



**Federal Energy Regulatory Commission
Office of Energy Projects**

May 2016

Millennium Pipeline Company, L.L.C.

Docket No. CP16-17-000

Valley Lateral Project Environmental Assessment



Washington, DC 20426

Cooperating Agencies



**Agriculture
and Markets**



FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 1
Millennium Pipeline Company,
L.L.C
Valley Lateral Project
Docket No. CP16-17-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this Environmental Assessment (EA) of the Valley Lateral Project (Project) proposed by Millennium Pipeline Company, L.L.C. (Millennium) in the above-referenced docket. Millennium requests authorization to construct, operate, and maintain new natural gas facilities consisting of 7.9 miles of new, 16-inch-diameter natural gas pipeline extending from Millennium's existing mainline to the CPV Valley, LLC (CPV) Valley Energy Center in Orange County, New York. The Project would provide transportation capacity for 130,000 dekatherms per day (130 million cubic feet) of natural gas to serve the new 650 megawatt gas-powered CPV Valley Energy Center.

The EA assesses the potential environmental effects of the construction and operation of the Project in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA). 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 U.S. Environmental Protection Agency and New York State Department of Agriculture and Markets participated as cooperating agencies in the preparation of the EA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis.

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the Project area. In addition, the EA is available for public viewing on the FERC's website (www.ferc.gov) using the eLibrary link.

A limited number of copies of the EA are also available for distribution and public inspection at:

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

Any person wishing to comment on the EA may do so. Your comments should focus on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that 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 **June 8, 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 (CP16-17-000) 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 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 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 (Title 18 Code of Federal Regulations Part 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 that 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 **1-866-208-FERC (3372)** 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., CP16-17). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at 1-866-208-3676, or for TTY, contact 1-202-502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

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

¹ Interventions may also be filed electronically via the Internet in lieu of paper. See the previous discussion on filing comments electronically.

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TECHNICAL ABBREVIATIONS AND ACRONYMS

APE	Area of Potential Effect
ATWS	additional temporary workspace
AQCR	Air Quality Control Region
BGEPA	Bald and Golden Eagle Protection Act
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
COE	U.S. Army Corps of Engineers
Columbia	Columbia Pipeline Group
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
CPV	CPV Valley, LLC
dBA	decibels on the A-weighted scale
DOT	U.S. Department of Transportation
Dth/d	dekatherms per day
EA	environmental assessment
ECS	Environmental Construction Standards
EI	environmental inspector
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	global warming potential
HCA	high consequence area
HDD	horizontal directional drill
HDD Plan	Horizontal Directional Drill Contingency Plan
HDDV	Heavy Duty Diesel Vehicle Program
HUC	hydraulic unit code
IPCC	Intergovernmental Panel on Climate Change
L _{dn}	day-night sound level
L _{eq}	equivalent sound level
m ³	cubic meter
MAOP	maximum allowable operating pressure

MBTA	Migratory Bird Treaty Act
Millennium	Millennium Pipeline Company, L.L.C.
MOU	Memorandum of Understanding
MP	milepost
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Valley Lateral Project and Request for Comments on Environmental Issues</i>
NO ₂	nitrogen dioxide
N ₂ O	nitrous oxide
NO _x	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NWI	National Wetlands Inventory
NYNHP	New York Natural Heritage Program
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSGIS	New York State Geographic Information System
NYSOEJ	New York State Office of Environmental Justice
OEP	Office of Energy Projects
Orange and Rockland	Orange and Rockland Utilities, Inc.
PEM	palustrine emergent
PFO	palustrine forested
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	<i>FERC's Upland Erosion Control, Revegetation, and Maintenance Plan</i>
PM	particulate matter
PM _{2.5}	particles with an aerodynamic diameter less than or equal to 2.5 microns
PM ₁₀	particles with an aerodynamic diameter less than or equal to 10 microns

Procedures	FERC's <i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Valley Lateral Project
ppb	parts per billion
ppm	parts per million
PSS	palustrine shrub/scrub
ROW	right-of-way
Secretary	Secretary of the Federal Energy Regulatory Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPRP	Spill Prevention and Response Procedures
SWAP	Source Water Assessment Program
TMDL	total maximum daily load
tpy	tons per year
USDA	U.S. Department of Agriculture
USGRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
VOC	volatile organic compounds
µg	microgram

A. PROPOSED ACTION

1. Introduction

On November 13, 2015, Millennium Pipeline Company, L.L.C. (Millennium) filed an application with the Federal Energy Regulatory Commission (FERC or Commission) in Docket No. CP16-17-000. Millennium is seeking a Certificate of Public Convenience and Necessity (Certificate) under Section 7(c) of the Natural Gas Act (NGA) to construct and operate a natural gas transmission pipeline and related facilities in Orange County, New York. Millennium's project, referred to as the Valley Lateral Project (Project), would consist of 7.9 miles of new, 16-inch-diameter natural gas pipeline extending from Millennium's existing mainline to the CPV Valley, LLC (CPV) Valley Energy Center in Orange County, New York.

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

The FERC is the lead federal agency for the preparation of this EA. Consistent with NEPA and its respective responsibilities and regulations, the U.S. Environmental Protection Agency (EPA) and New York State Department of Agriculture and Markets (NYSDAM) participated as cooperating agencies in the preparation of this EA. Cooperating agencies have jurisdiction by law or special expertise with respect to the environmental impacts associated with Millennium's proposal.

The assessment of environmental impacts is an integral part of FERC's decision on whether to issue Millennium a Certificate to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that would result from the proposed action;
- assess reasonable alternatives to avoid or minimize adverse effects to the environment; and
- identify and recommend mitigation measures, as necessary, to minimize environmental impacts.

Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the Project is in the public interest.

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

2. Purpose and Need

Millennium states that the purpose of the proposed Project is to provide transportation capacity for 130,000 dekatherms per day (Dth/d) of natural gas to serve the new 650 megawatt gas-powered CPV Valley Energy Center in Orange County, New York.

Under section 7 (c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The FERC's Certificate Policy Statement² provides guidance as to how the Commission evaluates proposals for new construction, and establishes criteria for determining whether there is a need for a proposed project and whether it would serve the public interest. 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. The Commission does not direct the development of the gas industry's infrastructure regionally or on a project-by-project basis, or redefine an applicant's stated purpose.

3. Scope of the Environmental Assessment

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

4. Public Review and Comment

On May 19, 2015, the Commission granted Millennium's request to use the FERC's pre-filing review process in Docket No. PF15-23-000. The pre-filing process was established to encourage early involvement by citizens, government entities, non-governmental organizations, and other interested parties in the development of planned natural gas transmission projects. During the pre-filing process, FERC staff worked with Millennium, cooperating agencies and interested stakeholders, including federal and state agencies, to identify and resolve Project-related issues.

Millennium hosted an open house meeting on June 10, 2015 to inform stakeholders about the Project and to provide an opportunity to ask questions and express

² The Policy Statement can be found on our website at <http://www.ferc.gov/legal/maj-ord-reg/PL99-3-000.pdf>. Clarifying statements can be found by replacing "000" in the URL with "001" and "002."

comments and concerns. FERC environmental staff attended the open house meeting and conducted an onsite environmental review of the Project area.

On July 6, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Valley Lateral Project and Request for Comments on Environmental Issues* (NOI). The NOI was published in the Federal Register³ and was mailed to 188 interested parties, including federal, state, and local government representatives and agencies; elected officials; affected landowners; environmental and public interest groups; potentially interested Native American tribes; other interested parties; and local libraries and newspapers. The NOI also established a scoping period and requested that the public provide written comments on specific concerns about the planned Valley Lateral Project or issues that should be considered during preparation of the EA.

In response to the NOI, the Commission received 11 comment letters during the public scoping period (July 6 through August 5, 2015). The environmental comments received in response to the NOI are summarized below and addressed, as applicable, in relevant sections of this EA as shown in table A-1.

Most comments received were in opposition to the Valley Lateral Project, or expressed opposition to the CPV Valley Energy Center. Commentors questioned the need for the CPV Valley Energy Center; expressed opposition to fossil fuels in favor of renewable energy; raised concerns regarding health risks associated with air emissions from the CPV Valley Energy Center and natural gas sourced from hydraulic fracturing; and raised concerns regarding cumulative impacts of the Valley Lateral Project and the CPV Valley Energy Center. The EPA commented that the EA should include a discussion of the direct and cumulative impacts of the CPV Valley Energy Center and an analysis of environmental justice concerns regarding the placement of the CPV Valley Energy Center. The CPV Valley Energy Center is discussed further in section A.8, and cumulative impacts are discussed in section B.10. Because the purpose of the Project is to provide 130,000 Dth/d of firm natural gas transportation service to the CPV Valley Energy Center, the use of renewable energy sources could not function as a substitute for the Project. Comments that question the need for the CPV Valley Energy Center and the use of alternative energy sources are outside the scope of this EA and are not considered or evaluated further. As discussed in section A.8, the CPV Valley Energy Center is not under the Commission's jurisdiction, was previously authorized by the New York State Public Service Commission, and is currently under construction.

³ 80 Federal Register 40058 (July 13, 2016)

**Table A-1
Issues Identified During the Public Scoping Process**

Issue	EA Section Addressing Issue
Air quality, GHG, climate change	section B.8.1
Alternatives (including pipeline routing alternatives)	section C
Cultural resources	section B.7
Cumulative impacts (including those associated with the non-jurisdictional CPV Valley Energy Center)	section B.10
Land use, recreation, and visual impacts (including impacts on agricultural land and Shannen Park)	section B.5
Millennium’s Environmental Construction Standards	sections A.7, B.2, B.3, and B.5
Safety	section B.9
Socioeconomic impacts (including impacts on property values and environmental justice)	section B.6
Soils	section B.1.2
Surface water (including floodplains), groundwater, and wetlands	section B.2
Vegetation and wildlife	section B.3
Threatened and endangered species	section B.4

Commentors also expressed concerns regarding Project impacts on surface and groundwater quality; wetlands; floodplains; wildlife and vegetation; threatened and endangered species; cultural resources and historic structures; soils; property values; land use; safety, including strains on local emergency services; pollution prevention practices; air quality; methane leaks and greenhouse gas (GHG) emissions; and climate change. We also received comments regarding Project impacts on livestock, productivity of agricultural land, and concern regarding the depth of pipeline cover in agricultural areas.

Commentors raised concerns regarding routing and alternatives analysis, including the placement of the pipeline in the vicinity of Shannen Park; placement of Project facilities near wetlands; and impacts on the viewshed at Venturi Road near milepost (MP) 3.0. Commentors recommend that Millennium consider siting the Project in more industrial areas or collocate the Project pipeline along road or railroad easements to avoid residential areas. The EPA also commented that the EA should include a discussion of collocation alternatives.

NYSDAM filed comments regarding Millennium’s Environmental Construction Standards (ECS). The New York State Department of Environmental Conservation

(NYSDEC) also provided comments regarding impacts on state-regulated wetlands, wetland mitigation, threatened and endangered species, and alternatives.

Additionally, the landowners of one tract crossed by the proposed Project commented on Millennium's survey access and stipulations in the right-of-way agreement. FERC is not a party in right-of-way agreements with landowners or the stipulations contained in those agreements. The landowners also commented that, since the Project is proposed wholly within New York State and would deliver natural gas to one recipient, the CPV Valley Energy Center, the Project should not be reviewed under FERC jurisdiction. Because the Project would supply natural gas from Millennium's existing interstate natural gas transmission pipeline system and would involve the transportation of natural gas in interstate commerce, the Valley Lateral Project is under the jurisdiction of FERC per Section 7(c) of the NGA.

5. Proposed Facilities

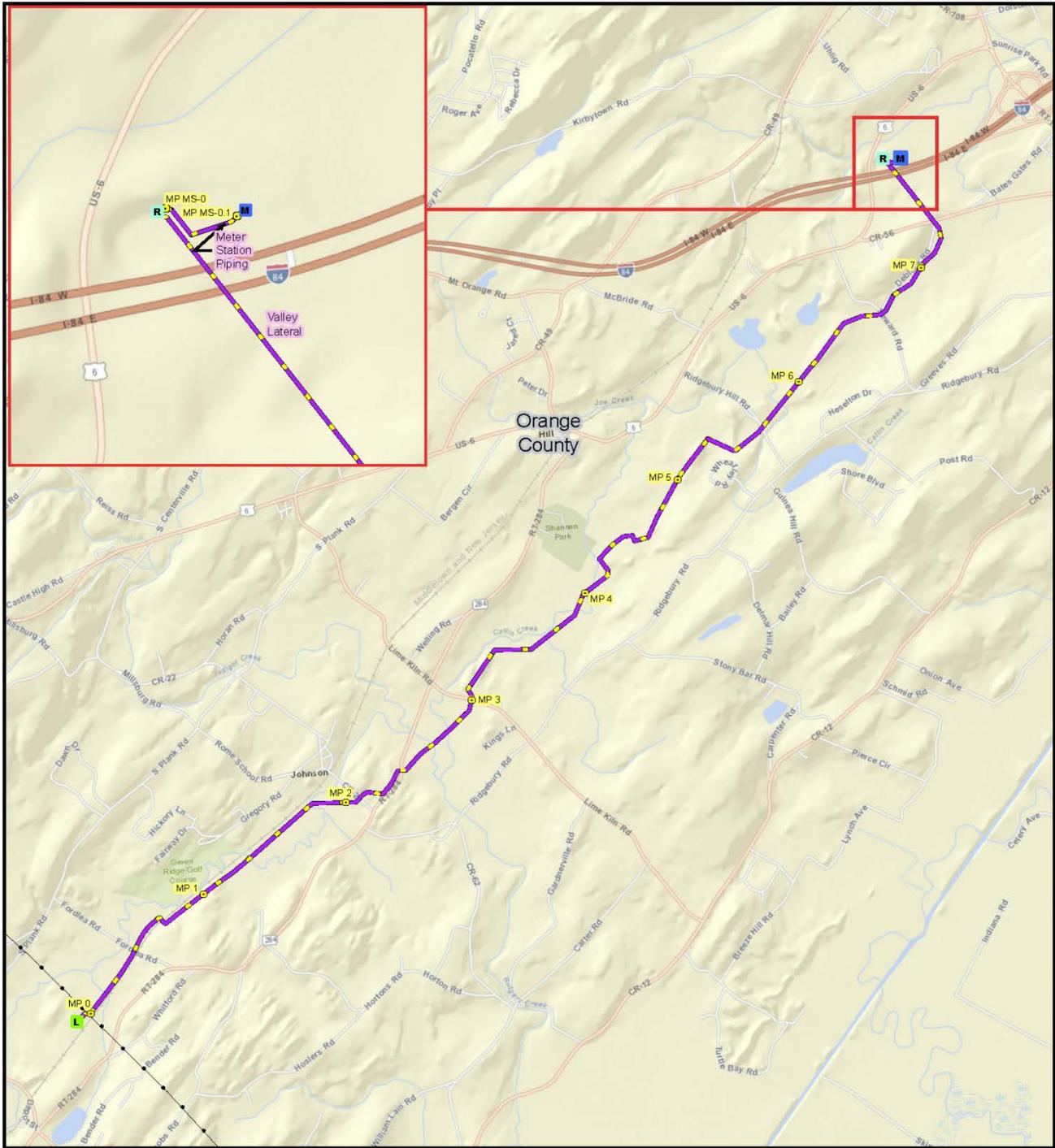
The natural gas facilities proposed for the Valley Lateral Project would consist of the following:

- 7.9 miles of new, 16-inch-diameter natural gas pipeline extending from Millennium's existing mainline to the CPV Valley Energy Center in Orange County, New York;
- a tap valve with associated piping and a pig⁴ launcher facility;
- a pig receiver facility; and
- a new delivery meter station and associated piping.

Additionally, temporary access roads and pipeyards for use during Project construction, and permanent access roads for use during Project construction and operation are proposed. The general location of the proposed Project is shown in figure 1, and U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic maps are included in appendix A.

Construction of the Project would affect 117.1 acres of land, including additional temporary workspace (ATWS), staging areas, access roads, and aboveground facilities. Following construction, 63.3 acres would revert to pre-construction conditions and uses. The remaining 53.8 acres, including the permanent pipeline easement and aboveground facility sites, would be retained for operation of the Project. Table A-2 provides acreage requirements for each of the proposed Project facilities.

⁴ A pipeline "pig" is a device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.



Legend

- Milepost
- Proposed Launcher
- Proposed Receiver
- Proposed Meter Station
- Proposed Pipeline
- Existing Millennium Pipeline
- County Boundary

0 0.5 1
Miles

Scale: 1:50,000

Basemap Source: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China, Esri Thailand, Tom Tom, 2013

Valley Lateral Project

Project Overview

FIGURE 1

**Table A-2
Summary of Land Requirements for the Valley Lateral Project^a**

Facility	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Right-of-Way ^b	88.5	39.9
Access Roads	10.3	3.1
Pipeyards	17.1	9.6
Pig Launcher/Tap Valve ^c	0.2	0.2
Pig Receiver	0.2	0.2
Meter Station ^d	0.8	0.8
Project Total	117.1	53.8
<p>^a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.</p> <p>^b The right-of-way includes acreages for additional temporary workspace. The permanent right-of-way does not include the area between horizontal directional drill entry and exit points.</p> <p>^c The land required for the tap valve is included in the pig launcher site.</p> <p>^d The meter station acreage includes 533 feet of buried piping between the pig receiver and the meter station.</p>		

5.1 Pipeline Facilities

The proposed pipeline would be 7.9 miles long, beginning at a tie-in to Millennium’s existing mainline system in Minisink, Orange County, New York and ending at the CPV Valley Energy Center in Wawayanda, Orange County, New York. The Project would provide transportation capacity for 130,000 Dth/d, with a maximum allowable operating pressure (MAOP) of 1,250 pounds per square inch gauge. The pipeline would include pigging facilities, one tap valve, and a meter station with associated buried piping between the pig receiver station and the meter station.

The construction right-of-way would be 75 feet wide in uplands and wetland and waterbody crossings; the right-of-way would vary for site-specific conditions. In agricultural lands, Millennium would use a variable right-of-way width of up to 120 feet, but typically 110 feet, to allow for full right-of-way topsoil segregation. A construction right-of-way up to 135 feet wide would be used in areas of steep side slopes. Where Millennium would construct via bore, the right-of-way would be limited to the width of the permanent easement, except where a travel lane is required at MP 0.7 to cross an abandoned railroad. The proposed permanent right-of-way would be 50 feet wide. About 23 percent, or 1.8 miles, of the pipeline would be adjacent to existing rights-of-way, as shown in table A-3. Environmental surveys were completed on 96 percent of the pipeline route, which represents all areas where landowner survey access was granted.

Survey access is not available for 106 feet at MP 3.0, 1,267 feet between MP 3.1 and 3.4, 50 feet at MP 5.6, and 264 feet east of the proposed construction workspace at MP 7.3; in addition, survey access was rescinded from MP 2.4 to MP 3.0.

Table A-3 Right-of-Way Collocation for the Valley Lateral Project					
Start Milepost	End Milepost	Total Length (miles)	Type of Right-of-Way (ROW)/ Operator	Offset From Pipeline Centerline (feet)	Width of Foreign ROW Used During Construction (feet)
0.0	0.7	0.7	Abandoned railroad/ Orange County, New York	75	0
0.7	1.3	0.6	Powerlines/ Orange and Rockland Utilities, Inc.	50	35
1.3	1.8	0.5	Powerline/ Orange and Rockland Utilities, Inc.	50	0
Total		1.8			

Millennium would require ATWS outside the construction right-of-way for road, wetland, and waterbody crossings; at horizontal directional drill (HDD) entry and exit points; for storage of segregated topsoil; in areas with steep side slopes; for storage of construction materials; for equipment movement and turn-arounds; and for other site-specific constraints (see appendix B). The use of ATWS during construction would affect 30.1 acres. Millennium would generally locate ATWS a minimum of 50 feet from waterbody and wetland edges, as required by FERC’s *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), except where a reduced set-back is necessary for site-specific reasons (see appendix C). Although Millennium has identified all areas where ATWS would be currently required, additional or alternative areas could be identified in the future because of changes in construction requirements at specific sites, and Millennium would be required to file information on each of those areas for Commission review and approval prior to use in accordance with recommendation 5 in section D of this document.

Millennium would restore all ATWS to pre-construction conditions, to the extent practicable, and allow these areas revert to previous uses following construction. However, 0.5 acre of ATWS (ATWS-047A and ATWS-047B) would be on a parcel that Millennium plans to purchase at MP 0.0, which includes pipeyard CY-2 (see section A.5.3). As such, the 0.5 acre of ATWS within the parcel would convert from agricultural land to open land during operation of the Project.

5.2 Aboveground Facilities

Millennium is proposing to construct one tap valve with associated piping and a pig launcher at the origin of the pipeline (MP -0.1⁵) where it would tie-in to the existing Millennium mainline system. Millennium would also construct a meter station with associated piping and pig receiver at the pipeline terminus (MP 7.8) within the property of the CPV Valley Energy Center.

5.3 Pipeyards

Millennium has identified two pipeyards it would use for storing pipe and construction materials, staging construction operations, and as staging for temporary construction offices. Pipeyard CY-1 is off the proposed right-of-way; pipeyard CY-2 is at the origin of the proposed pipeline (see table A-4). Millennium would lease pipeyard CY-1 during construction. As stated above (section A.5.1), Millennium would purchase the land for pipeyard CY-2, which includes access road PAR-001A, the tap valve, and the pig launcher, per the landowner's preference. Millennium does not plan to continue agricultural use of the parcel following construction; therefore, CY-2 would be permanently converted to open land use. Additional staging areas would also be used along the proposed pipeline right-of-way at locations identified in appendix B.

Pipeyard Name	Location (Nearest MP)	Size (acres)	Current Land Use
CY-1	0.5 mile northwest of MP 6.3	7.5	Commercial/industrial
CY-2	MP 0.0	9.6	Agricultural, upland forest

5.4 Access Roads

Millennium has identified 13 access roads proposed for use, including 10 temporary and 3 permanent roads for use during operation (see table A-5). Of those, six are existing roads and five are proposed new for the Project. Two use existing roads for a portion of their length, and require construction of new road for a portion of their length. Modifications or improvements may be required for existing roads proposed for temporary use, including widening and gravelling. After construction, Millennium would remove the new temporary access roads and return them to pre-construction conditions. The existing and new roads proposed for permanent use would be paved, and would be

⁵ Negative mileposting is used to denote approximately 0.1 mile of pipe added to the Project after Millennium filed its application.

maintained for the life of the Project to access the aboveground facilities at MP -0.1 and 7.8.

Table A-5 Access Roads Proposed for Use on the Valley Lateral Project						
Access Road	Nearest MP	Construction Status	Existing or New	Modifications	Length (feet)	Area (acres)^a
PAR-001A	0.0	Permanent	Existing	Additional Gravel	242	0.3
			New		230	
PAR-001B	0.0	Permanent	Existing	Paved entrance	2,648	1.7
TAR-001	0.4	Temporary	Existing	Gravel	850	0.5
TAR-002	1.6	Temporary	New	Gravel	1,340	0.9
TAR-008	2.2	Temporary	Existing Approach	Gravel	180	0.1
TAR-003	2.5	Temporary	New	Gravel	505	0.3
TAR-004	2.8	Temporary	New	Gravel	970	0.6
TAR-005	3.7	Temporary	Existing	Gravel	1,005	1.0
			New		805	
TAR-006	4.6	Temporary	Existing	Additional Gravel	1,675	1.0
TAR-007	5.0	Temporary	New	Gravel	2,525	1.7
TAR-009	5.7	Temporary	Existing	Gravel	1,370	0.9
TAR-010	7.7	Temporary	New	Gravel	654	0.2
PAR-002	7.8	Permanent	Existing ^b	Pavement	1,750	1.1

^a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

^b PAR-002 is primarily the existing paved access road and graveled surfaces for the CPV Valley Energy Center. No new impervious surface is proposed.

6. Construction Schedule and Workforce

Millennium anticipates that construction of the Project would commence in September 2016, pending the Commission’s approval and receipt of all other necessary permits and regulatory approvals. As discussed in sections B.3.3 and B.4, Millennium plans to clear trees between October 1 and March 31 to minimize potential impacts on nesting migratory birds and state- and federally listed bats. Millennium is proposing to

complete Project construction using one construction “spread” (spreads are construction areas with separate crews), as well as smaller work crews at HDD and aboveground facility locations. The peak construction work force required for construction is about 220 people; no new operational staff would be required. Millennium’s projected in-service date is April 2017.

7. Construction, Operations, and Maintenance Procedures

The Project would be designed, constructed, operated, and maintained in accordance with applicable requirements defined by U.S. Department of Transportation (DOT) regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; the Commission’s Siting and Maintenance Requirements with 18 CFR 380.15; and other applicable federal and state safety regulations.

Generally, the pipeline would be installed using conventional overland pipeline construction techniques, where the construction spread proceeds along the pipeline right-of-way in one continuous operation, with the entire process coordinated to minimize the total time a tract of land is disturbed. Millennium would implement its ECS, which meets or exceeds FERC’s guidelines in the *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and Procedures. The FERC’s Plan⁶ and Procedures⁷ are a set of baseline construction and mitigation measures developed in collaboration with other federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impacts of the construction of pipeline projects in general. Millennium has requested certain deviations from FERC’s Procedures, including deviations from ATWS setback requirements from wetlands and waterbodies (see appendix C); we have reviewed these deviations and find them acceptable. Millennium’s ECS also incorporates provisions of the NYSDAM pipeline construction guidance document on agricultural land (NYSDAM 2011).

Millennium would also implement additional construction, restoration, and mitigation plans prepared for the Project, including its Spill Prevention and Response Procedures (SPRP), Unanticipated Discovery of Contamination Plan, Horizontal Directional Drill Contingency Plan (HDD Plan), Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains, Winter Construction Plan, and Blasting Plan. These plans are available for review on our website (eLibrary under Docket No. CP16-17-000). We have reviewed these construction and mitigation plans and find them acceptable.

⁶ A copy of the FERC Plan is available at www.ferc.gov/industries/gas/enviro/plan.pdf

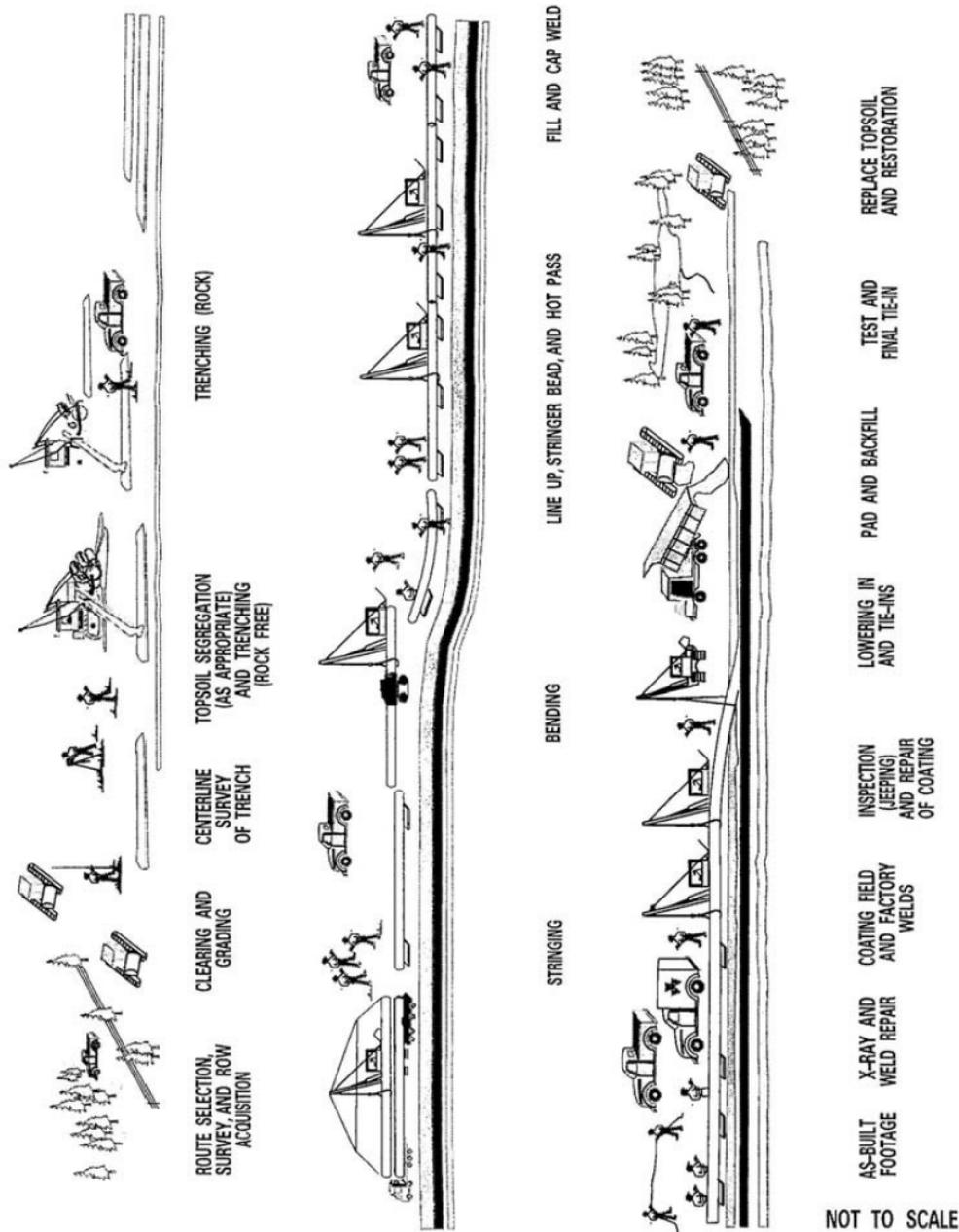
⁷ A copy of the FERC Procedures is available at www.ferc.gov/industries/gas/enviro/procedures.pdf.

7.1 General Pipeline Construction Procedures

Figure 2 depicts the typical pipeline construction sequence. Prior to construction, Millennium's survey crew would stake the pipeline centerline and limits of the construction right-of-way, ATWS, highway and railroad crossings, and access roads. Millennium would also mark wetland boundaries and other environmentally sensitive areas. Millennium would contact the State One-Call system to identify and mark existing underground utilities within the construction workspace to minimize the potential for accidental damage during pipeline construction.

After marking the construction areas, clearing crews would clear workspaces of vegetation and obstructions including trees, rocks, and logs. Cleared vegetation and stumps would be burned, chipped (except in wetlands), or otherwise handled per individual landowner agreements and applicable regulations and ordinances. Millennium would install temporary soil erosion and sedimentation control devices as needed in accordance with its ECS prior to grading near wetlands and waterbodies, and immediately after initial soil disturbance in all other areas. These erosion and sediment controls would be inspected and maintained throughout construction and restoration of the Project. Following clearing, Millennium would grade the construction right-of-way and ATWS areas where necessary to provide a level work surface. Topsoil would be segregated in accordance with the Millennium's ECS.

Millennium would construct the trench with a backhoe or ditching machine. Large stones or bedrock would be broken using conventional rock-trenching methods; blasting is not currently proposed. However, blasting may be necessary in areas where bedrock is encountered at depths that interfere with conventional rock-trenching methods (see section A.7.2). Millennium would stockpile excavated soils along the right-of-way, typically on the side of the trench away from the construction traffic and pipe assembly area (on the "spoil side"). In agricultural, residential, and non-saturated wetland areas, subsoil would be stored separately from topsoil piles. The trench would be excavated at least 12 inches wider than the diameter of the pipe and to a sufficient depth to allow a minimum of 3 feet of soil cover between the top of the pipe and the final graded land surface after construction. Pipeline cover may be greater than 3 feet at road, railroad, stream, wetland, and agricultural land crossings. In compliance with 49 CFR 192, the depth of cover would be a minimum of 2 feet in areas of consolidated bedrock.



Valley Lateral Project

Typical Pipeline
Construction
Sequence

FIGURE 2

Individual sections of pipe would be trucked to the construction right-of-way and strung along the trenchline in a single, continuous line. Typically, a track-mounted, hydraulic pipe-bending machine would tailor the shape of the pipe to conform to the contours of the terrain. The pipe segments would then be placed on temporary supports and welded together into long ‘strings’. Millennium would weld its pipeline in compliance with 49 CFR 192 (*Transportation of Natural and Other Gas by Pipeline Minimum Federal Safety Standards*), American Petroleum Institute Standard 1104 (*Welding of Pipelines and Related Facilities*), and Millennium’s specifications. Completed welds would be coated to prevent corrosion; the coating would be inspected for defects and repaired, if necessary, prior to lowering the pipeline into the trench.

Prior to lowering in the pipe, Millennium would inspect the trench to ensure it is free of rocks and other debris that could damage the pipe or its protective coating. The pipe would then be lifted from the temporary supports and lowered into the trench using sideboom tractors. In rocky areas, a layer of soil or sand would be placed on the bottom of the trench to protect the pipe. Once the pipe has been lowered in, the trench would be backfilled with previously excavated materials. If excavated materials are not suitable (in other words, they are too rocky), the pipeline would be covered with more suitable fill or protected with a rock shield (padding placed around the pipe). Topsoil would not be used to provide padding around the pipe. Excess soil may be spread evenly within uplands in the right-of-way, and in accordance with landowner and agency requirements.

After backfilling, Millennium would hydrostatically test pipeline segments to ensure the system is free from leaks and meets safety requirements at operating pressures. Water would be obtained for testing from commercially available sources. No chemicals would be added to the test water prior to use. The water in the pipe segments would be pressurized and held for a minimum of 8 hours in accordance with 49 CFR 192 and applicable permit conditions. Millennium would repair any leaks detected and retest the pipe segment. Upon completion of hydrostatic testing, the water would be discharged in accordance with Millennium’s ECS, as well as federal and state requirements. Refer to section B.2.2 of this report for additional information on hydrostatic testing.

Final cleanup would begin after backfilling and as soon as weather and site conditions permit. In accordance with the FERC’s Plan and weather and season permitting, Millennium would complete final cleanup (including removal of construction debris, replacement of topsoil where applicable, final grading, and installation of permanent erosion control devices) within 20 days after the trench is backfilled. In residential areas, cleanup and restoration would occur within 10 days of backfilling. When final cleanup would be prevented by winter snowfall, Millennium would implement its Winter Construction Plan, which includes measures to temporarily stabilize the right-of-way and avoid erosion until spring thaw conditions (see section B.7.2).

Millennium would implement restoration guidelines in accordance with its ECS and applicable permit requirements. Areas disturbed by construction would be graded to

match original contours and surrounding drainage patterns, except at those locations where permanent changes in drainage would be required to prevent scour, erosion, or potential exposure of the pipeline. A slight crown on top of the trench may be left to allow for settling of soil air pockets. Temporary and permanent erosion and sediment control measures, including silt fencing, water bars, and vegetation would be installed. Fences, gates, driveways, and roads disturbed by pipeline construction would be restored to pre-construction conditions or better, as practicable. Markers showing the location of the pipeline would be installed at fence and road crossings to identify Millennium as the owner and convey emergency information in accordance with applicable government regulations, including DOT safety requirements.

In most upland locations, Millennium would revegetate areas disturbed by construction with a grass seed mixture and apply mulch as appropriate to avoid erosion. Millennium developed its seed mixture in accordance with NYSDEC's *New York State Standards and Specification for Erosion and Sediment Control* (NYSDEC 2005). At the landowner's request, actively cultivated cropland may be left unseeded.

7.2 Special Pipeline Construction Procedures

Waterbody Crossings

Millennium proposes to cross streams using open-cut, dry-ditch (dam and pump or flume), and HDD crossing methods. Millennium would implement the measures specified in the FERC Procedures, its ECS, and any additional requirements that may be specified in federal or state waterbody crossing permits.

Open-Cut Method

An open-cut crossing method is proposed at waterbodies that are dry or have no perceptible flow at the time of crossing. Millennium would conduct this crossing method using backhoe-type excavators operating from the banks of the waterbody. Spoil excavated from the trench would be placed at least 10 feet upland from the bank (where possible) for use as backfill. A prefabricated segment of pipeline would then be placed into the trench using sideboom tractors. Millennium would use concrete coated pipe or set-on weights, as necessary, to provide negative buoyancy for the pipeline. Once the trench is backfilled, the banks would be restored as near as practicable to pre-construction contours and stabilized. Stabilization measures would include seeding, installation of erosion control blankets, or installation of riprap materials, as appropriate. Millennium would consult NYSDEC prior to using non-vegetative materials, such as riprap, for stream stabilization. Because waterbodies crossed using the open-cut method would be dry at the time of crossing, impacts on water quality would be minimized. If conditions changed during construction such that perceptible flow was present, or likely to become present, Millennium would implement contingency measures including installing a

culvert to maintain flow, or moving equipment and material out of the stream channel and temporarily stabilizing the crossing if a storm event is predicted.

Dam-and-Pump Crossing Method

A dam-and-pump crossing diverts or isolates flow during pipe installation. The dam-and-pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing, typically using sandbags. Following dam installation, pumps with hoses transport the streamflow around the construction work area and trench. Additional pumps dewater the area between the dams. Intake screens installed at the pump inlets prevent or limit entrainment of aquatic life, and energy-dissipating devices at the pump discharge point minimize erosion and streambed scour. Trench excavation and pipe installation would then commence through the dewatered and relatively dry portion of the waterbody channel. After pipe installation, Millennium would backfill the trench, and restore the stream banks, prior to removing the temporary dams to restore flow through the construction work.

Flume Crossing Method

The flume method is similar to the dam-and-pump crossing method but uses flumes instead of pumps to maintain water flow and fish passage during pipeline construction. During a typical flume crossing, water would be diverted across the trenching area through one or more flume pipes of suitable diameter to convey the maximum water flow. Temporary sandbag and plastic sheeting dams would support and seal the ends of the flume and to direct stream flow into the flume and over the construction area. These temporary dams at both the upstream and downstream sections of the flume would create a containment area where turbid water would be confined. Millennium would pump the trench water through an upland dewatering structure to create a dry work area for trench excavation and pipe installation. Immediately after backfilling, Millennium would recountour the stream bottom and restore the stream banks. Then the flume and temporary dams would be removed and flow through the construction work area would be restored.

Conventional Bore Crossing Method

Millennium proposes to use the conventional bore construction method at one waterbody crossing. This method eliminates impacts on the bed and banks of the waterbody. The conventional bore crossings consist of excavating a pit on each side of the waterbody; placing boring equipment within the pits; boring a hole under the feature and pulling a section of pipe through the hole. Dewatering the bore pits would be similar to dewatering the trench described above for the dam-and-pump and flume crossing methods. For long crossings, pipe sections could be welded into a pipe string before being pulled through the borehole.

HDD Crossing Method

Millennium proposes to use the HDD method of construction at three locations along the proposed pipeline route (see table A-6). The HDD method involves drilling a pilot borehole under the waterbody, or targeted feature, then enlarging that borehole through successive reaming until the borehole is large enough to accommodate the pipe. For a 16-inch-diameter pipeline, the borehole diameter would be about 24 inches.

Throughout the process of drilling and enlarging the borehole, drilling mud (made of a naturally occurring non-toxic bentonite clay material and water) would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and stabilize the borehole during reaming and during placement of the pipeline. Pipe sections long enough to span the entire crossing would be staged and welded along the construction work area and then pulled through the drilled borehole. This crossing method requires ATWS for the HDD entry and exit points, but generally avoids impacts on the feature being crossed, with the exception of hand-clearing minimal vegetation (a maximum 10-foot-wide path) to lay the HDD guide wire and for personnel and equipment to access and monitor the drill path from the potential inadvertent return of drilling mud to the surface. Millennium has provided an HDD Plan with its application that addresses the prevention, detection, required notifications, and response to inadvertent returns in uplands, wetlands, and waterbodies. In response to inadvertent returns of drilling mud to the surface, on-site personnel would assess the volume and discharge location to inform appropriate containment and response measures. In the event an inadvertent release enters a flowing waterbody, Millennium would work to stop the flow and isolate the release, and would develop a clean-up plan based on site-specific conditions, in consultation with appropriate agencies.

HDD	Begin Milepost	End Milepost	Length (feet)	Primary Features Avoided
Rutgers Creek HDD	1.3	1.8	2,762	Rutgers Creek, unnamed tributary to Rutgers Creek, and wetlands
Ridgebury Hill Road and Catlin Creek HDD	5.6	6.1	2,527	Ridgebury Hill Road, unnamed tributary to Caitlin Creek, and wetlands
Interstate Highway-84 HDD	7.3	7.8	2,597	Interstate 84, Deblock Road, County Road 56, and wetlands

To minimize the potential for an inadvertent return in a waterbody that would be crossed by an HDD, Millennium may implement the intersect method, which would

require two drill rigs set up on opposite sides of the crossing, and pilot holes drilled from each side of the waterbody with the intersection of these drilled boreholes at a predetermined point per its HDD Plan. In the event of a failed HDD attempt, Millennium would re-evaluate and re-locate HDD entry and exit points to an adjacent area and attempt the HDD again. Millennium has developed an alternate open-cut crossing plan for the HDD crossing of Rutgers Creek in the event that HDD attempt fails. See section B.2.2 for further information on waterbodies crossed by the Project.

Wetland Crossings

Millennium would delineate and mark wetland boundaries in the field prior to construction activities. Wetlands would be crossed via conventional bore, HDD, or open-cut methods. Conventional bore and HDD crossing methods would be the same as those described above for waterbody crossings, and the locations where HDD construction would cross wetlands are shown in table A-6. At open-cut wetland crossings, woody vegetation within the construction right-of-way would be cut off at ground level and removed from the wetlands, generally leaving the root systems intact; the pulling of tree stumps and grading activities would be limited to the area directly over the trenchline unless it is determined that safety-related construction constraints require otherwise. Millennium would install temporary sediment control devices prior to grading near wetlands and, as necessary, after initial disturbance of wetlands or adjacent upland areas to prevent sediment flow into wetlands in accordance with its ECS. Millennium would maintain these devices until revegetation of the wetlands is complete. Construction equipment operating in wetland areas would be limited to that needed to clear the right-of-way, dig the trenches, install the pipeline, backfill the trenches, and restore the right-of-way. In addition, Millennium would install trench plugs to maintain wetland hydrology and use timber mats (or similar measures) in saturated wetlands or other wetland areas where rutting could occur.

Millennium would determine the method of pipeline construction within each wetland by soil stability and saturation at the time of construction. Where soils are stable and are not saturated at the time of crossing, the pipeline would be installed using methods similar to those in uplands. Other methods identified in our Procedures could be used where wetland soils are saturated and/or inundated, if applicable. Stringing and welding of the pipe would be conducted prior to trenching in wetlands per FERC's Procedures, which are included in Millennium's ECS.

Topsoil would be stripped from the area directly over the trenchline (except in areas of standing water or in saturated conditions) and stockpiled separately from the subsoil. Following pipeline installation, Millennium would backfill the trench with subsoil then topsoil, and install permanent erosion control measures in accordance with its ECS. Saturated wetlands would typically be allowed to revegetate naturally; unsaturated wetlands would be seeded with annual rye grass and in accordance with

Millennium’s ECS. Millennium would use hay or straw as mulch in wetlands only if required in writing by state and federal agencies per its ECS.

During field surveys, Millennium identified two man-made drainage swales crossed by the Project that could be designated as wetlands due to the presence of wetland hydrology, hydrophytic vegetation, and hydric soils. Flowing water was not present at the time of the surveys. During construction, Millennium would temporarily block man-made drainages or install a flume if necessary to allow water flow while preventing downstream sedimentation (see section B.2.2).

Some staging areas may be required adjacent to wetlands for the assembly and fabrication of the pipeline to perform a wetland crossing. These ATWS would be at least 50 feet from the edge of the wetland except in cases where this is not feasible (for example, near HDD entry and exit locations and road crossings). In these cases, Millennium has requested alternative measures from the FERC’s Procedures that would allow a setback less than 50 feet from wetlands (see appendix C). Appendix C identifies the location and rationale for changes in setback distances at wetland crossings. We have reviewed these ATWS locations, and Millennium’s justifications for them, and have found them acceptable. See section B.2.3 for further information on wetlands.

Road and Railroad Crossings

Millennium would conduct construction across local, state, federal, and private roads using the conventional bore or HDD crossing method (see table A-7). Six paved roads and one abandoned railroad would be crossed by conventional bore. Three paved roads and one gravel road would be crossed by HDD.

Table A-7 Road and Railroad Crossings Associated with the Valley Lateral Project			
Road or Railroad Name	Milepost	Crossing Method	Surface Type
Fordlea Road	0.4	Conventional bore	Pavement
Abandoned railroad	0.7	Conventional bore	Railroad
County Road 22	2.1	Conventional bore	Pavement
State Highway 284	2.4	Conventional bore	Pavement
County Road 93 - Lime Kiln Road	3.0	Conventional bore	Pavement
Ridgebury Hill Road	5.7	Conventional bore	Pavement
Dump Road	5.6 – 5.9	HDD	Gravel
Seward Road	6.6	Conventional bore	Pavement
Deblock Road	7.3	HDD	Pavement
County Road 56	7.3	HDD	Pavement
Interstate 84	7.7	HDD	Pavement

Foreign Utility Crossing

The proposed pipeline would cross 10 existing overhead electric utilities (see table A-8). The Project would not cross existing foreign pipelines. Millennium would use field instrumentation or excavation of test pits by hand to locate existing utilities within construction work areas. Where trenching would occur near a buried utility, soft digging methods, such as hand digging or use of an excavator with teeth or side cutters, would be implemented. If foreign utilities are accidentally damaged during construction, Millennium would stop work and evacuate the immediate area. To aid in immediate response in the event of accidental damage, Millennium would coordinate with the utility company to have a representative on-site during excavation.

Table A-8 Foreign Utilities Crossed by the Valley Lateral Project		
Milepost	Utility Type	Operator
0.4	Overhead electric	Orange and Rockland Utilities, Inc.
0.7	Overhead electric	Orange and Rockland Utilities, Inc.
0.7	Overhead electric	Orange and Rockland Utilities, Inc.
2.1	Overhead electric	Orange and Rockland Utilities, Inc.
2.4	Overhead electric	Orange and Rockland Utilities, Inc.
3.0	Overhead electric	Orange and Rockland Utilities, Inc.
5.7	Overhead electric	Orange and Rockland Utilities, Inc.
6.7	Overhead electric	Orange and Rockland Utilities, Inc.
7.3	Overhead electric	Orange and Rockland Utilities, Inc.
7.3	Overhead electric	Orange and Rockland Utilities, Inc.

Agricultural Areas

Agricultural areas would be crossed by the Valley Lateral Project. Millennium would implement measures in its ECS, which incorporates measures from the NYSDAM pipeline construction guidance document (NYSDAM 2011) and the FERC Plan to minimize impacts on agricultural areas, including requirements regarding minimum depth of pipeline cover, topsoil segregation, and post-construction monitoring and remediation. Construction in these areas would be conducted in a manner similar to conventional pipeline construction; however, Millennium would segregate the topsoil in accordance with its ECS. The full depth of topsoil, up to 12 inches, would be segregated from subsoil. Millennium would store segregated topsoil and subsoil in separate windrows. Millennium would use a construction right-of-way up to 120 feet wide in agricultural areas for topsoil stockpiling when topsoil segregation across the full construction right-

of-way is conducted, and up to 135 feet where agricultural land occurs in areas of steep side slopes. During backfill operations, subsoil would be used to initially backfill the trench, and then the topsoil would be reapplied to the top of the trench and the graded right-of-way.

Millennium is not currently aware of any agricultural drainage systems that would be crossed by the Project. If any are located during construction or through landowner discussions, site-specific measures would be implemented to minimize impacts on the systems. In the event of damage by Project-related activities, Millennium would repair or replace these systems. Per the FERC Plan, seeding would not be required in cultivated croplands unless requested by the landowner. Revegetation of agricultural lands would be considered successful when, upon visual survey, crop growth and vigor were similar to adjacent undisturbed portions of the same field. Soils would be decompacted, if required, in accordance with Millennium's ECS and the NYSDAM pipeline construction guidance document (NYSDAM 2011). See section B.5.1 for further information on agricultural areas.

Residential Areas

No residences are within 50 feet of proposed construction workspaces. Where the pipeline would cross residential yards, Millennium would either segregate and conserve topsoil or have topsoil imported. After construction, final grading would be conducted within 10 days of backfilling the trench and all turf, ornamental shrubs, and specialized landscaping would be restored in accordance with landowner agreements. See section B.5.1 for further information on residential areas.

Rugged Terrain

Portions of the Project would cross areas with steep side slopes (see table A-9). These areas can be susceptible to landslides, or slips, during construction following trench backfill (see section B.1.1). In these areas, Millennium may use cut-and-fill construction to provide for safe working conditions. Grading activities would remove the upslope side of the construction right-of-way, which would then be used to fill the downslope side of the construction right-of-way to create a safe and level surface for travel lanes and equipment operation. Potential impacts associated with steep slopes and rugged terrain, as well as associated mitigation measures, are further discussed in section B.1.1.

Blasting

Millennium does not anticipate that blasting would be required for construction of the Project. Millennium would attempt to avoid blasting on the proposed Project by breaking apart large stones or bedrock using mechanical rock breaking methods such as mechanically ripping the rock with a backhoe or using a hydraulic hammering attachment

operated from a backhoe. However, blasting may be necessary in areas where bedrock is encountered at depths (typically less than 5 feet) that interfere with conventional rock-trenching methods. Although Millennium does not anticipate that blasting would be required, it has prepared a project-specific Blasting Plan to minimize the effects of blasting and mitigate any impact caused by blasting. In the event that blasting becomes necessary, Millennium would implement its Blasting Plan and would comply with state and local regulations. Blasting is further discussed in section B.1.1.

Table A-9 Areas of Steep Side Slopes Crossed by the Valley Lateral Project	
Start Milepost	End Milepost
1.0	1.1
3.1	3.1
3.2	3.3
3.3	3.3
5.0	5.1
5.1	5.2
5.2	5.3

Winter Construction

In the event that weather conditions result in snowfall events greater than 6 inches or frozen soils during Project construction, Millennium would implement measures in its Winter Construction Plan, including methods of snow handling and removal; snow removal would be limited to construction work areas. In frozen soil conditions, Millennium would limit topsoil stripping to equipment that can accurately strip variable topsoil depths; if topsoil segregation is not possible, Millennium would stop topsoil removal activities until soil conditions improve. As discussed in section B.7.1, when final cleanup would be prevented by winter snowfall, Millennium would implement measures to temporarily stabilize the right-of-way and avoid erosion until spring thaw conditions.

7.3 Aboveground Facility Construction Procedures

Aboveground facilities would be constructed in accordance with Millennium’s ECS, and federal and state approvals, as applicable. Generally, construction of new aboveground facilities would begin with clearing and grading of the construction workspace, and excavation would be conducted where necessary to accommodate new foundations. Subsequent activities would include preparing foundations, installing underground piping, installing aboveground piping and machinery, testing the piping and control equipment, and cleaning and stabilization of the work area. Aboveground

facilities would be fenced, and areas in and around building, meters, piping, and associated equipment would be covered with crushed rock or similar material. Any areas not covered with rock or paving would be seeded with a compatible grass and would be maintained as herbaceous cover. The buried piping between the pig receiver and the meter station would be constructed and restored in the same way as described for the pipeline.

7.4 Environmental Compliance Inspection and Monitoring

Prior to construction, Millennium would conduct environmental training for the appropriate construction personnel. Construction contractors typically receive environmental training applicable to their job duties and construction management and the environmental inspectors (EI) receive all Project-specific information. The training program would focus on the ECS; Project-specific Certificate and other permit conditions; regulatory requirements, such as those pertaining to endangered species, cultural resources, or wetlands; and other Project-specific mitigation plans.

Millennium would be represented during construction by its Chief Construction Inspector, Craft Inspectors, and the EI. The EI would report directly to the Chief Construction Inspector; EI responsibilities would include monitoring compliance with environmental measures required by the Project-specific Certificate and other permit conditions; documenting compliance with environmental requirements; and identifying and overseeing corrective actions where necessary. The EI would have the authority to stop activities that violate the Project's environmental conditions and to order appropriate corrective action.

Millennium would conduct post-construction monitoring to document restoration and revegetation of the right-of-way and other disturbed areas. Millennium would monitor wetlands for a period of at least 3 years until revegetation is successful in accordance with its ECS. Millennium would monitor upland areas after the first and second growing seasons following restoration or until revegetation is successful in accordance with its ECS. Millennium would also file quarterly monitoring reports with FERC to document the status of revegetation in disturbed areas. These reports would describe the results of post-construction inspections, any problem areas, and corrective actions taken. Monitoring would cease if an area meets performance standards at the end of the second year (or in any subsequent year). Within 3 years of construction, Millennium would file with FERC a wetland revegetation monitoring report. Millennium would continue to file wetland revegetation monitoring reports on an annual basis thereafter until revegetation efforts are considered successful.

In addition, FERC staff would inspect the Project throughout construction to independently verify compliance with the Commission's order. FERC staff would continue to monitor and inspect the vegetation along the Project route until restoration and revegetation are deemed successful.

7.5 Operations and Maintenance

Millennium would operate and maintain the new pipeline, aboveground facilities, and modified facilities in accordance with all applicable federal and state regulations, including 49 CFR 192. Millennium would periodically inspect the pipeline from the air and/or ground, in accordance with applicable regulatory requirements, to identify potential concerns that may affect the safety and operation of the pipeline. If pipeline patrols or vegetation maintenance identify areas on the right-of-way where erosion is occurring, Millennium would repair existing erosion control devices or install additional devices as necessary (including vegetation) to stabilize the area and prevent future erosion, throughout the life of the Project.

To maintain accessibility to the right-of-way and accommodate pipeline integrity surveys, vegetation along the permanent pipeline right-of-way would be cleared periodically, using mechanical mowing or cutting where necessary, and in accordance with the ECS. Millennium would not conduct routine vegetation maintenance in uplands more frequently than every 3 years, with the exception of a 10-foot-wide corridor centered on the pipeline that Millennium would maintain in an herbaceous state to allow for periodic corrosion and leak surveys. In no case would routine vegetation maintenance clearing occur between April 15 and August 1 of any year to minimize potential impacts on migratory birds during operation of the pipeline facilities. In accordance with FERC's Procedures, included in Millennium's ECS, routine maintenance would not be conducted in wetlands and waterbody riparian areas between HDD entry and exit points.

Active cropland would be allowed to revert to pre-construction use for the full width of the right-of-way. In non-cultivated uplands, routine vegetation maintenance clearing would be done in accordance with the FERC Plan. In wetlands, a 10-foot-wide corridor centered over the pipeline could be maintained in an herbaceous state, and trees within 15 feet of the pipeline with roots that may compromise the pipeline integrity may be selectively cut and removed from the right-of-way.

Millennium would also perform regular operation and maintenance activities on equipment at the tap valve, pig launcher and receiver, and meter station. These activities would include calibration, inspection, and scheduled routine maintenance. Operational testing would be performed on safety equipment to ensure proper functioning, and problems would be corrected.

8. Non-Jurisdictional Facilities

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the FERC. These non-jurisdictional facilities may be integral to a project (for instance, a natural gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated because of a project.

The Valley Lateral Project is under FERC's jurisdiction and is proposed as a result of construction of the non-jurisdictional CPV Valley Energy Center. The CPV Valley Energy Center is a new natural gas combined-cycle power generation facility, consisting of two combustion turbines and associated equipment, which will generate 650 megawatts of electricity annually. Construction of the CPV Valley Energy Center commenced in August 2015, and is expected to be complete in December 2017.

The CPV Valley Energy Center is located on a 122-acre parcel in Wawayanda, Orange County, New York, and will require disturbance of about 30 acres of land for construction. The operational footprint of the CPV Valley Energy Center will be 21.3 acres for operation of new electric generation equipment and supporting facilities. An additional 4.4 acres will be required for an aboveground electric transmission line to connect with New York Power Authority's existing transmission system. Additionally, CPV will construct non-jurisdictional underground water supply and discharge pipelines to connect with the City of Middletown Sewage Treatment Plant.

The New York State Environmental Quality Review Act review of the CPV project was completed in 2012, and CPV was granted a Certificate to construct the CPV Valley Energy Center by the New York State Public Service Commission on May 8, 2014. The CPV Valley Energy Center is subject to state and local permitting requirements; however, the impacts associated with construction that would overlap the proposed Valley Lateral Project are addressed in section B.10 of this EA (cumulative impacts).

9. Permits and Approvals

As discussed, in section A.1, the EPA and NYSDAM participated as cooperating agencies in the preparation of this EA. The EPA has delegated water quality certification, under Section 401 of the Clean Water Act (CWA), to NYSDEC. The EPA also oversees the issuance of a National Pollutant Discharge Elimination System permit by the state agency, under Section 402 of the CWA, for point-source discharge of used water into waterbodies.

The NYSDAM is a state agency that works to promote a viable agricultural industry, foster agricultural environmental stewardship, and safeguard the food supply of New York. The NYSDAM has prepared guidance documents for construction of pipelines within agricultural areas. Millennium's ECS also incorporates provisions of the NYSDAM pipeline construction guidance document on agricultural land (NYSDAM 2011). Table A-10 provides a list of federal and state permits related to construction and operation of the Project.

**Table A-10
Environmental Permits, Approvals, and Consultations for the Valley Lateral Project**

Administering Agency	Administering Agency	Administering Agency
Federal		
FERC	Certificate of Public Convenience and Necessity	Application submitted November 2015
U.S. Army Corps of Engineers (COE)- New York District	CWA, Section 404	Application submitted November 2015; additional information submitted March 2016
U.S. Fish & Wildlife Service - New York Ecological Services Field Office	The Endangered Species Act of 1973, Section 7 Consultation Migratory Bird Treaty Act Consultation Bald and Golden Eagle Protection Act Consultation	Initial consultation submitted April 2015; Information for Planning and Conservation package submitted November 2015
State of New York		
	Section 401 CWA Water Quality Certification	Pending
NYSDEC	NYSDEC/COE Joint Permit Application: Freshwater Wetlands Permit and Protection of Waters Permit	Application submitted November 2015
	State Pollutant Discharge Elimination System Permit for Construction Activities	Submitted February 2016
New York Natural Heritage Program	Threatened and Endangered Species Consultation and Clearance	Consultation completed June 2015
New York Bureau of Parks, Recreation, and Historic Preservation	Section 106 of the National Historic Preservation Act Clearance	Initial consultation submitted April 2015; Phase I Survey Report submitted November 2015; Agency concurrence was issued on November 24, 2015 for surveyed areas; The agency also indicated no concerns regarding impacts on historic-age buildings
NYSDAM	Consultation	Initial consultation submitted April 2015
New York State Department of Transportation	Accommodation of utilities within the state highway right-of-way	Application to be submitted
County and Local		
Orange County Department of Public Works	Permit for work within the county right-of-way	Application to be submitted second quarter 2016
Town of Wawayanda	Stormwater Pollution Prevention Plan	Application submitted February 2016
Note: This table lists the major permits, approvals, and consultations for the Project. It is not intended to be a comprehensive list.		

B. ENVIRONMENTAL ANALYSIS

Construction and operation of the Project would have temporary, short-term, long-term, or permanent impacts. As discussed throughout this EA, temporary impacts are defined as occurring only during the construction phase. Short-term impacts are defined as lasting between one and three years. Long-term impacts are defined as lasting three years or more. Permanent impacts are defined as lasting throughout the life of the Project, and are considered significant if it would result in a substantial adverse change in the physical environment.

1. Geology and Soils

1.1 Geology

Physiographic Setting and Geologic Conditions

The proposed Project area is in the Southern New York Section of the Valley and Ridge Physiographic Province, which is characterized by narrow relief valleys bounded by uplands. The surficial geology in the Project area is characterized primarily as Wisconsin-age outwash sand and gravel and glacial till deposits with smaller areas of kame, alluvial, and lacustrine deposits. The area is underlain by bedrock composed of shale with mudstone and sandstone (USGS 2015a). The topography associated with the Project is moderately low and rolling with elevations ranging from 550 to 650 feet above mean sea level (New York State Department of Transportation [NYSDOT] 2013).

Paleontological Resources

Paleontological resources are the fossilized remains of prehistoric plants and animals, as well as the impressions remaining in rock or other materials. The proposed Project is atop the Normanskill Shale and Austin Glen Formations, which consist primarily of sedimentary rock from the Middle Ordovician Period (USGS 2015a). Although the proposed Project would have the potential to encounter paleontological resources in the form of marine invertebrate fossils, unique and/or significant paleontological resources would likely not be encountered (NYSDEC 2013; NYSDOT 2013). Therefore, we conclude the Project would not adversely affect paleontological resources.

Mineral Resources

The primary minerals produced in Orange County are crushed stone, clay, and sand and gravel. No active mining operations would be crossed by the Project, and no inactive or permit-pending mining operations were identified near the proposed Project. According to the NYSDEC Division of Mineral Resources, the nearest mineral resources, both of which include active permits for sand and gravel mining operations, are about 0.2 mile west of MP 7.7 and 0.3 mile north/northwest of MP 6.2 (NYSDEC 2015a). Based

on NYSDEC records, about 70 percent (55 acres) of the land used for mining operations west of MP 7.7 has been reclaimed and it appears from review of aerial photography that active mining operations have ceased at that location. No coal, oil, or gas mines/wells occur within 0.25 mile of the Project. Therefore, we conclude the Project would not affect present and/or future extraction of nearby mineral resources.

Coal Resources

The Project would not affect any active or inactive coal resources. Information regarding coal mining activities and locations in the Project area was obtained from NYSDEC, Division of Mineral Resources and Millennium's Project field surveys. There are no active or inactive/abandoned coal mines within 0.25 mile of the proposed Project (NYSDEC 2015a).

Oil and Natural Gas Resources

The Project would not affect any active or inactive oil and/or natural gas resources. Based on data from NYSDEC, Division of Mineral Resources, there are no active or inactive oil and/or gas wells located within 0.25 miles of the proposed Project (NYSDEC 2015a). In addition, the Project would not cross any known gas storage facilities (U.S. Energy Information Administration 2011).

Geologic Hazards and Impact Mitigation

Geologic hazards are natural physical conditions that, when active, can result in damage to land and structures, or injury to people. Potential geologic hazards can be related to seismic activities, such as earthquakes and fault rupture. Other potential geologic hazards may include soil liquefaction, landslides, and subsidence. The pipeline alignment was evaluated with respect to those geologic processes that have a potential for occurrence.

Seismicity, Ground Rupture and Soil Liquefaction

The Project occurs within a region of relatively low historical earthquake activity. A review of earthquakes over the last 50 years identified 63 events within 50 miles of the Project, all with magnitudes of 3.6 or less. On average, these earthquakes were more than 30 miles from the Project area. The closest event to the Project was about 2.6 miles away and occurred in March of 2008 with a magnitude of 1.9, which is described on the Mercalli Intensity Scale as typically not felt or rarely felt (USGS 2015b).

The horizontal force a structure must withstand during an earthquake is related to ground acceleration, and seismic hazards can be assessed based on peak ground acceleration (PGA). PGA is the maximum acceleration experienced by a particle during an earthquake. The USGS produces ground motion hazard maps at a given level of probability to exceed PGA values. PGA values are represented as a factor of "g". The

factor “g” is equal to the acceleration of a falling object due to gravity. For buried pipelines, the design operational earthquake is considered to be the PGA associated with a 10 percent probability of exceedance in 50 years (475-year return period); and for aboveground structures, it is considered to be the PGA associated with a 2 percent probability of exceedance in 50 years (2,500-year return period). Review of the USGS Seismic Hazard Maps (USGS 2014a) for the Project area indicates that there is a 2 percent probability of a 7 to 14 percent “g” exceedance in 50 years; and that there is a 10 percent probability of a 3 to 4 percent “g” exceedance in 50 years. A 3 to 4 percent PGA characterized as very light ground shaking and very light to no potential for damage; a 7 to 14 percent PGA is associated with moderate to strong perceived shaking with very light to light damage (USGS 2011).

In addition, according to the USGS Quaternary Fold and Fault database and New York State Fault database, no Quaternary-Period faults would be crossed or encountered by the Project facilities (New York State Geological Survey 2015; USGS 2014a).

These data show that the Project would not be considered at risk from active seismicity or surficial ground rupture. Given the low seismic potential in the Project area, the potential for soil liquefaction to occur is likewise low. Soil liquefaction occurs when loose (low density or uncompacted) sandy, water-saturated soils temporarily lose their strength and liquefy by strong ground-shaking due to earthquakes or other rapid loading. The proposed pipeline facilities would be constructed to meet or exceed federal standards, and would be constructed in accordance with International Building Code 2012 (Chapter 16 and Section 1613) and American Society of Civil Engineers 7-10, Minimum Design Loads for Buildings and Other Structures.

Landslides

Landslides involve the downslope mass movement of soil, rock, or a combination of materials on an unstable slope. The proposed Project is within an area consisting primarily of low, rolling topography. Landslide incidence and susceptibility mapping compiled by the USGS for the Project area show that landslide incidence is considered low. In areas with steep side slopes, soils may be unstable and present erosion management problems when disturbed, often requiring various erosion and sedimentation control measures during pipeline construction and operation. Soils on steep slopes are further discussed in B.1.2. Landslide incidence may be more frequent in these areas of steep slopes. About 6.4 percent of the Project, or 0.5 mile, would traverse side slopes greater than 30 percent (see table A-9). Following construction, slopes would be returned to their original contours and vegetation would be reestablished in accordance with the ECS. Additionally, Millennium would implement and monitor erosion and sediment controls as outlined in its ECS to minimize erosion and runoff. Therefore, we conclude that the Project would not increase the risk of landslides.

Subsidence

Ground subsidence is a lowering of the land surface elevation that results from changes that take place underground. Subsidence can range from small, localized areas of collapse to a broad, regional lowering of the ground surface. Common causes of land subsidence include the dissolution of limestone in areas of karst terrain and the collapse of underground mines. Subsidence could also be caused by the pumping of water, oil, and gas from underground reservoirs.

Karst

Karst features such as sinkholes, caves, and caverns form as a result of long-term dissolution of soluble bedrock such as carbonate rocks including limestone, dolomite, and gypsum. Because the Project area is not underlain by bedrock susceptible to dissolution, there would not be hazards from surface subsidence due to karst (USGS 2014b).

Mines

As discussed, there are no active or abandoned coal mines within 0.25-mile of the Project, and as such, there is no potential for land subsidence to mine collapse in the Project area.

Flash Flooding

Bank erosion and/or scour from flash flooding could result in exposure of the pipeline or cause the pipeline to become unsupported. All pipeline facilities are required to be constructed in accordance with 49 CFR 192. To prevent bank erosion and/or scour, following completion of pipeline installation and construction, Millennium would grade all disturbed construction areas back to their original surface contours, excluding areas that would require permanent drainage alteration. In addition, temporary and permanent sediment control devices such as silt fencing, hay bales, and diversion terraces would be installed to prevent bank erosion and scour following completion of the Project. The potential for scour at waterbodies that would be crossed using open-cut methods is discussed in section B.2.2.

Blasting

Blasting is sometimes required for pipeline projects in areas with shallow bedrock. Millennium would attempt to avoid blasting on the proposed Project by breaking apart large stones or bedrock using mechanical rock breaking methods such as mechanically ripping the rock with a backhoe or using a hydraulic hammering attachment operated from a backhoe. Although Millennium does not anticipate that blasting would be required, it has prepared a project-specific Blasting Plan to minimize the effects of blasting and mitigate any impact caused by blasting. Millennium has developed this plan

because blasting could be necessary along western portions of the Project that are located atop the Austin Glen Formation (MP -0.1 to 1.4, including the tap valve and pig launcher facilities) where the depth to bedrock could preclude the use of mechanical methods. Blasting activities would comply with applicable federal, state, and local requirements governing the use of explosives.

With implementation of the mitigation measures identified in Millennium's ECS and Blasting Plan, we conclude that Project impacts by blasting on nearby resources would not be significant; and, given the conditions in the Project area, impacts on geologic resources are not anticipated.

1.2 Soils

Soil information and tables for the proposed Project were developed using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey and Soil Survey Geographic Database (USDA-NRCS 2015a and 2014). The Project area has been glaciated and is characterized by narrow relief valleys bounded by uplands. The Project is within the New England and Eastern New York Upland, Southern Part Major Land Resource Area, with dominate soil orders comprised of Entisols, Histosols, and Inceptisols, which are very deep, somewhat excessively drained to poorly drained, and loamy or sandy (USDA-NRCS 2006). Soils in the Project area are formed in glacial outwash, glacial till deposits, and organic material. Potential impacts on soils from the proposed Project are generally associated with soil limitations and certain soil characteristics, as described below.

Soil Limitations

Soils were grouped and evaluated according to the characteristics that could affect construction or increase the potential for soil impacts during construction. These characteristics include prime farmland, compaction prone and hydric soils, highly erodible soils, and the presence of stones and shallow bedrock. Additional soil-related issues considered in the analysis include revegetation and soil contamination (see table B-1).

U.S. Department of Agriculture Designated Farmland Soils

The USDA-NRCS defines prime farmland as land that has the best combination of physical and chemical characteristics for growing food, feed, forage, fiber, and oilseed crops (USDA-NRCS 2015b). Unique farmland is land, other than prime farmland that is used for production of specific high-yield food and fiber crops. Soils that do not meet all of the requirements to be considered prime or unique farmland may be considered farmland of statewide or local importance if soils are capable of producing high yield crops when treated or managed according to accepted farming methods. About 84.8 percent of land potentially affected by the Project is classified as prime, unique, or locally

important farmland (see table B-1). The proposed pig launcher and permanent access roads PAR-001A and PAR-001B at MP -0.1 would be constructed in prime farmland and farmland of statewide importance. In addition, pipeyard CY-2 is proposed in prime farmland and farmland of statewide importance that would be converted to open land following construction.

Table B-1 Soil Characteristics and Limitations for the Valley Lateral Project (acres)^a					
Facility	Prime, Unique, or Local Farmlands^b	High Compaction Potential/ Hydric Soils^{c,d}	Highly Water Erodible^e	Depth of Bedrock < 5 Feet^f	Low Revegetation Potential^g
Pipeline Right-of-Way and ATWS ^h	89.5	54.6	25.1	23.4	28.9
Access Roads	8.9	5.3	2.1	1.0	2.1
Aboveground Facilities ⁱ	1.8	1.1	1.0	0.1	0.1
Percent of Project Area ^j	84.8	51.7	23.9	20.7	26.4
<p>^a Total acreage does not equal the total impact acreage for the Project as not all soils are classified with limitations and certain soils are classified as having multiple limitations.</p> <p>^b Prime farmland includes soils designated by the USDA-NRCS if drained and/or reclaimed of excess salts and sodium. Totals include 19.3 acres of prime farmland if drained which accounts for 16.4 percent of the Project area.</p> <p>^c Soils categorized as compaction prone include soils with clay loam or finer texture and a drainage class of poor, somewhat poor, and very poor. All soils represented in this category are hydric, but may not have a high compaction potential.</p> <p>^d Hydric soils included soils classified by the USDA-NRCS as being partially hydric and hydric.</p> <p>^e Water erodible soils included soils with a K factor of "High." No highly wind erodible soils would be affected by the Project.</p> <p>^f Shallow bedrock soils included soils which have a depth to bedrock of less than 5 feet (60 inches).</p> <p>^g Soils with low revegetation potential included soils with a capability class of three or greater, a low water capacity, and a slope greater than 8 percent.</p> <p>^h Totals include permanent and temporary impacts associated with the Project (ATWS, pipeyards, and the pipeline right-of-way).</p> <p>ⁱ Totals include the permanent and temporary impacts associated with the pig launcher and receiver facilities and meter station.</p> <p>^j Totals do not equal 100 percent as not all soils are classified with limitations and certain soils are classified as having multiple limitations.</p>					

Millennium would purchase the agricultural land for the tap valve and pig launcher, PAR-001A, and pipeyard CY-2 where the land would be permanently converted to non-agricultural use. To minimize potential impacts on farmland from construction of the proposed Project, Millennium would implement measures outlined in its ECS, our Plan, and NYSDAM’s pipeline construction guidance document on agricultural land (NYSDAM 2011). Topsoil would be segregated from subsoil and would be replaced in the proper order during backfilling and final grading to help ensure post-construction revegetation success. Millennium would remove excess rock or stone

from the topsoil and exposed subsoil of disturbed soils in agricultural areas such that the size, density, and distribution of remaining rock on the construction work area is similar to adjacent non-disturbed areas. Soil compaction in agricultural areas during construction would be minimized or remediated as discussed below.

Soil Compaction and Hydric Soils

Soil compaction modifies the structure of soil and, as a result, alters its strength and drainage properties. Soil compaction decreases pore space and water-retention capacity, which restricts the transport of air and water to plant roots. As a result, soil productivity and plant growth rates may be reduced, soils may become more susceptible to erosion, and natural drainage patterns may be altered. Consequently, soil compaction is of particular concern in agricultural areas and in areas of hydric soils. The susceptibility of soils to compaction varies based on moisture content, composition, grain size, and density of the soil. Soils that form under conditions of extended saturation, flooding, or ponding during the growing season may develop anaerobic conditions in the upper horizon, and are considered to be hydric (59 FR 16835). Due to extended periods of saturation, hydric soils can be prone to compaction and rutting.

To minimize compaction, Millennium would limit off-road traffic to those areas required for construction. Millennium would also implement measures to minimize compaction, such as timber mats, during periods of snowmelt or in saturated soil conditions to the extent practicable. After construction, areas of heavy compaction would be tilled as necessary and affected areas would be graded and restored to original contours prior to final revegetation. In agricultural areas, decompaction would be conducted in accordance with NYSDAM's pipeline construction guidance document (NYSDAM 2011).

Soil Erosion

Soil erosion potential is affected by soil characteristics such as texture, grain size, organic content, slope of the land, and the type and density of vegetative cover. Soils most susceptible to erosion by water typically have bare or sparse vegetative cover, non-cohesive soil particles, such as silt loam soils in the Project area, with low infiltration rates, and are located on moderate to steep slopes. About 23.9 percent of the soils that would be affected by construction of the proposed Project are considered to be highly susceptible to erosion by water (see table B-1); none of the soils are considered to be highly susceptible to erosion by wind. Millennium would minimize erosion impacts during construction by using temporary erosion control devices, such as silt fences and hay bales, in accordance with its ECS. Following construction, permanent erosion control devices, such as slope breakers, would be installed, and vegetation would be established to stabilize the soils and monitored at a minimum through the first and second growing season per Millennium's ECS, which generally adheres to the FERC Plan.

Shallow Depth to Bedrock

Construction through soils with shallow bedrock (bedrock less than 5 feet from the surface) could result in the incorporation of bedrock fragments into surface soils. Shallow bedrock is present along 20.7 percent of the Project (see table B-1). As discussed in section B.1.1, Millennium would attempt to avoid blasting on the proposed Project route by breaking apart large stones or bedrock using mechanical rock trenching methods. In the event that blasting becomes necessary, Millennium would implement its Blasting Plan and would comply with state and local regulations. To the extent practicable, Millennium would remove excess rock or stone from the topsoil and exposed subsoil of all disturbed soils in cultivated and rotated croplands, hayfields, pastures, residential areas, and other areas as requested by landowners, so that the size, density, and distribution of rock in the proposed construction right-of-way would be similar to undisturbed adjacent areas. Excess rock that could not be backfilled would be disposed of in an approved landfill unless approved by landowner for use as slope stabilization or other construction use.

Low Revegetation Potential

Revegetating areas affected by construction of the proposed Project may be more difficult in areas with poor drainage, shallow depth to bedrock, and steep slopes. Additionally, construction activities could affect soil fertility and facilitate the dispersal and establishment of invasive weeds. As shown in table B-1, 26.4 percent of soils that would be affected by Project construction have a low revegetation potential. Where necessary, temporary soil stabilization measures, such as mulching or matting, would be implemented to ensure new vegetation is able to establish. As stated in its ECS, Millennium would only use mulch in wetlands if required in writing by state and federal agencies. Soils disturbed by the Project would be revegetated using a seed mix specified in Millennium's ECS or by landowners and permitting agencies. Millennium would apply mulch, lime, and fertilizer in accordance with its ECS to ensure revegetation success. The final seed mixes should germinate quickly, effectively control erosion, and provide an environmentally beneficial vegetative cover. Where applicable, segregated topsoil would be replaced after the subsoil to ensure post-construction success.

Inadvertent Spills or Discovery of Contaminants

Other potential impacts during construction would include the accidental release of petroleum hydrocarbons or other hazardous materials, as well as the discovery of contaminated soils during trench excavation and grading activities. Soil contamination during construction could result from material spills or trench excavation through pre-existing contaminated areas. Millennium researched environmental databases and identified 14 potentially hazardous sites within 0.25 mile of the Project. Of these 14 sites, 12 sites had no regulatory status or were classified as closed, 1 site was classified as a historic generator with no reported releases or violations, and 1 site (about 1,300 feet

west of MP 7.5) reported a gasoline release that was discovered during underground storage tank removal activities in 2009; records indicate soil and groundwater investigations were conducted.

Millennium would implement its SPRP, which specifies cleanup procedures in the event of an inadvertent leak or spill. If contaminated or suspect soils (such as those that are oil stained) were identified during trenching operations, Millennium would implement its Unanticipated Discovery of Contamination Plan. Work in the area would be halted until an appropriate plan of action is determined based on the type and extent of contamination and local, state, and federal regulations.

Soil Impacts and Mitigation

To minimize impacts on soils, Millennium collocated about 23 percent of the proposed Project with existing rights-of-way. Millennium would implement its ECS, SPRP, Unanticipated Discovery of Contamination Plan, Blasting Plan, Invasive Species Management Plan, and Winter Construction Plan, as well as NASDAM's pipeline construction guidance to minimize impacts on soils associated with the Project. Measures to segregate topsoil from subsoil in non-saturated wetlands, croplands, pastures, hayfields, residential lands, and in areas requested by the landowner would contribute to post-construction revegetation success, and minimize the loss of crop productivity and the potential for long-term erosion problems. We conclude that Millennium's use of its ECS and its adherence to guidance by NYSDAM during construction and restoration would adequately minimize impacts on soils for the proposed Project.

2. Water Resources and Wetlands

2.1 Groundwater Resources

Existing Groundwater Resources

Bedrock aquifers that underlie the Project area are of local extent and generally yield small volumes of water (Olcott 1995). Glacial till deposits in the Project area yield little water because they generally contain fine grained material and are unsorted and unstratified; yields typically range from less than 1 to a few gallons per minute (Olcott 1995).

A system of shallow (surficial), unconsolidated valley-fill glacial aquifers underlie the Project where bedrock formations are overlain by an aquifer system of coarse-grained glacial outwash, ice-contact, and alluvial deposits. Well yields in these aquifers vary from 10 to as much as 3,000 gallons per minute, depending on the aquifer composition (Olcott 1995), and large quantities of groundwater are sourced from these aquifers (Frimpter 1985). In Orange County, New York, wells in sedimentary bedrock aquifers

may provide sufficient water for small domestic supplies. Water quality characteristics show that, while water quality parameters including total dissolved solids vary depending upon the mineral composition of the aquifer, groundwater sourced from wells in Orange County is generally hard, and may contain high levels of dissolved iron and manganese (Frimpter 1985).

Spills of hazardous materials and leaking storage tanks, septic systems, and landfills are the most prevalent groundwater concerns in the state of New York. While many spills are small and quickly contained or cleaned up, the large number of spills and materials involved remain a high concern to the state. Both storage tanks and septic systems also remain a source of concern for the state. Landfills permitted in New York since 1988 have all been lined and the last unlined landfill operating in New York was closed in 2001 (NYSDEC 2012).

Designated Sole Source Aquifers

The EPA defines a sole or principal source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. The proposed Project does not cross any sole source aquifers; however, the New Jersey Fifteen Basin Aquifers system is about 0.5 mile to the southeast of MP 0.0 (EPA 2011). The Project is within the Rutgers Creek and Masonic Creek-Walkkill River subwatersheds, which are both in the Walkill River watershed, a designated recharge zone for the New Jersey Fifteen Basin Aquifers system (Hoffman 1999). Impacts on surface water, including potential impacts on surface water quality, which could affect groundwater quality via aquifer recharge, are discussed in section B.2.2.

Public Water Supply

The proposed Project does not cross primary aquifers; however, the unconsolidated valley-fill glacial outwash aquifers that underlie the Project are considered principal aquifers by the state of New York (New York State Geographic Information System [NYSGIS] 2008). Primary aquifers are highly productive aquifers used as sources of water by major municipal water systems. Principal aquifers are known to be highly productive or have geology suggesting abundant potential water supply, but are not intensively used as sources of water supply by major municipal water systems (NYSDEC 1990). Table B-2 identifies the principal aquifers that would be crossed by the Project, by milepost. In consultation with the Towns of Unionville and Wawayanda, New York, Millennium identified a public water supply well about 3.3 miles southeast of MP 0.0 in Unionville and identified multiple public water supply wells in the Project vicinity in Wawayanda, with the nearest about 0.6 mile southeast of MP 5.8. Public and private drinking water wells were not identified within 150 feet of the proposed Project.

Table B-2 Principal Aquifers Crossed by the Valley Lateral Project				
Aquifer Type	Start Milepost	End Milepost	Approximate Depth to Groundwater (feet)^a	Average yield^b
Pipeline				
Kame, Kame Terrace, Kame Moraine, Outwash or Alluvium	4.2	4.5	0-100	Unknown
Unconfined, Mid Yield	5.5	6.5	0-100	10-100
Unconfined, Mid Yield	7.5	7.8	0-100	10-100
Meter Station Piping				
Unconfined, Mid Yield	N/A	N/A	0-100	10-100
Source: NYSDEC 2008, Olcott 1995, Frimpter 1985				
^a The depth to groundwater (the depth to the water table) in Orange County is typically within 100 feet of the land surface.				
^b Represented in gallons per minute.				

Source Water Protection Areas

New York State’s Source Water Assessment Program (SWAP) is implemented by the New York State Department of Health (NYSDOH). The SWAP identifies sources of water used by public water systems and the drainage areas that supply these source waters (NYSDOH 1999). Based on data provided by the NYSDOH, the proposed Project crosses five public groundwater supply SWAP areas (see table B-3). In addition, the southwest corner of proposed permanent access road PAR-001A and contractor yard CY-2 are within a groundwater supply SWAP area. No proposed permanent aboveground facility is within a SWAP area; however, the proposed pig launcher facility is about 11 feet north of the nearest SWAP. The pig receiver would be about 0.4 mile west of the nearest SWAP area, and the proposed meter station would be about 0.3 mile west of the nearest SWAP area (NYSDOH 2015).

Groundwater Impacts and Mitigation

Construction of the pipeline would generally require the excavation of a trench between 5 and 15 feet in depth to allow for appropriate soil cover. In areas where the water table is near the surface, groundwater could sustain minor impacts from temporary changes in overland water flow and recharge from trenching, backfilling, and clearing and grading of the right-of-way. Soil compaction from construction could reduce the ability of the soil to absorb water, thereby reducing groundwater recharge. Construction,

operation, and maintenance of the facilities would not be expected to have significant or long-term impacts on groundwater resources with implementation of Millennium’s ECS.

Table B-3		
Source Water Assessment Program Areas Crossed by the Valley Lateral Project		
Begin MP	End MP	Length^a
1.9	2.3	0.4
3.1	3.4	0.2
4.0	5.5	1.5
5.1	6.8	1.7
5.5	5.7	0.2

^a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

An inadvertent spill of fuel or hazardous materials during refueling or maintenance of construction equipment could also affect groundwater if not cleaned up appropriately. Contaminated soils could continue to leach contaminants to groundwater long after a spill has occurred. To minimize the risk of potential fuel or hazardous materials spills, Millennium would implement its SPRP, which includes spill prevention measures, mitigation measures, and cleanup methods to reduce potential impacts should a spill occur. If Millennium encounters contaminated soil or groundwater during construction, it would implement the measures in its Unanticipated Discovery of Contamination Plan, included in its ECS. Millennium would stop work, identify the type and extent of contamination, and develop a response action in adherence to applicable regulations. This Project would not necessitate storage or collection of condensate at the aboveground facilities.

Millennium would implement its SPRP, which prohibits refueling and storage of hazardous materials within 200 feet of identified active private water wells and 400 feet of public water supply wells. Blasting is not currently anticipated for the proposed Project; however, if it were required, Millennium would follow the procedures outlined in its Blasting Plan. Millennium did not identify any drinking water wells within 150 feet of the Project; however, in the event that impacts on private wells occur as a result of construction, Millennium would provide an alternative water source, repair any permanent damage, or otherwise compensate landowners.

To avoid or minimize potential impacts, Millennium would comply with its SPRP, and the measures in its ECS. Therefore, we conclude the Project would not result in significant long-term or permanent impacts on groundwater resources in the Project area.

2.2 Surface Water Resources

Existing Surface Water Resources

Millennium conducted field surveys of the Project area in 2015 to identify wetlands and waterbodies crossed by the proposed Project. The Project is within the Rutgers Creek (hydraulic unit code [HUC] 020200070206) and Masonic Creek-Walkkill River (HUC 020200070401) subwatersheds. The pipeline would require crossing seven perennial, four intermittent, and one ephemeral waterbodies. One perennial and four intermittent waterbodies would be crossed by Project access roads. In addition, one ephemeral waterbody would be within the construction workspace for permanent access road PAR-002, and also extends into the construction workspace for the meter station piping (see appendix D).

Perennial waterbodies flow or contain standing water year-round and are typically capable of supporting populations of fish and macroinvertebrates. Intermittent waterbodies contain water seasonally, and are typically dry for part of the year. Ephemeral waterbodies generally contain water only in response to surface runoff and rising water tables following precipitation or spring snowmelt. Information on each waterbody crossing for the proposed Project, including name, water quality classification, flow regime, crossing width, and crossing method is provided in appendix D. Maps depicting the waterbody crossings are provided in appendix A.

Of the 19 total proposed waterbody crossings and waterbodies in workspaces, 13 are classified as minor (less than 10 feet wide) and 6 are classified as intermediate (10 to 100 feet wide); no major waterbodies (those greater than 100 feet) would be crossed by the Project (see appendix D). Portions of the pipeline would also cross 100-year floodplains and may be prone to flash flooding.

Sensitive Waterbody Crossings

The proposed Project would not cross designated High Quality or Exceptional Value waterbodies, or state or federal wild and scenic rivers. The workspace for the meter station piping and permanent access road PAR-002 would affect one ephemeral tributary that is listed as a 303(d) impaired water requiring a total maximum daily load (TMDL) in association with Monhagen Brook. Millennium would use erosion controls in accordance with its ECS to minimize runoff to the tributary during construction. The Project would cross two fisheries of special concern (trout fisheries), which are discussed in section B.3.2.

Surface Water Intakes and Source Water Protection Areas

No potable surface water intakes are within 3 miles downstream of any Project waterbody crossing, and the Project does not cross source water protection areas for

surface water (NYSDOH 2015). The Project would not cross SWAPs designated for surface water protection.

Floodplains

The Project would cross the Federal Emergency Management Act (FEMA) 100-year floodplain at the locations shown in table B-4. According to FEMA, these floodplains have a 1 percent annual chance of a flood event (2015). Construction of the Project pipeline and associated tap valve would impact approximately 33.4 acres of land within the within the 100-year floodplain for Rutgers Creek and Masonic Creek-Walkkill River. Per the requirements of Executive Order (EO) 11988 on Floodplain Management, we analyzed the total permanent (operational) footprint of the Project pipeline and tap valve relative to the total acreage of the impacted floodplains and conclude that there would be an insignificant permanent loss of floodplain storage due to operation of the Project pipeline facilities. In addition, based on Millennium’s proposed construction techniques and mitigation measures contained in their ECS, we conclude that construction of the Project pipeline facilities and tap valve would not significantly impact the Rutgers Creek and Masonic Creek-Walkkill River 100-year floodplain.

Table B-4 100-Year Flood Zones Crossed by the Valley Lateral Project		
Begin Milepost	End Milepost	Length (miles)
-0.0	0.4	0.4 ^a
0.4	0.7	0.3
0.9	0.9	<0.1
0.9	0.9	<0.1
0.9	1.0	0.1
1.2	2.0	0.8
2.5	3.0	0.5
3.0	3.1	0.1

Source: FEMA 2015

^a This crossing length captures 50-foot crossing of the 100-year flood zone by the piping associated with the tap valve.

Surface Water Impacts and Mitigation

The proposed pipeline route includes 12 waterbody crossings. Millennium proposes to cross each waterbody using conventional bore, HDD, or a dry ditch (dam-and-pump or flume) method if perceptible flow is present at the time of crossing. The crossings of intermittent waterbodies that do not have flowing water at the time of construction may be crossed with upland construction methods. Millennium would

construct waterbody crossings in accordance with state and federal permits, and its ECS. Typical waterbody crossing methods are described in section A.7.2.

Millennium would install erosion controls in accordance with its ECS to minimize impacts during construction. Trench spoil would be placed at least 10 feet from the waterbody edge for use as backfill, and temporary erosion controls would be installed to prevent migration of trench spoil into the waterbody.

In accordance with its ECS and DOT requirements, Millennium would install the pipeline with a minimum cover of 3 feet between the streambed and the top of the pipeline, except in consolidated rock, where a minimum of 2 feet of cover would be required. However, to minimize the potential for impacts to the pipeline from streambed scour in perennial waterbodies, Millennium analyzed the maximum scour depth for each perennial crossing including Indigot Creek (MP 2.6) and three crossings of Catlin Creek (MP 2.8, 3.9, and 4.1). The estimated scour depth for these waterbodies ranged from 1.8 to 4.9 feet, and Millennium proposed to further increase the depth of burial at these locations to 5 feet. However, based on a maximum estimated scour depth of 4.8 and 4.9 feet for Indigot Creek (MP 2.6) and Catlin Creek (MP 3.9), respectively, we conclude that a burial depth of 5 feet at these locations would not be sufficient over the long-term. Therefore, **we recommend that:**

- **Prior to construction, Millennium should file with the Secretary of the Commission (Secretary), for review and written approval by the Director of the Office of Energy Projects (OEP), revised plan and profile drawings for the pipeline crossings of Indigot Creek (MP 2.6) and Catlin Creek (MP 3.9), that demonstrate maintenance of the minimum regulatory burial depth (49 CFR 195.248) below the estimated scour depth for these waterbodies.**

The depth of burial at waterbodies crossed by HDD would be significantly deeper than the minimum requirement (at least 24 feet deep). In addition, the pipeline would be maintained in accordance with DOT pipeline standards in 49 CFR 192, which include requirements for monitoring pipeline conditions.

Pipeline construction could result in temporary impacts on water quality due to increased turbidity from construction in or near flowing surface waters. The highest levels of sediment would be generated by use of the wet open-cut method; however, this crossing method is not proposed for use. Where waterbodies are crossed via HDD or conventional bore, direct impacts on the bed and banks of the waterbody would generally be avoided. In order to evaluate the feasibility of HDD, Millennium drilled a total of six soil borings, and conducted a borehole stability analysis for each crossing. The results of this analysis showed that HDD construction at these locations is feasible, with minimum chance for a release of drilling fluids. However, if an inadvertent release of HDD drilling fluid occurs within a waterbody, the resulting turbidity could temporarily affect water

quality. Millennium would implement the measures in its HDD Plan, which addresses measures for prevention, detection, required notifications, and mitigation for inadvertent releases. In the event an inadvertent release enters a flowing waterbody, Millennium would work to stop the flow and isolate the release, and would develop a clean-up plan based on site-specific conditions, in consultation with appropriate agencies. In addition, Millennium's adherence to measures in its SPRP, including locating hazardous material storage and equipment refueling activities at least 100 feet from waterbodies, would reduce the potential for hazardous materials to enter waterbodies.

After installation of the pipeline, Millennium would replace the excavated spoil in the trench and restore the streambed and banks as close as practicable to their pre-construction contours. During final restoration, Millennium would seed stream banks and riparian areas with conservation grasses and legumes or native plant species in accordance with applicable agency requirements and Millennium's ECS. Where flow conditions or waterbody bank conditions would not allow for stabilization via revegetation, Millennium would implement additional measures, such as the use of riprap from the construction work area to stabilize waterbody banks, in consultation with NYSDEC.

ATWS would be located in accordance with Millennium's ECS per the requirements of FERC's Procedures unless otherwise requested by Millennium and approved in advance by the FERC. Where Millennium requests a deviation from FERC's Procedures regarding the location of ATWS within 50 feet of waterbodies as identified in appendix C, Millennium would install sediment and erosion controls per its ECS to minimize the potential for impacts on the waterbody. At HDD crossings, Millennium would designate at least one EI to monitor HDD activities and to be present where ATWS is within 50 feet of a waterbody. We have reviewed the justifications for these deviations and find them acceptable.

The temporary access roads required for construction of the pipeline would require waterbody crossings (see appendix D). Waterbodies would be crossed using a span or mat bridge. Where existing culverts occur, they would be used to maintain waterbody flow and crossed using temporary mats if necessary. Millennium would restore temporary access roads to pre-construction conditions. Permanent access roads would use existing roadways when available. Where PAR-002 would be adjacent to an unnamed tributary to Monhagen Brook for less than 100 feet, Millennium would implement erosion control measures to avoid sedimentation of the waterbody and install a culvert as needed to maintain flow. With implementation of Millennium's ECS as well as applicable permit conditions, we conclude Millennium would minimize and mitigate impacts on surface waters and these impacts would not be significant.

Hydrostatic Testing

In accordance with DOT regulations, Millennium would conduct hydrostatic testing of the pipelines prior to placing them into service. Hydrostatic testing is a method by which water is introduced to segments of pipe and then pressurized to verify the integrity of the pipeline. Millennium would use commercially supplied water, totaling about 811,000 gallons for both hydrostatic testing (about 421,000 gallons) and HDD activity (about 390,000 gallons), as shown in table B-5, to avoid impacts on surface waters. No chemicals would be added to the test water prior to use. In the event that Millennium is unable to acquire the necessary volume of water through commercial sources and must supplement with surface water, the total volume of water that would be withdrawn would be less than the NYSDEC-permitted threshold of 100 thousand gallons per day and 3 million gallons in a 30-day period. Millennium would use a screen around the intake to prevent fish and macroinvertebrates for becoming trapped. Upon completion of installation of all pipe, the pipeline would be tested in one segment.

Table B-5				
Total Water Use for Construction of the Valley Lateral Project				
Facility/Activity	Estimated Volume Uptake (gallons)	Activity Start Milepost	Activity Discharge Milepost	Estimated Discharge Volume (gallons)
Pipeline				
Tap valve piping	3,000	-0.1	-0.1	3,000
Spread 1, test section 1	405,000	-0.1	-0.1	405,000
Rutgers Creek HDD operations	30,000	1.3	1.1	30,000
Rutgers Creek HDD hydrostatic test	100,000	0.8	0.8	100,000
Ridgebury Hill Road and Catlin Creek HDD operations	30,000	5.6	5.6	30,000
Ridgebury Hill Road and Catlin Creek HDD hydrostatic test	100,000	6.1	6.4	100,000
Interstate Highway 84 HDD operations	30,000	7.8	7.8	30,000
Interstate Highway 84 HDD hydrostatic test	100,000	7.3	7.3	100,000
Aboveground Facilities				
Meter Station	7,500	7.8	7.8	Pumped to tank
Meter Station Piping	5,500	7.8	7.8	Pumped to tank
Total	811,000			798,000

Test water for the new pipe would be discharged to a well-vegetated upland area along the pipeline at the locations shown in table B-5, through an energy-dissipating device, to prevent erosion. Test water used for the meter station and associated lateral would be collected and discharged off-site at an approved treatment facility. Environmental impacts from the discharge of test water would be minimized by implementing measures outlined in Millennium's ECS and in accordance with FERC Procedures, such as regulating the discharge rate and installing sediment barriers. Therefore, we conclude impacts from discharge of hydrostatic test water would be temporary, minor, and not significant.

2.3 Wetlands

The U.S. Army Corps of Engineers (COE) and EPA jointly define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (COE 1987). We define a wetland as any area that is not actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology presented in the COE's Wetland Delineation Manual (1987) and the associated regional supplement (COE 2012) for identifying and delineating wetlands. Wetlands generally include swamps, marshes, bogs, and similar areas.

Existing Wetland Resources

Wetlands crossed by the proposed Project were field delineated by Millennium in 2015 following the COE Wetlands Delineation Manual and Northcentral and Northeast regional supplement (COE 1987, COE 2012). Millennium conducted field surveys to identify wetlands in the Project area in May, July, and September 2015. Environmental surveys are complete on 96 percent of the pipeline route; survey access is not available for the remainder of the route. Within the areas where survey permission has not been granted, no National Wetlands Inventory (NWI) or NYSDEC wetlands were identified during a review of available data.

A total of 23 wetlands totaling 1.9 acres would be crossed by the pipeline and meter station piping (see appendix E). Wetland types were assigned using the NWI classification system (Cowardin et al. 1979). Palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) wetlands were documented in the Project area. PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens; PSS wetlands contain emergent vegetation with woody vegetation less than 20 feet tall; and PFO wetlands are dominated by hydrophytic tree species at least 20 feet tall.

Wetlands are further classified in New York's Freshwater Wetlands Act, the goal of which is to preserve, conserve, and protect freshwater wetlands for the benefit and

development of New York State. To be protected under New York’s Freshwater Wetlands Act, a wetland must be at least 12.4 acres in size. Smaller wetlands may be protected if considered of unusual local importance. Millennium completed a field visit with NYSDEC staff to verify NYSDEC wetland classifications provided in appendix E. The Project would cross Class II and Class III wetlands, as well as wetlands eligible for protection that have not been classified. Class II and III wetlands meet any of the cover type, ecological associations, special features (such as habitat for listed, vulnerable or rare animal and plant species, archaeological significance, or association with an unusual geological feature), or hydrological and pollution control features (such as sewage treatment capacity, hydrological connection to an aquifer designated as potentially useful water supply, or receiving significant pollution that could be treated by wetlands), or distribution and location characteristics (such as location within an urbanized area or publically owned land, or visibility from a highway, parkway, scenic highway or passenger railroad) defined in 6 New York Codes, Rules, and Regulations Part 664. Where practicable, Millennium would avoid impacts on NYSDEC Class II and III PFO wetlands by using conventional bore or HDD construction methods (see appendix E).

Wetland Impacts and Mitigation

Construction of the Project would impact about 1.9 acres of wetlands, including about 0.1 acre of PFO wetland, 0.5 acre of PSS wetland, and 1.3 acres of PEM wetland (see table B-6). All wetland impacts would be within the right-of-way and ATWS for the proposed pipeline. Five wetlands are within the proposed construction workspace for permanent and temporary access roads; Millennium would install erosion controls to minimize sedimentation. No direct wetland impacts would result from construction of temporary or permanent access roads.

Table B-6 Wetland Impact Summary of the Valley Lateral Project		
County/ NWI Classification^a	Wetland Area Affected During Construction (acre)^b	Wetland Area Affected During Operation (acre)^c
PFO	0.1	0.1
PSS	0.5	0.2
PEM	1.3	0.4
Project Total	1.9	0.8
^a NWI wetland types: PFO = palustrine forested; PSS = palustrine scrub-shrub; and PEM = palustrine emergent. ^b The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. ^c Operational impacts include the total acreage of wetlands within the permanent right-of-way. Although 0.12 acre of PFO would be within the permanent right-of-way, only 0.07 acre would be permanently maintained as PEM/PSS wetland. Millennium does not anticipate maintenance mowing in PEM/PSS areas beyond a 10-foot-wide area centered over the pipeline.		

Wetlands within the permanent right-of-way for the proposed pipeline include about 0.4 acre of PEM and 0.1 acre of PFO wetlands. In addition, 0.2 acre of PSS wetland is within the pipeline right-of-way for proposed piping between the proposed pig receiver site and the meter station. Operation of the pipeline would require right-of-way maintenance that would result in the permanent conversion of less than 0.1 acre of forested wetlands to PEM/PSS wetlands. Table B-6 summarizes impacts of the proposed Project on wetlands. Detailed information regarding each wetland that would be crossed by the Project is included in appendix E.

The primary impact of Project construction on wetlands would be the potential alteration of wetland vegetation due to clearing, excavation, rutting, compaction, and mixing of topsoil and subsoil. Construction could also affect water quality within wetlands due to sediment loading or inadvertent spills of fuel or chemicals. Temporary construction impacts on wetlands could include the loss of vegetation; soil disturbance associated with grading, trenching, and stump removal; and changes in the hydrological profile. Impacts on PFO wetlands could also include long-term or permanent conversion to PEM and/or PSS wetland types through tree removal. In the case of conversion of wetland vegetation type, no permanent loss of wetlands would occur, but functional changes to the wetland community would result.

Impacts on wetlands would be greatest during and immediately following construction. The majority of these effects would be short-term in nature and would cease when, or shortly after, the wetlands are restored and revegetated. Following revegetation, the wetland would eventually transition back into a community with functionality similar to that of the pre-construction state. In emergent wetlands, the herbaceous vegetation would regenerate quickly (typically within 1 to 3 years). Millennium would cross wetlands in accordance with state and federal permits and its ECS, which incorporates measures from our Procedures. The wetland crossing method would depend on site-specific conditions present during construction, as discussed in section A.7.2.

Millennium would avoid direct impacts on wetlands by crossing about 650 feet of wetlands using HDD and conventional bore construction methods. However, if an inadvertent release of HDD drilling fluid occurs within a wetland, temporary impacts on wetland vegetation and hydrology would occur. Millennium would implement the measures in its HDD Plan, which addresses measures for prevention, detection, required notifications, and mitigation for inadvertent release as discussed in section B.2.2.

Certain ATWS requested for use during construction would be adjacent to or within wetlands in areas requiring special construction techniques, such as steep side slope construction or near HDDs (see appendix B). Where Millennium has requested a deviation from our Procedures regarding the placement of ATWS, erosion and sediment controls would be installed in accordance with the ECS to minimize wetland impacts. In standing water or saturated soils, timber mats or similar devices would be used to

minimize impacts from rutting and compaction. Millennium would designate at least one EI to monitor construction activities where ATWS is within 50 feet of a wetland. We have reviewed the justifications for these deviations and find them acceptable.

Where soils are stable and are not saturated at the time of crossing, the pipeline would be installed using methods similar to those in uplands. Tree stumps and root systems would be removed from areas directly over the trenchline. In the absence of safety-related construction constraints, stumps and root systems would be left in place in the remainder of the construction right-of-way. Millennium would segregate the topsoil up to one foot in depth in wetlands where hydrologic conditions permit. Segregated topsoil would be stockpiled separately from the subsoil and would be placed in the trench following subsoil backfilling. Millennium would restore and monitor wetland crossings in accordance with its ECS. Unless standing water is present, wetlands would be seeded with annual rye grass and other species as described in the ECS. In addition, all PFO wetlands disturbed by the Project would be seeded with a native wetland seed mix as identified in Millennium's ECS. Saturated wetlands include those with standing water or completely saturated soils at the time of construction. Topsoil segregation is generally not practical in saturated wetlands. Otherwise, construction would be similar as described for unsaturated wetlands. Saturated wetlands would be crossed using timber mats to avoid rutting.

During field surveys, Millennium identified two man-made drainage swales that would be crossed by the Project as wetlands. Flowing water was not present at the time of the surveys. Wetland W-AY would be crossed by an access road using an existing culvert. Wetland W-AA would be crossed by the pipeline. During construction, Millennium would temporarily block man-made drainages or install a flume if necessary to allow water flow while preventing downstream sedimentation.

Millennium would minimize wetland impacts by implementing the construction and mitigation measures outlined in its ECS and adhering to applicable permit requirements. In addition, Millennium plans to use bore or HDD methods to avoid impacts on multiple wetlands. General construction and mitigation measures from Millennium's ECS include:

- limiting construction right-of-way width in wetlands to 75 feet;
- limiting construction equipment in wetlands to that needed to clear the right-of-way, excavate the trench, fabricate the pipe, install the pipe, backfill the trench, and restore the right-of-way;
- installing sediment barriers prior to ground disturbance near wetlands;
- minimizing the length of time that topsoil is segregated and the trench is open;

- stabilizing the right-of-way with timber mats, prefabricated equipment mats, or terra mats;
- using low ground weight equipment or operating equipment on timber matting, prefabricated equipment mats, or terra mats on saturated soils or where standing water is present;
- installing trenchline barriers and/or sealing the trench bottom as necessary to maintain the original wetland hydrology;
- prohibiting the use of lime, fertilizer, or mulch during the restoration of wetlands unless required in writing by federal and state agencies;
- seeding wetland areas with seed mixes consistent with NYSDEC recommendations and Millennium's ECS; and
- limiting vegetation maintenance on the operational right-of-way in wetlands to a 10-foot-wide herbaceous corridor centered over the pipeline and the cutting and removal of trees and shrubs greater than 15 feet in height that could impact the pipeline coating.

With implementation of these minimization and mitigation measures, we conclude that wetland impacts associated with the construction and operation of the Project would not be significant and would be in compliance with applicable permit conditions.

3. Vegetation, Aquatic Resources, and Wildlife

3.1 Vegetation

Existing Vegetation Resources

Construction and operation of the Project would affect the following general vegetative cover types: agricultural land, upland forested land, open land (including existing rights-of-way, pasture, and non-forested uplands including open fields and shrublands), forested wetlands, and non-forested wetlands (see table B-7). Impacts on developed lands (including commercial/industrial and residential land) and agricultural lands are discussed in section B.5.1 and wetlands are discussed in B.2.3.

Table B-7 Acreage of Construction and Operation Impacts of the Valley Lateral Project on Vegetation ^a												
Facility	Agricultural		Forested		Open Land		Forested Wetlands		Non-Forested Wetlands ^b		Total	
	Con ^c	Op ^d	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Pipeline Facilities												
Pipeline ROW ^{c, d}	35.6	24.2	16.9	11.4	4.1	2.8	0.1	0.1	0.8	0.5	57.5	38.9
ATWS	20.9	0.5 ^e	5.0	0.0	2.4	0.0	0.0	0.0	0.8	0.0	29.1	0.5
<i>Pipeline Subtotal</i>	56.5	24.7	21.9	11.4	6.4	2.8	0.1	0.1	1.6	0.5	86.5	39.4
Access Roads	6.7	1.8	1.2	0.1	0.6	0.0	0.0	0.0	0.0	0.0	8.5	1.9
Pipeyards	8.0 ^f	8.0 ^f	1.6 ^f	1.6 ^f	0.0	0.0	0.0	0.0	0.0	0.0	9.6	9.6
Aboveground Facilities												
Pig Launcher/Tap Valve	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Pig Receiver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meter Station	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meter Station Piping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2
<i>Aboveground Facilities Subtotal</i>	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3
Project Total	71.3	34.7	24.8	13.1	7.1	2.8	0.1	0.1	1.8	0.7	105.3	51.6
^a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. ^b Non-forested wetlands include PEM and PSS wetlands. ^c Con = Construction. Construction impact acreages are based on a temporary right-of-way between 75 and 135 feet. Impacts do not include the area between HDD entry and exit points, where impacts would be limited to hand-clearing a maximum 10-foot-wide footpath. ^d Op = Operation. The operational footprint is based on a 50-foot-wide permanent right-of-way in uplands and wetlands. However, Millennium does not intend to maintain the permanent right-of-way in non-forested wetlands and would only maintain a 30-foot-wide area (centered over the pipeline) within forested wetlands; therefore, actual impacts on wetlands during operation may be less. ^e This permanent impact is associated with a parcel that Millennium plans to purchase as described in section A.5.1. ^f Millennium has purchased the property for pipeline CY-2, which includes 8.0 acres of agricultural land and 1.6 acres of forested uplands. Millennium would convert the agricultural land to open land, but would retain the trees; therefore, no permanent impact on forested acreage within pipeyard CY-2 would occur.												

Forested areas in the proposed Project area have been previously disturbed by agriculture, logging, and existing rights-of-way, creating early successional forest cover types (Birch 1996). Early successional forests are composed of young, early-colonizing tree species and lack a closed, mature tree canopy. Species documented during field surveys included red oak, white oak, red maple, green ash, shagbark hickory, black cherry, river birch, eastern cottonwood, American beech, sugar maple, and American hop hornbeam. Other common tree species in the Western Allegheny Plateau Ecoregion include tulip poplar, basswood, buckeye, and eastern hemlock (Bailey 1995). Construction of the pipeline would disturb about 21.9 acres of forested upland, of which 11.4 acres would be within the maintained right-of-way. Millennium's purchase of pipeyard CY-2 would include 1.6 acres of upland forest; Millennium would not clear forested land at pipeyards (see table B-7).

The pipeline would disturb 6.4 acres of open land, of which 2.8 acres would be maintained as permanent right-of-way. Field surveys conducted by Millennium within open land habitats commonly identified native grass and herbaceous species including field horsetail, stinging nettle, southern crabgrass, dandelion, Canada goldenrod, Kentucky bluegrass, silky dogwood, gray dogwood, and possumhaw. An additional 22 non-native species were observed in open lands within the survey corridor, including 10 non-native, invasive species classified as "prohibited" from sale, import, purchase, transport, introduction, or transport by the State of New York (NYSDEC 2014). Noxious and invasive weeds are further discussed below.

Construction of access roads would affect 6.7 acres of agricultural land, 1.2 acres of upland forest, and 0.6 acre of open land; no impacts on wetlands would occur from access roads. Use of permanent access roads would result in the conversion of 1.8 acres of agricultural land and 0.1 acre of upland forest for the life of the Project. Construction and operation of the proposed pig launcher would affect 0.2 acre of agricultural land; construction of the buried pipeline between the pig receiver and meter station would affect 0.2 acre of wetland during construction and operation. Wetland impacts are addressed in detail in section B.2.3.

Vegetation Communities of Special Concern

Millennium consulted with the U.S. Fish and Wildlife Service (FWS) and the New York Natural Heritage Program (NYNHP) to determine the presence of sensitive or protected vegetation within the Project area (NYNHP 2015). No vegetation communities of special concern were identified in the Project area during either agency consultations or field surveys (NYSDEC 2015b, FWS 2015a, FWS 2015b). Threatened or endangered species are discussed in section B.4.

Noxious and Invasive Weeds

Noxious or invasive plant communities can out-compete and displace native plant species, thereby negatively altering the appearance, composition, and habitat value of

affected areas. Plant species identified as noxious and invasive by the NYSDEC were observed within the Project area during Millennium's field surveys, including Canada thistle, common buckthorn, common reed, common wormwood, garlic mustard, Japanese barberry, multiflora rose, purple loosestrife, spotted knapweed, and tartarian honeysuckle (NYSDEC 2014).

Vegetation Impacts and Mitigation

The proposed Project would affect 105.3 acres of vegetation during construction; 51.6 acres would be within the operational footprint of the Project. Table B-7 summarizes the temporary construction and permanent operational impacts of the Project on each vegetation community type. Impacts on developed lands are discussed in section B.5.1.

Prior to construction, the pipeline right-of-way and workspaces would be cleared of vegetation to the extent necessary to allow for safe working conditions. Millennium may hand-clear small-diameter vegetation in heavily vegetated areas along the path for laying the telemetry cable where the HDD entry and exit points. Where possible (for example, in temporary construction workspaces), tree stumps and roots would be left in place to facilitate natural revegetation. Cleared timber and vegetation would be burned, chipped, or sold in accordance with landowner preferences and local ordinances. Erosion and sedimentation controls would be installed according to Millennium's ECS following soil disturbance.

During construction and operation of the Valley Lateral Project, Millennium would use existing access roads to the maximum extent possible; however, 10 temporary access and 3 permanent roads would be used, including 6 existing and 5 new roads. In addition, two access roads use existing roads for a portion of their length, and require construction of new road for a portion of their length. The three permanent access roads would be used for access to aboveground facilities at MP -0.1 and 7.8. Millennium would also use ATWS and pipeyards to support construction of the Project. Vegetated areas within ATWS and temporary access roads would be returned to pre-Project conditions and allowed to revegetate after construction. Millennium would purchase a 9.6-acre pipeyard (CY-2) and convert 8.0 acres of those acres from agricultural to open land for the life of the Project. The remaining 1.6 acre of upland forest within pipeyard CY-2 would not be cleared.

During operation, maintenance of the permanent pipeline right-of-way would be necessary to allow for visibility and access for pipeline monitoring and maintenance activities. In upland areas, the permanent right-of-way would be 50 feet wide. Routine mowing would be conducted no more frequently than once every 3 years across the entire width of the right-of-way in uplands; however, a 10-foot-wide corridor centered on the pipeline could be mowed at a frequency necessary to allow for periodic pipeline surveys. In wetlands, as discussed in section B.2.3, vegetation maintenance on the operational right-of-way would be limited to a 10-foot-wide herbaceous corridor centered over the

pipeline and the cutting and selective removal of trees within 15 feet of the pipeline with roots that may compromise the pipeline integrity.

Community-Specific Impacts

Impacts on forest vegetation from construction of the Project would be long-term. Re-growth of trees to pre-construction condition would take 20 to 30 years for many species, such as green ash. Hardwood species, such as oaks, could take more than 50 years to reach maturity. Upland forest vegetation in the permanent right-of-way would be maintained in an herbaceous state through the operational life of the Project.

The term “edge effect” is commonly used in conjunction with the boundary between natural habitats, especially forests, and disturbed or developed land, such as pipeline corridors. Where land adjacent to a forest has been cleared, creating an open/forest boundary, sunlight and wind penetrate to a greater extent, resulting in tree destabilization from increased wind shear, drying out of the interior of the forest near the edge, encouraging growth of opportunistic species at the edge, and changing air temperature, soil moisture, and light intensity (Murcia 1995). Fragmentation of forested areas can result in changes in vegetation (for example, invasion of shrubs along the edge). As currently designed, about 23 percent of the new pipeline would be adjacent to existing rights-of-way; construction adjacent to existing rights-of-way minimizes fragmentation.

For non-forested vegetation types, including agricultural lands, open lands, and non-forested wetlands, impacts associated with construction of the pipeline would generally be temporary or short-term. Agricultural lands generally return to crop production the season following construction. Herbaceous areas would return to their vegetative cover within 1 to 3 years, and shrub-scrub areas would return to their vegetative cover within 3 to 5 years’ post-construction. To facilitate revegetation, Millennium would re-seed disturbed areas using seed mixes in accordance with NYSDEC recommendations and measures described in its ECS, unless otherwise specified during landowner consultation or by permit requirements (NYSDEC 2005). Before a permanent vegetation cover is established within the right-of-way, Millennium would use a seasonal variety of ryegrass, depending on the time of year and in accordance with its ECS.

Mitigation

To minimize direct and indirect impacts on vegetative communities from construction and operation of the Project, Millennium would implement the measures in its ECS and Invasive Species Management Plan, including:

- minimizing vegetative clearing through collocation with existing rights-of-way where practicable (about 23 percent of the proposed route; 0.6 mile of the proposed route would have a 35-foot right-of-way overlap with existing rights-of-way);

- using existing roads for access to the Project where practical;
- installing temporary erosion control measures, such as slope breakers, sediment barriers, and mulch;
- visually inspecting agricultural lands to ensure that crop growth and vigor in areas affected by construction is similar to those of adjacent portions of the same field, or as otherwise agreed to by the landowner; and
- monitoring and reporting to FERC to document the status of revegetation until deemed successful.

After construction has been completed, Millennium would monitor revegetation success within all construction workspaces. Revegetation would be considered successful if the density and cover of non-nuisance vegetation were similar in density and cover to adjacent undisturbed lands, or in accordance with any state or local permit requirements.

Millennium would follow the measures included in the FERC Plan to control the spread of noxious weeds and invasive plant species. In accordance with Millennium's ECS, its Invasive Species Management Plan, and per the FERC Plan, in the event that invasive plants species spread to areas of the right-of-way where they were not present prior to construction, Millennium would remove invasive species either by hand-pulling or use of approved herbicides, in coordination with landowners and as recommended by applicable federal and state agencies. Herbicides would only be used to control invasive species in wetlands if approved by applicable agencies. Inspections would take place after the first and second growing seasons and continue until the disturbed areas are adequately restored.

Based on the types and amounts of vegetation affected by the Project and Millennium's proposed avoidance, minimization, and mitigation measures to limit Project impacts, we conclude that impacts on vegetation from the proposed Project would not be significant.

3.2 Aquatic Resources

Freshwater waterbodies in New York are classified as either coldwater or warmwater and given letter classifications under regulation 6, New York Code of Rules and Regulations, Part 701 which denote their best use: AA, A, B, C, and D (NYSDEC 2015c). Freshwater classes AA, A, B, and C are all suitable for fish, shellfish, and wildlife propagation and survival. To be classified as a coldwater fishery the water temperature must be below 70 degrees Fahrenheit and contain a high oxygen content; Millennium did not identify any warmwater waterbodies near the Project.

The pipeline would cross seven Class C waterbodies and two waterbodies classified as C(T) streams (see appendix D). Class C waterbodies are capable of supporting fisheries and are suitable for non-contact activities; the (T) indicates that the waterbodies may support trout populations. Field surveys identified 3 ephemeral, 8 intermittent, and 8 perennial waterbody crossings within the Project workspace, 12 of which would be crossed by the pipeline. Access roads would require six waterbody crossings, one of which is classified as a Class C waterbody.

Fisheries of Special Concern

Millennium consulted with the National Marine Fisheries Service (NMFS) and FWS to identify waterbodies that may contain federally or state-listed threatened, endangered, or candidate species and their habitats, and other fisheries of special concern in the Project area. Potential impacts on threatened and endangered species are discussed in section B.4. In addition to fisheries of special concern under the purview of NMFS and FWS, the NYSDEC classifies all waterbodies with a rating of B or higher, or those rated C with suitable trout habitat, as protected streams. Rutgers Creek, crossed at MP 1.4 and 1.8, is a C(T) designated waterbody, indicating that it may support trout populations (see appendix D).

Aquatic Resources Impacts and Mitigation

Of the 19 waterbody crossings within the Project construction workspace, 10 are not classified by NYSDEC as containing fisheries. The remaining nine waterbody crossings include two trout fisheries and seven waterbodies classified as Category C, which are capable of supporting fisheries (NYSDEC 2015d). Waterbody crossing methods are described in detail in section A.7.2 and listed in appendix D.

To minimize impacts from sedimentation and turbidity in streams crossed by the proposed pipeline, Millennium is proposing to cross six waterbodies using dry-ditch methods (dam-and-pump or flume) where there is discernable flow within the waterbody. The crossing of intermittent waterbodies that do not have flowing water at the time of construction may be completed with upland construction methods. In addition, five streams would be crossed by HDD and one would be crossed by conventional bore. In-stream blasting is not anticipated to occur (see section B.1.1). In the event that blasting becomes necessary, Millennium would implement the measures in its Blasting Plan and would comply with state and local regulations.

Millennium is continuing to consult with the NYSDEC regarding fishery classifications and timing windows for construction through fisheries; however, in accordance with its ECS, the FERC timing window for construction through coldwater fisheries (June 1-September 30) would be implemented unless the NYSDEC provides written approval for an alternate timing window (see appendix D).

While dry-ditch crossing methods would reduce turbidity and downstream sedimentation during construction, minor aquatic habitat alteration could still occur. Temporary impediments, changes to behavior, temporary loss of habitat, and/or the alteration of water quality could increase the stress rates, injury, and/or mortality experienced by fish.

Millennium's use of the conventional bore and HDD crossing method would avoid direct impacts on fisheries during construction at crossings of Rutgers Creek and multiple unnamed tributaries. However, if an inadvertent release of HDD drilling fluid occurs within a waterbody, the resulting turbidity could impact water quality and impede fish movement, potentially increasing the rates of stress, injury, and/or mortality experienced by fishes. In addition, water quality could be adversely affected by an accidental spill of hazardous material into a waterbody. Millennium's adherence to its HDD Plan and ECS would minimize the potential for these impacts, as well as the response time for notification and clean-up, should an inadvertent release or spill occur. Specific measures to minimize impacts on waterbodies, and the fisheries they contain, are discussed in section B.2.2.

Use of temporary and permanent access roads would require six waterbody crossings, which would be completed by using existing culverts and temporary timber mats. Millennium's adherence to its ECS would mitigate potential impacts from temporary use of access road crossings. One waterbody extends into the construction workspace for the meter station piping and for PAR-002; it would be crossed using a culvert and erosion controls would be installed to reduce the potential for sedimentation. No other waterbodies would be affected by construction or operation of aboveground facilities.

To minimize impacts on waterbodies and fisheries, Millennium would maintain a 25-foot-wide riparian strip within the permanent right-of-way adjacent to waterbodies and would limit vegetative maintenance within the riparian area to a 10-foot-wide strip centered over the pipeline with selective tree-clearing within 15 feet of the pipeline.

Water for hydrostatic testing and HDD construction would be from commercially available sources and would therefore avoid impacts on fisheries from surface water withdrawal (see section B.2.2). However, Millennium has identified mitigation measures that would be implemented in the event that surface water withdrawals are required for Project construction. To minimize impacts on fisheries and aquatic resources, Millennium would implement the following measures, including:

- allowing the water intake structure to float instead of laying on the streambed;
- using screen around the intake to prevent fish and macroinvertebrates from becoming trapped;
- maintaining adequate flow rates to protect aquatic life and other downstream uses;

- regulating the discharge rate, using energy dissipation devices, and installing sediment barriers, as necessary, to prevent sedimentation and streambed scour;
- reusing hydrostatic test water to the extent practicable;
- avoiding water withdrawal during low-flow conditions; and
- restoring streambeds and banks to pre-construction conditions.

Impacts on aquatic resources from construction and operation of the Project would be temporary and Millennium would limit impacts on aquatic resources by implementing its ECS and using HDD and dry-ditch waterbody crossing methods. Therefore, we conclude that impacts on aquatic resources from the Project would not be significant.

3.3 Wildlife Resources

Wildlife habitat types are based on the vegetation types in the Valley Lateral Project area and include upland forests, open uplands, agricultural areas, and wetlands (including PFO, PSS, and PEM wetlands). Vegetation types are described in detail in section B.3.1; wetlands are described in detail in section B.2.3. Forested upland habitat in the Project area is primarily early successional forest that provides food, cover, and nesting habitat for a variety of wildlife species, including mammals such as cottontail rabbit, snowshoe hare, white-tail deer, and red and gray foxes, and birds such as the woodcock, chestnut-sided warbler, golden-winged warbler, yellow warbler, yellow-breasted chat, field sparrow, and ruffed grouse (NYSDEC 2011).

Open lands include non-forested uplands (including shrublands and open fields), pastures, and previously disturbed areas such as maintained rights-of-way. Open upland habitat is dominated by grasses, herbs, and shrubs and, depending on vegetative development, provides food, cover, and nesting habitat for a variety of wildlife species. Common bird species to open uplands in the Project area include the bobolink, northern harrier, short-eared owl, sedge wren, grasshopper sparrow, and Henslow's sparrow (NYSDEC 2008). Species that use open lands may also occur in agricultural lands, which provide foraging and resting habitat for numerous habitat generalists.

Three different types of wetland habitat occur in the Project area: forested, scrub-shrub, and emergent wetlands. Wetland habitat types are described in detail in section B.2.3. PFO wetlands are dominated by hardwoods that provide food, cover, and nesting habitat. PSS wetlands consist of low and compact vegetation dominated by shrubs and PEM wetlands are dominated by grasses, sedges, and rushes. Wetlands in the Project area support species such as the white-footed mouse, raccoon, muskrat, mink, beaver, red-winged blackbird, swamp sparrow, tree swallow, herons, green frog, northern water snake, and numerous turtles and frogs (NYSDEC 2006).

Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act ([MBTA] – 16 U.S Code 703-711) and Bald and Golden Eagles are additionally protected under the Bald and Golden Eagle Protection Act ([BGEPA] – 16 U.S Code 668-668d). EO 13186 (66 FR 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the FWS.

EO 13186 was issued, in part, to ensure that environmental analyses of federal actions assess the impacts of these actions/plans on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from the FWS. On March 30, 2011, the FWS and the Commission entered into a Memorandum of Understanding (MOU) that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the Commission and the FWS. This voluntary MOU does not waive legal requirements under the MBTA, the Endangered Species Act (ESA), the NGA, or any other statutes and does not authorize the take of migratory birds. The entire Valley Lateral Project would be within Region 28 (Appalachian Mountains) of the North American Bird Conservation Initiative. In total, 234 migratory bird species occur within Region 28 (Appalachian Mountains Bird Conservation Region Partnership 2005).

Managed and Sensitive Wildlife Areas

The FWS and the NYNHP were consulted to identify managed or sensitive wildlife habitats near the proposed Project (FWS 2015a, NYSDEC 2015b). Agency consultation and review of NYNHP databases identified no state wildlife management areas or existing or proposed National Wildlife Refuges that would be crossed by the Project. The closest managed land, Huckleberry Ridge State Forest, is 4.9 miles northwest of the Project and is owned by New York State.

Wildlife Impacts and Mitigation

Construction and operation of the Project would result in various short- and long-term impacts on wildlife. Impacts would vary depending on the specific habitat requirements of the species in the area and the vegetative land cover crossed by the proposed pipeline right-of-way. Potential short-term impacts on wildlife include the displacement of individuals from construction areas and adjacent habitats and the direct mortality of small, less mobile mammals, reptiles, and amphibians that are unable to leave the construction area. Long-term impacts would include permanent conversion of forested or scrub-shrub habitats to cleared and maintained right-of-way, and periodic

disturbance of wildlife during operation and maintenance. Altered habitat and periodic disturbance could also increase wildlife mortality, injury, and stress.

Blasting is not currently anticipated on the proposed Project. In the event that blasting becomes necessary for construction, Millennium would implement the measures in its Blasting Plan, which includes development of site-specific methods to prevent flying debris (see section B.1.1). If blasting were required, wildlife close to the blast could be injured or killed; however, the preparation of rock for blasting, such as drilling shot holes and the movement of machinery and people, would likely cause enough disturbances to displace most wildlife from the immediate vicinity prior to the blast.

In total, construction of the proposed pipeline, including ATWS, aboveground facilities, pipeyards, and access roads would impact 24.8 acres of upland forest, 7.1 acres of open land, 71.3 acres of agricultural land, and 1.9 acres of wetlands (see table B-7). During operation, 13.1 acres of upland forest, 2.8 acres of open land, 34.7 acres of agricultural land, and 0.8 acre of wetlands would be within the permanent Project footprint. Of the 34.7 acres of agricultural land affected by operation, 8.5 acres would be converted to open land within pipeyard CY-2 and the associated ATWS, and 1.8 acres would be permanently converted to developed land at access road locations; the remainder would revert to agricultural use after construction.

Fragmentation of forested areas results in changes in vegetation (for example, shrubs inhabiting the forest edge) which may limit the movement of species between adjacent forest blocks, increase predation, and decrease reproductive success for some species (Rosenberg et al. 1999). Where practicable, Millennium has collocated the proposed pipeline with existing utility rights-of-way to minimize habitat fragmentation. Forest fragmentation and edge effects are further described in section B.3.3.

Millennium proposes to use 10 temporary access roads and 3 permanent access roads for construction and operation of the facilities (see table A-5). Access roads include six existing and five new roads. In addition, two access roads use existing roads for a portion of their length, and require construction of new road for a portion of their length. The new permanent access roads would permanently affect 1.9 acres of wildlife habitat (agricultural land and upland forest).

Millennium would implement impact minimization measures as described in its ECS. These measures would include:

- minimizing vegetative clearing through collocation with existing pipeline rights-of-way along about 23 percent of the proposed route (0.6 mile of right-of-way would have a 35-foot right-of-way overlap with existing rights-of-way);
- revegetating the right-of-way, where applicable, with seed mixes developed accordance with NYSDEC recommendations, landowner consultation, and permit requirements; and

- not conducting vegetation maintenance over the full width of the permanent right-of-way in wetlands and maintaining a 25-foot-wide buffer of native vegetation along the edge of waterbodies.

Although individual mortality of some wildlife species could occur because of the proposed Project, the effects of these individual losses on wildlife populations would be temporary and minor. Based on the construction within and/ or adjacent to the existing right-of-way, the presence of similar habitats adjacent to and in the vicinity of construction activities, and the implementation of impact avoidance and minimization measures, we conclude that construction and operation of the Valley Lateral Project would not have population-level impacts or significantly measurable negative impacts on wildlife.

Migratory Birds

The primary concern for impacts on migratory birds, including bald eagles, is mortality of eggs and/or young as mature birds could avoid active construction. Tree clearing and ground disturbing activities could cause disturbance during critical breeding and nesting periods, potentially resulting in the loss of nests, eggs, or young. In addition, forest fragmentation could increase predation and competition, and reduce nesting and mating habitat for migratory and ground-nesting birds (Faaborg et al. 1995). Millennium has proposed a pipeline route that would minimize impacts on migratory birds by placing about 23 percent of the pipeline adjacent to existing rights-of-way.

Although multiple bird species occur in the Project area, no federally listed threatened or endangered bird species are known to occur in the area. During construction, Millennium plans to clear trees between October 1 and March 31, which would minimize risks to both migratory birds and federally listed bats. During operations, Millennium would prohibit all vegetative maintenance activities between April 15 and August 1 to minimize disturbance during migratory bird critical nesting periods. Millennium is continuing to consult with the FWS regarding impacts on migratory birds to identify any additional clearing restrictions.

The proposed Project is within the range of the bald eagle, which is federally protected under the BGEPA and state-listed by NYSDEC as threatened. No active bald eagle nests were identified by Millennium during field surveys and no additional records of bald eagle nests were identified within 2.5 miles of the Project location during Millennium's consultation with the NYDEC (NYSDEC 2015b). However, bald eagles may establish new nests over time. Millennium stated that, in the event that a newly encountered bald eagle nest is identified in the Project area, it would coordinate with the FWS for concurrence prior to beginning construction in the vicinity of the nest and would implement the FWS' recommendations to avoid disturbance at bald eagle nest sites. Based on the characteristics and habitat requirements of migratory birds known to occur in the proposed Project area, the amount of similar habitat adjacent to and in the vicinity of the Project, and Millennium's implementation of the measures in its ECS, including

timing restrictions for clearing of vegetation, we conclude that construction and operation of the Valley Lateral Project would not have significant impacts on migratory bird populations.

4. Threatened and Endangered Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Special status species include federally listed species protected under the ESA, as amended, species proposed or candidates for listing by the FWS, and those species that are state listed as threatened, endangered, or other special status. Section 7(a)(2) of the ESA requires the Commission to ensure that any action it authorizes, funds, or carries out would not jeopardize the continued existence of federally listed or proposed listed species, or result in the adverse modification or destruction of critical habitat for federally listed and proposed species. As the lead federal agency for the Valley Lateral Project, FERC is responsible for the ESA consultation with the FWS. Species classified as candidates for listing under the ESA do not currently carry regulatory protection but are typically considered during our assessment as they may be listed in the future. Similarly, species protected under state statutes do not carry regulatory protection under the ESA but impacts are reviewed if the applicable agency indicates its potential presence in the Project area during consultation.

Informal consultations were conducted by Millennium, as our non-federal representative, with the FWS – New York Field Office and NYSDEC-NYNHP to determine whether any federally or state listed threatened or endangered species, federal species of concern, or designated critical habitats occur in the proposed Project area. We have also conducted an Information for Planning and Conservation assessment for the proposed Project (FWS 2015b). Table B-8 describes the federally and state listed species that may occur in the Project area, their preferred habitat, and our determination of effect. The NYNHP records indicated the presence of the Indiana bat (*Myotis sodalis*) within the vicinity of the proposed Project, which is federally and state listed as endangered; no additional state-listed species were noted as a concern for the proposed Project. Species for which there is no suitable habitat in the Project area will not be discussed further. No designated critical habitat occurs in the Project area (FWS 2015b).

4.1 Mammals

Indiana Bat

The federally and state-listed endangered Indiana bat was identified during Information for Planning and Conservation database review and during consultations with NYSDEC as occurring in the vicinity of the proposed Project (FWS 2015b, NYSDEC 2015b). As presence has been established through review of the NYNHP records, no surveys are proposed. Direct impacts on the species could occur if roost trees or hibernacula are disturbed during periods of use.

Table B-8 Federal and State Threatened and Endangered Species and Species of Concern Potentially Occurring in the Project Area				
Species	Federal Status ^a	State Status (NY) ^a	Habitat Description	Effect Determination
Mammals				
Indiana bat (<i>Myotis sodalis</i>)	E	E	Hibernates in caves and abandoned mines during the winter. Roosts in maternity colonies in spring, summer, and fall located under the exfoliating bark of dead trees in riparian zones, bottomland and floodplain habitats, wooded wetlands, and upland communities. Forages in forested areas, cleared areas adjacent to forests, and over ponded areas that support abundant flying insects (FWS 2012).	<i>Not likely to adversely affect</i> ; the Project would be within the range of this species; however, Millennium proposes to avoid species impacts by conducting tree clearing between October 1 and March 31, 2016 when the bats are hibernating or concentrated near their hibernacula.
Northern long-eared bat (<i>Myotis septentrionalis</i>)	T	T	Hibernates in caves and abandoned mines during the winter. Roosts singly or in colonies underneath exfoliating bark of dead trees, in cavities, or in crevices of both living and dead trees. Occasionally found using structures as roost sites (for example, barns and sheds). Forages within the understories of forested hillsides and ridges (FWS 2015c).	<i>Not likely to adversely affect</i> ; the Project would be within the range of this species; however, Millennium proposes to avoid species impacts by conducting tree clearing between October 1 and March 31, 2016 when the bats are hibernating or concentrated near their hibernacula.
Mussels				
Dwarf wedgemussel (<i>Alasmidonta heterodon</i>)	E	E	Inhabits streams and rivers with low to moderate currents and with sand, clay, or gravel substrate. Adults generally remain buried; parasitic larvae attach themselves to a fish for several weeks before detaching and settling on the sediment (FWS 2005).	<i>No effect.</i> The Project would be outside of the known watershed of occurrence.
Plants				
Small whorled pogonia (<i>Isotria medeoloides</i>)	T	E	Generally grows in older hardwood forest stands with an open understory, although it sometimes grows in softwood stands. Prefers acidic soils with a thick layer of dead leaves, often on slopes near streams. Flowers in May and June, but may not bloom annually (FWS 2008).	<i>No effect.</i> No known occurrences or suitable habitat near the proposed Project.

**Table B-8 (Continued)
Federal and State Threatened and Endangered Species and Species of Concern Potentially Occurring in the Project Area**

Species	Federal Status ^a	State Status (NY) ^a	Habitat Description	Effect Determination
Reptiles				
Bog turtle (<i>Clemmys muhlenbergii</i>)	T	E	Lives in open, sunny, spring-fed wetland areas with scattered dry areas. Nests are built during summer, in moss or sedges above the water level adjacent to the wetlands (FWS 2010).	<i>No effect (subject to survey completion).</i> No potential habitat was identified during Phase 1 surveys; however, some right-of-way areas have not been surveyed for wetlands (see section A.5.1) because of access issues. If wetlands were in these areas, coordination with FWS would be required for any potential bog turtle habitat
^a E = endangered; T = threatened				

Long-term, indirect impacts could also occur due to the permanent loss of suitable roost trees from vegetation clearing during construction and operation. Suitable roost trees have exfoliating bark, including those that are dead or dying, and those that have cracks or crevices (FWS 2012).

To avoid take of the species during construction, Millennium would restrict tree clearing to the period when Indiana bats are in hibernation (October 1 to March 31), as recommended by FWS (FWS 2012). No known hibernacula within the Project area were identified by the applicable agencies. To avoid long-term, indirect impacts on the species, the FWS – New York Field Office project review guidance indicates the need to assess indirect impacts on the Indiana bat, including those that may occur from the temporary or permanent loss, degradation, and/or fragmentation of suitable habitat (FWS 2012). Further, NYSDEC has requested that the applicant evaluate indirect impacts on the Indiana bat and that we consider the implementation of mitigation for indirect effects. The proposed Project would result in the disturbance of 24.8 acres of forested uplands during construction and the loss of 11.5 acres of upland forest during operations. As these forested areas may contain suitable roost trees and habitat, **we recommend that:**

- **Prior to construction, Millennium should file with the Secretary documentation of its FWS consultation to determine the need to identify potential roost trees and any agreed upon mitigation for habitat loss within the known, occupied range of the Indiana bat.**

Although the need to mitigate for potential indirect impacts on the Indiana bat would be determined through coordination with the FWS based on our recommendation, Millennium would avoid direct impacts on the Indiana bat through adherence to the tree-clearing window. Therefore, we conclude that the proposed Project *is not likely to adversely affect* the Indiana bat.

Northern Long-Eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is state listed as threatened and was federally listed as threatened under the ESA on April 2, 2015 due to population declines from white-nose syndrome. The FWS also established a final rule under Section 4(d) of the ESA, effective February 16, 2016, that targets the prohibition of incidental take in those areas affected by white-nose syndrome. Within affected areas, incidental take is prohibited if it occurs within a hibernaculum; if it results from tree removal activities within 0.25-mile of a known hibernaculum; or if it results from removal of a known, occupied maternity roost or trees within 150 feet of the maternity roost during the pup season (June 1 through July 31) (FWS 2016a). Based on a review of FWS data, the Project area is within the area affected by white-nose syndrome and the northern long-eared bat has the potential to occur in the proposed Project area (FWS 2015b, FWS 2016b).

Direct impacts on the northern long-eared bat would be similar to those listed for the Indiana bat, including loss from disturbance of roost trees and hibernacula during periods of use. However, habitat loss is not a contributing factor in species decline, and indirect effects would be limited to impacts on known hibernacula that would preclude seasonal use by northern long-eared bats. Millennium's implementation of the tree-clearing window for the protection of Indiana bats (tree clearing would occur from October 1 to March 31) would protect northern long-eared bats from direct take. No known hibernacula or maternity roosts have been identified by the applicable agencies within 0.25-mile of the proposed Project. As direct impacts on the northern long-eared bat would be avoided through adherence to the tree-clearing window, and no known hibernacula or occupied maternity roosts are within the proposed Project area, we conclude that the proposed Project *is not likely to adversely affect* the northern long-eared bat.

4.2 Reptiles

Bog Turtle

The federally threatened and state endangered bog turtle (*Clemmys muhlenbergii*) occurs in Orange County. Potential bog turtle habitat includes wetlands that contain areas of perennially saturated soils, predominantly emergent vegetation, and deep (3 to 5 inches), mucky soils (FWS 2006). A wetland found to contain these three characteristics (either together or in separate pockets) during Phase 1 (habitat) surveys may require Phase 2 surveys to determine species presence or absence within suitable habitat. In July and September 2015, Millennium conducted Phase 1 surveys within a 300-foot survey corridor centered on the proposed pipeline and found no potential habitat. Although lack of survey access has precluded bog turtle surveys in certain wetlands (see section A.5.1), Millennium would survey all remaining wetlands within the survey corridor for potential habitat when able and would coordinate with FWS and NYSDEC to determine if Phase 2 surveys were warranted. As no suitable habitat was encountered during surveys and the remaining surveys would be completed, and results coordinated with the FWS and NYSDEC, prior to construction, we find that construction and operation of the proposed Project would have *no effect* on the bog turtle.

Millennium has not completed bog turtle consultation with NYSDEC, because areas of potential habitat identified by NYSDEC have not yet been surveyed. NYSDEC stated in a December 21, 2015 letter that surveys for five additional wetlands would be required to complete the bog turtle analysis. In addition, the FWS must concur with our determinations of effect for the Indiana bat and northern long-eared bat to complete the ESA consultation process. To ensure compliance with our responsibilities under Section 7 of the ESA regarding federally listed species, **we recommend that:**

- **Millennium should not begin construction of the proposed Project until:**
 - a. **Phase 1, and any applicable Phase 2, bog turtle surveys have been completed for all wetlands within the 300-foot survey corridor and survey concurrence from the FWS and NYSDEC has been filed with the Secretary;**
 - b. **the FERC staff completes Section 7 consultation with the FWS for Indiana and northern long-eared bats, and bog turtles if necessary; and**
 - c. **Millennium has received written notification from the Director of the OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.**

5. Land Use and Visual Resources

5.1 Land Use

The proposed pipeline would cross multiple land types in Orange County, New York, the majority of which would be agricultural land (4.0 miles) or forested land (2.7 miles). Other land uses crossed include open land (0.7 mile), industrial/commercial land (0.4 mile), wetlands (0.2 mile), and open water (0.1 mile). In addition, about 1.8 miles (23 percent) of the 7.9-mile pipeline would be adjacent to existing rights-of-way. The Valley Lateral Project would affect 117.1 acres of land during construction, including pipeline construction right-of-way, ATWS, aboveground facilities, access roads, and pipeyards. Of the 117.1 acres, about 63.3 acres would be restored to pre-construction uses. The remaining 53.8 acres would be within the operational footprint of the proposed Project. Table B-9 summarizes the Project's temporary (construction) and permanent (operational) land use impacts. Impacts on open water and wetlands are discussed in sections B.2.2 and B.2.3, respectively.

Agricultural Land

Construction of the proposed Project would affect 71.3 acres of agricultural land, which is defined by the presence of active crop production. Crops produced in agricultural lands crossed by the proposed Project include hay, corn, and soybeans; no areas of specialty crop production would be crossed. Within actively cultivated or rotated croplands, managed pastures, and hayfields, topsoil would be stripped and stockpiled separately from the subsoil.

Table B-9 Land Use Affected by Construction and Operation (in Acres) of the Valley Lateral Project ^a																	
Facility	Agricultural		Upland Forest		Open Land		Industrial/ Commercial		Wetlands ^b		Open Water		Residential		Total		
	Con ^c	Op ^d	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	
Pipeline Facilities																	
Pipeline																	
Pipeline ROW	35.6	24.2	16.9	11.4	4.1	2.8	0.8	0.3	0.9	0.6	0.2	0.2	0.0	0.0	58.4	39.4	
ATWS	20.9	0.5 ^e	5.0	0.0	2.4	0.0	0.9	0.0	0.8	0.0	0.0	0.0	0.0	0.0	30.1	0.5	
Subtotal	56.5	24.7	21.9	11.4	6.4	2.8	1.7	0.3	1.7	0.6	0.2	0.2	0.0	0.0	88.5	39.9	
Access Roads	6.7	1.8	1.2	0.1	0.6	0.0	1.7	1.1	0.0	0.0	0.0	0.0	0.1	0.0	10.3	3.1	
Pipeyards	8.0 ^f	8.0 ^f	1.6 ^f	1.6 ^f	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.1	9.6	
Aboveground Facilities																	
Pig Launcher/Tap Valve	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	
Pig Receiver	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	
Meter Station	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	
Meter Station Piping	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.6	0.6	
Subtotal	0.2	0.2	0.0	0.0	0.0	0.0	0.9	0.9	0.2	0.2	0.0	0.0	0.0	0.0	1.2	1.2	
Project Total	71.3	34.7	24.8	13.1	7.1	2.8	11.8	2.3	1.9	0.8	0.2	0.2	0.1	0.0	117.1	53.8	
^a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. ^b The wetlands category includes both forested and non-forested wetlands. ^c Con = Construction. Construction impact acreages are based on a temporary right-of-way between 75 and 135 feet. Impacts do not include the area between HDD entry and exit points, where impacts would be limited to hand-clearing a maximum 10-foot-wide footpath. ^d Op = Operation. The operational footprint is based on a 50-foot-wide permanent right-of-way in uplands and wetlands. However, Millennium does not intend to maintain the permanent right-of-way in non-forested wetlands and would only maintain a maximum of a 30-foot-wide corridor within forested wetlands; therefore, actual impacts on wetlands during operation may be less. ^e This permanent impact is associated with a parcel that Millennium plans to purchase as described in section A.5.1. ^f Millennium has purchased the property for pipeline CY-2, which includes 8.0 acres of agricultural land and 1.6 acres of forested uplands. Millennium would convert the agricultural land to open land, but would retain the trees; therefore, no permanent impact on forested acreage within pipeyard CY-2 would occur.																	

Millennium anticipates that one growing season would be lost due to construction; however, landowners would be compensated for these production losses in accordance with the terms of individual landowner agreements. Following construction, Millennium would visually inspect agricultural lands to ensure that crop vigor in areas affected by construction was similar to those of adjacent portions of the same field. Impacts on prime farmland and farmland of statewide importance are discussed in section B.1.2.

Operations would affect 34.7 acres of agricultural land. Of this, 24.2 acres would be within the proposed permanent pipeline right-of-way, which would be restored in accordance with FERC's Plan following construction so that the full right-of-way could be used for crop production the following season. Millennium would purchase the land used for pipeyard CY-2 (9.6 acres at MP 0.0, of which 8.0 acres is agricultural), and a related 0.5-acre ATWS and would convert agricultural land within both to open land after construction. The remaining 2.0 acres would be permanently affected by access roads or an aboveground facility (a pig launcher). Millennium would mitigate for the permanent loss of agricultural lands according to the terms of individual landowner agreements.

The proposed Project, including piping associated with the tap valve and meter station, would cross about 6.6 miles of lands within Orange County Agricultural District No. 2, designated by Orange County and the NYSDAM for protection from non-agricultural uses (see table B-10). For those lands affected by construction or within the permanent pipeline right-of-way, which would be returned to agricultural use, Millennium anticipates that the Project would comply with the purpose of the district's program. Millennium has purchased those designated agricultural lands that would be permanently converted to non-agricultural uses.

Millennium would implement its ECS, which includes measures listed in the FERC Plan and NYSDAM's pipeline construction guidance (NYSDAM 2011). NYSDAM's pipeline construction guidance measures would include:

- burying pipelines in cropland, hayland, and improved pasture so that a minimum cover of 4 feet is obtained;
- providing temporary livestock crossings, temporary farm equipment crossings, and fencing around open trench, where needed by the landowner;
- placing geotextile matting over subsoils prior to using gravel for access ramps placed in agricultural areas to prevent gravel from becoming embedded into the subsoil; and
- providing a phone number to farm owners/operations that can be used to directly contact Millennium staff through all stages of the Project.

Table B-10				
Orange County Agricultural District Parcels Crossed by the Proposed Project				
Facility	Start MP	End MP	Crossing Length (feet)	Permanent Operational Impact (acres)
	-0.1 ^a	0.0	464	--
	0.0	0.4	2,256	--
	0.4	0.7	1,379	--
	0.7	2.1	7,241	--
	2.1	2.4	1,710	--
Pipeline	2.4	3.0	3,004	--
	3.0	5.4	12,467	--
	6.3	6.7	1,693	--
	6.7	7.3	3,374	--
	7.6	7.6	18	--
	7.7	7.8	382	--
Pig Launcher/Tap Valve	0.0	--	300 ^c	0.2
Pig Receiver ^b	7.8	--	--	0.2
Meter Station and Piping ^b	7.8	--	533 ^c	0.8
Project Total			34,821	1.2
^a Negative mileposting is used to denote approximately 0.1 mile of pipe added to the Project after Millennium filed its application.				
^b Although these lands are designated as agricultural, they are currently being developed as part of the CPV Valley Energy Plant and are categorized as industrial/commercial lands and wetlands, as applicable, in table B-9.				
^c This crossing length is associated with facility piping.				

No drain tile systems have been identified in the Project area during landowner discussions; however, if present within the right-of-way, Millennium would develop a set of specific mitigation measures with the landowner prior to beginning construction. Work in proximity to these systems would be conducted in accordance with Millennium's ECS.

With implementation of Millennium's ECS, which incorporates the FERC Plan and certain measures from NYSDAM's pipeline construction guidance (NYSDAM 2011), impacts on agricultural lands would generally be minor and temporary. Minor permanent impacts would also occur associated with the land use conversion of 2.0 acres of agricultural land to industrial lands at access roads and the pig launcher and removal of 8.0 acres from active production at the pipeyard CY-2.

Forested Land

No areas of commercial timber production or sustainably managed forest have been identified along the proposed Project route through Millennium's search of public records and contact with landowners (Sustainable Forest Initiative 2015, Forest Stewardship Council 2015, Empire State Forest Products Association 2015, NYSDEC 2015e). If Millennium identifies any such parcels at a later date, it would consult with the landowner and management entity, as appropriate, to mitigate impacts.

After construction, trees and shrubs would be allowed to grow within the temporary construction right-of-way and other temporary workspace areas. Impacts on forested lands would be long-term or permanent, as it would likely take 20 years or more for mature trees to re-establish within the construction areas and the 11.5 acres required for operation would be permanently converted to open land. Impacts on forested vegetation are discussed in detail in section B.3.1 and visual impacts from clearing forested land are discussed in section B.5.4.

Open Land

Project construction would affect 7.1 acres of open land, defined as non-forested uplands, pastures, and maintained utility rights-of-way (see table B-9). Approximately 4.3 acres of the temporarily disturbed area and would be allowed to revert to original condition after construction. During operation of the Project, 2.8 acres of open land would be within the maintained pipeline right-of-way. Based on the limited acreage of open land subject to permanent maintenance or conversion, impacts on open land would be predominantly short term and minor.

Industrial/Commercial

Industrial/commercial lands are defined as existing industrial plants, commercial facilities, mines, paved areas, and existing roads and railroads. As presented in table B-9, the proposed Valley Lateral Project would affect a total of 11.8 acres of industrial/commercial land during construction, including land within the area of the CPV Valley Energy Center, which is currently under construction. With the exception of 2.3 acres of industrial/commercial land that would be permanently encumbered by the operational right-of-way, aboveground facilities, or permanent access roads, the remaining 9.5 acres of affected land would be returned to original conditions after construction.

During construction, the proposed pipeline would cross nine public roads and one private road. Each of the road crossings would be conducted via HDD or subsurface bore, thereby avoiding impacts. In addition, one abandoned railroad would be crossed by bore at MP 0.7. Transportation impacts are discussed in section B.6.2. The majority of impacts on industrial/commercial land would be temporary and minor.

Residential Land

No residential lands would be affected by construction of the pipeline or aboveground facilities; however, 0.1 acre of residential land would be impacted by use of existing temporary access road (TAR-005; see table B-9 and table A-5). TAR-005 is about 110 feet from a residence and 45 feet from the swimming pool at the residence. The swimming pool is used during summer months and construction is anticipated to be completed prior to use. Impacts on residential areas during the construction and use of the temporary access roads could include noise and dust from construction traffic and disturbance or removal of lawns, trees, and landscaped shrubs. Millennium would notify landowners of the approximate timelines of active construction and would restore disturbed areas to pre-construction conditions where possible, or as specified by the landowners. Overall impacts on residential areas would be negligible and temporary.

5.2 Planned Developments

The Valley Lateral Project would cross a “priority growth area” designated by the Orange County Planning Department from MP 7.1 to MP 7.8. These areas are designated to promote additional development around urban and accessible areas (Orange County Department of Planning 2010). Millennium contacted county and town planning agencies, both within and outside the priority growth area, and conducted record reviews of permit applications to determine whether any commercial or residential developments are planned within 0.25 mile of the Project; no such developments were identified through these consultations and record searches. One existing residential area with ongoing development (the Lakeridge subdivision) is approximately 65 feet from the proposed workspace at MP 5.1; however, a forested buffer would be retained between the Project and the residential lots (see section B.10).

5.3 Public Land, Recreation, and Special Interest Areas

No federally or state managed or owned lands would be within 0.25 mile of the proposed Project, including wildlife refuges, parks, scenic byways or rivers, or preserves. Further, no privately owned conservation easements managed under agreements with the USDA-NRCS (agricultural or wetland reserve program lands) or the Farm Service Agency (conservation reserve program lands), have been identified within 0.25 mile of the proposed Project through review of publicly available data and landowner consultation. The Farm Service Agency does not disclose the locations of easements under its purview in New York.

The proposed Project would cross three parcels owned by the Town of Wawayanda. Millennium has coordinated with the municipality to route around its planned ballpark on a parcel crossed between MP 4.1 and 4.6, and to cross another parcel by HDD between MP 5.7 and 6.0. Millennium is continuing to coordinate with the Town of Wawayanda regarding the crossing of a third parcel between MP 5.4 and 5.5; any

easement agreement signed by the town would contain measures to minimize impacts on later development of this property, if applicable.

Another municipal area owned by the Town of Wawayanda, Shannen Park, would be 370 feet from the proposed Project at MP 4.3. Shannen Park is a 52-acre park and wildlife area with baseball fields, picnic areas, and a jogging trail (Town of Wawayanda 2015). The recreational facilities are predominately located at the furthest end of the park so that the jogging trail would be the closest aspect to the Project. No direct impacts on the park would occur and any indirect impacts from increased noise during construction would be minor and temporary, as a buffer of forested habitat would separate construction activities from the park .

Additional areas of potential concern include the Green Ridge Golf Club, Bicycle Route 17, and the Ridgebury Cemetery. The Green Ridge Golf Club, a year-round facility, would be about 140 feet from Project workspaces between MP 0.9 and 1.5. Although no direct impacts on the golf club would occur, construction activities may cause temporary, indirect impacts from increased noise at locations closest to the pipeline activities. Noise impacts from the proposed Project are discussed in section B.8.2.

Bicycle Route 17 is a 442-mile, on-road bicycle route that crosses through Wawayanda as part of U.S Route 6. Although construction would not directly affect the U.S. Route 6, it would be used by construction vehicles to transport equipment and personnel. A permanent access road (PAR-002) would connect U.S. Route 6 to the meter station, and it would be maintained for the life of the Project. To minimize impacts on bicyclists, Millennium would adhere to safe driving practices during construction and operation of the Project.

The Ridgebury Cemetery is about 460 feet south of the proposed pipeline at MP 5.5. The cemetery is accessed from Ridgebury Hill Road, which would be crossed by the pipeline during construction; however, the proposed bore crossing would allow for continued traffic flow and cemetery access (see table A-5).

5.4 Visual Resources

The proposed Project could alter existing visual resources in two ways: (1) construction activity and equipment may temporarily alter the viewshed; and (2) lingering impacts along the right-of-way from clearing during construction and operation could alter existing vegetation patterns. The significance of these visual impacts would primarily depend on the quality of the viewshed, the degree of alteration of that view, the sensitivity or concern of potential viewers, and the perspective of the viewer.

Impacts would be greatest during construction of the proposed Project because of the increased right-of-way needed for construction, the displaced soil, and the presence of personnel and equipment. After construction, temporary workspaces would be returned

to pre-construction conditions by the restoration methods discussed in Millennium's ECS. Land affected by the proposed Project is dominated by agricultural land and other disturbed or herbaceous habitats that would revert to pre-Project conditions within 1 to 3 years after construction. The greatest long-term and permanent visual impacts would occur in areas of forested land where cleared vegetation would be more noticeable (about 2.7 miles). The conversion of forested land to open land has the potential to affect its use as a visual buffer and reduce its aesthetic quality. In restored areas, regrowth to pre-construction conditions would generally take 20 to 30 years for many species to reach maturity. Hardwood species, such as oaks, could take 50 years to reach maturity. However, the significance of visual impacts would vary based on the viewer's location and the adjacent land use type. When the proposed pipeline is routed adjacent to existing disturbance (e.g., rights-of-way, agricultural fields), the impact of cleared trees may result in a slightly wider cleared area, but would not significantly change the viewshed of the land at that location. In areas where the proposed pipeline is routed through larger forested plots, the remaining trees would generally screen the right-of-way from view and would not result in visual impacts. However, minor to moderate visual impacts would occur in those areas where views include a newly cleared right-of-way in forested lands. In consideration of the amount of forested land proposed for clearing and the routing of the proposed pipeline, we find that the overall impacts of clearing in forested lands for the proposed Project would be minor and long-term to permanent.

Visual impacts on visitors at Shannen Park and the Green Ridge Golf Club would be avoided because Millennium would not clear the existing treeline, which would block the view of construction. In addition, Millennium would place its meter station within the proposed CPV Valley Energy Center property, an industrial facility currently under construction, so that there would be no significant changes in the visual landscape.

In comments provided during the scoping period, concern was raised regarding visual impacts of the Project on Venturi Road. Although Venturi Road would not be crossed by the proposed Project, it would be adjacent to it, near MP 3.0. Construction activities would likely be visible to those viewers standing on Venturi Road and looking southwest; however, lands immediately south of the road consist predominantly of vegetation that would be returned to pre-construction conditions within one year (agricultural land and herbaceous open lands). During operation, no visual impacts on Venturi Road would occur; therefore, all visual impacts on Venturi Road would be minor and temporary or short-term.

Through Millennium's implementation of the revegetation measures in its ECS, collocation with existing disturbance where possible, and pipeline routing through predominately non-forested areas, we conclude that visual impacts of the entire proposed Project would be appropriately minimized.

6. Socioeconomics

Socioeconomic impacts resulting from the construction and operation of the proposed Valley Lateral pipeline, access roads, meter station, and pigging facilities would primarily affect the towns of Minisink and Wawayanda in Orange County, New York. Some of these potential effects are related to the number of construction workers that would work on the Project and their impact on population, public services, and employment during construction. Other potential effects include an increase in local traffic, available housing, and tax revenue, as well as potential changes in property values.

6.1 Employment

According to the U.S. Bureau of Labor Statistics (2015), the 2014 average annual unemployment rate for Orange County, New York was 5.5 percent, compared to the national and state annual averages of 6.2 and 6.3 percent, respectively. Construction of the pipeline and ancillary facilities for the Valley Lateral Project would require an estimated peak workforce of 220 workers. Based on previous experience in the region, Millennium anticipates that the majority of workers would be local, although specialists and supervisory positions may be filled by non-local workers. Local workers would likely be residents of Orange County and reside within commuting distance of the Project.

Due to the short duration of construction, it is anticipated that most non-local workers would not be accompanied by their families. The introduction of non-local workers would be temporary and limited to the 8-month period required to complete construction. The increase in employment for local workers would result in a temporary and negligible impact on Orange County's employment rate and a negligible impact on the population and services of the local municipalities. Millennium would not hire additional staff for operation of the Project.

6.2 Transportation

Construction of the proposed Project may result in minor, temporary impacts on roadways due to construction and the movement of heavy equipment and workers. The Project would cross 10 roads, including 9 public paved roads and 1 private gravel road. All roads would be crossed by trenchless methods (either bore or HDD), thereby avoiding direct impacts on traffic. One abandoned railroad would also be crossed at MP 0.7 by conventional bore. Construction at public road crossings would be done in compliance with applicable permits. Because roads would not be open-cut, traffic delays due to road crossings are not expected.

A minor increase in traffic would occur during the 8-month construction period from the temporary influx of workers moving to and from the Project area; however,

Millennium anticipates that much of this travel would occur outside of peak traffic times. Minimal traffic delays would also occur during the transportation of construction materials, specifically oversized equipment, on public roadways. Millennium would obtain all permits necessary to transport construction materials on public roadways. Overall, we conclude impacts on transportation would be temporary, minor, and not significant.

6.3 Housing

As previously indicated, Millennium anticipates that the majority of the 220 workers required for construction would already reside near the proposed Project area. Non-local workers, however, would relocate to the Project area for the 8-month construction period. As of 2010, there were 11,100 vacant housing units in Orange County (U.S. Census Bureau 2015). The 2010 rental vacancy rates in the towns of Minisink and Wawayanda were 4.1 percent and 8.5 percent, respectively (U.S. Census Bureau 2015). In addition, there are 160 hotels, motels, and bed and breakfasts, and more than 50 recreational vehicle parks and campgrounds in and around Orange County that the workforce could use (HotelMotels 2015, Yellowbook 2015). Based on the number of available rental units, hotels/motels, recreational vehicle parks, and campgrounds in and near the proposed Project area, we conclude that there would be sufficient housing available for the peak Project workforce.

Operation of the Project would not require any new full-time workers; therefore, no impacts on public housing would occur during operation of the Project. Overall, impacts on housing in the vicinity of the proposed Project area would be negligible and limited to the construction phase.

6.4 Tax Revenue

Millennium projected that a portion of the 6.2 million dollars of the construction workforce payroll would be spent on local amenities such as food, housing, and other living expenses. As such, sales and state taxes would be paid by local and non-local workers on goods and services bought locally with money earned from the Project. In addition, Millennium would locally procure some materials needed for construction of the proposed Project. Therefore, during construction, the Project would benefit the economies of Minisink, Wawayanda, and Orange County, New York.

During operation, the proposed Valley Lateral Project would become a new source of tax revenue that could be used to finance public school districts, local city and county governments, and public safety services such as police and fire departments. Millennium's payment of local taxes would result in a long-term, positive impact on the local municipalities and Orange County, New York.

6.5 Property Values

The potential impact of a pipeline on the value of a property is related to many property-specific variables, including the size, current value of the land, available utilities and services, current land use, and value of adjacent properties. Land values are determined by appraisals that would take into account objective characteristics of the property, such as size, location, and any improvements. While there is recently published literature indicating that there is no identifiable or consistent link between the presence of natural gas pipeline easements and residential property values (Diskin et al. 2011; Wilde et al. 2012; The INGAA Foundation 2016), valuation is subjective and is generally not considered in appraisals. The presence of a pipeline, and the restrictions associated with a pipeline easement, could influence a potential buyer's decision to purchase a property. If a buyer is looking for a property for a specific use that the presence of the pipeline renders infeasible, then the buyer may decide to purchase another property more suitable to their objectives. For example, a buyer wanting to develop the land for a commercial property with sub-surface structures would likely not find the property suitable, but farmers looking for land for grazing or additional cropland could find it suitable for their needs. This would be similar to other buyer-specific preferences that not all homes have, such as close proximity to shopping or access to high quality school districts.

Millennium would acquire easements for both the temporary (construction) and permanent rights-of-way. Compensation would be paid to landowners for limited use during construction and any construction related damages, per the terms of the individual landowner easement agreements. We conclude the Project would have no significant impact on property values.

6.6 Environmental Justice

In accordance with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, we address the potential for disproportionately high and adverse health or environmental effects of the Project on minority and low income populations. NYSDEC's New York State Office of Environmental Justice (NYSOEJ) (2015a) defines a potential environmental justice area as a Census Block Group of 250 to 500 households with populations that meet at least one of the following three criteria according to the 2000 Census:

1. "At least 51.1 percent of the population in an urban area reported themselves to be members of minority groups; or
2. At least 33.8 percent of the population in a rural area reported themselves to be members of minority groups; or
3. At least 23.59 percent of the population in an urban or rural area had household incomes below the federal poverty level."

Based on available mapping provided by the NYSOEJ, no potential environmental justice areas would be crossed. According to U.S. Census data from 2000, the nearest potential environmental justice area is in the city of Middletown, about 1 mile northeast of MP 7.8 (NYSOEJ 2015b). Because of the Project's location outside of a potential environmental justice area, it is unlikely that the potential environmental justice area would be negatively affected by the Project. In addition, comments regarding potential environmental justice concerns about the placement of the pipeline were not submitted in response to FERC's NOI for the Project (see section A.4). Millennium would comply with all regulatory requirements associated with noise and the storage and use of hazardous chemicals such as fuel. Lastly, the Project area would be visually obstructed from the nearest potential environmental justice area by vegetation and existing buildings. As such, we find that the proposed Project would not disproportionately affect minority or low income populations.

7. Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires the FERC to take into account the effects of its undertakings (including issuance of Certificates) on properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking. Millennium, as a non-federal party, is assisting the Commission in meeting our obligations under Section 106 and the implementing regulations by preparing the necessary information, analyses, and recommendations, as authorized by 36 CFR 800.2(a)(3).

7.1 Cultural Resource Investigations

Millennium completed cultural resources survey investigations of all accessible Project areas to determine if construction activities associated with the Valley Lateral Project would have the potential to affect previously identified cultural resources within the Project's Areas of Potential Effect (APE). The APE for archaeological resources includes all surface and subsurface areas affected by construction, operation, and maintenance of the proposed facilities. More specifically, the archaeological APE typically includes a 300-foot-wide survey corridor over the proposed pipeline right-of-way and a 50-foot-wide survey corridor along proposed access roads. In addition, any areas outside of the 300-foot-wide survey corridor, such as the pipe yards and meter station, were also included within the archaeological APE and were subject to field survey.

The architectural APE includes areas where potential effects on NRHP-listed or eligible architectural resources may occur, including within the 300-foot-wide survey corridor, areas near noise-producing facilities or activities, and areas within the viewshed of historic architectural resources. Project-related noise impacts are discussed in section B.8.2. Millennium assessed the viewshed, which includes Project areas that would fall

within view of historic resources as a result of removing vegetation, changes in natural topography, or where the natural topography would not block the line-of-sight to/from proposed aboveground facilities. Consultations with the New York State Historic Preservation Office (SHPO) may refine the APE for architectural resources.

Summary of Consultations

In November 2015, Millennium submitted the archaeological report to the SHPO describing all accessible areas surveyed to date. In correspondence dated November 24, 2015, the SHPO concurred with the report recommendations and agreed that no further investigation would be necessary within the surveyed areas. In addition, the SHPO indicated they have no concerns regarding the potential for the Project to effect historic buildings.

7.2 Survey Results

Background research indicated that 24 previously identified archaeological resources and 15 architectural resources have been documented within a one-mile radius of the Project area. These include two prehistoric period archaeological resources (A07119.0029 and A07110.000042) adjacent to the APE. In addition, one prehistoric site (A07119-000198) is within the Project APE; however, this site was recorded during a previous survey and was later determined not eligible for inclusion on the NRHP (Sara and Schmidt 2009; Sara and Walters 2015). Lastly, the Project APE crosses an historic railroad bed (identified as A07110.000043); however, Millennium would avoid the resource by constructing the pipeline beneath the railroad bed using the conventional bore technique.

Archaeological surveys within the APE were conducted in May, July, August, and September 2015. To date, about 96 percent of the APE has been surveyed. The remaining 4 percent includes 2,479 feet of survey corridor. These areas are pending landowner permission for survey.

As a result of the efforts within the surveyed portions of the archaeological APE, no evidence of the two previously identified archaeological sites recorded adjacent to the Project APE were documented. The survey resulted in the identification of 24 new archaeological resources; these include 1 new archaeological site with prehistoric and historic period components, and 23 isolated finds. The isolated finds include 14 assigned to the prehistoric period and 8 to the historic period; 1 is indeterminate. The newly recorded site was assigned temporary field identification number MCV-TRC-1. All 24 resources are recommended not eligible for inclusion on the NRHP due to lack of research potential and no further work was recommended. In a letter dated November 24, 2015, the SHPO concurred with these eligibility recommendations. We also concur.

To date, Millennium has not completed field surveys for architectural resources. However, a desktop assessment of architectural resources within 1 mile of the Project resulted in the identification of 3 historic properties listed on the NRHP and 12 additional resources that are eligible for listing. None of the 15 documented architectural resources are within the proposed construction workspaces. No other historic-age buildings were identified within or near the Project APE as a result of the desktop assessment. The New York SHPO indicated that it has no concerns regarding the Project's potential to effect historic buildings; we concur.

7.3 Native American Consultation

Millennium sent letters to four Indian tribes on April 29, 2015: the St. Regis Mohawk Tribe, the Delaware Tribe of Indians, the Stockbridge-Munsee Band of Mohicans, and the Delaware Nation. The St. Regis Mohawk Tribe acknowledged receipt of the initial consultation package. The Delaware Tribe of Indians requested a copy of the survey report. The Stockbridge-Munsee Band of Mohicans requested copies of the archaeological scope of work and unanticipated discoveries plan in addition to the opportunity to conduct tribal monitoring during the course of field surveys. A response has not been received from the Delaware Nation.

The Stockbridge-Munsee Band of Mohicans Indians did not participate in field surveys; however, Millennium intends to coordinate site visits with the tribe should they identify any areas warranting assessment. As requested, on November 11, 2015, Millennium provided copies of the Phase I survey report to the Stockbridge-Munsee Band of Mohicans and the Delaware Tribe of Indians. The Stockbridge-Munsee Band of Mohicans responded on November 18, 2015 indicating their satisfaction with the survey report and that no additional information was requested unless construction activities result in the inadvertent discovery of cultural materials. To date, the Delaware Tribe of Indians has not provided review comments regarding the Phase I survey report.

On August 19, 2015 we sent letters to the same four tribes requesting their comments on the Project. No responses have been received to date.

7.4 Unanticipated Discoveries

In consultation with the SHPO, Millennium developed *Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains* that would be implemented in the event that previously unreported archaeological sites or human remains were encountered during construction. This plan provides for the notification of interested parties, including Native American tribes, in the event of any discovery. We find the plan to be acceptable.

7.5 Compliance with the National Historic Preservation Act

Since we have not completed consultation with the SHPO, to ensure that the FERC's responsibilities under the NHPA and implementing regulations are met, we recommend that:

- **Millennium should not begin construction of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads until:**
 - a. **Millennium files with the Secretary remaining cultural resources survey reports(s); site evaluation report(s); and avoidance/treatment plan(s), as required; and comments on the cultural resources reports and plans from the SHPO;**
 - b. **the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and**
 - c. **the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Millennium in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

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

8. Air and Noise

8.1 Air Quality

Existing Air Quality

The Project would result in air emissions through short-term construction activities. Emissions associated with construction activities generally include fugitive dust from soil disruption and combustion emissions from construction equipment. Millennium does not propose any new or changes to compressor stations or operating emission sources as part of the Project, and therefore, no air permitting actions are required.

Federal and state air quality standards have been designed to protect human health and the environment from airborne pollutants. The EPA established National Ambient

Air Quality Standards (NAAQS) for seven air contaminants designated "criteria air pollutants," which are nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), lead, inhalable particulate matter (PM) with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}), and PM with an aerodynamic diameter less than or equal to 10 microns (PM₁₀). The NAAQS were established under the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990, to protect human health (primary standards) and public welfare (secondary standards). The NAAQS are codified in 40 CFR 50. The NAAQS are applicable to all counties where the Project is proposed. Table B-11 summarizes the NAAQS as designated by the EPA.

Under the CAA, each state prepares a State Implementation Plan (SIP) to demonstrate the state's air quality management program to attain or maintain the primary and secondary NAAQS. The SIP may also include stricter standards than the NAAQS. The state of New York implements its SIP through NYSDEC and has established more stringent air quality standards for SO₂, NO₂, CO, PM, hydrogen sulfide, beryllium, fluorides, and non-methane hydrocarbons. The combustion of gasoline and diesel fuels during construction of the Project would release NO₂, CO, volatile organic compounds (VOC), PM_{2.5}, PM₁₀, SO₂, hazardous air pollutants, and GHG.

On December 7, 2009, the EPA added GHG to the definition of pollutant, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The GHGs that would be produced by the Project are CO₂, CH₄, and N₂O, but only during operation of construction equipment; hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride would not be emitted. Emissions of GHGs are quantified in terms of carbon dioxide equivalents (CO₂e) by multiplying emissions of each GHG by its respective global warming potential (GWP). The GWP is a ratio relative to CO₂ regarding each GHG's ability to absorb solar radiation and its residence time in the atmosphere. Accordingly, CO₂ has a GWP of 1 while CH₄ has a GWP of 25, and N₂O a GWP of 298.

To obtain the CO₂e quantity, the mass of the particular chemical is multiplied by the corresponding GWP, the product of which is the CO₂e for that chemical. The CO₂e value for each of the GHG chemicals is summed to obtain the total CO₂e GHG emissions. There are no federal regulations at this time limiting the emissions of CO₂. Also, CO₂ reporting requirements for stationary sources do not apply to construction emissions. However, in compliance with EPA's definition of air pollution to include GHGs, we have provided estimates of GHG emissions for construction activities as shown in table B-13 below. The EPA did not establish NAAQS for any listed GHGs as their impact is on a global basis and not a local/regional basis.

Table B-11
National Ambient Air Quality Standards for Criteria Pollutants

Pollutant [Final Rule Citation]	Primary or Secondary	Averaging Time	Level^a	Criteria
Carbon Monoxide [76 FR 54294, Aug 31, 2011]	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead [73 FR 66964, November 12, 2008]	Primary and Secondary	Rolling 3 month average	0.15 µg/m ^{3b}	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, February 9, 2010] [61 FR 52852, October 8, 1996]	Primary	1-hour	100 ppb	98th percentile, averaged over three years
	Primary and Secondary	Annual	53 ppb ^c	Annual mean
Ozone [73 FR 16436, March 27, 2008]	Primary and Secondary	8-hour	0.075 ppm ^d	Annual fourth-highest daily maximum 8-hour concentration, averaged over three years
	Primary	Annual	12 µg/m ³	Annual mean, averaged over three years
PM_{2.5} Particle Pollution [December 14, 2012]	Secondary	Annual	15 µg/m ³	Annual mean, averaged over three years
	Primary and Secondary	24-hour	35 µg/m ³	98 th percentile, averaged over three years
PM₁₀ Particle Pollution [December 14, 2012]	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over three years
Sulfur Dioxide [75 FR 35520, June 22, 2010] [38 FR 25678, September 14, 1973]	Primary	1-hour	75 ppb ^e	99 th percentile of 1-hour daily maximum concentrations, averaged over three years
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2015

^a ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter

^b Final rule signed October 15, 2008. The 1978 lead standard (1.5 micrograms per cubic meter [µg/m³] as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

^c The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

^d Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over three years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm not to be exceeded more than once per year) in all areas, although some areas have continuing obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to one.

^e Final rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

The EPA has established Air Quality Control Regions (AQCR) in accordance with Section 107 of the CAA, defined as contiguous areas considered to have relatively uniform ambient air quality, and treated as single geographical units for reducing emissions and determining compliance with the NAAQS. Attainment with the NAAQS is determined based on whether or not measured ambient air pollutant concentrations are above or below the NAAQS and/or state AAQS. The SIP must include measures identifying how applicable air quality standards are achieved as well as maintained in each AQCR. The Project, including the pipeline and aboveground facilities, would be in the Hudson Intrastate AQCR.

Areas of the country are designated based on compliance with the NAAQS. Designations fall under three main categories as follows: “attainment” (areas in compliance with the NAAQS); “nonattainment” (areas not in compliance with the NAAQS); or “unclassifiable” (areas lacking data to determine attainment). Areas formerly designated as nonattainment are considered ‘maintenance areas.’ Orange County is within the Northeast Ozone Transport Region. However, Orange County is designated as in attainment or unclassified for all NAAQS, with the exception of being designated as maintenance for the 1997 and 2006 PM_{2.5} standards. Air quality designations for Orange County, New York are summarized in table B-12.

Table B-12	
National Ambient Air Quality Standards Attainment Status for Orange County	
Air Pollutant	Orange County, NY
SO ₂	Attainment
CO	Attainment
NO ₂	Attainment
Ozone (8-hour standard)	Attainment
PM ₁₀	Unclassifiable
PM _{2.5}	Maintenance
Lead	Attainment

Federal Air Quality Requirements

The CAA, 42 U.S.C. 7401 et seq., as amended in 1977 and 1990, and 40 CFR 50 through 99 provide the federal statutes and regulations governing air pollution in the United States. The federal requirements discussed below would be applicable to the Project. New Source Review, Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, and impacts on designated Class I areas were not reviewed, as the Project would not include stationary sources. Air quality impacts

associated with the Project would result primarily from mobile source emissions (fossil-fueled construction equipment) and fugitive dust.

Greenhouse Gas Mandatory Reporting Rule

The EPA's Mandatory Reporting of GHG Rule requires reporting of GHG emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 tons per year (tpy) of GHG CO₂e. Subpart W of the Mandatory Reporting of GHG Rule establishes reporting requirements for natural gas supplier's transmission pipeline systems, and specifically natural gas transmission compression; however, because the Project does not involve compression, the reporting requirements do not apply to the Project. Potential GHG emissions from construction of the Project would nonetheless result in less than 25,000 tpy of GHG CO₂e. Table B-13 summarizes GHG emissions expected from the proposed Project.

Conformity of General Federal Actions

According to Section 176(c)(1) of the CAA (40 CFR Section 51.853), a federal agency cannot approve or support activity that does not conform to an approved SIP. Therefore, a conformity analysis to determine whether a Project would conform to an approved SIP is required when a federal action would generate emissions exceeding conformity threshold levels of pollutants for which an air basin is designated as nonattainment or maintenance. A conformity applicability determination requires that direct and indirect emissions of nonattainment or maintenance pollutants (or precursors) resulting from the federal action be compared with general conformity applicability emissions thresholds. If the thresholds are exceeded, general conformity applies and a conformity determination is required. The Project is in Orange County, New York, which is classified as maintenance for the 1997 PM_{2.5} standard. Thresholds for general conformity are therefore set at 100 tpy of PM_{2.5}.

The majority of emissions from the Project would result from construction. Ongoing operational emissions from the Project are limited to minor fugitive releases. A summary of construction and operational emissions, including a comparison with general conformity emission thresholds, is presented in table B-14. As shown herein, all construction and operation emissions would fall beneath the general conformity *de minimis* emission threshold for PM_{2.5}.

Table B-13														
Summary of Estimated Emissions from Construction of the Valley Lateral Project^a														
Source	2016 Construction Emissions (TPY)						2017 Construction Emissions (TPY)							
	NO_x	CO	SO₂	VOC	PM₁₀	PM_{2.5}	CO_{2e}	NO_x	CO	SO₂	VOC	PM₁₀	PM_{2.5}	CO_{2e}
Construction Equipment Emissions	16.75	7.60	0.03	1.65	1.09	1.09	3,833	12.72	6.48	0.03	1.36	0.92	0.91	3,451
Fugitive Dust	--	--	--	--	20.57	2.10	--	--	--	--	--	20.57	2.10	--
Project Total	16.75	7.60	0.03	1.65	21.66	3.19	3,833	12.72	6.48	0.03	1.36	21.49	3.02	3,451

Table B-14					
Comparison of Construction Emissions for the Valley Lateral Project to General Conformity Thresholds (TPY)					
Air Pollutant	PM₁₀	PM_{2.5}	NO_x	SO_x	VOC
Construction Emissions					
2016 Construction Emissions	21.66	3.19	16.75	0.03	1.65
2017 Construction Emissions	21.49	3.02	12.72	0.03	1.36
General Conformity Threshold ^a	N/A	100	N/A	N/A	N/A
Operational Emissions					
Project Fugitive Emissions	0.00	0.00	0.00	0.00	<0.01
General Conformity Threshold ^a	N/A	100	N/A	N/A	N/A
^a General Conformity is only applicable to nonattainment or maintenance areas. Thresholds for each pollutant are based on the severity of the nonattainment areas or maintenance area where the Project is located. N/A = not applicable.					

State Regulations

Within 6 New York Codes, Rules, and Regulations Part 217, NYSDEC has implemented programs that are relevant to heavy construction equipment and passenger vehicles for transport of workers to the Project site. The Project would be subject to these programs. The New York Vehicle Inspection Program is designed for light-duty vehicles. The Heavy Duty Diesel Vehicle Program (HDDV) is for on-road diesel-powered vehicles greater than 8,500 pounds gross vehicle weight rating. Both the New York Vehicle Inspection Program and HDDV programs require annual inspections for air emissions. HDDVs operating on any New York State public roadway are also subject to roadside emissions inspections.

Construction Emissions Impacts and Mitigation

Emissions associated with construction activities generally include: 1) exhaust emissions from construction equipment, 2) fugitive dust emissions associated with construction vehicle movement on unpaved surfaces, and 3) fugitive dust associated with grading, trenching, backfilling, and other earth-moving activities. The exhaust emissions would depend on the equipment used and the horsepower-hours of operation. Fugitive dust emission levels would vary in relation to moisture content, composition, and volume of soils disrupted during construction. Estimated construction emissions for the proposed Project are shown in table B-13.

Fugitive dust and other emissions from construction activities generally do not result in a significant increase in regional pollutant levels, although local pollutant levels could increase temporarily. Millennium would take measures to reduce fugitive emissions through the application of dust suppressants (such as water) to disturbed work areas and by avoiding excessive vehicle speeds on unpaved roads. Millennium may use busses or vans to transport construction workers to the work site, thereby reducing the number of vehicles on unpaved roads. Millennium would also revegetate disturbed areas to limit dust.

Gasoline and diesel engines used during construction would be operated and maintained in a manner consistent with the manufacturers' specifications and the applicable EPA mobile source emission regulations (40 CFR 85), thus minimizing construction equipment emissions. Current EPA sulfur-in-fuel standards would also contribute to minimizing emissions from construction equipment. The construction equipment would be operated on an as-needed basis, and primarily during the daytime hours.

Once construction activities are completed, fugitive dust and construction equipment emissions would return to current levels. Emissions associated with the construction-related activities would be temporary in nature and we conclude they would

not cause, or significantly contribute to, a violation of any applicable ambient air quality standard.

Operational Emissions Impacts and Mitigation

Millennium does not propose any new or modified compressor stations or operating emission sources as part of the Project, and therefore, no air permitting actions are required. Fugitive natural gas emissions, however, occur from valve components during pipeline operations. The Valley Lateral Pipeline Project and associated facilities would result in minor amount of fugitive emissions from operations and maintenance. Though it is not possible to fully determine the amount of future maintenance required, the Project would have the potential for operational emissions of volatile organic compounds (VOC) and CO_{2e} from fugitive gas releases associated with the pipeline, meter station, regulation facilities, tap valve, and pig launcher and receiver. Estimated operational emissions for the proposed Project are 7.8 tpy of CO_{2e} and less than 0.01 tpy of VOCs. These emissions would occur for the lifetime of the Project, and would be spread geographically in accordance with the fugitive potential of each section of the pipeline.

Potential impacts on air quality associated with construction and operation of the Project would be minimized by adherence to all applicable federal and state regulations. Based on the analysis presented above, we conclude that construction and operation of the Valley Lateral Pipeline would have no significant impact on regional air quality.

8.2 Noise and Vibration

The ambient sound level of a region is defined by the total noise generated within the specific environment, over varying land use types, and is usually comprised of natural and artificial sounds. The land use in the Project area is primarily agricultural land, upland forest, or commercial/industrial land. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the week. This variation is caused in part by changing weather conditions, the effect of seasonal vegetation cover, and human activities.

Ambient sound quality can be affected during construction and operation of the Project and the magnitude and frequency of sound levels can vary considerably during the day, week, or the seasons, changing weather conditions, vegetative cover, and non-Project sources of noise. Two measures that associate the time-varying quality of sound to its effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} plus 10 decibels on the A-weighted scale (dBA), added to account for people's greater sensitivity to nighttime sound (between the hours of 10:00 pm and 7:00 am). The

A-weighted scale is used as human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perceptible sound level change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 9 dBA is perceived as a doubling of sound.

Noise sensitive areas (NSAs) within the vicinity of a project may include residences, schools, churches, or any location where people reside or gather and may be affected by construction and operation of the Project. Construction equipment would contribute to ambient sound levels during construction; however, once construction is complete, sound would return to pre-construction levels.

Regulatory Noise and Vibration Requirements

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* providing information for state and local regulators to use when developing their own ambient noise standards. The EPA has determined that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity noise interference. An L_{dn} of 55 dBA is equivalent to a continuous sound level of 48.6 dBA. For comparison, normal speech at a distance of 3 feet averages 60 to 70 dBA L_{eq} . Where site-specific, ambient sound levels are above 55 dBA, sound impacts should be restricted to no more than 10 dBA over background levels. We have adopted this criterion and use it to evaluate the potential noise impact from operation of compressor facilities and certain construction-related activities.

The State of New York has ordinances in place under Section 386 of New York Vehicle and Traffic Law that restricts noise from motor vehicles. It is unlawful for motor vehicles travelling at a maximum speed of 35 miles per hour to exceed 86 dBA, or to exceed 90 dBA while travelling over 35 miles per hour. Engines fixed with a speed regulator are further limited to 76 dBA at 35 miles per hour or less, and 82 dBA for speeds greater than 35 miles per hour.

The Town of Wawayanda has an ordinance as part of Section 195-23 of Article IV of the Town Code that restricts noise from commercial or industrial properties to 65 dBA when measured 100 feet from the property line associated with the source. Additional references within the Town Code of Wawayanda prohibit noise that might be considered a general nuisance. The Town of Minisink does not have any additional noise ordinances.

Construction Noise Impacts and Mitigation

Construction of the Project would result in temporary increases in ambient sound levels. Construction noise is highly variable as equipment operates intermittently. The type of equipment operating at any location changes with each construction phase. The

sound level impacts on NSAs along the pipeline right-of-way due to construction activities would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and equipment used simultaneously, and the distance between the sound source and receptor. The Project would utilize conventional construction techniques and equipment, including excavators, bulldozers, heavy trucks (water and dump trucks), and similar heavy construction equipment.

Individuals along the pipeline route would likely hear construction noise during the daytime, but the overall impact would be temporary. The closest residences are about 200 feet from the Project, including the Green Ridge Golf Club, which is about 140 feet from Project workspaces between MP 0.9 and 1.5. Construction equipment would be operated on an as-needed basis during daylight hours only; therefore, nighttime noise levels would remain unaffected by most construction activities, with the exception of the proposed HDDs. Work on any given section of the pipeline route would typically take less than a week to complete, as pipeline construction activities continuously move along as an assembly line. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and localized, and we do not believe that adjacent landowners would be adversely affected.

HDD Noise

Millennium proposes to use the HDD construction method at three locations along the pipeline route. Without dampening noise, preliminary estimations suggest that noise levels from HDD construction alone could exceed 55 dBA at three nearby NSAs (the Rutgers Creek HDD entry point at MP 1.8, the Ridgebury Hill Road and Catlin Creek HDD entry point at MP 5.6, and the Interstate Highway-84 entry point at MP 7.7). Table B-15 summarizes the noise impacts associated with each HDD location (entry and exit point) on the nearest NSA. Where applicable, the calculated peak sound level includes the addition of noise control measures. HDD activities are expected to last between 60 to 90 days at each site, and would occur over a 24-hour per day timeframe.

As shown in table B-15, the estimated noise attributable to HDD activities could exceed our 55 dBA L_{dn} criterion at certain NSAs without employing noise mitigation measures; therefore, Millennium committed to implementing site-specific noise mitigation measures and calculated the resulting noise levels at these NSAs.

Table B-15 Acoustical Survey and Analysis Summary for Horizontal Directional Drills						
Closest NSA	Distance and Direction of NSA from HDD Location^a	Estimated L_{dn} due to Project Construction, No Noise Control (dBA)	Estimated L_{dn} due to Project Construction, Noise Control (dBA)	Existing Ambient L_{dn} (dBA)	L_{dn} of Construction plus Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dB)^b
Rutgers Creek HDD (Entry and Exit)						
Entry, Residence (MP 1.8)	350 ft. NW	70.4	57.1	47.5	57.5	10.0
Exit, Residences (MP 1.3)	800 ft. NW	48.0	--	49.3	51.7	2.4
Ridgebury Hill Road and Catlin Creek HDD (Entry and Exit)						
Entry, Residence (MP 5.6)	200 ft. E	72.9	59.4	53.3	60.4	7.1
Exit, Residences (MP 6.1)	1,400 ft. SE	42.3	--	57.6	57.7	0.1
Interstate Highway-84 HDD (Entry and Exit)						
Entry, Residences (MP 7.7)	1,050 ft. SW	52.7	--	58.5	59.5	1.0
Exit, Residences (MP 7.3)	350 ft. W	60.1	48.8	56.4	57.1	0.7
Notes:						
^a NW = northwest; E = East; SE = southeast; SW = southwest; W = west.						
^b Potential increase above ambient (dB) uses the estimated peak noise impact with noise control measures implemented, where applicable.						

These site-specific noise mitigation measures could include, but are not limited to, a combination of the following:

- a temporary noise barrier around the workspace associated with the HDD entry site, which could be constructed of 0.5-inch thick plywood panels (e.g., 12 to 16 feet high), installed around two or three sides of the HDD workspace;
- hospital-grade exhaust silencers on all engines in conjunction with any of the site HDD equipment (e.g., generators, pumps and hydraulic power unit);
- partial noise barriers or enclosure around the hydraulic power unit and engine-driven pumps; and
- relocation of specific equipment.

In addition, Millennium could offer compensation or temporary relocation to the residents as a means of reducing the temporary HDD noise impact.

Based on the noise mitigation measures proposed by Millennium at these NSAs, we find that the noise impacts attributable to the HDD would not be significant. However, because the HDD activities would be continuous and last for 60 to 90 days, and to ensure that the nearest NSAs to the HDD sites are not exposed to excessive noise during nighttime HDD operations, **we recommend that:**

- **Millennium should file the following in the biweekly construction status reports:**
 - a. **the noise measurements at the nearest NSA, obtained at the start of the HDD operations;**
 - b. **the noise mitigation that Millennium implemented at the start of drilling operations; and**
 - c. **any additional mitigation measures that Millennium would implement if the initial noise measurements exceeded an L_{dn} of 55 dBA at the nearest NSA and/or increased noise is over ambient conditions greater than 10 dB.**

To minimize the potential for an inadvertent return in a waterbody crossed by HDD, Millennium may implement the intersect method, during which pilot holes would be drilled from each side of the waterbody and would intersect at a predetermined point per its HDD Plan (see section A.7.2). Because the intersect method would necessitate the use of two HDD drill rigs, **we recommend that:**

- **Millennium should not begin construction of any HDD crossing where the intersect method would be used until Millennium files with the Secretary a revised noise analysis and mitigation plan for the review and written approval of the Director of OEP. During drilling operations, Millennium should implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than an Ldn of 55 dBA at the NSAs.**

In addition to the pipeline, a new delivery meter station would be constructed at MP 7.8. As shown in table B-16, the meter station is expected to have minimal contribution to the ambient sound levels on nearby NSAs. The estimated sound level contribution due to operation of the station is estimated to be 50.1 dBA at 100 feet from the closest property line, which meets the requirements of the Town of Wawayanda noise ordinance.

Table B-16					
Acoustical Survey and Analysis Summary for the Meter Station					
Closest NSA	Distance and Direction of NSA from HDD Location	Estimated Meter Station Ldn Contribution (dBA)	Existing Ambient Ldn (dBA)	Ldn of Construction plus Ambient Ldn (dBA)	Potential Increase Above Ambient (dB)
NSA #1	1,500 ft. SW	39.4	58.5	58.5	0.0
NSA #2	2,000 ft. SE	35.9	56.4	56.4	0.0
NSA #3	1,750 ft. N	37.5	61.0	61.0	0.0

Because the Project does not include operation of new or modified compressor stations, the Project would not result in any significant operational noise impacts. Based on the analyses conducted, Millennium's proposed mitigation measures, and our recommendations, we conclude that construction and operation of the Project would not result in significant sound level impacts on residents or the surrounding communities.

9. Reliability and Safety

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

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If inhaled in high concentrations, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of over 1,000 degrees Fahrenheit and is flammable at concentrations between 5 and 15 percent in air. An

unconfined mixture of methane and air is not explosive; however, it may ignite if there is an ignition source present. A flammable concentration within an enclosed space in the presence of an ignition source can explode. Methane is buoyant at atmospheric temperatures and disperses upward rapidly in air.

9.1 Safety Standards

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

Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adoption and enforcing the federal standards, while Section 5(b) permits a state agency that does not qualify under Section 5(a) to perform certain inspection and monitoring functions. A state may also act as DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement actions. New York is authorized by PHMSA under Section 5(a) to assume all aspects of the safety program intrastate, but not interstate, facilities (PHMSA 2016a).

The DOT pipeline standards are published in 49 CFR 190 - 199. Part 192 specifically addresses natural gas pipeline safety issues. Under a MOU on Natural Gas Transportation Facilities, dated January 15, 1993, between the DOT and the FERC, the DOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.12(a)(9)(vi) of the FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision within the MOU to promptly alert the DOT. The MOU also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction. The FERC also participates as a member of the DOT's Technical Pipeline

Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

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

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

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

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 18 inches in consolidated rock and 30 inches in normal soil. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 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, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures; hydrostatic test pressures; MAOP; inspection and testing of welds; and the frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

The proposed Project would be constructed through Class 1 and 2 areas. However, Millennium would comply with the minimum depth requirements for Class 2, 3, and 4 areas along the entire Project route and would install the pipeline with a minimum depth of cover of 4 feet in agricultural lands. Throughout the life of the

pipeline, Millennium would monitor population changes in accordance with CFR 49, title 192, subpart L (Section 192.609 and 192.611) to determine whether the pipeline requires upgrades to meet changes in population.

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

The DOT has published rules that define HCAs as areas where a gas pipeline accident could considerably harm people and their property and that require an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for the DOT 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 locations 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 locations where the potential impact circle includes an identified site (as described below).

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

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

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

⁸ The potential impact radius is calculated as the product of 0.69 and the square root of: the MAOP of the pipeline in pounds per square inch gauge 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.

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 pipeline within HCAs. The DOT regulations specify the requirements for the integrity management plan in Section 192.91. The pipeline integrity management rule for HCAs requires inspection of pipeline HCAs at a rate of once every 7 years. Millennium has identified no HCAs along the proposed pipeline route. Millennium would be subject to criteria specified by the DOT to identify HCAs if conditions change along the proposed pipeline.

The DOT prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Each pipeline operator is required to establish an emergency plan that includes procedures to minimize the hazards of natural gas pipeline emergency. Key elements of the plan include procedures for:

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

Under 49 CFR 192.615, each pipeline operator must also establish an Emergency Plan that provides written procedures to minimize hazards from a natural gas pipeline emergency. Millennium is operated by Columbia Pipeline Group (Columbia), which would employ qualified emergency response personnel to be dispatched to the scene of an emergency, should one arise. In addition, Columbia would implement procedures with their Site Specific Emergency Plan to enable the public and officials to recognize and report a natural gas emergency. Columbia would establish and maintain a liaison with public officials to coordinate emergency response planning, to notify officials of Columbia's emergency response capabilities, and facilitate communication regarding during emergencies.

The DOT requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. 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. Millennium maintains an ongoing liaison with the appropriate fire, police, and public officials to coordinate mutual assistance during emergencies.

9.2 Pipeline Accident Data

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

- caused a death or personal injury requiring hospitalization; or
- involved property damage of more than \$50,000 (1984 dollars)¹⁰.

During the 20-year period from 1996 through 2016, a total of 1,309 significant incidents were reported on more than 301,000 total miles of natural gas transmission pipelines nationwide. Additional insight into the nature of service may be found by examining the primary factors that caused the failures. Table B-17 provides a distribution of the causal factors as well as the number of each incident by cause.

The dominant causes of pipeline incidents are corrosion, pipeline material and weld or equipment failure, constituting 50.7 percent of all significant incidents. The pipelines included in the dataset in table B-17 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of the pipeline.

The frequency of significant incidents is strongly dependent upon pipeline age. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. The use of both an external protective coating and a cathodic protection system¹¹ required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially protected pipe.

Outside forces, excavation, and natural forces are the cause of 33.6 percent of significant pipeline incidents. These result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; and weather effects such as winds, storms, and thermal strains and willful damage.

¹⁰ \$50,000 in 1984 is approximately \$115,000 as of November 2015 (Bureau of Labor Statistics 2015).

¹¹ Cathodic protection is a technique to reduce corrosion (rust) of the natural gas pipeline through the use of an induced current or a sacrificial anode (like zinc or manganese) that corrodes at a faster rate to reduce corrosion.

Table B-17 Natural Gas Transmission Pipeline Significant Incidents by Cause 1996-2015		
Cause	Number of Incidents	Percentage ^a
Corrosion	310	23.7
Excavation ^b	210	16.0
Pipeline material, weld, or equipment failure	354	27.0
Natural force damage	146	11.2
Outside forces ^c	84	6.4
Incorrect operation	40	3.1
All other causes ^d	165	12.6
Total	1,309	--
Source: PHMSA 2016b.		
^a Due to rounding, column does not total 100 percent.		
^b Includes third party damage.		
^c Fire, explosion, vehicle damage, previous damage, intentional damage, electrical arcing from other equipment/facilities, fishing or maritime activity, maritime equipment or vessel adrift, and unspecified or other outside force damage.		
^d Miscellaneous causes or unknown causes.		

Older pipelines have a higher frequency of outside forces incidents, partly because their location may be less well known and less well marked as compared to newer pipelines. In addition, the older pipelines contain a disproportionate number of smaller-diameter pipelines, which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movement. Table B-18 provides a breakdown of outside force incidents by cause.

Since 1982, operators have been required to participate in “One Call” public utility programs in populated areas to minimize unauthorized excavation activities near pipelines. The “One Call” program is a service used by public utilities and some private sector companies (for example oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. As Millennium would construct in close proximity to other utility lines (see table A-3 and table A-8), it would monitor excavations, avoid mechanical excavations within 3 feet of existing pipelines, and give other operators the opportunity to be present during work around their pipelines.

Table B-18
Outside Forces Incidents by Cause^a 1996-2015

Cause	Number of Incidents ^b	Percent of Outside Force Incidents ^c
Third party excavation damage	172	39.1
Operator excavation damage	25	5.5
Unspecified excavation damage/previous damage	13	2.5
Heavy rain/floods	74	16.6
Earth movement	32	7.8
Lightning/temperature/high winds	27	6.0
Natural force (unspecified or other)	13	3.5
Vehicle (not engaged with excavation)	49	10.8
Fire/explosion	9	1.8
Previous mechanical damage	6	1.6
Fishing or maritime activity	7	1.6
Maritime equipment or vessel adrift	2	0.5
Intentional damage	1	0.2
Electrical arcing from other equipment/facility	1	0.2
Unspecified/other outside force	9	1.6
Total	440	-

Source: PHMSA 2016b.

^a Excavation, Outside Force, and Natural Force from table B-17.

^b The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

^c Due to rounding, column does not total 100 percent.

9.3 Impact on Public Safety

As stated in section B.9.1, Millennium would comply with all applicable DOT pipeline safety standards as well as regular monitoring and testing of the pipeline. While pipeline failures are rare, the potential for pipeline systems to rupture and the risk to nearby residents is discussed below.

The service incidents data summarized above in table B-17 included pipeline failures of all magnitudes with widely varying consequences. Table B-19 presents the average annual injuries and fatalities that occurred on natural gas transmission pipelines in the 5-year period between 2011 and 2015.

Table B-19 Injuries and Fatalities - Natural Gas Transmission Pipelines		
Year	Injuries	Fatalities
2011	1	0
2012	7	0
2013	2	0
2014	1	1
2015	14	6
Source: PHMSA 2016b.		

The majority of fatalities from pipelines are due to incidents with local distribution pipelines not regulated by the FERC. These are natural gas pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, these distribution lines are smaller diameter pipes and/or plastic pipes, which are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to the FERC-regulated natural gas transmission pipelines. The nationwide total of accident fatalities from various anthropogenic and natural hazards are listed in table B-20 to provide a relative measure of industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously; however, because individual exposures to hazards are not uniform among all categories. The data nonetheless indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to other hazard categories. Furthermore, the fatality rate associated with natural gas distribution lines is much lower than the fatalities from natural hazards such as lightning, tornados, or floods. The available data show that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. From 1996 to 2015, there were an average of 65 significant incidents (see table B-17), 9 injuries, and 2 fatalities per year (PHMSA 2016b). The operation of the Project would represent a slight increase in risk to the nearby public; however, the number of significant incidents over more than 301,000 miles of natural gas transmission lines indicates that the risk is low for an incident at any given location.

Table B-20
Nationwide Accidental Deaths^a

Type of Accident	Annual No. of Deaths
All accidents	123,706
Motor vehicle	456,844
Poisoning	29,846
Falls	22,631
Injury at work	4,551
Drowning	3,443
Fire, smoke inhalation, burns	3,286
Floods	56
Lightning	34
Tornados ^b	74
Natural gas distribution pipelines ^c	14
Natural gas transmission pipelines ^c	2

^a All data, unless otherwise noted, reflect 2007 or 2009 statistics from the U.S. Census Bureau 2012.
^b Data are sourced from National Oceanic and Atmospheric Administration 2015.
^c Data are sourced from PHMSA 2016b.

10. Cumulative Impacts

In accordance with NEPA and FERC policy, we evaluated the potential for cumulative impacts of the Project. Cumulative impacts are considered as impacts on the environment that results from the incremental effects of the Project when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such actions. Cumulative effects generally refer to impacts that are additive or synergistic in nature and result from the construction of multiple projects in the same vicinity and time frame. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time. In general, small-scale projects with minimal impacts of short duration do not significantly contribute to cumulative impacts.

The Project’s cumulative impact analysis generally follows the methodology set forth in relevant guidance (Council on Environmental Quality 2005; EPA 1999). Under these guidelines, inclusion of other projects in the analysis is based on identification of impacts on environmental resources from other projects that would directly or indirectly result in similar effects as the proposed Project. The cumulative impacts analysis includes those past, present, and reasonably foreseeable projects meeting the following three criteria:

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

The Valley Lateral Project would affect a confined corridor for pipeline construction and operation within Orange County, New York. In this cumulative impact analysis we considered past, present, or reasonably foreseeable actions expected to affect similar resources during similar timeframes with the Project. Information on past, present, and relatively foreseeable future projects in the region of influence were identified through Millennium's consultation with local authorities and through our own research. Regions of influence were identified for each specific environmental resource that would be impacted by the Project.

Millennium consulted public sources to obtain information on planned future developments. To date, no planned commercial, residential, or other developments have been identified within 0.25 mile of the proposed Project facilities (see section B.5.2). One existing residential development, the Lakeridge subdivision, is approximately 65 feet from the proposed pipeline easement at approximate MP 5.1. The subdivision would be buffered from the Project by an existing area of forested land between the pipeline route and residential lots.

Potential cumulative impacts associated with recently completed, current, proposed, or reasonably foreseeable future actions within Orange County are shown in table B-21. This area accounts for the largest of the resource-specific regions of influence (socioeconomics). The regions of influence are determined for each resource and described in each resource-specific assessment, below. The projects identified in the regions of influence include four energy projects, the non-jurisdictional CPV Valley Energy Center, a non-jurisdictional project associated with the Valley Lateral Project (see section A.8), four projects to upgrade and/or expand infrastructure, and ten other projects. Not included in table B-21 but discussed in section B.1.1 are two active sand and gravel mining operations in proximity to the Valley Lateral Project.

Potential impacts most likely to be cumulative with the Project's impacts are related to geology and soils, water resources and wetlands, vegetation and wildlife (including federally and state listed endangered and threatened species), land use and visual resources, air quality, and noise. The proposed pipeline facilities could contribute to these cumulative impacts; however, Millennium would minimize adverse Project impacts by implementing mitigation measures identified in section B of this EA, and would collocate the proposed pipeline with existing rights-of-way to the extent practicable.

Table B-21					
Existing or Proposed Projects with Potential Cumulative Impacts in the Region of Influence					
Project and Proponent	Status	Potential Impact Area	Closest Known Distance to Project^a	Description	Sources
Non-Jurisdictional Projects					
CPV Valley Energy Center (CPV)	Present	35 acres	0.0 mile	Construction of a new 650 megawatt natural gas combined cycle power generation facility and associated electrical interconnect right-of-way. Construction commenced in August 2015.	CPV 2009, Town of Wawayanda 2012
Energy and Pipeline Projects					
Minisink Compressor Station (Millennium)	Past	10.6 acres	0.7 mile	Construction of a natural gas compressor station including tow 6,130 horsepower gas compressor units. Construction was completed in 2013 (Docket No. CP11-515-000).	Millennium 2015; FERC 2012
Eastern System Upgrade Project (Millennium)	Future	Unknown ^b	0.0 mile	Construction of 7.8 miles of 30- and 36-inch-diameter pipeline looping, a new compressor stations, and modifications to existing facilities. Construction anticipated to begin in 2017 (Docket No. PF16-3-000).	Millennium 2015
East Side Expansion Project (Columbia)	Present	248.9 acres (0.8 acre in Orange County)	7.5 miles	Modification to a meter station in Orange County, NY associated with construction of 19.1 miles of 20- and 26-inch-diameter pipeline loop to provide 312,000 Dth/d of natural gas transportation capacity. In-service October 2015 (Docket No. CP14-17-000).	FERC 2014
President Container	Present	Unknown	5.5 miles	Construction of a solar electric generator plant at an existing facility. Construction scheduled for completion in Fall, 2015.	Millennium 2015
Infrastructure Projects					
Orange County Regional Airport	Future	>7.9 acres	11 miles	Relocation of the existing runway to meet current safety requirements; impacts include 7.9 acres of New York State wetlands and 4.2 acres of federal wetlands.	NYSDEC 2015f
Route 17 at exit 122 (NYSDOT)	Past	Unknown	4.9 miles	Roadway under construction. Construction schedule for completion October 2015.	Millennium 2015
Route 211 (NYSDOT)	Present	Unknown	4.2 miles	Pedestrian and landscape improvements scheduled for June 2016.	Millennium 2015
US 17 Transportation Corridor Study (NYSDOT)	Future	Unknown	4.4 miles	Corridor study completed in 2013; road improvements to be considered as funding is available.	Millennium 2015

Table B-21 (continued)
Existing or Proposed Projects with Potential Cumulative Impacts in the Region of Influence

Project and Proponent	Status	Potential Impact Area	Closest Known Distance to Project^a	Description	Sources
Residential and Commercial/Industrial Developments^a					
Kent Farm Development	Future	36 acres	2.8 mile	150 Age Restricted housing units and commercial building under DEIS review.	382 Golf Links LLC 2015
Sleep Inn Hotel	Future	Unknown	0.8 mile	New hotel, construction estimated to begin in August 2015.	Millennium 2015
Pathway to Health	Future	Unknown	3.0 miles	Planned new clinical health facility.	Millennium 2015
Echo Lake Corporate Park	Future	Unknown	5.9 miles	New business park, construction anticipated to begin in Spring, 2016.	Millennium 2015
Kikkerfrosch Brewery	Present	Unknown	4.0 miles	New brewery, construction anticipated to begin Summer, 2015.	Millennium 2015
Orange County Regional Medical Center	Present	Unknown	4.2 miles	Medical center expansion; construction anticipated to be complete Fall, 2016.	Millennium 2015
Hilton Home2 Suites	Present	Unknown	4.7 miles	New hotel; construction anticipated to be complete early 2016.	Millennium 2015
Amy's Kitchen	Future	Unknown	3.0 miles	New food processing facility, construction anticipated to begin in Spring, 2016	Millennium 2015
Advanced Coating Technologies (Pratt & Whitney Manufacturing)	Future	Unknown	4.9 miles	Expansion of an existing facility that applies engineered coatings to turbine parts, construction timing unknown.	Millennium 2015
Tiller USA Manufacturing	Present	Unknown	5.2 miles	Manufacturing facility; construction anticipated to be complete in Summer, 2016.	Millennium 2015
Other Projects					
Heritage Trail Expansion	Future	Unknown	1.7 mile	Ten-mile extension of an existing recreational trail. Construction could begin in the second half of 2016.	Millennium 2015
^a Projects identified by Millennium (Millennium 2015) that include renovation of existing buildings and no new ground disturbance were not included in the cumulative impacts assessment, such as the Equilibrium Brewery and Clemson Brewery. ^b Millennium's planned Eastern System Upgrade Project is in FERC's the pre-filing review process and project details are pending. Impact acreages have not been filed as of publication of this EA.					

10.1 Geology and Soils

The Project occurs within a region of relatively low historical earthquake activity and in an area of low, rolling topography with a low susceptibility to landslides, soil liquefaction, and land subsidence hazards. Because direct effects of geologic hazards would be highly localized and limited primarily to the period of construction, cumulative impacts geologic hazard impacts would only occur if other projects are constructed at the same time and place as the proposed facilities. Therefore, the region of influence for cumulative impacts on geology and soils is the footprint of the proposed Project. The Project, in addition to other projects in the region of influence, may have cumulative impacts on geology since projects may be subject to natural geological hazards. Soils resources by resulting in soil erosion and compaction.

The CPV Valley Energy Center is within the region of influence for geology and soils for the Project where the Valley Lateral pipeline terminates on the CPV Valley Energy Center property at the Project meter station. As discussed, the geologic setting of the Project poses minimal geologic hazards. In addition, the CPV Valley Energy Center would employ best management practices to limit effects on soils, and would implement NYSDAM guidelines for agricultural soil removal and restoration during construction (CPV 2009, Town of Wawayanda 2012). Permanent impacts would occur where soils are encumbered by the CPV Valley Energy Center facilities. Similarly, Millennium's Eastern System Upgrade Project would be within the Valley Lateral Project footprint at MP 0.0. Construction of the Eastern System Upgrade Project, if approved, would commence in September 2017, after the proposed Valley Lateral Project in-service date.

Impacts on geology and soils resources associated construction of these projects would not overlap, and Millennium would implement measures in the FERC Plan to minimize impacts associated with the Eastern System Upgrade Project. Millennium would minimize incremental impacts on soils through implementation of its ECS; soil impacts would be short term as revegetation would occur quickly. Therefore, we conclude that cumulative impacts on geology and soils from the Project in consideration with other projects would be minor.

10.2 Water Resources and Wetlands

Because impacts on surface waters and wetlands can result in downstream contamination or turbidity, the region of influence for cumulative impacts on water resources and wetlands includes each HUC-12 subwatershed crossed by the Project. HUCs define the source area that contributes surface water to a specified outlet point, and they are delineated based on surface water flow along natural topographic and hydrologic breaks. HUC-12 subwatersheds typically define the drainage area upstream of tributaries to major rivers, and range from 10,000 to 40,000 acres in size. The Project would cross two subwatersheds: Rutgers Creek and Masonic Creek-Walkkill River.

The Project, in addition to other projects in the region of influence, may have cumulative impacts on water resources and wetlands including changes in groundwater recharge; impacts on surface and groundwater quality; sedimentation and increased turbidity due to erosion or construction within surface waters; and temporary and permanent impacts on wetlands. Construction of the proposed Project would result in temporary and minor impacts on groundwater and surface water resources. Temporary, minor impacts on PEM and PSS wetlands would occur. Impacts on PFO wetlands would be long-term within the temporary construction right-of-way. Permanent impacts on PFO wetlands would include conversion to PEM wetlands within the maintained portion of the permanent right-of-way (a 10-foot-wide maintenance corridor centered over the pipeline).

Many of the projects identified in table B-21 are within the same subwatersheds that would be crossed by the Valley Lateral Project, including the CPV Valley Energy Center (only the Minisink Compressor Station, Orange County Regional Airport, and Advanced Coating Technologies projects are outside this region of influence). Some of these projects would result in direct and indirect impacts on wetlands and waterbodies during construction and operation. Therefore, the Project, when considered with other projects in the vicinity, would result in cumulative impacts on water resources and wetlands. However, impacts on surface waters associated with the Project would be temporary, including sedimentation from construction areas. Additionally, some of the projects identified in table B-21, such as the CPV Valley Energy Center, would result in temporary and permanent impacts on wetlands in the watersheds crossed by the Project. However, the Town of Wawayanda determined that the CPV Valley Energy Center would not result in significant impacts on wetlands (Town of Wawayanda 2012).

Because the proposed Project and other projects would be required to comply with any mitigation requirements and permit conditions in its CWA Section 404 and 401 permits for any permanent wetland impacts, and the incremental impacts of the Project would be temporary and minor, we conclude that cumulative impacts would not be significant.

10.3 Vegetation and Wildlife

Cumulative effects on vegetation and wildlife, including threatened and endangered species, affected by the Project could occur in the HUC-12 watersheds crossed by the Project. Most of the projects in table B-21 are within the HUC-12 watersheds crossed by the Project. Ten of these projects could be under construction at the same time as the Valley Lateral Project, based on known construction timeframes. Many of the commercial developments and infrastructure projects are in areas of developed land and would not affect natural vegetation communities or wildlife habitat. However, the CPV Valley Energy Center is currently resulting in combined temporary and permanent impacts on open and agricultural (27.8 acres), forest (4.1 acres), and wetland (2.9 acres) areas. Together, the Project and the CPV Valley Energy Center

would affect a total of about 140.1 acres of vegetation during construction and 76.3 acres during operation.

Cumulative impacts, such as those on vegetative cover types and wildlife habitat, are additive. Many wildlife species depend on mature contiguous tracts of forest to sustain their migratory and reproduction cycles. These species include songbirds and terrestrial mammals that require large tracts of forest to support their home ranges. Similar habitats are adjacent to and near construction activities that are expected to be sufficient to support wildlife displaced during construction. Millennium would minimize impacts on vegetation and wildlife habitat by collocating the Project with existing rights-of-way where practicable and by implementing the measures in its ECS.

Cumulative impacts on federally and state listed threatened and endangered species and federal species of concern could occur if other projects were to affect the same habitats as the Project. However, the ESA consultation process includes a consideration of the current status of affected species and cumulative impacts would be minimized. We conclude that the cumulative impacts on vegetation and wildlife resources, including threatened and endangered species, would not be significant based on the addition of the Project's impacts on these resources.

10.4 Land Use and Visual Resources

The Project could contribute to cumulative impacts on land use with other projects within 5 miles to encompass any large areas with specialized or recreational uses, as well as potential visual impacts. Of the projects identified in table B-21, 15 are within this 5-mile region of influence. The construction and operation of the Project and other projects could result in temporary and permanent cumulative impacts on land use. While many of the impacts of the Project would be temporary, construction of the proposed facilities would result in some permanent land use changes, including forest conversion to maintained rights-of-way and conversion of agricultural land and upland forest for aboveground facilities and access roads to developed, industrial land.

Millennium would minimize impacts on land use by implementing its ECS, which includes provisions from the NYSDAM pipeline construction guidance document and our Plan and Procedures, and by collocating with existing rights-of-way where practicable to minimize forest fragmentation and reduce the visual impacts associated with a new corridor. However, we recognize that collocation with existing utility corridors may, in some cases, also have negative consequences to particular tracts such as small privately held properties. Although collocation may reduce cumulative impacts overall, the cumulative impacts of two or more rights-of-way at individual properties or managed sites may be magnified.

As discussed in section B.10.3, many of the commercial developments and infrastructure projects within the region of influence are located in areas of developed

land and would not likely result in noticeable changes in land use. The CPV Valley Energy Center would result in the conversion of open, agricultural, and forest land to developed land. However, the Town of Wawayanda determined that the CPV Valley Energy Center is compatible with its Comprehensive Plan and land use zoning of the area for mixed commercial use (CPV 2009, Town of Wawayanda 2012). In the vicinity of the Valley Lateral Project, the Eastern System Upgrade Project would include a pipeline loop collocated with Millennium's existing mainline pipeline; this collocation would minimize habitat fragmentation associated with the project. Therefore, we conclude that cumulative impacts would not be significant. Since the Valley Lateral Project would not cross recreation or special interest areas, it would not contribute to cumulative effects on those areas.

Visual impacts from the proposed Project would be greatest in areas of forest conversion where the changes in vegetative cover would be more noticeable from a greater distance. The CPV Valley Energy Center would be visible from major roadways including Interstate 84 and U.S. Route 6. The aboveground facilities associated with the Valley Lateral Project at MP 7.8, including the pig receiver and meter facility, would be located within the CPV Valley Energy Facility and would contribute to visual impacts with the facility. Commercial developments and infrastructure projects are generally sited near existing development and would have minor visual impacts; the commercial development projects identified in a 5-mile radius of the Project are not expected to be visible from Shannen Park and the Green Ridge Golf Club. Minor long-term and permanent cumulative impacts on visual resources could result from the clearing of forested lands for construction and maintenance of the permanent right-of-way for the proposed Valley Lateral Project and other projects. However, we conclude these impacts would not be significant.

10.5 Air Quality

Construction of the proposed Project and other projects were considered for cumulative impacts on air quality if they occur within 0.25 mile of the pipeline and aboveground facilities, since construction emissions are highly localized. Operation of the proposed Project and other projects were considered for cumulative impacts on air quality if they occurred within 50 kilometers (31 miles) of the Valley Lateral Project.

Air emissions from projects in the vicinity of the Project would be additive. Each project in table B-21 would be required to meet applicable state and federal air quality standards to avoid significant impacts on air quality. Construction of the non-jurisdictional CPV Valley Energy Center began in August 2015, and is anticipated to be completed in December 2017. Cumulative construction emissions from the CPV Valley Energy Center and concurrent construction of the Valley Lateral Project would not result in an exceedance of applicable general conformity thresholds, as shown in table B-22. As discussed in section B.8.1, impacts from construction and operation of the Valley Lateral Project would not result in any violation of applicable ambient air quality

standards, and impacts from construction would be temporary. Any potential cumulative impacts from construction would be limited to the duration of the construction period, and would be temporary and minor.

Table B-22						
Summary of Estimated Emissions from Construction of the Valley Lateral Project and CPV Valley Energy Center						
Source	NO_x	CO	SO₂	VOC	PM₁₀	PM_{2.5}
2016 Construction Emissions						
Valley Lateral Project	16.75	7.60	0.03	1.65	21.66	3.19
CPV Valley Energy Center	16.71	101.11	0.05	3.06	13.92	2.17
Total	33.46	108.71	0.08	4.71	35.58	5.36
2017 Construction Emissions						
Valley Lateral Project	12.72	6.48	0.03	1.36	21.49	3.02
CPV Valley Energy Center	16.71	101.11	0.05	3.06	13.92	2.17
Total	29.43	107.59	0.08	4.42	35.41	5.19
General Conformity Threshold ^a	N/A	N/A	N/A	N/A	N/A	100
^a General Conformity is only applicable to nonattainment or maintenance areas. Thresholds for each pollutant are based on the severity of the nonattainment areas or maintenance area where the Project is located. N/A = not applicable.						

Operation of the non-jurisdictional CPV Valley Energy Center, as a new major stationary source of air pollutants, is subject to Prevention of Significant Deterioration regulations for emissions of criteria pollutants greater than 100 tpy. Additionally, due to the location of the CPV Valley Energy Center within a designated non-attainment area for ozone, it is subject to non-attainment New Source Review regulations for emissions of NO_x and VOCs and is required to obtain offsets for those pollutants (CPV 2009, Town of Wawayanda 2012). Under these regulations, the CPV Valley Energy Center is required to demonstrate compliance with the NAAQS. The CPV Valley Energy Center has been issued the following air quality permits required for its operation: NYSDEC Air State Facility Permit and Title IV (Phase II Acid Rain) Permit.

During operation, emissions from the Valley Lateral Project would be limited to fugitive emissions of CO₂e and VOCs. Furthermore, each of the projects identified in table B-21 would be required to meet all applicable federal and state air quality standards

that are designed to avoid significant impacts on air quality. Therefore, we conclude that the Project would not result in significant cumulative impacts on regional air quality.

10.6 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 (IPCC) is the leading international, multi-governmental scientific body for the assessment of climate change. The United States is a member of the IPCC and participates in the IPCC working groups to develop reports. The leading U.S. scientific body on climate change is the U.S. Global Change Research Program (USGCRP). Thirteen federal departments and agencies participate in the USGCRP, which began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990.

The IPCC and USGCRP have recognized that:

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

In May 2014, the USGCRP 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 federal air quality standards;
- 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 due to sea-level rise and heavy downpours 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 are projected to become more aggressive due to their benefit of higher CO₂ levels;
- 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 or West Nile virus).

The GHG emissions associated with construction and operation of the projects are discussed in more detail in section B.8.1. Emission of GHGs from the proposed Project 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.

10.7 Noise

Noise impacts would occur during construction of the Project; operational noise impacts are not anticipated. Because the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases, the Project could contribute to a cumulative noise impact on NSAs affected by the Valley Lateral Project within 1 mile along the proposed pipeline route. The projects within one mile for which construction could be concurrent with the Valley Lateral Project are the CPV Valley Energy Center and the Sleep Inn Hotel. The Minisink Compressor Station could also be operating at the same time as construction of the proposed Project. Due to the linear nature of the Project, however, construction-related noise impacts would be of a short duration in a given area. During construction, noise would be generally limited to daylight hours except for the HDD activities. Noise associated with the HDD activities could exceed an Ldn of 55 dBA at multiple NSAs; however, we included a recommendation to ensure that the nearest NSAs to the HDD sites are not exposed to excessive noise during nighttime HDD operations (see section B.8.2). Overlapping NSAs during construction of the proposed Project and other projects could experience a temporary, cumulative increase in noise.

The HDD entry point at MP 7.8 is located within the CPV Valley Energy Center facility boundary; concurrent HDD operations and construction or operation of the CPV Valley Energy Center would have a cumulative impact on the noise at nearby NSAs. Millennium would implement mitigation so that where site-specific, ambient noise levels are above 55 dBA, noise impacts would be restricted to no more than 10 dBA over background levels at nearby NSAs. For this reason and the reasons presented above, we conclude that the Project would not result in significant cumulative noise impacts.

10.8 Conclusions on Cumulative Impacts

We conclude that impacts associated with the Project would be relatively minor, and we are recommending additional measures to further reduce the environmental impacts associated with the Project. We anticipate that the proposed Project would contribute to a negligible to minor cumulative impact when the effects of the Project are added to past, present, and reasonably foreseeable projects in the region of influence and would not be significant.

C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no action alternative, system alternatives, major pipeline route alternatives, and minor route variations. No significant aboveground facilities are proposed. The evaluation criteria used for developing and reviewing alternatives were:

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

Information used to evaluate alternatives to the proposed Project included review of area maps, comments and suggestions from regulatory agencies, comments from the public, data provided by Millennium in its application, and our independent research.

It should be recognized that the currently proposed route reflects modifications to the originally planned route that Millennium incorporated during the pre-filing and application review based on discussions with landowners, land managing agencies, Project engineers, and FERC staff to avoid or minimize impacts on sensitive resources, reduce or eliminate engineering and constructability concerns, and/or avoid or minimize conflicts with existing land uses. These route variations were incorporated into the proposed Project route and are considered part of the proposed Project. Their associated environmental consequences were included in our environmental analysis in section B.

In addition to these adopted route variations, minor alignment shifts may be required prior to and during construction to accommodate currently unforeseeable site-specific constraints related to engineering, landowner, and environmental concerns. All such alignment shifts that occur outside of the permanent right-of-way would be subject to review and approval by the FERC.

1. No-Action Alternative

If the Commission were to deny Millennium's application, the Project would not be built and the environmental impacts identified in this EA would not occur. Under this alternative, Millennium would not provide natural gas supply to the CPV Valley Energy Center, and the purpose of the Project would not be met. Under the no-action alternative, other natural gas transmission companies could propose to construct similar facilities to meet the demand for new service at the CPV Valley Energy Center. Such actions could result in impacts similar to or greater than the proposed Project, and might not meet the Project's purpose and need within the proposed time frames. Therefore, we have concluded that the no-action alternative would not satisfy the Project objectives.

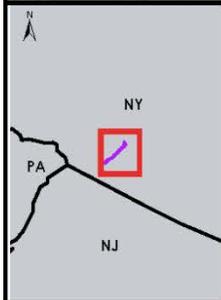
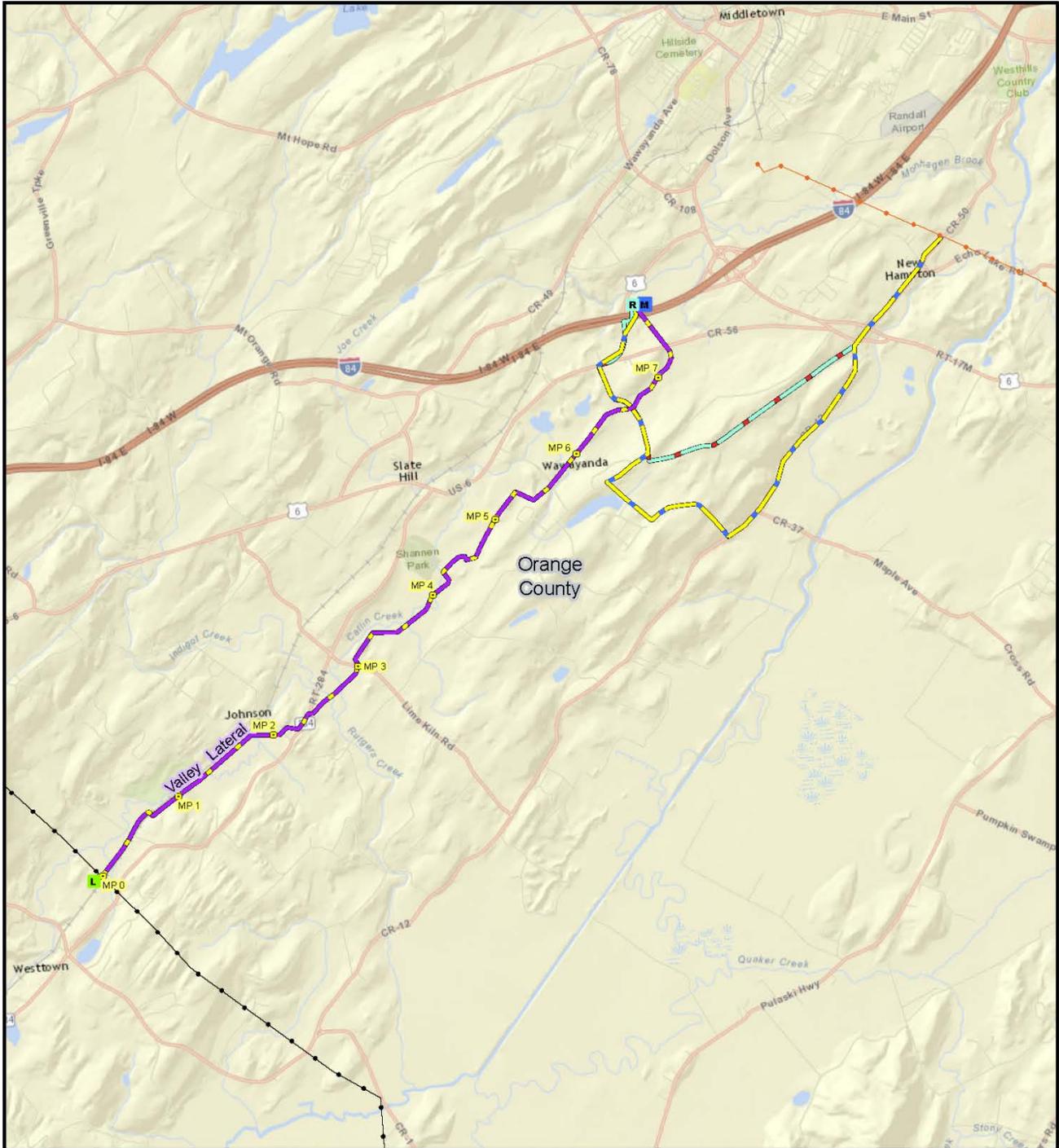
2. System Alternatives

System alternatives would use existing, modified, or proposed pipeline systems to meet the purpose and need of the Valley Lateral Project. Although modifications or additions to existing or proposed pipeline systems may be required, implementation of a system alternative would deem it unnecessary to construct all or part of the Project. These modifications or additions could result in environmental impacts that are less than, similar to, or greater than those associated with construction and operation of the Project.

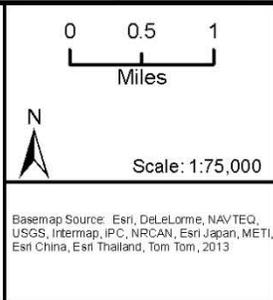
The purpose of identifying and evaluating system alternatives is to determine whether the environmental impacts associated with construction and operation of the Project could be avoided or reduced by using another pipeline system, while still meeting the objectives of the Project. The remainder of this section includes a discussion of the feasibility of using existing natural gas pipeline systems or looping alternatives to achieve the Project objectives.

We evaluated the use of an existing Orange and Rockland Utilities, Inc. (Orange and Rockland) natural gas distribution pipeline system near the CPV Valley Energy Center as a system alternative to the Valley Lateral Project. One existing 12-inch distribution pipeline operated by Orange and Rockland connects to the Millennium mainline in Minisink, New York and travels northeast toward the CPV Valley Energy Center along Route 12. Millennium stated that the MAOP of the Orange and Rockland pipeline is 250 pounds per square inch gauge; however, the system would need to operate at 575 pounds per square inch gauge to be able to provide the 130,000 Dth/d of firm transportation as stated in the purpose of the proposed Project. Therefore, this particular Orange and Rockland distribution pipeline could not meet the needed capacity.

Another Orange and Rockland distribution pipeline is located about 3 miles northeast of the CPV Valley Energy Center; and two lateral pipelines from this distribution pipeline were evaluated (see figure 3). Each of these laterals would be largely collocated with existing roadways, including residential roads such as Route 12 and Ridgebury Road. The Orange and Rockland laterals are shorter than Millennium's Project, and avoid more forested and agricultural lands and wetlands and waterbodies; however, construction would be constrained by working in existing roadways and by the presence of other utilities and would result in significantly greater impacts on residential properties. Millennium stated to meet the demand of the CPV Valley Energy Center, the Orange and Rockland system would require increased capacity via looping and/or additional compression. Additionally, it is not certain that the existing available capacity on the Orange and Rockland system is sufficient to meet the Project objective without impacting current customers. As such, the extent of additional facilities required to enable the laterals to serve as true system alternatives is yet undetermined; however, for purposes of disclosure and per the request of the EPA, table C-1 provides a comparison of the Orange and Rockland laterals to the proposed Project.



Legend	
	Milepost
	Proposed Launcher
	Proposed Receiver
	Proposed Meter Station
	Proposed Pipeline
	County Boundary
	System Alternative 1
	System Alternative 2
	Existing Millennium Pipeline
	Orange and Rockland Distribution Pipeline



Valley Lateral Project

Orange and Rockland System Alternatives

FIGURE 3

**Table C-1
Orange and Rockland System Alternatives to the Valley Lateral Project**

Resource	Proposed Route^a	System 1	System 2
Pipeline length (miles)	7.9	6.6	5.0
Operation acres ^b	47.9	39.8	30.0
Construction acres ^c	84.4	62.6	45.6
Length of adjacent right-of-way (miles) ^d	1.8	6.2	4.9
Number of roads crossed	11	17	10
Residential structures within 50 feet of the construction right-of-way ^e	0	65	47
Commercial structures within 50 feet of the construction right-of-way ^e	0	6	3
Acres of NWI wetland impacted (construction)	3.8	2.2	0.2
Number of NYSDEC wetlands crossed (feet)	1 (109)	1 (630)	0
Number of forested wetlands crossed	2	1	0
Acres of forest land impacted (construction / operation)	25.5 / 17.0	4.7 / 3.0	3.2 / 1.7
Acres of agricultural land impacted (construction / operation)	50.0 / 25.5	10.8 / 5.4	2.9 / 1.4
Number of waterbodies crossed ^f	11	1	0
Length of shallow depth to bedrock (miles) ^g	0.9	0.4	< 0.1

^a The data provided for the proposed route is based on desktop data to allow for consistent comparison of data types between the proposed route and variations. The comparison includes two similar HDD construction lengths on each route.

^b Operation acres estimated based on an assumed 50-foot-wide easement.

^c Construction acres estimated based on an assumed 75-foot-wide construction corridor and 100-foot corridor in agricultural lands.

^d Estimated from 2013 aerial photography, and utility and transportation layers. Based on an assumed 50-foot-wide permanent easement centered on the route.

^e Estimated based on an assumed 110-foot-wide construction right-of-way centered on the Proposed Route and System Alternative lateral lines. Accessory structures such as sheds not included.

^f Waterbodies were calculated using National Hydrography Data Sets. Waterbodies are a combination of streams, rivers, ponds and lakes.

^g Areas identified to have shallow depth to bedrock are described as having bedrock less than 5 feet from the surface as determined by USDA-NRCS 2014.

These Orange and Rockland lateral alternatives, while constructible, would not guarantee a reduction in environmental impacts. In addition, these system alternatives would require numerous residential impacts over the proposed Project route. Therefore, we conclude they do not offer a significant environmental advantage over the proposed Project. Further, the amount of additional design and engineering time required to make

use of these system alternatives would result in delays in delivering gas to the CPV Valley Energy Center.

No other existing or modified pipeline systems occur in the Project vicinity that would be able to meet the Project objectives.

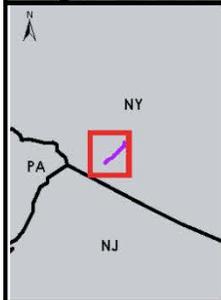
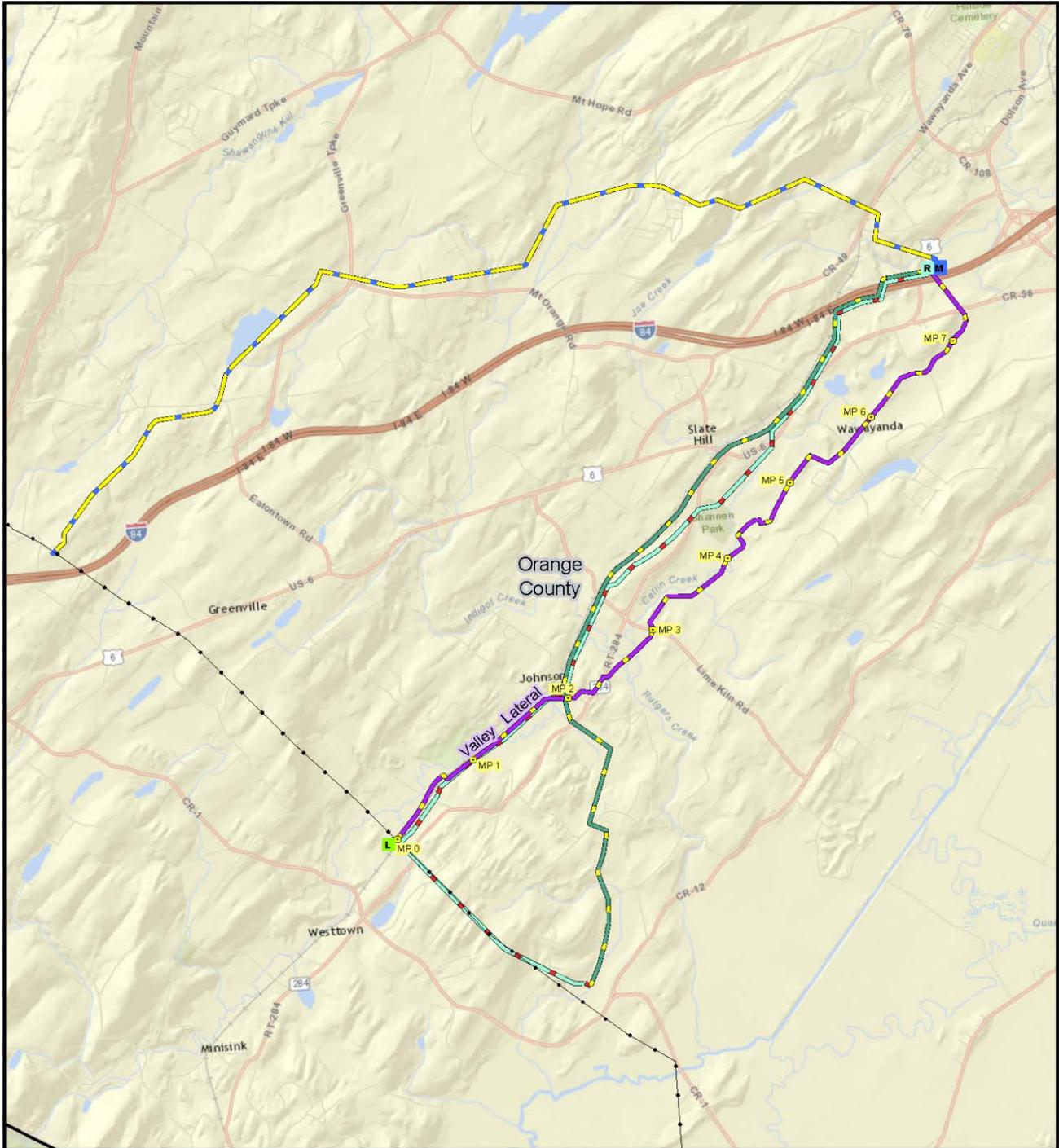
3. Major Route Alternatives

A route alternative deviates from a relatively large segment of a proposed pipeline alignment for a substantial length and distance in an effort to reduce overall environmental impacts. Route alternatives would involve construction of a new pipeline route that interconnects with Millennium's mainline, but would ultimately terminate at the CPV Valley Energy Center.

Primary criteria in evaluating route alternatives included following existing rights-of-way wherever possible to minimize impacts, as well as avoiding impacts on residences, wetlands, forested land, known cultural sites, and other resources. All resource impacts are considered in the alternatives analysis and no individual resource is given priority over any other. A total of six major route alternatives were reviewed. Alternatives assessed include three CPV Alternatives and two Collocation Alternatives. The CPV Alternatives were identified by CPV as potential routes to bring natural gas from the Millennium mainline to the CPV Valley Energy Center; the Collocation Alternatives were identified to follow existing rights-of-way wherever possible to minimize impacts. In an effort to keep the comparisons consistent between the proposed route and the alternatives and in keeping with FERC guidelines, desktop data were used in the alternatives analysis. The discussion of impacts along the proposed route in section B of this EA is based on field surveys.

3.1 CPV Alternatives

The CPV Alternatives were initially identified by CPV during its application and review process under the New York State Environmental Quality Review Act. Each of the four CPV Alternatives originates at the Millennium mainline and terminates at the CPV Valley Energy Center; CPV Alternative 3 was adopted by Millennium as its proposed Project route (see figure 4).



Legend

● Milepost	CPV Potential Routing Option
L Proposed Launcher	Option 1
R Proposed Receiver	Option 2
M Proposed Meter Station	Option 3
— Proposed Pipeline	Option 4
□ County Boundary	— Existing Millennium Pipeline

0 0.5 1
Miles

Scale: 1:75,000

Basemap Source: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China, Esri Thailand, Tom Tom, 2013

Valley Lateral Project

CPV Alternatives

FIGURE 4

CPV Alternative 1

CPV Alternative 1 would originate along the Millennium mainline north of Interstate 84 and proceed 9.6 miles northeast to the CPV Valley Energy Center (see figure 4). This alternative would be collocated along existing rights-of-way for 3.4 miles more than the proposed route. However, it would be 1.8 miles longer than the proposed route, and would result in greater construction and operation impacts. Also, CPV Alternative 1 would be within 50 feet of 5 residences and would result in greater impacts on wetlands and forest land than the Project route (see table C-2). CPV Alternative 1 does not show a significant environmental advantage, and is not considered further.

CPV Alternative 2

CPV Alternative 2 would originate south of the proposed Project along the Millennium mainline pipeline and would proceed north, crossing the proposed Project route near MP 2.0, then turning northeast, following State Route 284 and U.S. Route 6 toward the CPV Valley Energy Center (see figure 4). This alternative would be 0.3 mile longer than the proposed route and would be collocated along existing rights-of-way for 4.4 miles more than the proposed route. The construction workspace for CPV Alternative 2 would be within 50 feet of 6 residences, while the proposed route would not be within 50 feet of any residences. Collocation with an existing railroad right-of-way, as well as crossing a major waterbody and 0.6 additional mile with shallow depth to bedrock would result in greater constructability constraints than the proposed route (see table C-2). CPV Alternative 2 does not show a significant environmental advantage, and is not considered further.

CPV Alternative 4

CPV Alternative 4 would originate at the same location as CPV Alternative 2, and would be collocated along the existing Millennium mainline right-of-way until the origin of the proposed Project. CPV Alternative 4 would then follow the approximate route of the proposed Project and CPV Alternative 2 toward the CPV Valley Energy Center (see figure 4). This alternative would be 1.3 mile longer than the proposed route, resulting in greater total construction and operation impacts. CPV Alternative 4 would be within 50 feet of eight residences, and would result in greater impacts on wetlands and forested land and six more waterbody crossings than the proposed route (see table C-2). CPV Alternative 4 would also cross one municipal park, Shannen Park, which would be avoided by the proposed route. Because CPV Alternative 4 would cross more sensitive areas than the proposed route, it does not provide a significant environmental advantage to the proposed route and is not considered further.

Table C-2
CPV Alternatives to the Valley Lateral Project

Resource	Proposed Route^a	CPV Alternative 1	CPV Alternative 2	CPV Alternative 4
Pipeline length (miles)	7.9	9.6	8.1	9.1
Operation acres ^b	47.9	58.1	49	55.5
Construction acres ^c	84.4	88.4	83.1	91.7
Length of adjacent right-of-way (miles) ^d	1.8	5.2	6.2	5.3
Number of roads crossed	11	13	10	16
Residential structures within 50 feet of the construction right-of-way ^e	0	5	6	8
Acres of NWI wetland impacted (construction)	3.8	8.1	4.7	8.1
Number of NYSDEC wetlands crossed, and crossing length (feet)	1 (109)	4 (2,228)	2 (2,189)	1 (451)
Number of forested wetlands crossed	2	4	1	5
Acres of forested wetland impacted (construction / operation)	2.0 / 1.3	1.9 / 1.3	0.4 / 0.3	3.1 / 2.1
Acres of forest land impacted (construction / operation)	25.5 / 17.0	48.9 / 33.1	16.1 / 10.8	24.8 / 16.8
Acres of agricultural land impacted (construction / operation)	50.0 / 25.5	3.9 / 2.0	37.9 / 18.8	34.7 / 17.3
Number of waterbodies crossed ^f	11	10	12	17
Number of public lands crossed (miles) ^g	0	0	0	1 / 0.3
Length of shallow depth to bedrock (miles) ^h	0.9	0.3	1.5	2.3
^a	The data provided for the proposed route is based on desktop data to allow for consistent comparison of data types between the proposed route and variations.			
^b	Operation acres estimated based on an assumed 50-foot-wide easement.			
^c	Construction acres estimated based on an assumed 75-foot-wide construction corridor and 100-foot-wide corridor in agricultural lands.			
^d	Estimated from 2013 aerial photography, and utility and transportation layers. Based on an assumed 50-foot-wide permanent easement centered on the route.			
^e	Estimated based on an assumed 110-foot-wide construction right-of-way centered on the Proposed Route and System Alternative lateral lines. Accessory structures such as sheds not included.			
^f	Waterbodies were calculated using National Hydrography Data Sets. Waterbodies are a combination of streams, rivers, ponds and lakes.			
^g	Source: NYSGIS 2015.			
^h	Areas identified to have shallow depth to bedrock are described as having bedrock less than 5 feet from the surface as determined by USDA-NRCS 2014.			

3.2 Collocation Alternatives

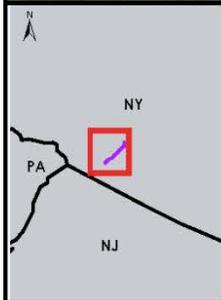
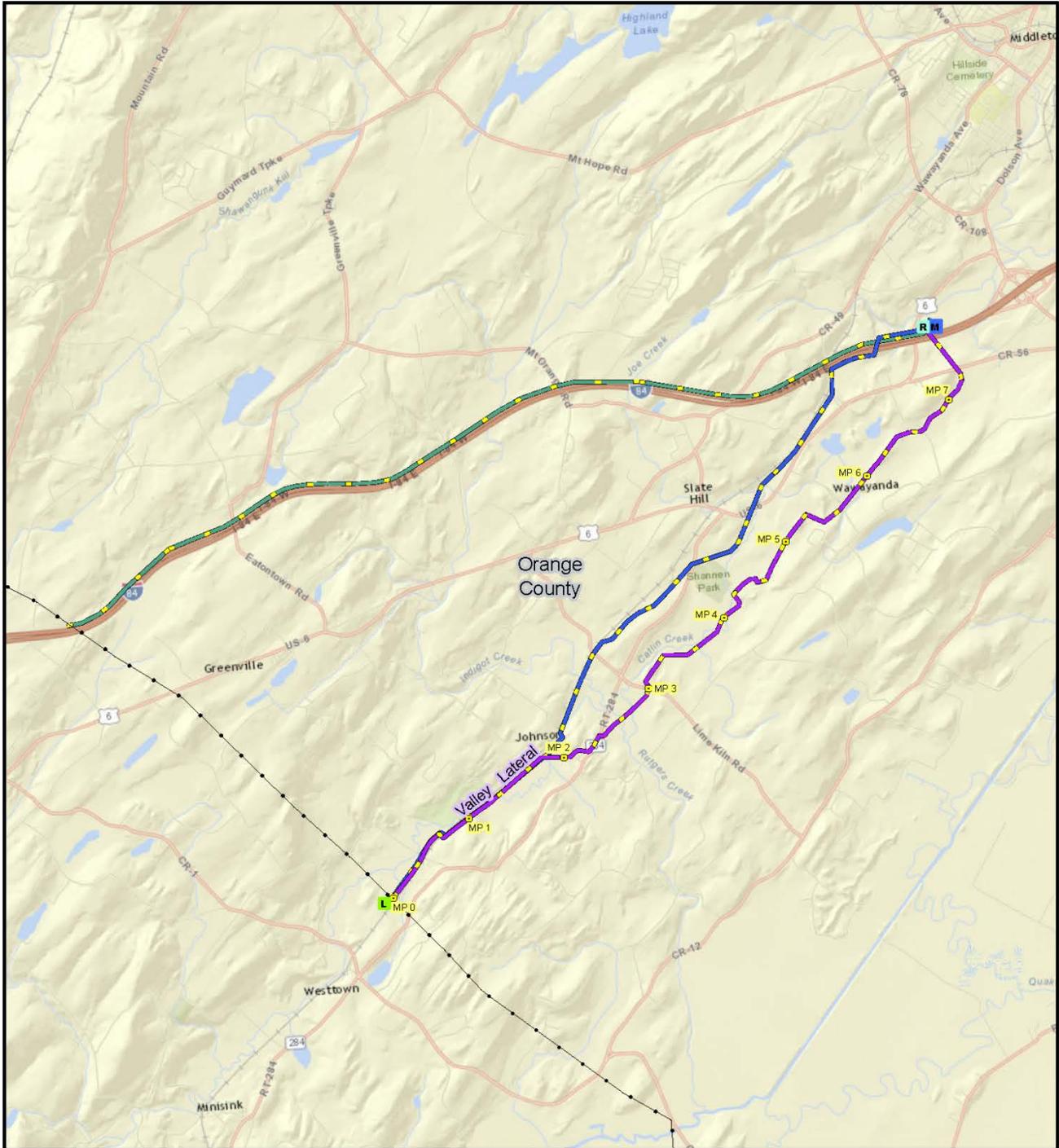
Railroad Alternative

The Railroad Alternative would originate at the Millennium mainline at the same location as the proposed route, and would follow the proposed route until approximate MP 2.0. At that point, the alternative route would continue along an abandoned railroad line north of the Project route to a waterbody, Joe's Creek, where the alternative would turn to collocate with an existing electric transmission line before terminating at the CPV Valley Energy Center (see figure 5). This alternative would traverse 0.2 mile of Shannen Park, a municipal park and a potential HCA, which would be avoided by the proposed route.

The Railroad Alternative is 0.6 mile shorter than the proposed route, is collocated along existing rights-of-way for 76 percent of its length, and would result in fewer acres of construction and operation impact (see table C-3). However, the location of the Railroad Alternative along the existing railroad corridor could increase the potential for discovery of contaminated soil, given the long operating history of the railway and facilities along the rail line and the use of creosote on the rail crossties. The Railroad Alternative would cross sensitive resources that would be avoided by the proposed route, including 1.2 more acres of wetlands, and would be within 50 feet of four residences. To maintain collocation with existing rights-of-way, the alternative would parallel Caitlin Creek, potentially resulting in constructability constraints due to saturated soils and greater impacts on the waterbody due to sedimentation. Millennium could avoid impacts on wetland and waterbody resources along the Railroad Alternative by using HDD and other trenchless construction methods to reduce the number of forested wetlands crossed and potential impacts from siting workspace parallel to streams. However, impacts would be similarly reduced along the proposed route by use of HDD construction methods, as discussed in section B.2. The Railroad Alternative does not show a significant environmental advantage, and is therefore not considered further.

Interstate 84 Alternative

The Interstate 84 Alternative was reviewed to assess the feasibility of installing the pipeline along the existing interstate highway corridor to minimize impacts from habitat fragmentation that could result from greenfield pipeline construction. The alternative was developed during the pre-filing review process, and in consideration of comments received from three stakeholders that requested the Project evaluate alternatives that would follow existing corridors.



Legend

- Milepost
- Proposed Launcher
- Proposed Receiver
- Proposed Meter Station
- Proposed Pipeline
- County Boundary
- Railroad Alternative
- I-84 Alternative 2
- Existing Millennium Pipeline

0 0.5 1
Miles

Scale: 1:75,000

Basemap Source: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China, Esri Thailand, Tom Tom, 2013

Valley Lateral Project

Collocation Alternatives

FIGURE 6

**Table C-3
Collocation Alternatives to the Valley Lateral Project**

Resource	Proposed Route^a	Railroad Alternative	Interstate 84 Alternative
Pipeline length (miles)	7.9	7.2	8.2
Operation acres ^b	41.9	37.3	43.5
Construction acres ^c	74.9	62.7	65.5
Length of adjacent right-of-way (miles) ^d	1.3	5.5	7.0
Number of roads crossed	9	9	6
Residential structures within 50 feet of the construction right-of-way ^e	0	4	3
Number of NYSDEC wetlands crossed (feet)	1 (109)	0	0
Number of forested wetlands crossed	1	0	5
Acres of forested wetland impacted (construction / operation)	0.1 / 0.1	0.0 / 0.0	1.2 / 0.7
Acres of NWI wetland impacted (construction)	2.0	3.2	2.8
Acres of forest land impacted (construction / operation)	14.5 / 14.3	8.1 / 5.1	31.2 / 31.1
Acres of agricultural land impacted (construction / operation)	47.8 / 24.6	25.3 / 12.7	0.9 / 0.5
Number of waterbodies crossed ^f	7	7	12
Number of public lands crossed (miles) ^g	0	1 (0.2)	0
Length of shallow depth to bedrock (miles) ^h	0.9	0.5	1.8
^a	The data provided for the proposed route is based on desktop data to allow for consistent comparison of data types between the proposed route and variations. The comparison includes two similar HDD construction lengths on each route.		
^b	Operation acres estimated based on an assumed 50-foot-wide easement.		
^c	Construction acres estimated based on an assumed 75-foot-wide construction corridor and 100-foot corridor in agricultural lands.		
^d	Estimated from 2013 aerial photography, and utility and transportation layers. Based on an assumed 50-foot-wide permanent easement centered on the route.		
^e	Estimated based on an assumed 110-foot-wide construction right-of-way centered on the Preferred Route and System Alternative lateral lines. Accessory structures such as sheds not included.		
^f	Waterbodies were calculated using National Hydrography Data Sets. Waterbodies are a combination of streams, rivers, ponds and lakes.		
^g	Source: NYSGIS 2015		
^h	Areas identified to have shallow depth to bedrock are described as having bedrock less than 5 feet from the surface as determined by USDA-NRCS 2014.		

The Interstate 84 Alternative would tie into the Millennium mainline northeast of the Project where it crosses Interstate 84, and would parallel the Interstate for 8.2 miles to

the CPV Valley Energy Center (see figure 5). The alternative would collocate along existing corridors for about 86 percent of its route, whereas the proposed route is collocated along about 23 percent of its length.

While the Interstate 84 Alternative would be 0.4 mile longer than the proposed route, its location near Interstate 84 would reduce the total amount of agricultural land crossed and would therefore result in a smaller construction footprint than the proposed route (see table C-3). However, the alternative would result in greater impacts on wetlands and approximately twice the impacts on forested land than the proposed route, and would cross one major waterbody. Millennium could avoid impacts on wetland and waterbody resources along the Interstate 84 Alternative by using HDD construction methods to avoid crossing NYSDEC wetlands, reduce the amount of forested wetlands crossed, and reduce the number of waterbody crossings. However, impacts would be similarly reduced along the proposed route by use of HDD and other trenchless construction methods, as discussed in section B.2. Steep side slopes along the highway may require two-tone construction techniques, increasing the total ATWS required for the Project. Construction in proximity to Interstate 84 could result in disruption of traffic flow, particularly if blasting is required for construction and traffic must be stopped for safety. The Interstate 84 Alternative does not show a significant environmental advantage and is not discussed further.

4. Minor Route Variations

Route variations are identified to reduce construction impacts on localized, specific resources such as waterbodies, wetlands, cultural resource sites, and residences; route variations are also identified to address landowner concerns. While route variations may be a few miles in length, most are relatively short and in close proximity to the proposed route. Route variations are identified in response to specific local concerns and may not always clearly display an environmental advantage other than to reduce impacts on a localized level. Table C-4 lists the four variations we have taken into consideration in our analysis, the associated segments along the proposed route that they would replace, and the rationale for the variation. Millennium worked with affected landowners during development of the application and during the pre-filing process, and incorporated three variations into the proposed pipeline route. These three variations are included in the proposed route evaluated in section B of this EA.

Route Variation 1 was considered to address a landowner request to be farther from the viewshed of a home near approximate MP 2.9. Route Variation 1 would have a greater effect on an adjacent landowner residence. Additionally, Route Variation 1 would result in greater forested (0.1 acre) and agricultural land (0.4 acre) impacts compared to the proposed route. Therefore, we do not recommend incorporation of Route Variation 1 into the proposed route.

Table C-4			
Minor Route Variations to the Valley Lateral Project			
Route Variation	Proposed Project Milepost Range	Reason for Variation	Status
Variation 1	2.8 – 3.1	Landowner request	Not recommended
Variation 2	4.0 – 4.2	HDD crossing to minimize impacts to forested wetlands and Catlin Creek	Not recommended
Variation 3	5.6 – 6.1	HDD crossing to avoid tributary to Catlin Creek	Not recommended
Variation 4	5.8	Avoid a bridge over the tributary to Catlin Creek	Not recommended

Route Variation 2 was reviewed for the use of HDD construction methods to minimize impacts on a forested wetland and avoid impacts on Catlin Creek. Route Variation 2 would result in greater forested impacts (0.2 acre) and greater impacts on agricultural lands (0.5 acre) during construction when compared to the proposed route. Therefore, Route Variation 2 does not offer a significant environmental advantage over the proposed route.

Route Variations 3 and 4 were considered for the proposed route from MP 5.6 to MP 6.1 to minimize impacts on a tributary to Catlin Creek. Route Variation 3 incorporates the use of an HDD to cross the tributary to Catlin Creek at MP 5.9, and slightly modified by Route Variation 4 to avoid impacts on a bridge at MP 5.8. However, due to a minor variation of the pipeline route that was incorporated into the Project alignment and analyzed in section B of this EA, and which also includes an HDD crossing of Catlin Creek, Route Variations 3 and 4 were no longer necessary, and as such not incorporated into the route.

5. Aboveground Facility Alternatives

The location of the aboveground facilities would be determined by the origin of the pipeline and the location of the CPV Valley Energy Center. The pig launcher and mainline tap valve at MP -0.1 would be where the Project ties into the existing Millennium pipeline system. The pig receiver and metering facilities would be at the pipeline terminus where it connects with the CPV Valley Energy Center. Therefore, alternative aboveground facility locations were not considered, nor were any alternative sites recommended.

D. STAFF CONCLUSIONS AND RECOMMENDATIONS

We conclude that approval of the Valley Lateral Project would not constitute a major federal action significantly affecting the quality of the human environment. This finding is based on the above environmental analysis, Millennium's application and supplements, and implementation of Millennium's proposed and our recommended mitigation measures. We recommend that the Commission Order contain a finding of no significant impact and that the following mitigation measures be included as conditions of any Certificate the Commission may issue.

1. Millennium 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. Millennium 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 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,** Millennium 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 EIs' 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**, Millennium 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.

Millennium'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. Millennium's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipelines or aboveground facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Millennium 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, pipeyards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

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

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

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and

- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the Certificate and before construction begins**, Millennium shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Millennium must file revisions to the plan as schedules change. The plan shall identify:
- a. how Millennium 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 Millennium will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Millennium 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 and specific portion of Millennium's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Millennium 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) 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. Millennium shall employ at least one EI per construction spread. The EIs shall be:
 - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order the correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of that Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Millennium shall file updated status reports with the Secretary on a **biweekly basis until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on Millennium's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;

- f. a description of any landowner/resident complaints 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 Millennium from other federal, state, or local permitting agencies concerning instances of noncompliance, and Millennium's response.
- 9. **Prior to receiving written authorization from the Director of OEP to commence construction of any Project facilities**, Millennium shall file with the Secretary documentation that it has received all authorizations required under federal law (or evidence of waiver thereof).
- 10. Millennium must receive written authorization from the Director of 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.
- 11. **Within 30 days of placing the authorized facilities in service**, Millennium shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed and installed 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 Millennium has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
- 12. **Prior to construction**, Millennium shall file with the Secretary, for review and written approval by the Director of OEP, revised plan and profile drawings for the pipeline crossings of Indigot Creek (MP 2.6) and Catlin Creek (MP 3.9), that demonstrate maintenance of the minimum regulatory burial depth (49 CFR 195.248) below the estimated scour depth for these waterbodies.
- 13. **Prior to construction**, Millennium shall file with the Secretary documentation of its FWS consultation to determine the need to identify potential roost trees and any agreed upon mitigation for habitat loss within the known, occupied range of the Indiana bat.
- 14. Millennium **shall not begin construction** of the proposed Project **until**:

- a. Phase 1, and any applicable Phase 2, bog turtle surveys have been completed for all wetlands within the 300-foot survey corridor and survey concurrence from the FWS and NYSDEC has been filed with the Secretary;
 - b. the FERC staff completes ESA Section 7 consultation with the FWS for Indiana and northern long-eared bats, and bog turtles if necessary; and
 - c. Millennium has received written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.
15. Millennium **shall not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
- a. Millennium files with the Secretary remaining cultural resources survey reports(s); site evaluation report(s); and avoidance/treatment plan(s), as required; and comments on the cultural resources reports and plans from the SHPO;
 - b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and
 - c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Millennium in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

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

16. Millennium shall file the following **in the biweekly construction status reports**:
- a. the noise measurements at the nearest NSA, obtained at the start of the HDD operations;
 - b. the noise mitigation that Millennium implemented at the start of drilling operations; and
 - c. any additional mitigation measures that Millennium would implement if the initial noise measurements exceeded an L_{dn} of 55 dBA at the nearest NSA and/or increased noise is over ambient conditions greater than 10 dB.

17. Millennium **shall not begin construction** of any HDD crossing where the intersect method would be used **until** Millennium files with the Secretary a revised noise analysis and mitigation plan for the review and written approval of the Director of OEP. During drilling operations, Millennium shall implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than an L_{dn} of 55 dBA at the NSAs.

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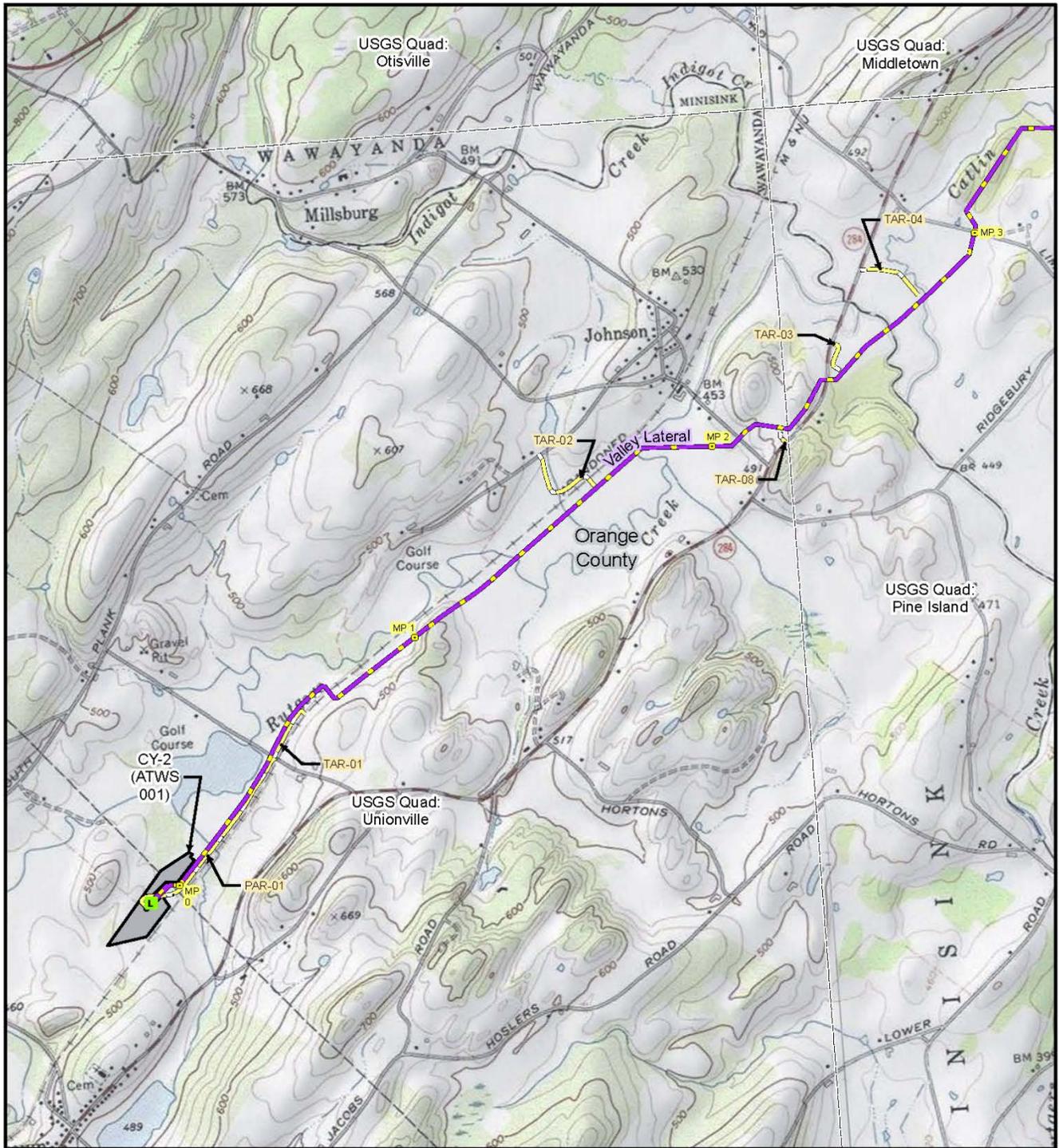
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APPENDIX A

TOPOGRAPHIC MAPS OF THE VALLEY LATERAL PROJECT



Legend

- Milepost
- L Proposed Launcher
- R Proposed Receiver
- M Proposed Meter Station
- Proposed Pipeline
- Proposed Access Road
- Proposed Laydown/Contractor Yard
- County Boundary
- USGS 7.5 min quad

0 0.25 0.5
Miles

N

Scale: 1:24,000

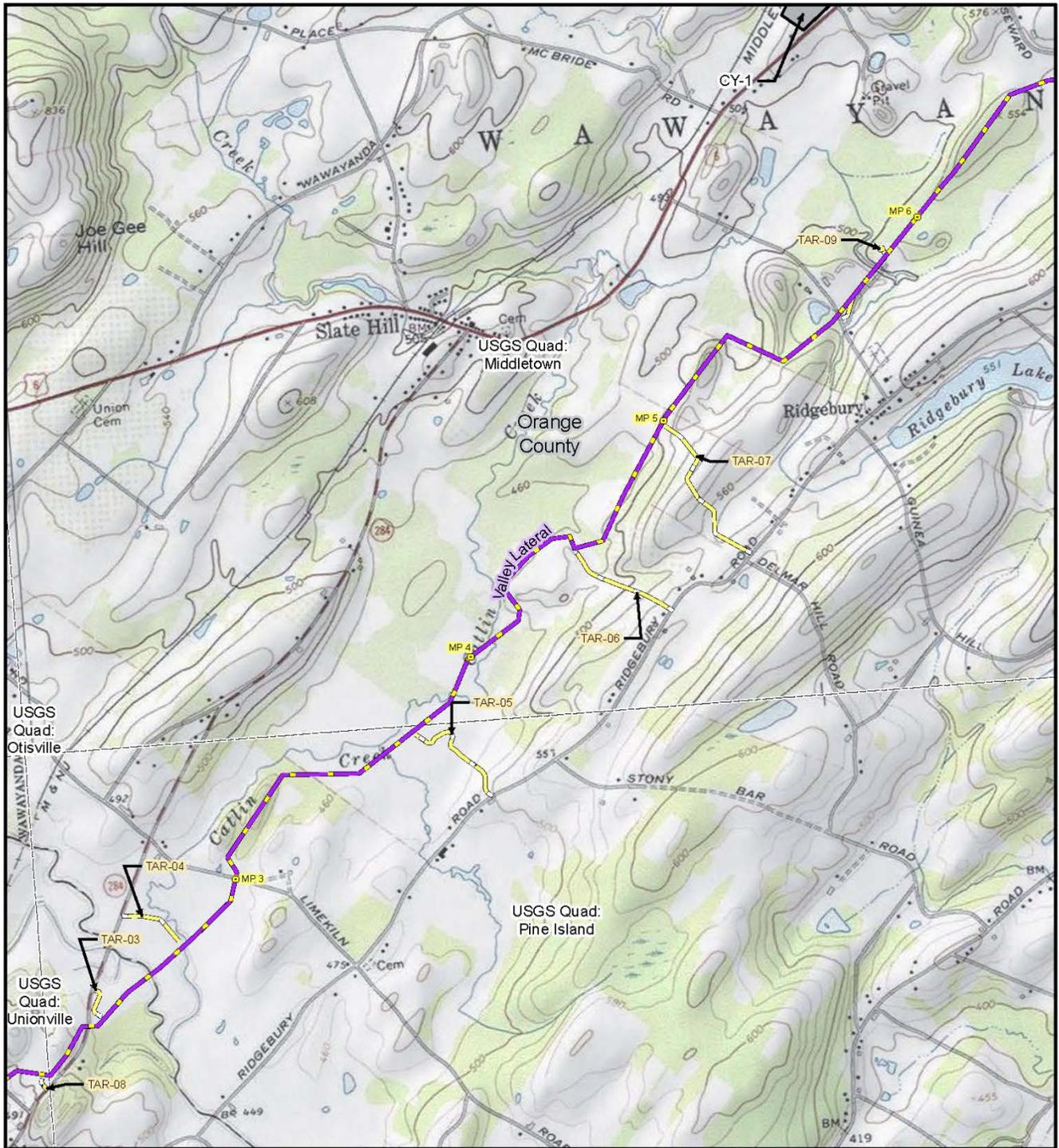
Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013 Copyright © 2013 National Geographic Society, I-cubed

Valley Lateral Project

Topographic Maps for the Valley Lateral Project

Map 1 of 3

APPENDIX A



Legend

- Milepost
- Proposed Launcher
- Proposed Receiver
- Proposed Meter Station
- Proposed Pipeline
- Proposed Access Road
- Proposed Laydown/Contractor Yard
- County Boundary
- USGS 7.5 min quad

0 0.25 0.5
Miles

N

Scale: 1:24,000

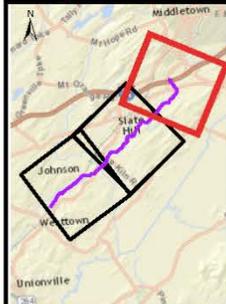
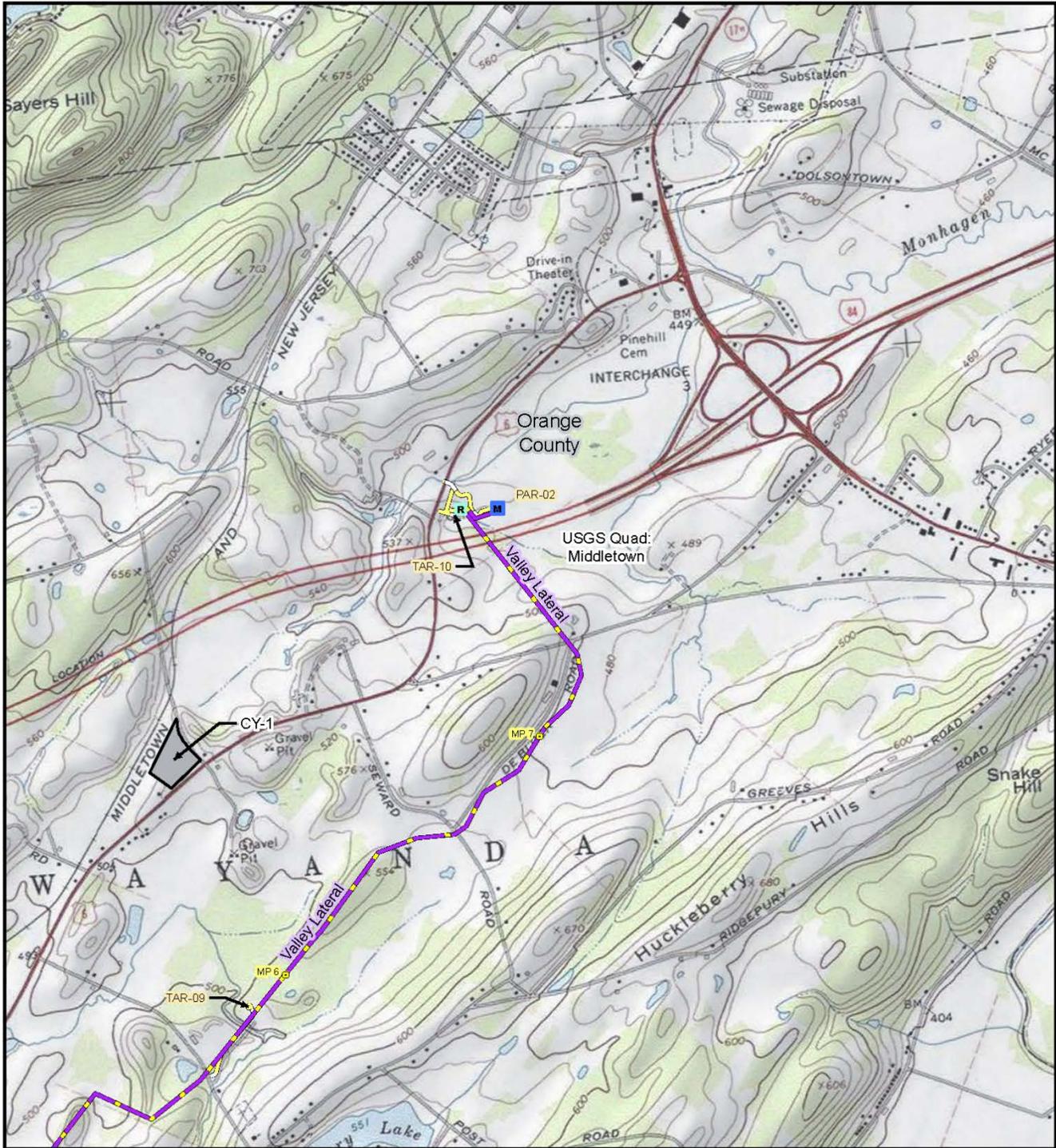
Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013 Copyright © 2013 National Geographic Society, I-cubed

Valley Lateral Project

Topographic Maps for the Valley Lateral Project

Map 2 of 3

APPENDIX A



Legend

- Milepost
- L Proposed Launcher
- R Proposed Receiver
- M Proposed Meter Station
- Proposed Pipeline
- Proposed Access Road
- Proposed Laydown/Contractor Yard
- County Boundary
- USGS 7.5 min quad

0 0.25 0.5
Miles

N

Scale: 1:24,000

Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013 Copyright © 2013 National Geographic Society, I-cubed

Valley Lateral Project

Topographic Maps for the Valley Lateral Project

Map 3 of 3

APPENDIX A

APPENDIX B

**LOCATION OF ADDITIONAL TEMPORARY WORKSPACES FOR THE
VALLEY LATERAL PROJECT**

Appendix B
Additional Temporary Workspace for the Valley Lateral Project

ATWS No.	Project Milepost	Approximate Dimensions (feet)	ATWS Size (acres)^a	Existing Land Use^b	ATWS Justification
ATWS-001	0.0	350 x 1,200	0.0 ^c	AG	Pig launcher site workspace & laydown/construction yard
ATWS-047A ^d	0.0	75 x 120	0.2	AG	Pig launcher site workspace
ATWS-047B ^d	0.0	80 x 165	0.3	AG	Hot tap site workspace
ATWS-002	0.1	25 x 165	0.1	AG	Additional workspace to avoid cutting trees & for farm swale crossing
ATWS-003	0.2	25 x 100	0.1	AG	Workspace farm swale crossing
ATWS-004	0.4	50 x 150	0.2	AG	Fordlea Road bore staging area
ATWS-005	0.5	50 x 200	0.2	AG, WL	Fordlea Road bore staging area
ATWS-006	0.6	30 x 905	0.6	AG, UF, WL	Traffic lane for equipment / temporary access road
ATWS-007	0.7	105 x 150	0.4	AG	Abandoned Railroad bore staging area
ATWS-010	0.7	145 x 150	0.5	AG	Abandoned Railroad bore staging area / two-tone side slope area
ATWS-008A	0.8	35 x 569	0.5	AG, OL, UF	Side slope / bore crossing staging area
ATWS-008B	0.8	35 x 1,694	1.4	AG, OL, UF	Side slope / HDD staging area
ATWS-009	0.8	25 x 553	0.3	AG, UF	Side slope
ATWS-059	0.9	25 x 160	0.1	OL, UF	Side slope
ATWS-011	1.1	25 x 1,668	1.0	AG, UF	Side slope
ATWS-012	1.2	75 x 200	0.3	AG, UF	Side slope spoils area
ATWS-013	1.3	25 x 400	0.2	AG	Rutgers Creek / Wetlands HDD staging area
ATWS-014	1.8	200 x 107	0.5	AG, OL	Rutgers Creek / Wetlands HDD staging area
ATWS-015	2.0	35 x 1,446	1.2	AG	Traffic lane for equipment / soil segregation
ATWS-016	2.1	50 x 141	0.2	AG	County Road 22 bore crossing
ATWS-017	2.1	50 x 159	0.2	AG	County Road 22 bore crossing
ATWS-019	2.1	50 x 150	0.2	AG	County Road 22 bore crossing
ATWS-018	2.3	35 x 1,646	1.3	AG	Side slope / traffic lane for equipment/soil segregation
ATWS-020	2.4	50 x 229	0.3	AG, CI, UF	State Highway 284 bore crossing

Appendix B (continued)
Additional Temporary Workspace for the Valley Lateral Project

ATWS No.	Project Milepost	Approximate Dimensions (feet)	ATWS Size (acres)^a	Existing Land Use^b	ATWS Justification
ATWS-021	2.4	50 x 160	0.2	AG, UF	State Highway 284 bore crossing
ATWS-022	2.4	50 x 135	0.2	AG	State Highway 284 bore crossing
ATWS-023	2.4	35 x 440	0.4	AG, UF	State Highway 284 bore crossing / traffic lane for equipment
ATWS-024	2.4	60 x 60	0.1	UF	State Highway 284 bore crossing
ATWS-025	2.6	50 x 150	0.2	AG	Rutgers Creek crossing / topsoil segregation
ATWS-026	2.7	50 x 150	0.2	AG	Rutgers Creek crossing / topsoil segregation
ATWS-027	2.6	35 x 210	0.2	AG	Rutgers Creek crossing / topsoil segregation
ATWS-028	2.7	35 x 460	0.4	AG	Rutgers Creek crossing / topsoil segregation
ATWS-029	2.8	50 x 100	0.1	AG	Catlin Creek crossing / topsoil segregation
ATWS-030	2.8	50 x 100	0.1	AG	Catlin Creek crossing / topsoil segregation
ATWS-031	2.9	35 x 1,076	0.9	AG	Traffic lane for equipment / soil segregation
ATWS-032	3.0	50 x 150	0.2	AG	County Road 93 bore crossing
ATWS-033	3.0	50 x 120	0.1	OL	County Road 93 bore crossing
ATWS-034	3.0	50 x 150	0.2	AG	County Road 93 bore crossing
ATWS-035	3.0	50 x 185	0.2	OL	County Road 93 bore crossing
ATWS-036	3.1	35 x 2,240	1.8	OL, UF, WL	Side slope
ATWS-037	3.5	50 x 50	0.1	OL	Wetland crossing
ATWS-038	3.6	35 x 505	0.4	AG	Farm wetland crossing / traffic lane for equipment / soil segregation
ATWS-039	3.7	25 x 75	0.0	AG	Farm wetland crossing / traffic lane for equipment / soil segregation
ATWS-040	3.7	25 x 75	0.0	AG	Farm wetland crossing / traffic lane for equipment / soil segregation
ATWS-041	3.7	35 x 150	0.1	AG	Farm wetland crossing / traffic lane for equipment / soil segregation
ATWS-042	3.8	35 x 746	0.6	AG	Catlin Creek crossing / traffic lane for equipment / soil segregation

Appendix B (continued)
Additional Temporary Workspace for the Valley Lateral Project

ATWS No.	Project Milepost	Approximate Dimensions (feet)	ATWS Size (acres)^a	Existing Land Use^b	ATWS Justification
ATWS-043	3.9	25 x 75	0.0	AG	Catlin Creek crossing / traffic lane for equipment / soil segregation
ATWS-044	3.9	35 x 541	0.4	AG	Catlin Creek crossing / traffic lane for equipment / soil segregation
ATWS-045	3.9	25 x 75	0.0	AG	Catlin Creek crossing / traffic lane for equipment / soil segregation
ATWS-046	4.0	100 x 100	0.2	AG	Catlin Creek crossing / traffic lane for equipment / soil segregation
ATWS-080	4.2	75 x 130	0.2	OL, UF	Conventional bore workspace
ATWS-048	4.3	34 x 941	0.8	AG, UF	Wetland crossing / soil segregation / staging area
ATWS-049	4.2	100 x 100	0.2	AG	Traffic lane for equipment / soil segregation
ATWS-050	4.5	100 x 239	0.6	AG, UF	Traffic lane for equipment / soil segregation
ATWS-051	4.5	35 x 291	0.2	AG, UF	Wetland crossing / soil segregation / staging area
ATWS-052	4.6	50 x 100	0.1	UF	Creek / Wetland crossing / workspace for centerline PI
ATWS-053	5.0	35 x 438	0.4	AG, UF	Traffic lane for equipment / soil segregation
ATWS-054	5.3	50 x 100	0.1	UF	Wetland crossing / workspace for centerline PI
ATWS-081	5.3	35 x 200	0.2	UF	Conventional bore workspace
ATWS-082	5.3	35 x 200	0.2	UF	Conventional bore workspace
ATWS-055	5.6	50 x 145	0.2	UF	Ridgebury Hill Road HDD crossing / staging area
ATWS-056	5.6	50 x 40	0.1	OL, UF	Ridgebury Hill Road HDD crossing / staging area
ATWS-057	5.6	75 x 235	0.4	UF	Ridgebury Hill Road HDD crossing / staging area
ATWS-058	5.7	75 x 65	0.1	CI, UF, WL	Ridgebury Hill Road HDD crossing / staging area
ATWS-060	5.8	100 x 103	0.2	CI	Ridgebury Hill Road HDD crossing / staging area
ATWS-061	6.1	50 x 200	0.2	UF	Ridgebury Hill Road HDD crossing / staging area / additional workspace for centerline PI

Appendix B (continued)
Additional Temporary Workspace for the Valley Lateral Project

ATWS No.	Project Milepost	Approximate Dimensions (feet)	ATWS Size (acres)^a	Existing Land Use^b	ATWS Justification
ATWS-062	6.1	75 x 200	0.3	UF	Ridgebury Hill Road HDD crossing / staging area / additional workspace for centerline PI
ATWS-078	6.4	50 x 785	0.9	AG, UF	HDD stringing/pullback workspace
ATWS-063	6.5	35 x 1,225	1.0	AG, UF, WL	Traffic lane for equipment / soil segregation
ATWS-064	6.6	50 x 171	0.2	AG	Seward Road bore crossing / staging area
ATWS-066	6.7	35 x 537	0.4	AG, WL	Traffic lane for equipment / soil segregation / wetland crossing
ATWS-067	6.7	50 x 170	0.2	AG, WL	Seward Road bore crossing / staging area
ATWS-068	6.9	35 x 1,185	1.0	AG	Traffic lane for equipment / soil segregation / farm wetland crossing
ATWS-069	7.0	50 x 100	0.1	AG	Farm wetland crossing
ATWS-070	7.1	35 x 1,157	0.9	AG	Traffic lane for equipment / soil segregation
ATWS-071	7.2	50 x 2,180	2.5	AG, OL, UF, WL	HDD stringing/pullback workspace
ATWS-072	7.3	50 x 69	0.1	AG	HDD staging area
ATWS-073	7.3	75 x 187	0.3	AG	HDD staging area
ATWS-074	7.8	25 x 130	0.1	CI	HDD staging area / station site work / line pipe spoils
ATWS-075	7.8	45 x 184	0.2	CI	HDD staging area / station site work
ATWS-076	7.8	32 x 200	0.2	CI	HDD staging area / station site work
ATWS-077	7.8	92 x 110	0.2	CI	Station site work
Total^c:			30.0		

^a Acreage calculated from actual footprint, which may not correspond to the approximate dimensions.

^b AG = Agricultural; CI = Commercial/industrial; UF = Upland forest; OL = Open land; WL = Wetlands.

^c The acreage for ATWS 001 is included in table 1.4-2 as pipeyard CY-2.

^d The ATWS is associated with a parcel that Millennium plans to purchase as described in section A.5.1 and would be converted from agricultural land to open land during operation of the Project.

^e The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

APPENDIX C

**PROPOSED ALTERNATIVE MEASURES TO THE FERC PROCEDURES FOR
THE VALLEY LATERAL PROJECT**

Appendix C
Alternative Measures to the FERC Procedures for the Valley Lateral Project

Waterbody/Wetland Name	Approximate Milepost	Wetland/Waterbody Type	Section in FERC Procedures	Deviation Measure	Justification/Description
FERC Procedures					
Rutgers Creek, St-E	1.3	Perennial	V.B.2	ATWS within 50 feet	Rutgers Creek/ wetlands HDD staging area
Rutgers Creek, St-G	1.8	Perennial	V.B.2	ATWS within 50 feet	Rutgers Creek/ wetlands HDD staging area
Wetland W-R	2.5, 2.6	PEM	VI.B.1	ATWS within 50 feet	Rutgers Creek crossing/ topsoil segregation
Indigot Creek, St-I	2.6	Perennial	V.B.2	ATWS within 50 feet	Rutgers Creek crossing/ topsoil segregation
Catlin Creek, St-J	2.8	Perennial	V.B.2	ATWS within 50 feet	Catlin Creek crossing/ topsoil segregation
Wetland W-AP ^a	3.0	PEM	VI.B.1	ATWS within wetland	Temporary workspace for construction along a sloped area.
Wetland W-AQ	3.4, 3.5	PSS	VI.B.1	ATWS within 50 feet	Side slope construction.
Wetland W-W	5.6	PEM	VI.B.1	ATWS within wetland	Ridgebury Hill Road HDD crossing/ staging area
Wetland W-AB	6.6	PSS	VI.B.1	ATWS within wetland	Temporary workspace for the bore crossing of Stewart Road.
Wetland W-BA	7.2	PEM/PSS	VI.B.1	ATWS within wetland	HDD stringing/ pullback workspace
Wetland W-AH	7.7	PSS	VI.B.1	ATWS within 50 feet	HDD staging area/station site work / line pipe spoils.
Unnamed Tributary to Monhagen Brook, St-AH	7.7	Ephemeral	V.B.2	ATWS within waterbody	HDD staging area/ station site work
^a Field survey access is not available where ATWS-036 is within wetland W-AP; Millennium would provide final survey information and any necessary changes to the ATWS once field survey access is available.					

C-1

APPENDIX D

WATERBODIES CROSSED BY THE VALLEY LATERAL PROJECT

**Appendix D
Waterbodies Crossed by the Valley Lateral Project**

Waterbody ID	Waterbody Name	Approximate Milepost	Flow Type	Crossing Length (feet)	Size Classification^a	Water Quality Standard^b	Fishery Construction Window^c	Proposed Construction Method^d
Pipeline Lateral								
St-A	Tributary to Rutgers Creek	0.1	Intermittent	<3	Minor	C	June 1-September 30	Dam and Pump, or Flume
St-E	Rutgers Creek	1.3	Perennial	95	Intermediate	C(T)	June 1-September 30	HDD
St-F	Tributary to Rutgers Creek	1.5	Intermittent	<3	Minor	N/A	N/A	HDD
St-G	Rutgers Creek	1.8	Perennial	42	Intermediate	C(T)	June 1-September 30	HDD
St-I	Indigot Creek	2.6	Perennial	73	Intermediate	C	June 1-September 30	Flume or Dam and Pump
St-J	Catlin Creek	2.8	Perennial	26	Intermediate	C	June 1-September 30	Flume or Dam and Pump
St-R	Tributary to Catlin Creek	3.7	Intermittent	<3	Minor	C	June 1-September 30	Dam and Pump, or Flume
St-S	Catlin Creek	3.9	Perennial	10	Intermediate	C	June 1-September 30	Flume or Dam and Pump
St-S	Catlin Creek	4.1	Perennial	19	Intermediate	C	June 1-September 30	Flume or Dam and Pump
St-O	Unmapped Tributary to Catlin Creek	4.6	Intermittent	<3	Minor	N/A	N/A	Conventional bore
St-L	Tributary to Catlin Creek	5.9	Perennial	<3	Minor	N/A	N/A	HDD
St-M	Unmapped Tributary to Monhagen Brook	7.5	Ephemeral	<3	Minor	N/A	N/A	HDD

**Appendix D (continued)
Waterbodies Crossed by the Valley Lateral Project**

Waterbody ID	Waterbody Name	Approximate Milepost	Flow Type	Crossing Length (feet)	Size Classification^a	Water Quality Standard^b	Fishery Construction Window^c	Proposed Construction Method^d
Meter Station Piping								
St-AH ^e	Unnamed tributary to Monhagen Brook	7.8	Ephemeral	<3	Minor	N/A	N/A	Install Erosion Controls/culvert as needed
Access Roads								
St-A	Tributary to Rutgers Creek	PAR-001B	Intermittent	<3	Minor	C	June 1-September 30	Use existing culvert
St-C	Unmapped Tributary to Rutgers Creek	PAR-001B	Intermittent	<3	Minor	N/A	N/A	Use existing culvert
St-F	Unnamed Tributary to Rutgers Creek	TAR-002	Intermittent	<3	Minor	N/A	N/A	Temporary mats
St-F	Unnamed Tributary to Rutgers Creek	TAR-002	Intermittent	<3	Minor	N/A	N/A	Use existing culvert
St-AH ^e	Unnamed tributary to Monhagen Brook	PAR-002	Ephemeral	<3	Minor	N/A	N/A	Install Erosion Controls/culvert as needed
St-L	Tributary to Catlin Creek	TAR-009	Perennial	<3	Minor	N/A	N/A	Use existing culvert

Appendix D (continued)
Waterbodies Crossed by the Valley Lateral Project

Waterbody ID	Waterbody Name	Approximate Milepost	Flow Type	Crossing Length (feet)	Size Classification ^a	Water Quality Standard ^b	Fishery Construction Window ^c	Proposed Construction Method ^d
<p>^a FERC waterbody size classifications - Minor (<10 feet); Intermediate (>10 - <100 feet); Major (>100 feet).</p> <p>^b Source: NYSDEC 2010. N/A = Not applicable; C = capable of supporting fisheries and are suitable for non-contact activities; C(T) = may support trout populations.</p> <p>^c Unless otherwise approved in writing by NYSDEC, Millennium would complete in-water work in applicable waterbodies between June 1 and September 30, in accordance with the FERC Procedures.</p> <p>^d Waterbodies may be crossed using traditional upland crossing methods if there is no discernable flow present at the time of crossing. HDD = Horizontal directional drill.</p> <p>^e The waterbody is listed as a 303(d) impaired water (due to nutrient enrichment and urban runoff) requiring a TMDL in association with Monhagen Brook.</p>								

APPENDIX E

WETLANDS CROSSED BY THE VALLEY LATERAL PROJECT

Appendix E
Wetlands Crossed by the Valley Lateral Project^{a, b}

Wetland ID	Milepost	NWI Classification^c	Crossing Length (feet)^d	Area Affected by Construction (acres)^e	Area Affected by Operation (acres)^e	NYSDEC Wetland Classification (Wetland ID)^f	Crossing Method^g
Pipeline							
W-A	0.1	PEM	11	0.02	0.02	N/A	Open-cut
W-C	0.4	PEM	29	0.18	0.09	N/A	Open-cut
W-D	0.4	PEM	9	0.04	0.01	N/A	Open-cut
W-E	0.5	PEM	12	0.01	0.01	N/A	Open-cut
W-G	0.8	PFO	106	0.14	0.12	Eligible	Open-cut
W-H	0.9	PEM	0	0.00	0.00	Eligible	Open-cut
W-H	1.0	PEM	0	0.02	0.00	Eligible	Open-cut
W-H	1.0	PEM	10	0.02	0.01	Eligible	Open-cut
W-L	1.5	PSS	84	0.00	0.00	Eligible	HDD
W-M	1.6	PSS	0	0.00	0.00	N/A	HDD
W-R	2.5	PEM	12	0.02	0.01	N/A	Open-cut
W-AP	3.0	PEM	40	0.09	0.05	Class II (MD-29)	Open-cut
W-AQ	3.5	PSS	44	0.06	0.05	Class II (MD-29)	Open-cut
W-AS	3.5	PEM	25	0.06	0.03	Class II (MD-29)	Open-cut
W-AT	3.7	PEM	41	0.08	0.05	N/A	Open-cut
W-AV	3.7	PSS	22	0.03	0.02	Class II (MD-29)	Open-cut
W-AL	4.1	PFO	219	0.00	0.00	Class II (MD-29)	Conventional Bore
W-AI	4.6	PFO	101	0.00	0.00	Class II (MD-29)	Conventional Bore
W-V	5.3	PFO/PEM	94	0.00	0.00	Class III (MD-26)	Conventional Bore

Appendix E (continued)
Wetlands Crossed by the Valley Lateral Project^{a, b}

Wetland ID	Milepost	NWI Classification^c	Crossing Length (feet)^d	Area Affected by Construction (acres)^e	Area Affected by Operation (acres)^e	NYSDEC Wetland Classification (Wetland ID)^f	Crossing Method^g
Pipeline (continued)							
W-W	5.7	PEM	17	0.03	0.02	N/A	HDD ^h
W-AA	6.6	PEM	15	0.04	0.02	N/A	Open-cut
W-AB	6.7	PSS	14	0.03	0.02	N/A	Open-cut
W-AF ⁱ	7.0	PEM	74	0.13	0.09	N/A	Open-cut
W-BA	7.2	PEM/PSS	0	0.74	0.00	Class III (MD-28)	Temporary Mats
W-AG	7.6	PFO	60	0.00	0.00	Class II (MD-23)	HDD
W-AH	7.7	PSS	94	0.00	0.00	N/A	HDD
Aboveground Facilities							
<i>Meter Station Piping</i>							
W-AH	7.8	PSS	126	0.15	0.15	N/A	Open-cut
Access Roads							
W-A	PAR-001	PEM	0	0.0	0.0	N/A	Install Erosion Controls
W-C	PAR-001	PEM	0	0.0	0.0	N/A	Install Erosion Controls
W-D	TAR-001	PEM	0	0.0	0.0	N/A	Install Erosion Controls
W-E	TAR-001	PEM	0	0.0	0.0	N/A	Install Erosion Controls
W-AY	TAR-005	PEM	0	0.0	0.0	N/A	Install Erosion Controls
		Total	1,259	1.89	0.77		

**Appendix E (continued)
Wetlands Crossed by the Valley Lateral Project^{a, b}**

Wetland ID	Milepost	NWI Classification^c	Crossing Length (feet)^d	Area Affected by Construction (acres)^e	Area Affected by Operation (acres)^e	NYSDEC Wetland Classification (Wetland ID)^f	Crossing Method^g
^a	This table includes all wetland impacts for the Project. Facilities not listed do not impact wetlands.						
^b	The numbers in the table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.						
^c	PEM = palustrine emergent; PSS = palustrine scrub/shrub; PFO = palustrine forested.						
^d	A crossing length of zero indicates the feature is not crossed by the centerline of the pipeline but is located within the construction work area. For access roads, a crossing length of zero indicates that the feature is located adjacent to the access road.						
^e	Construction acreage includes all workspace during construction activities (temporary and ATWS plus permanent right-of-way); operation acreage includes all wetlands located within the 50-foot permanent right-of-way. Although 0.6 acre of PFO would be within the permanent right-of-way, only 0.4 acre would be permanently maintained as PEM/PSS wetland. Millennium does not anticipate maintenance mowing in PEM/PSS areas beyond a 10-foot area centered over the pipeline.						
^f	Source: NYSDEC 2002. N/A = Not applicable						
^g	HDD = Horizontal directional drill.						
^h	The wetland would be crossed by HDD and partially located within ATWS.						
ⁱ	The wetland would be crossed by the pipeline in two locations.						