETY FENCE
- PROPOSED 42" REPLACEMENT
- EXISTING 42" MLLBC LINE "C"
- EXISTING TGPL R/W
- PROPERTY LINE
- ROAD R/W
- LIMITS OF DISTURBANCE
- RESIDENTIAL STRUCTURE WITHIN 50' OF CONSTRUCTION
- SINGLE TREE
- TREE LINE
- X — EXISTING FENCE
- S — SANITARY SEWER
- W — WATER LINE
- UP — UTILITY POLE



DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC RESIDENTIAL CONSTRUCTION PLAN NEW YORK BAY EXPANSION PROJECT PROPOSED 42" LOWER NEW YORK BAY REPLACEMENTS FOR THE PROPERTY OF L.L. NO. LB5A MIDDLESEX COUNTY, NEW JERSEY						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: ALART	DATE: 05-19-2015	ISSUED FOR BID:	SCALE: 1" = 100'
A	06-19-2015	AW	ISSUE FOR FERC	1174844	CR	CR	CHECKED BY: CR	DATE: 06-19-2015	ISSUED FOR CONSTRUCTION:	
							APPROVED BY: CR	DATE: 06-19-2015	DRAWING NUMBER: F-EX-MLLBC-C-02	SHEET 2
							WO: 1174844		11:50:25 -11 6/22/2015	OF 2

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