Office of Energy Projects

February 2025

National Fuel Gas Supply Corporation

Docket CP24-514-000

Tioga Pathway Project

Environmental Assessment

Washington, DC 20426

CEQ Unique ID: EAXX-019-20-000-1728990440

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas Branch 1
National Fuel Gas Supply Corporation
Tioga Pathway Project
Docket No. CP24-514-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Tioga Pathway Project (Project), proposed by National Fuel Gas Supply Corporation (National Fuel) in the above-referenced docket.[1] National Fuel requests authorization to provide 190,000 dekatherms per day of firm transportation service from the Tioga County, Pennsylvania natural gas production area to downstream delivery points with other interstate pipelines, which reach various end-use markets and demand centers in the United States and Canada, and modernize a portion of its existing pipeline system.

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

The proposed Project includes the following facilities:

- Line Z20: Replace approximately 3.8 miles of 12-inch-diameter 1936-vintage bare steel pipeline with new 20-inch-diameter coated steel pipeline and perform modifications to an existing valve setting in Potter County, Pennsylvania;

- Line YM59: Install approximately 19.5 miles of new 20-inch-diameter coated steel pipeline beginning at the east end of the 3.8-mile Z20 Pipeline replacement, traversing Potter and Tioga Counties, Pennsylvania, and ending at the NFG Midstream Covington, LLC (Midstream) Lee Hill Interconnect;

- McCutcheon Hill OPP Station: Construct a new over-pressure protection (OPP) station at the interconnection between the eastern terminus of the Z20 Pipeline replacement and the western terminus of the YM59 Pipeline in Potter County;

- Measurement equipment at Midstream's Lee Hill Interconnect at the terminus of the proposed YM59 Pipeline in Tioga County;

[1] For tracking purposes, the Council on Environmental Quality unique identification number for documents relating to this environmental review is EAXX-019-20-000-1728990440. 40 CFR § 1501.5(c)(4) (2024).

- Perform minor modifications at National Fuel's existing Ellisburg Compressor Station,[2] in Potter County, including replacing/installing measurement, OPP devices, flow control, and other associated appurtenances; and

- Construct one new remote-control valve setting and install a new cathodic protection ground bed along the Line YM59 Pipeline in Tioga County;

The Commission mailed a copy of the *Notice of Availability* of the EA to federal, state, and local government representatives and agencies; elected officials; non-governmental organizations, environmental and public interest groups; potentially interested Native American Tribes; potentially affected landowners; local libraries; churches; and newspapers in the Project area. The EA is only available in electronic format. It may be viewed and downloaded from FERC's website (www.ferc.gov), on the natural gas environmental documents page (https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents). In addition, the EA may be accessed by using the eLibrary link on FERC's website. Click on the eLibrary link (https://elibrary.ferc.gov/eLibrary/search), select "General Search" and enter the docket number in the "Docket Number" field, (i.e. CP24-514). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The EA is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of all issues in this proceeding. Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this Project, it is important that we receive your comments in Washington, DC **on or before 5:00 p.m. Eastern Time on March 17, 2025.**

For your convenience, there are three methods you can use to file your comments to the Commission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

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

(2) You can also file your comments electronically using the eFiling feature on the Commission's website (www.ferc.gov) under the link to FERC Online. With

[2] National Fuel does not propose any changes to compressor units or to the certificated capacity at the Ellisburg Compressor Station.

eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or

(3) You can file a paper copy of your comments by mailing them to the Commission. Be sure to reference the Project docket number (CP24-514-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

Filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered. Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. At this point in this proceeding, the timeframe for filing timely intervention requests has expired. Any person seeking to become a party to the proceeding must file a motion to intervene out-of-time pursuant to Rule 214(b)(3) and (d) of the Commission's Rules of Practice and Procedures (18 Code of Federal Regulations 385.214(b)(3) and (d)) and show good cause why the time limitation should be waived. Motions to intervene are more fully described at https://www.ferc.gov/how-intervene.

Additional information about the Project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, community organizations, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502-6595 or OPP@ferc.gov.

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 https://www.ferc.gov/ferc-online/overview to register for eSubscription.

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TECHNICAL ABBREVIATIONS AND ACRONYMS

APE	area of potential effects
ATWS	Additional Temporary Workspace
CCAA	Candidate Conservation Agreement with Assurances
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CS	compressor station
dBA	A-weighted decibel
DOT	Department of Transportation
EA	environmental assessment
EI	environmental inspector
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
ESCAMP	Erosion and Sedimentation Control & Agricultural Mitigation Plan
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gas
HAP	hazardous air pollutants
HDD	horizontal directional drilling
HUC	hydrologic unit code
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
MBTA	Migratory Bird Treaty Act
MP	milepost
National Fuel	National Fuel Gas Supply Corporation
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act of 1935
NHPA	National Historic Preservation Act
NLEB	Northern long-eared bat
NO_x	oxides of nitrogen

NOS	*Notice of Scoping Period Requesting Comments on Environmental Issues for the Proposed Tioga Pathway Project*
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
OEP	Office of Energy Projects
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PennDOT	Pennsylvania Department of Transportation
Plan	*Upland Erosion Control, Revegetation, and Maintenance Plan*
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
Procedures	*Wetland and Waterbody Construction and Mitigation Procedures*
Project	Tioga Pathway Project
Promising Practices	*Promising Practices for EJ Methodologies in NEPA Reviews*
RCV	remote control valve
Secretary	Secretary of the Commission
SHPO	State Historical Preservation Officer
SO_2	sulfur dioxide
SPARP	Spill Prevention and Response Procedures
TAR	temporary access road
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDA-NRCS	U.S. Department of Agriculture- Natural Resource Conservation Service
USFWS	U.S. Fish and Wildlife Service
USGS	United State Geological Survey
VOC	volatile organic compound

SECTION A – PROPOSED ACTION

1.0 INTRODUCTION

Federal Energy Regulatory Commission (Commission or FERC) staff prepared this environmental assessment (EA) to analyze the impacts associated with the Tioga Pathway Project (Project). On August 21, 2024, National Fuel Gas Supply Corporation (National Fuel) filed an application with the Commission (Docket No. CP24-514-000) pursuant to sections 7(b) and 7(c) of the Natural Gas Act of 1938 (NGA), as amended, and Part 157 of the Commission's regulations.

We[1] prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA),[2] and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations Part 380 (18 CFR 380).

The assessment of environmental impacts is an integral part of the Commission's decision-making process on whether to authorize National Fuel's proposal. 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 implementation of the proposed action;
- describe and evaluate reasonable alternatives to avoid or minimize adverse environmental impacts;
- identify and recommend specific mitigation measures, as necessary, to avoid or minimize Project related environmental impacts; and
- facilitate public involvement in the environmental review process.

2.0 PURPOSE AND NEED

National Fuel's stated purpose for this Project is to provide 190,000 dekatherms per day of firm transportation service from the Tioga County, Pennsylvania natural gas production area to downstream delivery points with other interstate pipelines, which reach various end-use markets and demand centers in the United States and Canada and modernize a portion of National Fuel's existing Line Z20 pipeline system.

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 of Public Convenience and Necessity (Certificate) to construct and operate them. Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity.

[1] We," "us," and "our" refers to environmental staff of the Commission's Office of Energy Projects (OEP).

[2] National Environmental Policy Act of 1969, as amended (Pub. L. 91-190. 42 U.S.C. §§ 4321–4347, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, Pub. L. 97-258, §4(b), September 13, 1982, Pub. L. 118-5, June 3, 2023).

The Commission bases its decisions on both economic issues, including need, and environmental impacts.

3.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The topics addressed in section B of this EA include geology; soils; surface water, groundwater, and wetlands; vegetation, wildlife, and special status species; land use and visual resources; cultural resources; air quality and noise; reliability and safety; and cumulative impacts, including climate change. The EA also assesses alternatives to the proposed Project (see section C). This EA describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, and identifies measures proposed by National Fuel to reduce impacts. In section D of this EA, we summarize our conclusions and present additional measures that we recommend the Commission adopt as mandatory environmental conditions of any authorization it may issue to National Fuel for the Project.

As the lead federal agency for the Project, FERC is required to comply with section 7 of the Endangered Species Act (ESA), as amended, and section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. FERC will use this document to consider the environmental impacts that could result if it authorizes this Project. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any permits necessary for all or part of the proposed Project (see section A.9 of this EA).

4.0 PUBLIC PARTICIPATION AND COMMENT

On August 30, 2024, FERC issued a *Notice of Application and Establishing Intervention Deadline* for National Fuel's Project in Docket No. CP24-514-000. The notice announced the receipt of National Fuel's application, identified ways for the public to provide comments on the Project, and established a deadline for submitting a motion to intervene in the proceeding. One comment was received from Seneca Resources Company, LLC. Seneca Resources Company, LLC commented that it is in support of the proposed Project and requested that FERC expedite the approval of National Fuel's application.

On October 4, 2024, FERC issued a *Notice of Scoping Period Requesting Comments on Environmental Issues for the proposed Tioga Pathway Project, and Notice of Virtual Public Scoping Session* (NOS). The NOS was mailed to affected landowners (as defined in the Commission's regulations); federal, state, and local officials; Native American Tribes; and agency representatives; environmental and public interest groups; local libraries; churches; and newspapers. The NOS established a 30-day scoping period and requested comments on specific concerns about the Project or issues that should be considered during the preparation of the environmental document. Two virtual public scoping sessions were conducted on October 29, 2024.[3] Comments were received from two federal government agencies (the U.S. Fish and Wildlife Service [USFWS] and the U.S. Environmental Protection Agency [EPA]) and one labor

[3] Transcripts of the public scoping sessions are available on e-library at accession number 20241118-4000.

union (the Teamsters National Pipeline Labor Management Corporation Trust). The labor union was in support of the project.

The Environmental Protections Agency (EPA) commented that FERC should ensure that the Project's need coincides with energy conservation trends; demonstrate how the Project follows Pennsylvania's Climate Action Plan; define the Project need in terms of what public interests and requirements the Project will serve; apply the Council on Environmental Quality (CEQ) interim guidance (NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change) as appropriate, to ensure robust consideration of potential climate impacts, mitigation, and adaptation issues regarding greenhouse gases and climate change; provide justification and an explanation of direct, indirect, and cumulative impacts of the Project; identify water quality issues regarding surface and groundwater impacts; summarize the need for and the results of any noise studies in the Project area and proposed mitigation measures; discuss the potential for impacts on both state and federally listed threatened and endangered species, including the potential for cumulative impacts on these species from previous projects; discuss the frequency or likelihood of hazardous materials spill events and describe spill and release response capabilities; further analyze, disclose, and reduce impacts on communities with environmental justice and children's health concerns; provide a formal Wetland and Waters of the U.S. delineation to know definitively where wetlands, streams, and other regulated Waters of the U.S. are located; and to include copies of all inter-agency consultation coordination sent to, and received from, landowners, state and federal resource agencies, and local municipalities.

The USFWS commented that it received survey results for the northeastern bulrush on August 30, 2024, and no additional correspondence from the USFWS has been received. National Fuel filed the survey results in January 2025 that indicated that no northeastern bulrush occurred within Project workspaces and is discussed further in section B.4.

Regarding the EPA comment on "purpose and need" for the Project, the Commission has developed a Certificate Policy Statement that established criteria for determining whether there is a need for a proposed project and whether a proposed project would serve the public convenience and necessity. The Commission decision, in its Order, would determine the need for the Project. Figure 1 shows the general location of Project facilities. The remaining comments from the EPA are discussed in sections B and C of this EA.

5.0 PROPOSED FACILITIES

The Project consists of the following facilities, as shown on figure 1:

- Line Z20: Replace approximately 3.8 miles of 12-inch-diameter 1936-vintage bare steel pipeline with new 20-inch-diameter coated steel pipeline and perform modifications to an existing valve setting on Line Z20 in National Fuel's existing right-of-way in Potter County, Pennsylvania;

- Line YM59: Install approximately 19.5 miles of new 20-inch-diameter coated steel pipeline beginning at the east end of the 3.8-mile Z20 Pipeline replacement, traversing Potter and Tioga Counties, Pennsylvania, and ending at the NFG Midstream Covington, LLC (Midstream) Lee Hill Interconnect;

- McCutcheon Hill OPP Station: Construct a new over-pressure protection (OPP) station at the interconnection between the eastern terminus of the Z20 Pipeline replacement and the western terminus of the YM59 Pipeline in Potter County;

- Measurement equipment at Midstream's Lee Hill Interconnect:[4] The Lee Hill Interconnect is a proposed producer interconnect with Midstream at the southeastern terminus of the YM59 Pipeline in Tioga County;

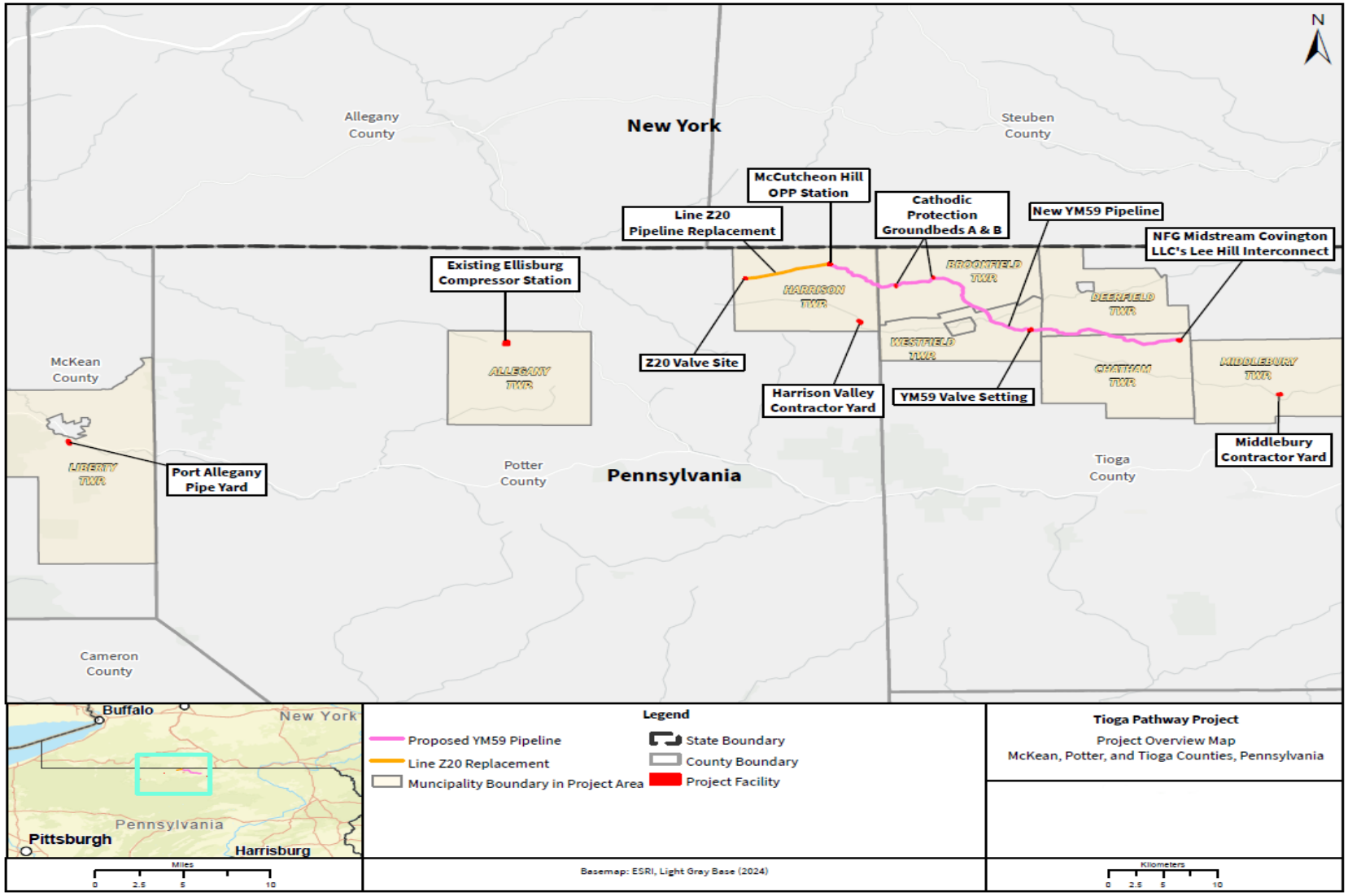
- Perform minor modifications at National Fuel's existing Ellisburg Compressor Station,[5] in Potter County, including replacing/installing measurement, OPP devices, flow control, and other associated appurtenances; and

- Construct one new remote-control valve setting and install a new cathodic protection ground bed along the Line YM59 Pipeline in Tioga County.

[4] This interconnect would be designed, installed, owned, operated, and maintained by Midstream, except for the interconnect's gas measurement, gas quality, over pressure protection devices and a pig launcher, which would be owned, operated, and maintained by National Fuel.

[5] National Fuel does not propose any changes to compressor units or to the certificated capacity at the Ellisburg Compressor Station.

Figure 1: Project Location Map



6.0 LAND REQUIREMENTS

Construction of the Project would require 356.2 acres of land during construction and 126.3 acres for operations. The entire 3.8 miles of Line Z20 replacement pipeline would be within the existing National Fuel right-of-way in Potter County, Pennsylvania. Of the 19.5 miles of new Line YM59 Mainline Pipeline, 17.8 miles (91 percent of length) is proposed to be constructed within new right-of-way and 1.7 miles (9 percent of length) would parallel existing right-of-way operated by Eastern Gas Transmission and Storage, Inc. In addition to public roads, National Fuel proposes 21 temporary access roads (TAR) and 16 permanent access roads. National Fuel proposes to use three pipe storage and contractor yards (Port Allegany Pipe Yard, Middlebury Contractor Yard, and the Harrison Valley Contractor Yard). National Fuel would also use temporary staging areas, additional temporary workspace (ATWS), and 21 TARs during Project construction. National Fuel would restore all temporary workspaces and return these areas to preconstruction land uses.

Table 1: Land Requirements for the Project

Project Component	Construction Workspace Area[a] (acres)	New Permanent Operational ROW or Area[b] (acres)
Pipeline Facilities		
Replacement Pipeline (Potter County, PA)	34.7	0.0
Additional Temporary Workspace for Replacement Pipeline	8.83	0.0
Mainline Pipeline (Potter and Tioga Counties, PA)	167.6	117.2
Additional Temporary Workspace for Mainline Pipeline	54.0	0.0
Pipeline Subtotal	**265.1**	**117.2**
Aboveground Facilities		
McCutcheon Hill OPP Station (Potter County, PA)	0.7	0.7
Measurement Facilities at Midstream's Lee Hill Interconnect (Tioga County, PA)	7.4	0.3[c]
Modifications at Ellisburg Compressor Station (Potter County, PA)	27.3	0.0
Valve Setting (Z20 Replacement Pipeline Milepost (MP) 0.00) (Potter County, PA)	0.2	<0.1[d]
Valve Setting (New YM59 Mainline Pipeline MP 12.08) (Tioga County, PA)	<0.1	0.0[d]
Aboveground Subtotal	**35.6**	**1.0**
Support/Auxiliary Facilities		
Pipe/Contractor Yards		
Port Allegany Pipe Yard (McKean County, PA)	13.8	0.0
Harrison Valley Contractor Yard (Potter County, PA)	10.5	0.0
Middlebury Contractor Yard (Tioga County, PA)	7.1	0.0
Pipe/Contractor Yard Subtotal	**31.4**	**0.0**
Temporary Access Roads (Temporary Use)	16.0	0.0
Permanent Access Roads (Permanent Use)	6.6	6.6
Cathodic Protection Ground Bed A[f]	0.8	0.8
Cathodic Protection Ground Bed B[f]	0.7	0.7
Access Roads/Cathodic Protection Subtotal	**23.3**	**10.6**

GRAND TOTAL[g]	**356.2**	**126.3**

NA = Not Applicable

[a] Includes areas to be disturbed by construction.
- For Replacement Pipeline and Mainline Pipeline, includes typical 75-foot-wide construction ROW, including and 50-foot- wide permanent ROW and 25-foot-wide temporary ROW.
- For access roads, includes a total width of 30 feet, including existing road width plus required widening up to 30 feet and construction of new roads.

[b] For pipelines, includes new permanent operational ROW. For aboveground facilities, includes areas to be newly developed within the existing and proposed aboveground facilities properties. Excludes temporary construction ROW and ATWS which would only be used during construction.

[c] No expansion of existing operation footprint, but National Fuel would acquire a new easement to operate at Midstream's Lee Hill Interconnect.

[d] Valve settings would typically be entirely within the permanent easement for pipeline or aboveground facility with which it is associated. Accordingly, "0 acres" means the acreage was already accounted for in the pipeline or other aboveground facilities, as applicable. One exception is the valve setting for the Z20 Pipeline; this valve setting would be on a 60-foot by 60-foot permanent pad, which would exceed the existing permanent ROW by 0.01 acre outside of (adjacent to) the existing permanent ROW.

[e] Z20 PAR 1 would be entirely within the existing permanent ROW for Z20 Replacement Pipeline; therefore, its acreage is not accounted for in this total.

[f] National Fuel has identified two potential locations for the cathodic protection ground bed; however, only one of these locations would be constructed, pending outcome of land negotiations and other factors of feasibility.

[g] Grand total includes the typical 75-foot construction ROW, (including 50-foot-wide permanent ROW, 25-foot-wide construction ROW, and ATWS.

7.0 CONSTRUCTION PROCEDURES

Construction Schedule and Workforce

National Fuel anticipates construction activities would begin in the first quarter 2026 for an in-service date no later than fall of 2026 (about 9 months). National Fuel estimates five spreads would be needed for the Project with a workforce of approximately 330 temporary construction personnel, including: 55 on the Replacement Pipeline, 220 on the Mainline Pipeline, 20 on the McCutcheon Hill OPP Station, 20 for the Ellisburg Compressor Station (CS) modifications, and 15 for Measurement Facilities at Midstream's Lee Hill Interconnect.

National Fuel anticipates construction work occurring 6 days a week, Monday through Saturday, and 10 hours per day during daytime hours (7:00 a.m. to 7:00 p.m.). Landowner requests, specialized construction activities, schedule, and unforeseen events may impact and influence the need to work additional hours and days, such as Sundays. Activities such as, but not limited to, hydrotesting, installation of resource/stream crossings, environmental control device maintenance/installations, and tie-in work may exceed typical daytime work hours.

Construction, Operation, and Maintenance Procedures

The Project would be designed, constructed, removed, operated, and maintained in accordance with applicable requirements defined by the United States Department of Transportation regulations in 49 CFR 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards; FERC's Siting and Maintenance Requirements in 18 CFR 380.15; and other applicable federal and state safety regulations.

Project construction would involve clearing and grading, pipeline installation via trenching or horizontal directional drilling (HDD), installation of appurtenant facilities, removal of select facilities, and restoration. National Fuel would use a 75-foot-wide construction right-

of-way to install pipeline via trenching. The rights-of-way would accommodate equipment needed to install large diameter pipes (12- to 20-inch-diameter). National Fuel would use special construction techniques for road, wetland, and waterbody crossings (discussed further throughout section B). National Fuel proposes to abandon the existing Z20 Pipeline by removal and replace it within the same trench or a trench parallel to the original trench within its existing 50-foot-wide pipeline right-of-way.

National Fuel would construct the pipeline and all appurtenant facilities in accordance with FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan); FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures); National Fuel's *Erosion and Sediment Control & Agricultural Mitigation Plan* (ESCAMP); National Fuel's *Project-specific Erosion and Sediment Control Plan* (E&SCP); *Project-specific Inadvertent Return Plan, Spill Prevention, and Response Procedures* (SPARP) and *Unanticipated Discoveries Plan*. National Fuel has requested six modifications to the Procedures where extra workspace would be within 50 feet of a waterbody or wetland. The modifications with justification are provided in section B.3.

7.2.1 Environmental Compliance and Monitoring

National Fuel would assign environmental inspectors (EI) to ensure all construction activities are completed in compliance with the FERC Plan and Procedures, all permits, and the requirements and conditions of the Certificate. National Fuel would provide training for its EIs and ensure that all construction personnel receive environmental training before they are permitted on the construction site and pipeline right-of-way.

The EIs would oversee construction and restoration activities. The EIs' duties would be consistent with those contained in the FERC Plan and they would have authority to stop activities that violate the environmental conditions of any Certificate that FERC may issue and other federal and state permits or landowner requirements, and to order corrective action.

In addition to National Fuel's efforts to ensure environmental compliance, FERC staff would conduct periodic inspections throughout construction and restoration to verify compliance with the Commission's orders.

8.0 NON-JURISDICTIONAL FACILITIES

Under section 7 of the NGA, and as part of the decision regarding whether to approve facilities under its jurisdiction, the Commission is required to consider all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of FERC. National Fuel anticipates using a local utility company to provide electrical service to the OPP Station, the remote-control valve (RCV) on the new YM59 Mainline Pipeline (Milepost [MP] 12.08), and the RCV on the Z20 Replacement Pipeline (MP 0.00). The existing overhead utility power along McCutcheon Road would support the OPP Station's power needs and the existing overhead utility power along Howland Hill Road would support the YM59 remote-control valve power needs. The existing overhead utility power along SR1010 – Marsh Creek Road would support the power needs for the Z20 Replacement Pipeline remote-control valves. Impacts from utility power lines would result in permanent

impacts for resources including vegetation and visual resources. Each of these non-jurisdictional facilities would be constructed in compliance with applicable federal and state regulations. No other non-jurisdictional facilities are planned in association with the Project.

9.0 PERMITS, APPROVALS, AND REGULATORY CONSULTATIONS

Table 1 lists the major federal, state, and local permits, approvals, and consultations for the Project construction activities, and provides the current status of each. National Fuel would be responsible for obtaining all permits and approvals required to construct the Project, regardless of whether they appear in this table.

Table 1: Permits, Approvals, and Consultations

Administering Agency	Permit/Consultation	Date Submitted	Date Received
Federal			
Federal Energy Regulatory Commission (FERC)	Section 7(b) and 7(c) of the Natural Gas Act – Certificate of Public Convenience and Necessity	August 21, 2024	Pending
USFWS – Pennsylvania Field Office	Endangered Species Act, Section 7 Consultation (Threatened & Endangered Species Clearance), Project review under Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act	December 27, 2023	Consultation ongoing.
U.S. Army Corps of Engineers (USACE), Baltimore and Pittsburgh Districts	Section 404 of the Clean Water Act – Wetland and Waterbody Crossing Permit (PA State Programmatic General Permit [PASPGP-6]) Section 10 of the Rivers and Harbors Act (for pipeline crossing Navigable Waterways) (if required)	September 2024	Anticipated September 2025

Administering Agency	Permit/Consultation	Date Submitted	Date Received
Commonwealth of Pennsylvania			
Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation, State Historic Preservation Office (SHPO)	Section 106 of the National Historic Preservation Act, Cultural Resources Consultation	December 20, 2023 – submitted request to initiate consultation. December 21, 2023– SHPO responded: No Effect. Spring 2024 - Phase I Archaeological Survey was completed. August 15, 2024 – Submitted Phase I Archaeological Investigations Report and Unanticipated Discoveries Plan to SHPO for review.	Received September 2024
Pennsylvania Department of Conservation and Natural Resources/Pennsylvania Natural Diversity Inventory (PADCNR/PNDI)	Threatened & Endangered Species Consultation (plants)	December 15, 2023 – submitted request to initiate consultation. May 21, 2024 – submitted Project mapping updates.	December 18, 2023 – Determination of No Impact Anticipated and provided invasive species recommendations (original mapping). May 23, 2023: Determination of No Impact Anticipated and provided invasive species recommendations (updated mapping).
Pennsylvania Fish and Boat Commission (PAFBC)	Threatened & Endangered Species Consultation (fish, mussels, amphibians, reptiles)	December 15, 2023 – submitted request to initiate consultation. May 21 and May 31, 2024 – submitted Project mapping updates.	December 18, 2023 – Determination of "no adverse impacts expected" (original mapping). July 1, 2024 – Determination of "no adverse impacts expected" (updated mapping).
Pennsylvania Game Commission	Threatened & Endangered Species Consultation (birds, mammals)	December 15, 2023 – submitted request to initiate consultation. May 21 and May 31, 2024 – submitted Project mapping updates.	January 9, 2024 – Determination of No Impact Anticipated (original mapping). June 3, 2024 – Determination of No Impact Anticipated (updated mapping).
Pennsylvania Department of Environmental Protection (PADEP)	Chapter 105 Wetland and Waterbody Obstruction/Encroachment Permit, Section 401 Water Quality Certification, and Submerged Lands of the Commonwealth License (for Cowanesque River)	September 2024	Anticipated September 2025

PADEP	General Permit for Discharges from Hydrostatic Testing of Tanks and Pipelines (PAG–10)	National Fuel has existing Statewide (general) Permit available for various company projects that will be modified to allow discharge from the new YM59 Mainline Pipeline.	Anticipated August 2026
PADEP	Chapter 102 Erosion and Sediment Control General Permit (ESCGP-3) and NOI Application	September 2024	Anticipated September 2025
PADEP	Title V Operating Permit Request for Determination	June 25, 2024 – Request for Determination submitted	Anticipated August 2025
PAFBC	Permit for In-Stream Blasting (if required)	Requirement for permit to be confirmed (if in-stream blasting is required to construct the Project, an in- stream blasting permit may be required).	*Not anticipated to be required; if required, National Fuel would obtain this permit by construction contractor before construction.*
County/Local Agencies			
Potter County Conservation District	(Participating agency for review of PADEP ESCGP-3 permit)	September 2024 (same as PADEP ESCGP-3 above)	Anticipated September 2025
Tioga County Conservation District	(Participating agency for review of PADEP ESCGP-3 permit)	September 2024 (same as PADEP ESCGP-3 above)	Anticipated September 2025
Harrison Township (Potter County)	Site Plan Review, Building Permit for OPP Station	November 2025	Anticipated April 2026
Cheatham Township (Tioga County)	Site Plan Review, Building Permit for Midstream's Lee Hill Interconnect station	November 2025	Anticipated April 2026
Townships (as applicable)	Road Use, Road Opening Permits (as required)	November 2025	Anticipated April 2026

SECTION B – ENVIRONMENTAL ANALYSIS

This section of the EA describes the affected environment as it currently exists and discusses the environmental consequences of the proposed Project. The discussion is organized by resource topic. Based on our review of the Project, the following resources are either not present or would not be affected by the Project, and they are not discussed further:

- essential fish habitat;
- national or state Wild and Scenic Rivers, national parks, national forests;
- hazardous waste sites; and
- coastal zone management areas.

The environmental consequences of facility construction would vary in duration. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impacts could continue between two to five years following construction. Impacts are considered long-term if the resource would require more than five years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to pre-construction conditions. When determining the significance of an impact, we consider the duration of the impact as well as the geographic, biological, and/or social context in which the effects would occur, and the intensity (e.g., severity) of the impact.

It is common for a project proponent to require minor modifications (e.g., minor changes in workspace configurations) during construction activities. Any such modifications for National Fuel's Project would be subject to review and approval from FERC and any other applicable permitting/authorizing agencies with jurisdiction.

1.0 GEOLOGY

The Project facility locations are within the Glaciated High Plateau of the Appalachian Plateaus Physiographic Province (Trapp and Horn, 1997). This physiographic province is underlain by generally flat-lying or gently folded sedimentary rocks. Elevations in this physiographic province generally range from 440 to 2,690 feet above mean sea level (ft-amsl).

These physiographic sections consist of elongated or rounded uplands and shallow valleys resulting from fluvial and glacial erosion and deposition processes. The bedrock is composed of sandstone, siltstone, shale, conglomerate, and some coal.

The proposed Middlebury Contractor Yard (Tioga County) and Port Allegany Pipe Yard (McKean County) are in the Deep Valleys physiographic section. This physiographic section is in northern-central Pennsylvania and consists of very deep, angular valleys with some uplands resulting from fluvial erosion and periglacial mass wasting. The bedrock is composed of sandstone, siltstone, shale, and conglomerate.

Horizontal Directional Drilling

National Fuel proposes to use the HDD method to install the YM59 Mainline Pipeline across the Cowanesque River. The HDD method reduces impacts on sensitive resources by installing the pipeline at a substantial depth beneath the resources. The HDD method is typically used to install pipelines in areas where traditional open-cut excavations are not feasible and/or practical due to sensitive resource areas or logistical reasons. While overall disturbance within a sensitive area may be reduced by HDD, a larger equipment staging area is typically required. The amount of workspace at the drill entry and exit locations can vary significantly based on site-specific conditions, length of the crossing, and carrier pipe outside diameter.

The HDD bore hole would be about 1,481 feet (0.28 mile, from MP 9.86 to MP 10.14) in length and would reach a maximum depth of cover of about 140 feet. The HDD crossing is estimated to take 20 days to complete. National Fuel would install a 42-inch-diameter surface casing from the entry to 314 feet into the bore, and from the exit 424 feet into the bore. ATWS would be required at the HDD entry to accommodate the drilling rig, drill pipe, drilling mud systems, and other equipment. ATWS would also be needed at the HDD exit to accommodate equipment for installing the surface casing and for fabricating and stringing the segment of pipeline to be pulled back and installed in the HDD borehole.

National Fuel conducted a geotechnical investigation and feasibility assessment for the HDD bore to define the stratification and engineering properties of the subsurface materials beneath the footprint of the proposed HDD location. National Fuel completed 4 borings to depths ranging from 50 to 100 feet below the ground surface. Bedrock was encountered at depths ranging from 24 to 56 feet in 3 of the borings. National Fuel stated that prior to January 2025 it would drill two additional borings to extra depth to verify the extrapolated depth to bedrock on the south side of the Cowanesque River. The proposed bore path is anticipated to predominantly pass through bedrock for the majority of the bore, but would pass through unconsolidated gravel and sediments in the shallower portions near the entry and exit locations. The geotechnical investigation and feasibility assessment concluded that based on the preliminary data, the HDD bore beneath the Cowanesque River is feasible with low to medium risk with the appropriate mitigation measures of installing casing at the bore entry and exits. However, while two borings on the south side of the Cowanesque River were proposed by National Fuel, the results of these borings were not filed. Therefore, the feasibility determination is based on assumed geologic conditions on the south side of the Cowanesque River crossing. To ensure this HDD is feasible at this location, **we recommend that the following measure be included as an environmental condition in the Commission's Order:**

- **<u>Prior to construction</u>, National Fuel shall file with the Secretary of the Commission (Secretary) the results of two additional borings on the south side of the Cowanesque River. National Fuel shall file with the Secretary, for review and written approval by the Director of the Office of Energy Projects (OEP), or the Director's designee, alignment sheets showing the final path and profile of the HDD bore, based on the geologic conditions encountered in the additional borings.**

In the process of drilling and reaming the hole, a slurry of drilling mud would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and promote borehole stability. Drilling mud primarily consists of bentonite, a non-toxic, clay mineral mixed with water. Based on drilling conditions, it may be necessary to augment the properties of the drilling mud using other additives, in order to enhance drilling efficiency and borehole stability. All drilling mud additives would have their Safety Data Sheets (SDS) available at the HDD workspaces. National Fuel would only use pre-approved additives that conform with the Pennsylvania Department of Environmental Protection (PADEP) and National Sanitation Foundation (NSF)/American National Standards Institute (ANSI) Standard 60 (Drinking Water Treatment Chemicals – Health Effects).

During normal HDD construction, the drilling mud remains in the immediate vicinity of the borehole and the drilling mud circulates between the drill bit and the drilling rig. The drilling fluid and mixed cuttings would be pumped to a fluid recycling and processing system where the excavated material would be separated from the drilling fluid. The processed material that is not recycled and sent back downhole would be pumped into sealed containment bins. Containers would be placed on-site or staged near the Project workspaces to be accessible for containing used or excess drilling mud. If drilling mud is found to be contaminated, it would be disposed of at an approved off-site disposal facility.

Depending on site-specific geologic conditions and drilling practices, drilling mud can extend beyond the immediate vicinity of the borehole, resulting in an inadvertent return of drilling mud at the land surface. Should an inadvertent return of drilling mud occur to the land surface or to an aquatic resource, National Fuel would implement measures to limit impacts on sensitive resources according to its Project-specific Inadvertent Return Plan for HDD, such as placing containment structures around the inadvertent return location in order to collect drilling mud for off-site disposal. These structures may include ECDs in upland areas and turbidity curtains or underwater booms in waterbodies or wetlands. Based on National Fuel's Project-specific Inadvertent Return Plan for HDD and our recommendation, we conclude that HDD is a feasible installation method for the proposed pipeline.

Blasting

Areas mapped as having shallow bedrock occur along about 31.4 percent of the YM59 Mainline Pipeline length, and about 18.2 percent of the Z20 Replacement Pipeline length (U.S. Department of Agriculture, Natural Resources Conservation Service [USDA-NRCS], 2024). National Fuel anticipates that areas of ground disturbance that exhibit shallow bedrock would be excavated mechanically using either an excavator equipped with various attachments, depending on the extent of the rock and its qualities. National Fuel does not anticipate that blasting would be necessary. However, where mechanical excavation methods are unsuccessful or inadequate, blasting may be required, and blasting controls would be required to limit stresses on parallel pipelines and other nearby facilities and structures. National Fuel identified numerous residences, outbuildings, gas wells, water wells, and other underground infrastructure within 500 feet of the Project workspaces that have the potential to be damaged by blasting if proper blasting procedures are not followed.

In the event that blasting is required, National Fuel prepared a Blasting Guidance Document that includes procedures it would follow in planning and permitting blasting. National Fuel would prepare, and submit for approval, a Project-specific blasting plan prior to initiating blasting activities and would also follow federal and state requirements, use a licensed blasting subcontractor, and monitor blasting activities with seismographs. Given that National Fuel would follow these procedures, we conclude that blasting would not significantly impact environmental resources in the Project area.

Mineral Resources

Five non-coal mineral facilities are within 0.25 mile of Project (Pennsylvania Spatial Data Access [PASDA], 2024b; PASDA, 2024c; US Geological Survey [USGS], 2024a). Of these, three are listed as large surface mines for industrial mineral mining operations, and two are listed as small, non-coal surface mines, mainly for sand/gravel. There are no surface or underground coal mining operations within 0.25 mile of the proposed Project workspaces. There are 24 natural gas and/or oil wells within 0.25 mile of Project workspaces (PADEP, 2024; PASDA, 2024a), the nearest of which are adjacent to a permanent access road for the YM59 Pipeline at about MP 14.9, and 35 feet from the Z20 Pipeline right-of-way at about MP 2.7. The remaining wells are more than 100 feet from Project workspaces. Thirteen of these wells are listed as storage wells associated with nearby natural gas storage fields, and five of these wells are listed as plugged or not drilled.

National Fuel would prevent damage to these wells by fencing or barricading the wellheads, as well as avoiding blasting in these areas. Based on the limited ground disturbance at Project workspaces near the identified mineral facilities, that impacts on the construction workspace would be temporary, and the measures National Fuel would implement to prevent damage to oil and natural gas wells near the workspaces, we conclude that the Project would not impact availability of, and access to, mineral resources.

Geologic Hazards

Geologic hazards are natural, physical conditions that can result in damage to land and structures and injury to people. Such hazards are typically seismic-related, including earthquakes and soil liquefaction. These hazards are discussed below. Other geologic hazards, such as landslides, flash flooding, and ground subsidence, are also discussed below.

Based on USGS seismic hazard probability mapping, there is a 2 percent probability of an earthquake with an effective peak ground acceleration of 0.04 gravity being exceeded in 50 years in the Project locations (USGS, 2018). For reference, a peak ground acceleration of 0.10 gravity is generally considered the minimum threshold for damage to older structures or structures not constructed to withstand earthquakes. Therefore, we conclude the risk of significant damage to the proposed Project facilities resulting from an earthquake or seismic ground faulting is low.

Soil liquefaction is a phenomenon often associated with seismic activity in which saturated, non-cohesive soils temporarily lose their shear strength (i.e., behave like viscous liquid) when subjected to ground shaking. Non-cohesive soils (e.g., sand), near-surface

saturation, and seismicity are necessary for soil liquefaction to occur. Given the low risk of earthquake-induced ground movement in the Project locations, we conclude that the risk of impacts on the Project facilities from soil liquefaction is low.

"Landslide" is a general term for downslope mass movement of soil, rock, or a combination of materials on an unstable slope. According to published USGS data, the Project is in areas of low to moderate landslide susceptibility and incidence (USGS, 1982; USGS, 2024d). Areas within the Project workspaces with a relatively higher "moderate" susceptibility to landslides occur along the Z20 Pipeline (Potter County), along about 9.5 miles of the YM59 Mainline Pipeline (Potter and Tioga Counties), at the McCutcheon Hill OPP Station (Potter County), the Ellisburg CS (Potter County), the Port Allegany Pipe Yard (McKean County), and the Middlebury Contractor Yard (Tioga County).

National Fuel completed a Project-specific Geohazard Evaluation of the Project workspaces, which identified 44 locations that have slopes greater than about 33 percent. National Fuel's field reconnaissance of these areas identified signs of recent ground movement (e.g., bent or leaning trees, hummocky terrain, and loose rocks or soil). A Geohazard Evaluation Report recommended installation of intrench drainage to a rock sump to reduce the amount of water collecting in the ditch line, and that areas with slopes greater than about 67 percent be reconstructed in controlled lifts and compacted. Given that National Fuel would implement these mitigation measures where necessary, we conclude that the risk of landslides impacting the Project is low.

Sections of the Z20 Replacement Pipeline and YM59 Mainline Pipeline would cross streams in narrow valleys, and portions of the Port Allegany Pipe Yard and the Harrison Valley Contractor Yard are within Federal Emergency Management Agency (FEMA) 100-year flood zones (FEMA, 2024). These sections of the Project workspaces may be susceptible to flash flooding. National Fuel would monitor local weather conditions and forecasts during construction activities and take preventative actions to avoid construction activities and materials being impacted by flash flooding. These actions may include avoiding work at stream crossings during high flows or predicted storms, securing equipment bridges across streams, and securing or removing other materials from potentially affected areas. Following completion of construction, the operation of the project would neither impact floodplains nor impact floodplain storage capacity, as the pipeline would be buried and no aboveground facilities are proposed within the floodplain.

Ground subsidence can occur due to natural geologic or human processes, such as karst formation, or underground mine collapse. No karst terrain was identified in the Project areas (USGS, 2014b). No active or abandoned underground mines were identified within 0.25 mile of the Project locations (PASDA, 2024b; PASDA, 2024c; USGS, 2024a). We conclude that the Project would be unlikely to be impacted by ground subsidence. We further conclude that given the procedures and mitigation measures that National Fuel would follow, the Project would not be significantly impacted by geologic hazards.

Paleontological Resources

Paleontological resources are the fossilized remains of prehistoric plants and animals, as well as the impressions left in rock or other materials. The Project area is underlain by Paleozoic sedimentary rocks, in which fossilized corals, bryozoans, brachiopods, mollusks, arthropods, echinoderms, and plants are common and are unlikely to be unique or significant (Hoskins, 1999). The Project workspaces do not cross any "Heritage Geology Sites" identified by Pennsylvania Department of Conservation and Natural Resources (PADCNR) (PADCNR, 2024). Furthermore, the Z20 Replacement Pipeline would primarily be installed in previously disturbed areas. Should unique or significant fossil specimens be unearthed during excavation activities, National Fuel would notify the PADCNR, Bureau of Geological Survey upon discovery. Given that no Heritage Geology Sites would be impacted and PADCNR would be notified immediately of any specimens, we conclude paleontological resources would not be significantly impacted by the Project.

2.0 SOILS

Based on the USDA-NRCS Web Soil Survey, the Project work areas are comprised of silty and loamy soils (USDA-NRCS, 2024). Some of the mapped soils within the Project area are described as having characteristics that limit suitability for development. These characteristics are: shallow bedrock, prime farmland, and soils susceptible to wind erosion.

The Project's potential impacts on soils may include erosion by wind and water, compaction, rutting, bringing rock to the surface, and poor revegetation. Based on the published soils data, about 4.1 acres of the soils within the Project workspaces are highly susceptible to wind erosion and have a low to moderate susceptibility to the other potential impacts listed above. To prevent or minimize impacts on soils from construction activities, National Fuel would follow procedures in the Project ESCAMP and FERC's Plan and Procedures, such as installing and maintaining erosion control devices and seeding as soon as possible after construction to revegetate and protect soils from erosion, and removing excess rock form the top 12 inches of soil in cultivated cropland. Temporarily disturbed areas used for staging would be restored to preconstruction conditions.

About 246.7 acres of prime farmland and farmland of statewide importance soils are within the proposed pipeline rights-of-way, aboveground facilities, and staging areas. About 2.8 acres of these prime farmland soils would be permanently converted to developed land within proposed new aboveground facilities. Agricultural land comprises about half of the pipeline rights-of-way and the proposed McCutcheon Hill OPP workspaces. With the exception of about 0.01 acre of land at the Z20 Replacement Pipeline Valve Setting, land that is currently in use for agriculture would be available for agricultural use following the completion of construction activities. Given that National Fuel would follow mitigation measures from the ESCAMP and FERC's Plan and Procedures that would return disturbed prime farmland soils to agricultural use, we conclude that the Project's impact on prime farmland soils would be short-term and not be significant. However, it may take a few years and attempts to mitigate potential restoration issues, such as soil compaction, ponding, and subsidence.

The EPA commented that FERC should discuss the frequency or likelihood of hazardous materials spill events; describe spill and release response capabilities; and identify and commit to appropriate state-identified and FERC-identified best management practices to reduce potential non-point sources of pollution from Project activities, such as secondary containment. Accidental spills of hazardous fluids such as oil, gasoline, or hydraulic fluids, could potentially impact soils. To reduce the potential for soil contamination, National Fuel follow measures in the Project Spill Prevention and Response Procedures to avoid or minimize the potential for accidental releases and measures to clean up any releases. In addition, National Fuel would implement the Procedures, which includes measures to minimize spill impacts, such as requirements for secondary containment, that equipment be inspected to make sure it is in good operating order, and ensuring that equipment is not parked overnight within 100 feet of a wetland or waterbody (unless an EI determines that there is no reasonable alternative and appropriate secondary equipment is implemented). Based on a review of publicly available databases of contaminated sites, nine facilities were identified within 0.25 mile of the Project area where previous contaminant discharges were reported (PADEP, 2025; PADEP, 2024a; PADEP, 2024b; USEPA, 2023a). Details on the discharges are not included in the databases; however, all nine of the facilities are listed as in compliance. However, in the event previously unidentified contamination were encountered, National Fuel would follow procedures detailed in its ESCAMP and SPARP. Given that National Fuel would follow mitigation procedures in these Project documents, we conclude that the Project is not likely to affect or be affected by soil or groundwater contamination.

Given National Fuel's proposed mitigation measures, we conclude impacts on soils would be short-term (i.e., lasting until vegetation is re-established) and not significant.

3.0 WATER RESOURCES

Groundwater

The Project would not occur over designated aquifers. Most aquifers in Pennsylvania are localized, due to bedrock characteristics and varying thickness and characteristics of surficial sediments and glacial deposits. Unconsolidated sediments comprised of sand and gravel, with significant porosity and permeability, are typically the most productive aquifers in Pennsylvania. These aquifers are generally limited to major stream valleys (Fleeger, 1999).

The EPA oversees the Sole Source Aquifer (SSA) Protection Program to protect high production aquifers that supply 50 percent or more of the region's water supply and for which there are no reasonably available alternative drinking water sources should the aquifer become contaminated. There are no SSAs underlying the Project areas (USEPA, 2023b). National Fuel does not propose using groundwater during the construction or operation of the Project. The EPA commented that FERC should identify the specific locations of any public or private drinking water supply intakes or wells. During National Fuel's surveys, no known public watershed areas or potable water supply areas were identified within three miles of Project activities. Additionally, National Fuel did not identify any public or private water supply wells within 150 feet of the Project workspaces.

National Fuel identified one spring adjacent to the Project workspaces, about 5 feet from the edge of the YM59 Replacement Pipeline right-of-way at about MP 7.7. National Fuel does not propose any dewatering activities in this area. National Fuel would install and maintain temporary erosion control devices at the edge of the right-of-way and would not withdraw or discharge groundwater near the spring. Additionally, National Fuel would implement the Procedures to minimize potential spill related hazards on the spring. Therefore, we conclude that impacts on the spring would be temporary and not significant.

Given National Fuel's mitigation measures, including implementation of our Plan and Procedures and its ESCAMP, we conclude that impacts from Project construction and operation on groundwater resources would be temporary, and would not be significant.

Surface Water and Wetlands

Surface Water

National Fuel conducted environmental field surveys for the Project in October and November 2023, and April and May 2024. The Project would cross 63 streams, and various additional water conveyances, such as ditches and man-made swales. The EPA commented that FERC should include information on the proposed stream crossing methods along with widths of each waterbody crossing. Appendix A provides an overview of the waterbodies National Fuel would cross, including the widths of proposed stream crossings and crossing methods. National Fuel would install the pipeline beneath all waterbodies using the dam and flume or dam and pump crossing method, except the Cowanesque River (stream S32), which National Fuel would cross using the HDD method.

National Fuel applied for federal Clean Water Act (CWA) Section 404 authorization from the U.S. Army Corps of Engineers (USACE) to permit activities associated with construction in wetlands and waterbodies that are jurisdictional Waters of the United States. National Fuel anticipates the permit's receipt in September 2025. In addition, the Section 401 water quality certification is pending with the PADEP; therefore, **we recommend that the following measure be included as an environmental condition in the Commission's Order:**

- **Within 5 days of receipt of a water quality certification issued by the PADEP, National Fuel should file the complete certification, including all conditions. All conditions attached to the water quality certification constitute mandatory conditions of the Certificate Order. Prior to construction, National Fuel shall file, for review and written approval by the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.**

The EPA recommended the use of directional drilling for all water crossings, including associated floodplains, wetlands, and unique wildlife habitats, such as forest land. National Fuel would use the HDD method to avoid the Cowanesque River, which is considered a stocked trout stream (STS). Most of the 63 waterbody crossings are minor waterbodies (i.e., less than 10 feet in width), with the exception of an unnamed tributary to Cowanesque River and Jameson Creek. Given the extra workspace and additional timing required for an HDD of this diameter pipeline,

this would not be practicable. Additionally, crossing of these streams using the dam-and-pump or flume method would minimize impacts on water quality, and impacts from this construction technique are anticipated to be temporary.

The EPA commented that FERC should identify potential impacts on water resources from erosion, and mitigation measures to protect upland and aquatic resources. Construction activities near waterbodies could result in a temporary localized increase in turbidity levels and downstream sediment deposition. Sedimentation and turbidity may occur because of in-stream construction, trench dewatering, and soil erosion along the construction right-of-way. In slack or slowly moving waters, increases in suspended sediment may increase the biochemical oxygen demand and reduce levels of dissolved oxygen in localized areas during construction. However, National Fuel would implement the FERC's Plan and Procedures, which include best management practices to minimize soil erosion into streams and wetland areas.

National Fuel would not park or store construction equipment in the 100-foot buffer area. No fuel storage, fuel transfer, oil change or hydraulic fluid additions would occur within 100 feet of any waterbody.

In accordance with section V.B.2 of the FERC's Procedures, National Fuel has located most of its extra workspaces at least 50 feet from waterbodies. However, some extra work areas are required with less than a 50-foot setback from a waterbody. Locations and site-specific justifications for additional temporary workspaces within 50 feet of a waterbody are depicted in table 2.

Table 2: Modifications from the FERC Procedures for Waterbodies

Milepost	County	Waterbody ID	ATWS ID	ATWS Area (acres)	Distance from Waterbody (feet)	Justification
ATWS in Waterbodies						
Replacement Pipeline 0.0	Potter	S73z	0	0.5	0	Facilitate modifications to existing Z20 Pipeline Valve Setting
Mainline Pipeline 9.98	Tioga	S31	9.9, 10.1b	1.5	0	Facilitate HDD
Mainline Pipeline 10.04	Tioga	S32	9.9, 10.1b	1.5	0	Facilitate HDD
Mainline Pipeline 10.10	Tioga	S33	10.1b	0.8	0	Facilitate HDD
Mainline Pipeline 12.05	Tioga	S39	12.1c	<0.1	0	Facilitate road crossing
TOTALS		**5 streams**	-	**0.5 acre[1]**	-	-
ATWS Within 50 feet of Waterbodies						
Mainline Pipeline 9.70	Tioga	S65	9.6b	0.2	44	HDD pipe pullback
TOTALS		**1 stream**	-	**0.2 acre**	-	-

[1] Streams S31, S32, and S33 share ATWS areas; calculations for ATWS area reflect this accordingly.

Given the extra workspaces within 50 feet of a waterbody would allow National Fuel the necessary workspace to facilitate modifications to the existing valve, HDD, and road crossing, and all temporary impacts would be restored upon completion, we conclude that National Fuel's request to deviate from FERC's Procedures have been adequately justified.

National Fuel would respond to inadvertent returns in waterbodies or wetlands, upon discovery by implementing its Project-specific Inadvertent Return Plan for HDD. Drilling operations would be suspended until the EI can properly document the release, assess the impact, and report the incident. National Fuel would take necessary actions to eliminate, reduce, or control the inadvertent return. Drilling operations would resume once the inadvertent return is contained and initial steps to remediate the area are underway. National Fuel would install the pipeline in accordance with the FERC Plan, Procedures, and its Inadvertent Return Plan for HDD. Therefore, we conclude no significant impacts on waterbodies would occur from the Project.

Sensitive Surface Water

The EPA requested that FERC discuss existing water quality issues for the waterbodies proposed to be crossed by the Project. One waterbody within the Project area, North Fork Cowanesque River, was identified as an impaired Total Maximum Daily Load (TMDL) stream by PADEP in 2000 (PADEP 2000) due to excessive siltation and organic nutrient enrichment (phosphorus) from agricultural activities. National Fuel proposes to install the pipeline using the dry crossing construction method. National Fuel would implement procedures and waterbody protection measures as outlined in its ESCAMP, which is consistent with FERC's Plan and Procedures, and would minimize impacts on this waterbody. Given these measures, impacts on the North Fork Cowanesque River from Project construction and operation would be temporary and would not be further impacted by Project activities.

Wetlands

The EPA commented that a formal wetland and Waters of the U.S. delineation should be completed to identify where wetlands, streams, and other regulated Waters of the U.S. National Fuel conducted environmental field surveys in October and November 2023, and April and May 2024 for wetlands and identified palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) wetlands[8]. The proposed Project would cross 56 wetlands, some of which have more than one Cowardin cover class. A summary of surveyed wetlands that would be crossed by the Project is provided in appendix B.

The Project would cross approximately 0.9 mile of wetlands, with total impacts amounting to approximately 8.4 acres of wetland disturbance. Approximately 6.5 acres of wetland impact would consist of temporary workspace that National Fuel would restore and allow to revert to pre-construction conditions once construction is complete. Approximately 1.1 acres of wetland impact are within the permanent right-of-way of the existing Z20 Replacement Pipeline. These wetlands have typically been subject to regular vegetation maintenance, and

[8] National Fuel's wetland delineation report can be found on the FERC eLibrary website under accession number 20240821-5098 (resource report 2).

would continue to be regularly maintained for the Replacement Pipeline. Approximately 0.8 acre of wetland areas would become new permanent right-of-way that would be permanently and regularly maintained for the new Mainline Pipeline. National Fuel would permanently fill the remaining 0.03 acre of wetlands for use as new permanent access roads. Construction activities associated with aboveground facilities would not result in any temporary or permanent impacts on wetlands. National Fuel submitted a Joint Application for Pennsylvania Chapter 105 Water Obstruction and Encroachment Permit and USACE Section 404 Permit for the Project on November 7, 2024, and anticipates obtaining mitigation credits through a USACE-approved wetland mitigation bank for the permanent fill of wetlands, pending agency approval.

National Fuel would install pipeline crossings at wetlands in accordance with the Procedures. Upon completion of construction activities, National Fuel would return wetlands, temporarily impacted by the Project to original contours and revegetate in accordance with the Procedures.

For disturbances within the existing right-of-way of the Replacement Pipeline with herbaceous cover, recolonization of disturbed ground by annual and perennial species would occur and is characteristically rapid and occurs within one growing season. Some PFO (0.3 acre for construction and 0.2 acre for operation) and PSS wetlands (1.6 acre for construction and 0.9 acre for operation) would be impacted, with some of those impacts resulting in permanent vegetation cover type conversion. National Fuel would clear forested vegetation within the permanent right-of-way and would maintain a 10-foot-wide corridor over the pipeline in an herbaceous state. Trees within 15 feet of the pipeline with roots that could damage the pipeline coating would also be periodically removed from the operational right-of-way. National Fuel would allow wetlands in the temporary construction right-of-way and additional temporary workspace areas to revegetate to preconstruction vegetative conditions (including forest) when construction is complete.

National Fuel has requested four proposed ATWS areas within four PEM wetlands, totaling approximately 0.2 acre of impacts, and two additional temporary workspaces within 50 feet of a wetland boundary (see table 3).

Table 3: Modifications from the FERC Procedures in Wetlands						
Milepost	**County**	**Wetland ID**	**Cover Class**	**Impacted Acreage**	**Workspace ID**	**Justification**
ATWS in Wetlands						
Replacement Pipeline 0.00	Potter	W01z	PEM	<0.1	0	Facilitate Z20 Valve Setting Modification
Mainline Pipeline 10.00	Tioga	W23	PEM	0.1	9.9, 10.1b	Facilitate HDD
Mainline Pipeline 10.05	Tioga	W24	PEM	<0.1	9.9	Facilitate HDD
Mainline Pipeline 9.8	Tioga	W58	PEM	0.4	9.8a	Facilitate HDD
TOTALS		**4 wetlands**	**-**	**0.5 acre**	**4 workspaces**	**-**
ATWS Within 50 feet of wetlands						
Mainline Pipeline 3.68	Tioga	W60	PEM	0.0	3.7b	Topsoil Segregation in Agricultural Field
Mainline Pipeline 9.50	Tioga	W55	PFO	0.0	9.6a	HDD pipe pullback Area
TOTALS		**2 wetlands**	**-**	**0.0**	**2 workspaces**	**-**

National Fuel requested a modification to section VI.B.1. of the FERC Procedures to permanently fill in 0.03 acre of wetlands for permanent access roads along the Z20 Replacement Pipeline. Given the existing pipeline's location to the Replacement Pipeline, impacts on the filled wetland cannot be avoided. National Fuel would install the pipeline in accordance with the FERC Plan and Procedures, which would require the installation of erosion controls (including but not limited to use of sediment barriers and trench dewatering). Given the access roads and extra workspaces within 50 feet of a waterbody would allow National Fuel the necessary workspace to facilitate modifications to the Z20 valve, Z20 Replacement Pipeline, and HDD and all temporary impacts would be restored upon completion, we conclude that National Fuel's request to deviate from FERC's Procedures have been adequately justified.

Upon completion of construction activities, National Fuel would return wetlands, temporarily impacted by the Project to original contours and revegetate in accordance with the Procedures. We have determined that impacts within the temporary workspaces on wetlands would be short-term and not significant and impacts within the permanent right-of-way would also not be significant and largely short-term given the scope of impact is limited to vegetative maintenance and 0.03 acre of permanent fill for access roads.

Hydrostatic Test Water

The EPA commented that FERC should disclose where hydrostatic testing would be undertaken, identify potential source waters, and to provide the amount of water required. National Fuel would hydrostatically test the entire new pipeline segments and source water for hydrostatic testing would be from the Cowanesque River at three withdrawal sites currently permitted by a field services contractor. An estimated 1,125,000 gallons of water would be required for hydrostatic testing of the new facilities prior to in-service. In addition, National Fuel would use about 318,000 gallons of water during HDD activities, including the mixing of drilling fluid. Based on typical discharge rates in the Cowanesque River ranging from about 19 million gallons per day to 128 million gallons per day, the volumes of water required for construction activities and hydrostatic testing throughout the Project represent about 5 percent of

the seasonal low daily discharge in the river and less than 1 percent of the seasonal high daily discharge in the river. Thus the proposed water withdrawals would not result insignificant impacts on the volume of water within this river (National Oceanic and Atmospheric Administration - National Water Prediction Service, 2025). National Fuel would dispose of hydrostatic test water in well vegetated upland areas within the Cowanesque River watershed, according to National Fuel's ESCAMP, state regulations, and FERC's Plan and Procedures.

The EPA commented that FERC should identify the impacts on water resources from erosion and the spread of aquatic nuisance species associated with hydrostatic testing, along with mitigation measures to protect upland and aquatic resources. National Fuel would discharge the used hydrostatic test water into an energy dissipation device before it is discharged into a well-vegetated area, where it would be allowed to infiltrate into the ground. National Fuel would use sediment barriers to ensure that the released water is not sediment laden. The energy dissipation device and the hydrostatic test water discharge device would reduce the velocity of the discharged water and prevent soil-scouring and would reduce the potential for erosion and sedimentation resulting from this activity. National Fuel would construct the temporary discharge device of geotextile and straw or hay bales and located in a well-vegetated upland area. Aquatic nuisance species in Pennsylvania consists of the bighead carp, black carp, crayfish mussel, quagga mussel, round goby, ruffe, silver carp, snakehead, tubenose goby, and zebra mussel (Commonwealth of Pennsylvania, 2025). The FERC Procedures requires for intake hoses to be screened to minimize the potential for fish and other wildlife entrainment. Given these measures, and that National Fuel plans to discharge the hydrostatic test water into a well-vegetated upland area, we conclude the spread of aquatic nuisance species would be minimal. We conclude that the Project would not have significant impacts on the water supply resources in the Project area.

4.0 VEGETATION, FISHERIES, WILDLIFE, AND SPECIAL STATUS SPECIES

Vegetation

The Project area occurs within the Laurentian Mixed Forest Province which lies between the boreal forest and the broadleaf deciduous forest zones and vegetation is therefore transitional. Vegetative cover types within the Project area consist of agricultural areas (e.g., cultivated crops, hay/pasture) (208.5 acres), forested areas (110.0 acres), open areas[9] (16.4 acres), shrub-covered land (2.8 acres), and developed or barren areas (18.8 acres). Vegetative impacts by Project component are summarized in appendix C.

Invasive Species and Noxious Weeds

As part of the permitting process in Pennsylvania, National Fuel would consult with the regulatory agencies regarding invasive species management. At this time, regulatory agencies have not identified any specific invasive species issues in the Project area other than the general recommended best management practices in PADCNR's response letter received by National Fuel on May 23, 2024, which National Fuel would implement as applicable. Given that National

[9] Open areas that consist of existing right-of-way, meadows, emergent wetlands, developed open areas that are mostly vegetated.

Fuel would follow the measures in the FERC Plan, we conclude that impacts on vegetation from invasive species and noxious weeds would not be significant.

Vegetation impacts by the Project are expected to be mostly short-term and recover relatively quickly (one to two growing seasons). However, impacts on forested lands would take longer to return to pre-construction conditions (typically up to 30 years). National Fuel would adhere to the FERC Plan, which includes measures to minimize erosion, restore approximate pre-construction contours in temporary workspaces, increase the potential for successful revegetation of the workspaces, minimize impacts on native vegetation, and prevent and control the spread of noxious weeds. Given National Fuel's proposed construction and mitigation measures, we conclude that impacts on vegetation would not be significant.

Fisheries

Most streams associated with the Project are assumed to have the capacity to support some type of aquatic wildlife, such as invertebrates, fish, amphibians, and waterfowl. Appendix A lists the 63 streams traversed by the Project and fisheries classifications of each. However, streams that are listed as dry, ephemeral, or intermittent may not be used by fish or only intermittently used.

Based on a review of available spatial data hosted by the PASDA supplied by PADEP and the Pennsylvania Fish and Boat Commission (PAFBC), protected water uses for waterbodies crossed by the Project include cold water fishes (CWF) waters, warm water fishes (WWF), and high quality (HQ) waters. The PAFBC also identifies Stocked Trout Streams (STS) and Approved Trout Waters.

The Cowanesque River is designated as an STS by the PAFBC. National Fuel would install the pipeline beneath Cowanesque River using the HDD method, thereby avoiding impacts on this waterbody. See section B.1 for further information on the HDD method.

Direct short-term effects of in-stream trenching can include physical distress to individual fish and displacement of fish through local disturbances and suspension of sediment in the water. Submergent and emergent vegetation, in-stream logs and rocks, and undercut banks provide important cover for fish and other aquatic biota. Fish that normally reside in these areas may be displaced. In addition, bank restoration would include seeding to promote regrowth of riparian vegetation.

Indirect effects of in-stream trenching involve alteration of habitat and food resources. Increased sediment load can smother aquatic insects, mussels, and other life; negatively impact fish spawning areas; and damage fish gills. Elevated suspended sediment levels can increase turbidity and consequently reduce primary photosynthetic production, flocculate plankton, decrease visibility and food availability, and produce effects that are aesthetically displeasing (USFWS 1982). Potential fuel or other petroleum product spills during equipment refueling and servicing could affect aquatic biota or their habitat. National Fuel would implement measures from the FERC Procedures, including following time windows for in-stream work (CWF June 1 through September 30, and June 1 through November 30 for coolwater fisheries and WWF), and screening intake hoses for hydrostatic testing. Given the measures that National Fuel would take

to prevent impacts on waterbodies and fisheries, we conclude impacts on fisheries would be mostly temporary (with bank revegetation being short-term) and not significant.

Wildlife

The various habitats within the Project area support a variety of mammals, birds, reptiles, amphibians, and invertebrates. Wildlife habitats within the pipeline Project areas consist primarily of open land and forest. Developed, agricultural, and residential areas are also within the Project area. Displaced wildlife could relocate to similar habitat adjacent to the Project area. Noise, lighting, and increased human activity from construction and operation activities could reduce nearby feeding, nesting, and cover habitat components. Mobile species could be disturbed or displaced from portions of their habitats, and mortality of less mobile individuals, such as some small mammals, reptiles, or amphibians, may occur. Both direct and indirect impacts on wildlife within the construction workspace and nearby areas generally would be temporary and short-term and limited to the period of construction and revegetation.

National Fuel would adhere to the construction, restoration, and mitigation methods identified in FERC's Plan and Procedures, to minimize impacts on wildlife and wildlife habitats. National Fuel would restore vegetative cover and stabilize wetland and stream crossings. Woodland vegetation removed from temporary workspace would be replaced initially by non-woody vegetation that may provide food and shelter for wildlife adapted to open habitats. National Fuel would allow trees to grow back on cleared workspace outside of the permanent pipeline right-of-way. After construction, wildlife is expected to return and colonize post-construction habitats. Given these measures, we conclude that impacts from the Project on wildlife would be mostly short-term (lasting until vegetation is re-established), and not significant.

Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 U.S. Code [U.S.C.] 703-711); bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668d). Executive Order 13186 (66 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 USFWS. Executive Order 13186 was issued, in part, to ensure that environmental analyses of federal actions assess the impacts of these actions/plans on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from the USFWS.

The USFWS Information for Planning and Consultation (IPaC) system identified 13 migratory bird species with potential to occur in the Project area. They include the bald eagle, black-billed cuckoo, bobolink, black-capped chickadee, Canada warbler, cerulean warbler, chimney swift, golden eagle, golden-winged warbler, northern saw-whet owl, prairie warbler, rusty blackbird, and wood thrush. Construction of the Project has the potential to impact birds protected under the MBTA. The Project may result in mortality of eggs and/or young, because immature birds could not avoid active construction. Ground disturbing activities could cause

disturbance during critical breeding and nesting periods, potentially resulting in the loss of nests, eggs, or young.

Although the provisions of the MBTA are applicable throughout the entire year, most migratory bird nesting activity in Pennsylvania occurs from April to August. National Fuel plans to conduct tree clearing in the winter before March 31, outside the primary nesting season. In the event that construction work cannot be avoided during the peak breeding season, National Fuel would conduct a preconstruction nest survey for breeding birds within the Project area. If any nests are observed, National Fuel would contact the USFWS or the PADCNR to determine any necessary avoidance or mitigation measures.

Given National Fuel's proposed mitigation measures, we have determined that the Project would not result in population-level impacts on migratory birds or bald and golden eagles, or significant measurable negative impacts on their habitat.

Special Status Species

FERC, as the lead agency, is required by section 7 of the ESA to ensure that the Project would not jeopardize the continued existence of a federally listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. To assess the potential occurrence of federally listed threatened and endangered species and species protected and managed by the state of Pennsylvania, National Fuel submitted a Pennsylvania Natural Diversity Inventory (PNDI) query and letters to the PADCNR, Pennsylvania Fish and Boat Commission (PAFBC), and Pennsylvania Game Commission (PGC) on December 15, 2023, and provided updated map information on May 31, 2024, requesting assistance in identifying any resources of concern that may be directly or indirectly impacted by the construction and operation of this Project. Responses from PADCNR, PAFBC, and PGC did not identify any wildlife resources of special concern for the Project area. Therefore, we conclude that the project would not have any impacts on state-listed species. National Fuel submitted an Information for Planning and Consultation (IPaC) query on December 21, 2023, and a Project-specific introduction letter to the USFWS on December 27, 2023, and provided updated information on May 31, 2024, requesting identification of any resources of concern. On March 13, 2024, USFWS provided a response via email recommending National Fuel conduct northeastern bulrush surveys.

The EPA recommended that FERC discusses the potential impacts to both state and federally listed species including the potential for cumulative impacts on these species. The discussions below and section B.11 analyze impacts and cumulative on these species, respectively.

Federal

The Project is in the range of the northern long-eared bat (NLEB) (endangered), tricolored bat (proposed endangered), northeastern bulrush (endangered), and the monarch butterfly (proposed threatened).

Northern Long-Eared and Tricolored Bats

The NLEB is listed as a federally endangered species and a Pennsylvania proposed endangered species and is considered a very high concern/low responsibility mammal species in the Pennsylvania Wildlife Action Plan (PGC 2024). It occurs in a widespread but uncommon pattern in forest habitat throughout most of its range, including Pennsylvania, but has been found there in relatively low numbers. The NLEB spends the winter hibernating in caves and underground mines. During the summer, it roosts in forested areas singly or in colonies underneath bark, in cavities or crevices of live trees or snags. NLEBs forage at night over small ponds, in forest clearings, at tree top level and along forest edges in search of night-flying insects.

Because the tricolored bat may be found in similar habitat as the NLEB, we expect the Project would result in similar impacts on the tricolored bat. As discussed above, National Fuel would restrict proposed tree clearing to occur during the winter to minimize potential impacts on the species; therefore, the Project *would not be likely to jeopardize the continued existence of the tricolored bat*.

Potential foraging habitat exists Project-wide for the NLEB and tricolored bat although roosting habitat is only present in the forested areas. National Fuel completed acoustic bat surveys in June 2024 and filed them in January 2025. However, because no correspondence has been filed with the USFWS after receiving the survey results, **we recommend that the following measure be included as an environmental condition in the Commission's Order:**

- **National Fuel shall <u>not begin</u> construction activities <u>until</u>:**
  a) FERC staff receives comments from the USFWS regarding the effects of the proposed action on the NLEB;
  c) FERC staff completes ESA consultation with the USFWS; and
  d) National Fuel has received written notification from the Director of OEP, or the Director's designee, that construction or mitigation measures may begin.

About 110 acres of roosting habitat (forest) for the NLEB would be impacted by the Project, however; National Fuel would restrict tree clearing to winter months. Therefore, we conclude that the Project *may affect, but is not likely to adversely affect* the NLEB.

Northeastern Bulrush

The northeastern bulrush is listed as a federally endangered species and a Pennsylvania proposed endangered species. It can be found growing throughout its range on the edges of seasonal pools, wet depressions, beaver ponds, wetlands, and small ponds. Potential habitat for this species is present throughout the Project area.

National Fuel conducted on-site surveys for northeastern bulrush in potential habitat in July 2024. The survey results identified that no federally listed plant species occur within the Project area. Therefore, we conclude that the Project would have *no effect* on the northeastern bulrush.

Monarch Butterfly

The monarch butterfly, a proposed threatened species, has the potential to occur within the Project area. The Project area is within the species' known range and suitable habitat was identified within the Project area. National Fuel has enrolled in the Nationwide Monarch Butterfly Candidate Conservation Agreement with Assurances (CCAA). In any areas containing suitable monarch butterfly habitat that cannot be avoided, with landowner permission, National Fuel would reseed with native seed mixtures that contain milkweed and nectar plants similar to National Fuels' Monarch CCAA program mixes, in order to restore the habitat and provide increased conservation for the species. National Fuel would restore all temporary workspaces after construction and allow vegetation to re-establish naturally or through post construction restoration. Therefore, we anticipate that the Project *would not likely jeopardize the continued existence* of the monarch butterfly.

5.0 CULTURAL RESOURCES

In addition to accounting for impacts on cultural resources under NEPA, Section 106 of the National Historic Preservation Act, as amended, requires FERC to take into account the effects of its undertakings on historic properties listed, or eligible for listing on the National Register of Historic Places (NRHP),[10] and to afford the Advisory Council on Historic Preservation an opportunity to comment. National Fuel, as a non-federal party, is assisting FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800. The Section 106 process is coordinated at the state level by the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation, which acts as the State Historic Preservation Office (SHPO).

Area of Potential Effects

The area of potential effects (APE) is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). The direct APE for archaeological sites includes all areas of potential effects where ground-disturbing activities are possible, while the indirect APE is the geographic areas from which any permanent infrastructure has the potential to impact, diminish, or alter the visual, auditory, vibratory, or atmospheric setting of a NRHP-listed or NRHP-eligible property. Given the limited aboveground impact of the proposed Project, the SHPO determined that there would be no impacts from indirect effects.

The direct APE totals approximately 356 acres, and would include all Project facilities. The APE is sufficient to account for all potential effects to historic properties by the proposed Project.

[10] In accordance with 36 CFR 800.16(l)(1), a historic property is any prehistoric or historic district, site, building, structure, object, or property of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties.

Cultural Resources Investigations

In an effort to identify historic properties within the Project APE and to account for any effects to those properties by the proposed Project, National Fuel conducted a Phase I cultural resources field investigation, supplemented by background research and an examination of the Pennsylvania archaeology site file database known as the Pennsylvania State Historic & Archaeological Resource Exchange (PA-SHARE) (Tetra Tech 2024). As a result of these investigations, four historic archaeological sites were identified in or near the APE: 36TI0188, 36TI0189, 36PO0057, and 36PO0056. Although sites 36PO0056, 36TI0189, and 36PO0057 have not yet been evaluated for their eligibility for listing in the NRHP, they would be avoided by the proposed Project. The search of PA-SHARE uncovered evidence that site 36TI0188 is within the APE and would be unavoidable. Because the 36TI0188 site boundary likely extends well beyond the Project APE, the site remains unevaluated for listing in the NRHP. National Fuel conducted site delineations and determined that the portion of 36TI0188 within the APE would not contribute to the eligibility of this site, should it be determined to be eligible in the future.

Based on the avoidance measures developed for sites 36PO0056, 36TI0189, and 36PO0057, and because the components of site 36TI0188 within the APE are non-contributing, National Fuel determined that no archaeological resource impacts would occur as a result of Project activities. On August 15, 2024, National Fuel sent the results of the survey and background investigation to the SHPO, recommending that no archaeological resources would be affected by Project implementation and asking for concurrence with the findings. On September 13, 2024, the SHPO concurred by letter, writing "that there are no archaeological concerns for the Project." The letter noted that four archaeological sites were found and have not been evaluated for eligibility for listing in the NRHP, agreeing the contributing portions of sites would be avoided by Project design, and SHPO stated no further archaeological work is necessary for the Project. We agree.

Tribal Outreach

On January 10, 2024, National Fuel contacted the following federally recognized Tribes regarding the Project: Absentee-Shawnee Tribe of Indians of Oklahoma; Eastern Shawnee Tribe of Oklahoma; Delaware Nation, Oklahoma; Delaware Tribe of Indians; Onondaga Nation; Oneida Nation; Seneca-Cayuga Nation; Seneca Nation of Indians; Shawnee Tribe; Saint Regis Mohawk Tribe; and the Tonawanda Band of Seneca Indians. National Fuel provided a Project information package, which included Project description and location maps. National Fuel sent a second letter to the Tribes with supplemental information on June 19, 2024. On October 4, 2024, we sent our Notice of Scoping to those same Tribes. The Eastern Shawnee Tribe of Oklahoma responded to National Fuel's outreach by letter on March 12, 2024 writing: "[t]he project proposes No Adverse Effect or endangerment to known sites of interest to the Eastern Shawnee Tribe." There have been no additional comments to date.

Unanticipated Discovery Plan

National Fuel developed Project-specific plans titled *Unanticipated Discoveries Plan, National Fuel Gas Supply Corporation, Tioga Pathway Project McKean, Potter, and Tioga*

Counties, Pennsylvania (Unanticipated Discovery Plan), which outline the procedures to follow, in accordance with state and federal laws, in the event that unanticipated cultural resources or human remains are discovered during construction of the Project, including consultation with FERC, the SHPO, and Tribes regarding discoveries. The Unanticipated Discovery Plan was submitted to FERC and the SHPO. We find the Unanticipated Discovery Plan acceptable.

Compliance with the National Historic Preservation Act

FERC has completed its compliance requirements with Section 106 for the Project.

6.0 LAND USE, RECREATION, AND VISUAL RESOURCES

The land within the Project area is characterized as agricultural, forest/woodland, open land, scrub/shrub, developed land, residential, and industrial land. The Project would temporarily impact about 208.4 acres for construction and require 149.4 acres for operation. Appendix E depicts the land uses affected by the Project.[11]

National Fuel would install most of the Mainline Pipeline along new rights-of-way. Approximately 9 percent of the new pipeline would be collocated adjacent to existing utility corridors. National Fuel would install the entire 3.8 miles of Replacement Pipeline within and along the existing permanent right-of-way, all of which would return to existing land uses after construction.

National Fuel would install one new, above-grade RCV setting on the new Mainline Pipeline to isolate the system in the event of an emergency. This RCV would be within a fence and have a new permanent access road for all-weather access along with power and communication to support the facility operation.

The modifications at Midstream's Lee Hill Interconnect are proposed at an existing Midstream interconnect facility. National Fuel's proposed modifications at the existing Ellisburg CS would involve minor ground disturbance within the existing station property during construction.

National Fuel would modify an existing valve setting within the existing Z20 Pipeline permanent right-of-way at MP 0.00 near the west end of the Replacement Pipeline. Modifications include the installation of RCV and communication and power (non-jurisdictional) to the existing site.

National Fuel would install the cathodic protection ground beds perpendicular to the pipeline right-of-way and near a road crossing. While two ground beds are currently proposed,

[11] Acreages discussed here and in appendix E for temporary workspace for the pipelines only includes the 25-foot-wide temporary workspace right-of-way and ATWS disturbed during construction, and does not include the 50-foot-wide permanent right-of-way that would also be used for construction workspace. Permanent operational pipeline right-of-way for the pipelines only includes the 50-foot-wide right-of-way that would be permanently maintained.

National Fuel would only construct one of these locations depending on the outcome of land negotiations and feasibility.

Residential Areas and Planned Developments

There are 42 residences/structures within 50 feet of construction workspaces. Five residences are within 25 feet of construction workspace, including one for the new Mainline Pipeline along the Cowanesque River/State Route 49 HDD path (no excavation or ground disturbance would occur at this location; only planned for placing HDD guide wire); three residences for proposed permanent and temporary access roads; and one for the Replacement Pipeline. Appendix D indicates nonresidential structures within 50 feet of Project activities, and table 4 depicts residences within 50 feet of Project activities.

Table 4: Residences within 50 feet of Project Areas

Nearest MP	County, State	Structure Type	Distance and Direction from Construction Workspace or ATWS Area (feet)	Distance from Centerline of Pipeline (feet)	Proposed Mitigation
Replacement Pipeline (Z20 Pipeline)					
2.5	Potter, PA	Residence	19 S	65	1,2,3,4
Mainline Pipeline (YM59 Pipeline)					
9.9 (within 25 feet of HDD area; no surface disturbance planned)	Tioga, PA	Residence	18 E	82	3,4, 5
Access Roads for Mainline Pipeline (YM59 Pipeline)					
6.0 (YM59 TAR7)	Tioga, PA	Residence	3N	1,132	1,2,3,4
16.6 (along YM59 TAR 14)	Tioga, PA	Residence	22 N	1,567	1,2,3,4

a TAR: temporary access road

1.National Fuel would restore lawns and residential landscaping within the construction work area immediately or as soon as possible after backfilling the trench.
2.National Fuel would install fencing along the residence and construction workspace areas extending past either side of the residential structure, and would maintain this fencing throughout the open trench phase of construction.
3.National Fuel would attempt to reduce construction area to maintain a 25-foot construction workspace area for a distance of 100 feet on either side of a residence or structure, where possible.
4.National Fuel would implement a site-specific residential construction plan and would use either stove pipe or drag section construction technique, a 15-foot separation distance from the construction workspace would be maintained, orange safety fence would be installed along the construction ROW, and vehicle access to the residence would be maintained at all times during the construction period .
5. National Fuel would attempt to reduce construction ROW around structure.

National Fuel would implement the following general measures to minimize construction related impacts on all residences and other structures within 50 feet of the construction right-of-way:

- control fugitive dust within the construction site, using water when warranted;
- install safety fences at the edge of the construction right-of-way, where a natural barrier is not present, extending 100 feet on either side of the residence to ensure

that construction equipment and materials, including the spoil pile, remain within the construction work area;

- ensure pipes are welded off-site and/or installed as quickly as practicable to minimize the amount of time that a residence is affected by construction;

- backfill trenches as soon as practicable after a pipe is laid, and if necessary, temporarily place steel plates over the trenches on streets or driveways; and

- complete final cleanup, grading, and installation of permanent erosion control devices within 10 days after backfilling trenches, weather permitting.

In addition to adopting the mitigation measures listed above, National Fuel developed a site-specific residential construction plan to minimize disruption and to maintain access to the residences/structures within 25 feet of the construction work area (see appendix F). These site-specific construction plans include a dimensioned drawing depicting the residence in relation to the pipeline; workspace boundaries; the proposed permanent right-of-way; and nearby residences, structures, roads, and waterbodies. The site-specific plans also include a description of the construction techniques that National Fuel would use to reduce impacts on the residence. We have reviewed the site-specific residential construction plans and find them acceptable. **However, we encourage the owners of each of these residences to provide us comments on the plan for their individual property during the EA comment period.**

National Fuel did not identify any planned residential or commercial/business development or subdivisions within 0.25 mile of the construction workspace of the proposed Project.

Given National Fuel's proposed mitigation measures for residences near Project workspaces, we conclude that impacts on residences would not be significant.

Public Land, Recreation, and Special Interest Areas

The Project is entirely within the Pennsylvania Wilds Conservation Landscape, a 13-county region covering 25 percent of Pennsylvania. The intention of the Pennsylvania Wilds Conservation Landscape is to revitalize rural communities through sustainable tourism development.

The Port Allegany Pipe Yard is within Elk Hunting Zone 1 and the Winslow and St Mary's Subpopulation Elk Management Area. The entirety of the Port Allegany Pipe Yard is established industrial/commercial land and would not provide habitat for elk, nor would hunting be allowed on this active site. The Port Allegany Pipe Yard is also within the Allegheny Portage Creek Core Habitat area, managed by the Pennsylvania Natural Heritage Program (PNHP). The conservation recommendations from the PNHP for Allegany Portage Creek Habitat area is to keep timbering, road construction, and oil and gas development or other construction activities well away from riparian corridors. The Port Allegany Pipe Yard is established industrial/commercial land and there would be no timbering, road construction, oil or gas

development, or other construction activities within any riparian corridors in the vicinity of this facility. In addition, National Fuel would only use the pipe yard during construction. Therefore, we conclude that the Project's usage of the Port Allegany Pipe Yard would not impact recreational resources noted above. No other special interest areas were identified in the Project area.

Visual Resources

Temporary visual impacts would occur from construction equipment and clearing of vegetation and grading of workspaces. Visual impacts from construction would cease once the pipeline has been installed and the land has reverted (one to two growing seasons).

National Fuel anticipates screening all the proposed Project aboveground facilities with chain-link fence and green privacy slats. The proposed McCutcheon Hill OPP Station would be surrounded with chain-link fence, green privacy slats, and arborvitaes to provide a permanent visual screen from nearby public roadways. The installation of measurement facilities at Midstream's Lee Hill Interconnect could be visible. However, the modifications at the Lee Hill Interconnect and all remaining aboveground facilities would occur at existing facilities, and would not change the visual landscape.

Given the limited ground disturbance that would be required for pipeline installation, and modifications, we conclude that visual impacts would be mostly temporary and minor during construction and operation.

7.0 AIR QUALITY

The term air quality refers to relative concentrations of pollutants in the ambient air. Air quality would be affected by emissions from construction and operation of the Project. This section summarizes federal and state air quality regulations that are applicable to the proposed facilities; characterizes the existing air quality; describes potential impacts the facilities may have on air quality; and identifies proposed mitigation measures.

The Project area (Tioga and Potter Counties, Pennsylvania) has a humid continental climate, with cold, snowy winters and warm, wet summers with warm temperate days. The annual mean average temperature is 45.2 °F. Precipitation is distributed evenly throughout the year and there is not a dry season; annual mean average precipitation is 35.48 inches.

Existing Air Quality

Federal and state air quality standards are designed to protect human health and welfare. Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA has developed National Ambient Air Quality Standards (NAAQS)[12] for criteria pollutants carbon monoxide, lead, oxides of nitrogen (NO_x), ozone, particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2).

[12] The current NAAQS are listed on the USEPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.

Volatile organic compounds (VOC) are also regulated by the EPA to prevent the formation of ozone, a constituent of photochemical smog. Hazardous air pollutants (HAP) are also emitted during fossil fuel combustion and are chemicals known to cause cancer and other serious health impacts. The EPA defines air pollution to include the mix of the following six long-lived greenhouse gases (GHG), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs produced by fossil-fuel combustion are CO_2, CH_4, and N_2O, and are generally non-toxic and non-hazardous at normal ambient concentrations. Emissions of GHGs are quantified and regulated in units of carbon dioxide equivalent (CO_2e). The CO_2e unit of measure factors in the global warming potential (GWP) of each GHG over a specified timeframe.[13] There are no NAAQS or established significance thresholds for GHG.

Air Quality Control Regions (AQCRs) are areas established for air quality planning purposes in which state implementation plans describe how ambient air quality standards would be achieved and maintained. AQCRs were established by the EPA and local agencies, in accordance with Section 107 of the Clean Air Act and its amendments, to implement the Clean Air Act and comply with the NAAQS through state implementation plans. The AQCRs are intrastate and interstate regions, such as large metropolitan areas, where the improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas.

Tioga and Potter Counties are either in attainment or unclassifiable for all criteria pollutant NAAQS. However, the entire Commonwealth of Pennsylvania is within the Northeast Ozone Transport Region, which establishes emission thresholds for NOx and VOCs as ozone precursors. Facilities within the Ozone Transport Region have a VOC major source threshold of 50 tons per year.

Regulatory Requirements

The CAA is the basic federal statute governing air pollution in the United States. Based on Project activities, we have reviewed the following federal requirements and determined that they are not applicable to the proposed Project:

- General Conformity;
- New Source Review- Prevention of Significant Deterioration; and
- New Source Review - Non-attainment New Source Review.

The provisions of the CAA that are applicable to the Project are discussed below.

[13] CO_2 has a GWP of 1, CH_4 has a GWP of 25, and N_2O has a GWP of 298 on a 100-year timescale.

New Source Performance Standards

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions discussed below. NSPS also establishes fuel, monitoring, notification, reporting, and recordkeeping requirements. The PADEP would determine final applicability to all NSPS in the final permit that it issues for Project facilities.

40 CFR 60 Subpart JJJJ - (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Subpart JJJJ applies to owners and operators of stationary spark ignition internal combustion engines that commence construction after June 12, 2006 (depending on engine power and date of manufacture), and to owners and operators of all stationary ignition internal combustion engines that are modified or reconstructed after June 12, 2006. The new emergency generator engines at the McCutcheon Hill OPP Station would be subject to Subpart JJJJ.

40 CFR 60 Subpart OOOOb and OOOOc - (Standards of Performance for Crude Oil and Natural Gas Facilities)

Subpart OOOOb and OOOOc would be potentially applicable to the proposed new process controllers at the Ellisburg CS, and National Fuel would comply with these rules, as required.

National Emission Standards for Hazardous Air Pollutants

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAPs are promulgated under 40 CFR 63 to regulate and limit HAP emissions from specific source types at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements.

40 CFR Part 63 Subpart ZZZZ – (NESHAP for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)

Subpart ZZZZ pertains to stationary engines located at either minor or major sources of HAP emissions. Therefore, these regulations would be potentially applicable to the emergency generator engine at the McCutcheon Hill OPP Station. National Fuel would comply as required. The existing compressor engines and emergency generators at Ellisburg CS are currently subject to and would continue to comply with the requirements under Subpart ZZZZ.

Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The major source threshold for an air emission source within an

attainment area, or within a marginal or moderate nonattainment area is 100 tons per year (tpy) for criteria pollutants, 10 tpy for any single HAP, and 25 tpy for total HAPs.

The existing Ellisburg CS is currently permitted by Title V Operating Permit no. 53-00003 and expects to continue to operate under the same permit with no modifications required, and no additional Title V permits would be required for Project facilities.

Mandatory Greenhouse Gas Reporting Rule

The EPA's Mandatory Reporting of Greenhouse Gases Rule, codified under 40 CFR 98 requires reporting from applicable operational sources of GHG emissions if these sources, in total, emit greater than or equal to 25,000 metric tons of GHG (as CO2e) in 1 year. The Mandatory Reporting Rule does not require emission control devices and is strictly a reporting requirement for stationary sources based on actual emissions. The expected GHG emissions from each proposed new Project facility do not exceed this threshold; therefore, mandatory GHG reporting is not required. The existing Ellisburg CS is currently subject to, and complies with, the GHG Reporting Rule and would remain subject to annual reporting under the rule following the proposed modifications.

Although the rule does not apply to construction emissions, we have provided GHG construction emission estimates, as CO2e, for accounting and disclosure purposes in table 6.

State Air Quality Regulations

A PADEP Plan Approval exemption, or Plan Approval air permitting authorization would be obtained as required by Pennsylvania Code Title 25 §127 for all facilities. None of the changes from the Project would have emissions exceeding major source thresholds, so no new Title V permitting, PSD permitting, or NNSR permitting would be required. Per Pennsylvania Code Title 25 §123, sites must control emission of sulfur compounds, visible emissions, particulate matter, fugitive emissions, and odors. National Fuel would comply with these rules as applicable to each emission source.

7.1. Construction Emissions

Construction of the Project facilities would result in short-term increases in emissions of some air pollutants due to the use of equipment powered by diesel fuel or gasoline and the disturbance of soil and other dust-generating activities over the estimated 9 months of construction activities.

Construction activities would result in the temporary generation of fugitive dust (large particles as well as PM_{10} and $PM_{2.5}$) due to land clearing and grading, ground excavation, and driving on unpaved roads. Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines on-site, and delivery vehicles and construction workers commuting to and from work areas. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity. Construction emission estimates are based

on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were estimated using the EPA AP-42 emission factors, CARB's Web Database,[14] and vendor data. Table 5 provides the total Project construction emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles, exhaust emissions from construction worker vehicles for commuting, and vehicles used to deliver equipment and materials to each of the construction sites.

To reduce emissions, National Fuel would implement measures that include applying water to construction sites and access roads, monitor and reduce vehicle speed on unpaved roads, and pave/gravel roads where necessary. To mitigate exhaust emissions during construction, National Fuel would construct the Project in accordance with applicable regulations and manufacturers recommendations for each piece of equipment, and limit vehicle idling.

Given the temporary, intermittent, and limited nature of construction emissions, we find that emissions from construction-related activities for the Project would not be expected to cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

7.2.Operational Emissions

Operational emissions would result from the new and modified Project facilities (see table 6).

The USEPA filed recommendations to report all expected project emissions in metric tons of each speciated GHG, the quantities of each individual GHG. These values are disclosed in tables 5 and 6.

Air Quality Modeling

As the operational emissions associated with the project are limited to minor fugitives of criteria pollutants, and as compliance with federal and state air regulations and state permit requirements would ensure that air quality impacts would be minimized during installation and operation of the Project's modified compressor station and ancillary facilities, air dispersion modeling was not required for the Project.

Given the limited facility changes and operational fugitive emissions, we find that emissions from operation of the Project would not cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

[14] http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)

Table 5: Estimated Construction Emissions (tons)

Project Location	CO	NO_x	SO_2	VOC	HAPs	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Tie-In Venting Emissions				0.00	0.00			0.00	0.02		0.60
Fugitive Dust						41.91	4.23				
Non-Road Equipment Engines	30.47	22.29	0.10	4.50	0.05	0.81	0.78	9,459.53	0.41	0.41	9,590.55
On-Road Engines	0.33	0.10	0.00	0.04	0.00	0.01	0.01	123.79	0.00	0.00	124.85
Road Emissions						0.06	0.01				
Project Construction Totals	**30.79**	**22.39**	**0.10**	**4.54**	**0.05**	**42.79**	**5.03**	**9,583.32**	**0.43**	**0.41**	**9,716.00**

Notes:
"0.00" indicates emissions are <0.01 ton.
Emissions are in tons for the entire Project.

Table 6: Operational Emissions (tpy)											
Source	**CO**	**NO_X**	**SO_2**	**VOC**	**HAP**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Z20 Pipeline Facility											
Fugitive Emissions				0.04	0.00			0.20	21.39		535
Subtotal:				**0.04**	**0.00**			**0.20**	**21.39**		**535**
YM59 Pipeline Facility											
Fugitive Emissions				0.09	0.00			0.45	48.02		1,201
Subtotal:				**0.09**	**0.00**			**0.45**	**48.02**		**1,201**
McCutcheon Hill OPP Station											
Pigging Emissions			--	0.10	0.00			0.53	56.66		1,417
Fugitive Emissions			--	0.43	0.00			2.26	240.68		6,019
Emergency Generator Emissions	0.45	0.05	0.00	0.00	0.00	0.00	0.00	6.46	0.00		6
Subtotal:	**0.45**	**0.05**	**0.00**	**0.53**	**0.00**	**0.00**	**0.00**	**9.25**	**297.33**		**7,443**
Measurement Facilities at Midstream's Lee Hill Interconnect											
Pigging Emissions				0.05	0.00			0.27	28.33		708
Fugitive Emissions				0.26	0.00			1.39	147.74		3,695
Subtotal:				**0.31**	**0.00**			**2.65**	**176.07**		**4,403**
Project Operating Emissions Totals	**0.45**	**0.05**	**0.00**	**0.96**	**0.00**	**0.00**	**0.00**	**11.56**	**542.81**		**13,582**

Notes:
0.00 indicates emissions are <0.01 ton.
Sums in table may differ from sums added from table due to rounding.
CO2e calculated from the following global warming potentials: CO2 = 1, CH4 = 25.
Table does not include emissions from existing sources at Ellisburg CS, which are expected to remain below currently permitted levels.

8.0 NOISE

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

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. Two measurements used to relate the time-varying quality of environmental noise to its known effects on people are the 24-hour equivalent sound level (L_{eq}) and the day-night average sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn}, late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB) to account for people's greater sensitivity to sound during the nighttime hours. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. Due to the 10 decibels on the A-weighted scale (dBA) nighttime penalty added prior to calculation of the L_{dn}, for a facility to meet the 55 dBA L_{dn} limit established by the EPA to protect the public from indoor and outdoor activity interference, a facility must be designed such that the constant 24hour noise level does not exceed an L_{eq} of 48.6 dBA at any Noise Sensitive Area (NSA). The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq}.

We have adopted the EPA's 55 dBA L_{dn} criterion and use it to evaluate the potential noise impacts from the proposed Project at NSAs, such as residences, schools, or hospitals. Also, in general, a person's threshold for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half as loud.

There are no state or local noise ordinances that apply to the Project.

8.1 Construction Noise

Noise would be generated during construction and modification of the Project facilities. Noise levels would be highest in the immediate vicinity of construction activities and would diminish with distance from each work area. These impacts would be localized and temporary. Sound level changes would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and machines used simultaneously, and the distance between the sound source and receptor. Construction activities would consist of those associated with the upgrades at the Ellisburg CS, new McCutcheon Hill OPP Station and

the installation of measurement facilities at Midstream's Lee Hill Interconnect, line Z20 as well as the YM59 HDD of the Cowanesque River and pipeline construction.

Sound surveys were conducted to quantify the existing noise levels near the proposed McCutcheon Hill OPP Station, the YM59 Pipeline HDD site, and the measurement facilities at Midstream's Lee Hill Interconnect. Tables 7-9 summarize the sound survey measurement results and estimated noise impacts throughout construction that would occur during daytime hours.[15]

Table 7: Estimated Construction Noise Levels at the McCutcheon Hill OPP Station

Location	Distance and Direction from Station	Ambient Sound Level (L_{dn}, dBA)	Daytime Construction (L_d, dBA)	Nighttime Construction (L_n, dBA)	Estimated Construction Day-Night Level (L_{dn}, dBA)
NSA #1 (House)	850 ft S	45.4	51.4	45.4	53.4
NSA #2 (House)	850 ft NW	45.4	45.3	39.3	47.2
NSA #3 (House)	850 ft NE	45.4	46.5	40.5	48.4

Table 8: Estimated Construction Noise at the Midstream Lee Hill Interconnect Measurement Facilities

Location	Distance and Direction from Station	Ambient Sound Level (L_{dn}, dBA)	Daytime Construction (L_d, dBA)	Nighttime Construction (L_n, dBA)	Estimated Construction Day-Night Level (L_{dn}, dBA)
NSA #1 (House)	1100 ft S	38.7	41.5	49.4	47.5
NSA #2 (House)	1200 ft E	38.7	36.8	44.8	42.8
NSA #3 (House)	1700 ft NW	38.7	39.7	47.7	45.7

Table 9: HDD Construction Noise Level Summary

Entry or Exit	Distance/Direction to closest NSA	Highest Ldn due to HDD	Ambient dBA, Ldn	dBA Ldn + Ambient	Increase above ambient dBA, Ldn
Entry	285 ft SE	51.1	45.4	52.1	6.7
Exit	1100 ft N	48.9	45.4	50.5	5.1
a. Includes mitigation measures (i.e., genset enclosures and barrier).					

[15] Hoover & Keith noise reports for construction and operation of project facilities in Appendix 9-E of application filing (eLibrary accession 20240821-5098).

National Fuel committed to mitigation recommendations made in the Hoover and Keith noise assessment reports[16]. To minimize potential noise impacts on NSAs within 0.5 mile, the following noise mitigation measures would be employed during construction activities to the extent practicable:

- equipment and trucks used for Project construction would use modern noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds);
- stationary noise sources would be as far from adjacent NSAs as possible and be muffled, enclosed within temporary sheds, and incorporate insulation barriers or other measures to the extent feasible;
- noise barriers around the HDD entry site should nighttime construction be needed;
- construction site and access road speed limits would be established and enforced during the construction period;
- electrically-powered equipment would be used instead of pneumatic or internal combustion powered equipment, where feasible;
- material stockpiles and mobile equipment staging, parking, and maintenance areas would be as far as practicable from NSAs;
- the use of noise-producing signals, including horns, whistles, alarms, and bells, would be for safety warning purposes only; and
- no Project-related public address or music system would be audible at any adjacent NSA.

Based on the short-term nature of construction, anticipated noise levels during activities, and that construction activities would primarily be limited to daytime hours of 7:00 AM to 7:00 PM, we conclude that noise impacts from construction activities would not be significant.

8.2 Operational Noise

The Project's operational noise would be generated by new equipment at the McCutcheon Hill OPP Station and Midstream's Lee Hill Interconnect. Tables 10 and 11 summarize the estimated operational noise impacts on the nearest NSAs during operation of the Project.

Table 10: Operational Noise Levels at the McCutcheon Hill OPP Station

Location	Distance and Direction from Station	Ambient Sound Level (L_{dn}, dBA)	Estimated Sound Level of Station (L_{dn}, dBA)	Total Sound Level: Ambient + Proposed Station (L_{dn}, dBA)	Potential Noise Increase (dBA)
NSA #1 (House)	850 ft S	45.4	38.8	46.2	0.9
NSA #2 (House)	850 ft NW	45.4	31.7	45.6	0.2
NSA #3 (House)	850 ft NE	45.4	31.5	45.6	0.2

[16] Appendix 9E of the application filing (eLibrary accession 20240821-5098).

Table 11: Operational Noise Levels at the Midstream Lee Hill Interconnect Measurement Facilities					
Location	**Distance and Direction from Station**	**Ambient Sound Level (L_{dn}, dBA)**	**Estimated Sound Level of Station (L_{dn}, dBA)**	**Total Sound Level: Ambient + Proposed Station (L_{dn}, dBA)**	**Potential Noise Increase (dBA)**
NSA #1 (House)	1100 ft S	38.7	38.0	41.4	2.7
NSA #2 (House)	1200 ft E	38.7	32.0	39.5	0.8
NSA #3 (House)	1700 ft NW	38.7	37.7	41.2	2.5

The acoustic analysis indicates that the OPP Station and Midstream's Lee Hill Interconnect sound level contributions are less than an L_{dn} of 55 dBA at the surrounding NSAs and would comply with all applicable noise ordinances, assuming the recommended noise control measures are followed and successfully implemented at each facility. Furthermore, the ambient noise increases are projected to be below a person's threshold for a perceivable change in loudness.

The acoustical analysis indicates that acoustical insulation for the regulation skid piping, and aboveground inlet and outlet piping directly adjacent to the regulation skid, would be required. The piping would be acoustically lagged with a fiberglass or mineral wool that is covered with a mass-filled vinyl jacket which is covered with aluminum.

If necessary, aboveground valves would be covered with removable and/or reusable acoustic material and/or blankets. The blanket material typically consists of a core of 2-inch-thick needled fiber mat and a liner material of mass-loaded vinyl that is covered with a coated fiberglass cloth.[17]

National Fuel does not expect operational noise changes at the Ellisburg CS as part of the proposed Project modifications. National Fuel performed an as-built survey of day-night average sound levels on October 30, 2024.[18] Sound levels were found to be in compliance with FERC criterion.

Based on the proposed operational noise levels and our recommendations, we conclude that the noise attributable to operation of the Project would not cause a significant impact.

9.0 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. An unconfined mixture of methane and air is not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed

[17] Appendix 9C and 9D of the application filing (eLibrary accession 20240821-5098).

[18] Hoover and Keith November 13, 2024 Environmental Information Response, attachment 13 (eLibrary accession 20240821-5098).

space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

The facilities associated with the project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR Part 192, including the provisions for written emergency plans and emergency shutdowns. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. National Fuel would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

The USDOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. For example, Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues, prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates compressor station design, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency.

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

With adherence to USDOT pipeline standards, we conclude that National Fuel's facilities construction and operation would represent a minimum increase in risk to the public.

Polychlorinated Biphenyls and Asbestos

When any existing station piping or pipeline is cut, the contractor would follow the EPA issued polychlorinated biphenyl (PCB) rules and regulations contained in 40 CFR 761. National Fuel reviewed its internal database and did not identify any Project facilities with existing PCB contamination. In the unlikely event that PCB contamination would be encountered during Project construction, contaminated materials and/or liquids would be managed and disposed of in accordance with the Toxic Substances Control Act regulations in 40 CFR 761, *Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions*.

Based on the Project scope of activities, we conclude that PCBs are not expected to exceed hazardous waste concentration thresholds (i.e., 50 parts per million) on any portion of the Project facilities.

10.0 CUMULATIVE IMPACTS

In accordance with NEPA, Commission staff evaluated the Project's potential for cumulative impacts. Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time. Commission staff's cumulative impact analysis in this proceeding focuses on the proposed Project's potential impacts on resources or areas of concern where incremental contributions could be potentially

significant when added to the potential impacts of other actions. To be included in this cumulative impacts analysis, an action must:

- affect a resource potentially affected by the proposed Project;
- cause this impact within all, or part, of the Project's geographic scope; and
- cause this impact with in all, or part, of the time span for the potential impact of the Project.

These actions include (but are not limited to) actions that are being implemented, have been funded, are under review by a regulatory agency, or are being considered by state and local planners. Actions that have not progressed beyond the planning and feasibility stages of development are not included in the analysis due to the uncertainty of whether the projects would be implemented. While recent past actions that continue to contribute to discernable impacts on a resource are included, the impacts of completed/past actions are considered part of the baseline environmental conditions (included in sections B.1 to B.10 above) and are not included in the cumulative impact analysis.

Geographic Scope of Cumulative Impacts

Our cumulative impacts analysis considers actions that impact environmental resources within all or part of the area affected by the proposed action (i.e., geographic scope), and within all or part of the time span of the Project's impacts. Actions outside the temporal and geographic scope are generally not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Project. Table 12 lists the resource-specific geographic areas that we determined are appropriate to assess cumulative impacts. Appendix G includes the past, present, and foreseeable future projects identified within the Project's geographic scope. The Project would not have impacts on land use, geology or cultural resources, and soils impacts are expected to be minor and temporary; therefore, these resources are not included in Appendix G and are not discussed further below.

Table 12: Geographic Scope for Cumulative Impact Analysis

Environmental Resource	**Geographic Scope**
Groundwater, Surface Water, Wetlands, Aquatic Resources	Hydrologic Unit Code (HUC)-12 watersheds
Fish, Vegetation, and Wildlife	HUC-12 watersheds
Air Quality – Construction	0.25 mile from aboveground facility
Air Quality – Operation	1 mile from aboveground facilities
Noise - Construction	0.25 mile of any construction and within 0.5 mile of HDD activities

Noise – Operation	Other facilities that would impact any NSA within 1 mile of a noise-emitting permanent aboveground facility

Water and Aquatic Resources

The SR 49 Trib Cowanesque Bridge Replacement, SR 4007 Over California B – Bridge Rehabilitation, and SR 4008 Over North Fork C – Bridge Rehabilitation projects were identified within the geographic scope for water and aquatic resources (i.e., hydrologic unit code-12) of the Project. The Project's proposed construction schedule falls within the first four years of the SR 49 Trib Cowanesque Bridge Replacement, SR 4007 Over California B – Bridge Rehabilitation, and SR 4008 Over North Fork C – Bridge Rehabilitation projects which could result in cumulative impacts on water resources (surface waters, aquatic resources, wetlands and groundwater) including increased sedimentation, and groundwater contamination. Impacts on aquatic resources include the potential introduction of invasive species, potential spills of hazardous materials, increased turbidity in the Cowanesque River. Cumulatively, these impacts, associated with the SR 49 Trib Cowanesque Bridge Replacement and the proposed Project could lead to overall degradation of habitat quality as well as population level effects on species through injury/mortality, reduced reproductive success, and altered behaviors necessary for survival (e.g., foraging, communication, etc.). These cumulative effects can also lead to loss of biodiversity, which can cause ecosystem distress. However, most impacts on the Cowanesque River would be avoided through use of the HDD crossing method.

National Fuel would follow the FERC's Plan and Procedures, National Fuel's ESCAMP, and Project-specific E&SCP, which would minimize potential impacts on groundwater, surface water, and wetlands during construction. National Fuel's Line Z20 Modernization Project was constructed in accordance with the FERC's Plan and Procedures, minimizing potential impacts on groundwater, surface water, and wetlands during construction. Cumulative impacts would last only as long, or a short duration after as the dewatering/in-stream construction activities. The impacts on water resources would be temporary and would return to pre-construction conditions within several days of the completion of any overlapping activities. We conclude that the cumulative impacts on water resources would not be significant or long-term.

Fish, Vegetation, and Wildlife

The SR 49 Trib Cowanesque Bridge Replacement, SR 4007 Over California B – Bridge Rehabilitation, SR 4008 Over North Fork C – Bridge Rehabilitation, Z20 Modernization Project, and NTIER Pedestrian Countdown Signals projects were identified within the geographic scope (hydrologic unit code-12) of the Project. The NTIER Pedestrian Countdown Signals project would potentially be in construction during the Project's construction schedule, which could result in vegetation impacts from routine mowing, clearing and grading. The Project's proposed construction schedule also falls within the first four years of the SR 49 Trib Cowanesque Bridge Replacement, SR 4007 Over California B – Bridge Rehabilitation, Z20 Modernization Project, and SR 4008 Over North Fork C – Bridge Rehabilitation projects which could also result in cumulative impacts on vegetation from clearing and grading. Cumulative impacts also include loss of wildlife habitat and state and federally listed species.

The recent past, present, and reasonably foreseeable future actions identified may result in the temporary disturbance and long-term or permanent loss (and conversion) of vegetation and wildlife habitat. Impacted vegetation and wildlife habitat includes open, agricultural, maintained/disturbed, and wooded/forested vegetation, as well as impacts associated with stream crossings (fish habitat). When projects are constructed in the same general location and time frame, there is the potential for a cumulative impact on local fish, vegetation, and wildlife communities. However, National Fuel would restore the areas disturbed by the Project in streams and most of the vegetated areas and allow them to revert to pre-construction vegetation conditions following completion of construction, allowing supported fish and wildlife to return and resume pre-construction habits; therefore, we conclude that the cumulative impacts on vegetation and wildlife would be temporary and not significant.

Air Quality and Noise

Construction Air Quality

Two projects were identified within the geographic scope of impacts for construction air quality: the SR 4008 Over North Fork C – Bridge Rehabilitation and National Fuel's Line Z20 Modernization Project. The Line Z20 Modernization Project has completed construction and therefore, there would be no temporal overlap with the Project that could result in cumulative impacts to air quality from construction emissions.

The SR 4008 Over North Fork C – Bridge Rehabilitation could be under construction at the same time as the Project and could temporarily increase air quality impacts due to emissions from the combustion engines used to power construction equipment, vehicle emissions traveling to and from the construction sites, and fugitive emission dust resulting from equipment movement on dirt roads and earth-disturbing activities. This project would be required to adhere to state and local construction permit regulations. Based on the short-term nature of construction, and mitigation measures discussed in section B.7.1 that National Fuel would commit to implementing, the potential cumulative emissions during construction would be temporary in nature and would not significantly affect local or regional air quality.

Operational Air Quality

Multiple oil and gas production wells, and gas storage wells were identified within the geographic scope of impacts for operational air quality that could potentially be producing emissions when the Project is operational. The Project's impacts on air quality during operation are described in section B.7.2 and National Fuel would be required to comply with all applicable federal air quality permitting programs. Project emissions would be limited to minor fugitive and pigging emissions, and emissions from an emergency generator. Based on the minor proposed emissions, there would not be significant impacts on air quality from the operation of the Project facilities. Based on the scope of the other projects within the geographic scope which are also not expected to have operational emissions (bridge replacement projects), and adherence to existing regulatory thresholds, we conclude that the Project's contribution to cumulative operational air emissions would not significantly affect local or regional air quality.

Construction Noise

SR 4008 Over North Fork C – Bridge Rehabilitation was identified within the geographic scope of impacts for construction noise that could potentially overlap with Project construction. Noise levels resulting from construction activities of the Project and construction noise from the bridge rehabilitation would vary over time and would depend on the nature of the construction activity, the number and type of equipment operating, and the distance between sources and receptors. The level of cumulative impacts would likely depend on the overlap in construction periods for the bridge rehabilitation and National Fuel's Project. Based on the low projected noise levels and construction noise mitigation measures National Fuel would employ, the Project would not result in significant construction noise impacts on local residents, but could contribute minor cumulative impacts on noise if construction periods overlap.

Operational Noise

Several projects were identified within the geographic scope of impacts for operational noise quality that could potentially be producing noise when the Project is operational, including multiple oil and gas production wells. The other projects identified within the geographic scope would be unlikely to produce significant operational noise. Based on the projected noise levels and our recommendations, we conclude that the noise attributable to operation of the Project would not cause a significant cumulative impact.

Climate Change

Climate change is the variation in the Earth's climate (including temperature, precipitation, humidity, wind, and other meteorological variables) over time. Climate change is driven by accumulation of GHG in the atmosphere due to the increased consumption of fossil fuels (e.g., coal, petroleum, and natural gas) since the early beginnings of the industrial age and accelerating in the mid- to late-20th century.[19] The GHGs produced by fossil-fuel combustion are CO_2, methane, and N_2O.

In 2017 and 2018, the U.S. Global Change Research Program (USGCRP)[20] issued its *Climate Science Special Report: Fourth National Climate Assessment*, Volumes I and II.[21] This report and the report by the Intergovernmental Panel on Climate Change, *Climate Change 2021:*

[19] Intergovernmental Panel on Climate Change, United Nations, *Summary for Policymakers* of Climate Change 2021: The Physical Science Basis. (Valerie Masson-Delmotte et al., eds.) (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (IPCC Report) at SPM 5. Other forces contribute to climate change, such as agriculture, forest clearing, and other anthropogenically driven sources.

[20] The U.S. Global Change Research Program is the leading U.S. scientific body on climate change. It comprises representatives from 13 federal departments and agencies and issues reports every 4 years that describe the state of the science relating to climate change and the effects of climate change on different regions of the United States and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health.

[21] U.S. Global Change Research Program, Climate Science Special Report, Fourth National Climate Assessment | Volume I (Donald J. Wuebbles et al. eds) (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. Global Change Research Program, Fourth National Climate Assessment, Volume II Impacts, Risks, And Adaptation In The United States (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II).

The Physical Science Basis, states that climate change has resulted in a wide range of impacts across every region of the country and the globe. Those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, human health, and ocean systems.[22] According to the Fourth Assessment Report, the United States and the world are warming; global sea level is rising and oceans are acidifying; and certain weather events are becoming more frequent and more severe.[23] These impacts have accelerated throughout the end of the 20th and into the 21st century.[24]

GHG emissions do not result in proportional local and immediate impacts; it is the combined concentration in the atmosphere that affects the global climate. These are fundamentally global impacts that feed back to local and regional climate change impacts. Thus, the geographic scope for cumulative analysis of GHG emissions is global rather than local or regional. For example, a project 1 mile away emitting 1 ton of GHG would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting 1 ton of GHG.

Climate change is a global phenomenon; however, for this analysis, we would focus on the existing and potential climate change impacts in the general Project area. The USGCRP's Fourth Assessment Report notes the following observations of environmental impacts attributed to climate change in the Northeast region of the United States:[25]

- increases in annual average temperatures across the Northeast range from less than 1 °F (0.6 degrees Celsius (°C)) in West Virginia to about 3 °F (1.7 °C) or more in New England since 1901;
- from 1958 to 2016, the northeast experienced a 55 percent increase in the amount of precipitation falling in heavy events (the greatest increase in the nation) and 5 to 20 percent increase in average winter precipitation;
- warming during the winter–spring transition has led to earlier snowmelt-related runoff in areas of the Northeast with substantial snowpack; and
- ocean and coastal ecosystems are being affected by large changes in a variety of climate-related environmental conditions.

The USGCRP'S Fourth Assessment Report[26] notes the following projections of climate change impacts in the Northeast with a high or very high level of confidence:[27]

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[22] 6 IPCC Report at SPM-5 to SPM-10.

[23] USGCRP Report Volume II at 73-75.

[24] See, e.g., USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).

[25] USGCRP Report Volume I and II.

[26] USGCRP Report Volume II.

[27] The report authors assessed current scientific understanding of climate change based on available scientific literature. Each "Key Finding" listed in the report is accompanied by a confidence statement indicating the consistency of evidence or the consistency of model projections. A high level of confidence results from "moderate evidence (several sources, some consistency, methods vary and/or documentation limited, etc.), medium consensus." A very high level of confidence results from "strong evidence (established theory, multiple sources, consistent results, well documented and accepted methods, etc.), high consensus." https://science2017.globalchange.gov/chapter/front-matter-guide/

- precipitation in the Northeast is projected to be about 1 inch greater for December through April by end of century (2070–2100) under the higher scenario;
- temperatures are projected to increase by 5.1 °F by the 2090s under the worst-case scenario (continually increasing emissions) and would increase by 4.0 °F if emissions were decreased;
- by the middle of the century, the freeze-free period across much of the Northeast is expected to lengthen by as much as 2 weeks under the lower scenario and by 2 to 3 weeks under the higher scenario. By the end of the century, the freeze-free period is expected to increase by at least 3 weeks over most of the region;
- higher than average sea level rise along the Northeastern coast would occur due to land subsidence; and
- much of the infrastructure in the Northeast, including drainage and sewer systems, flood and storm protection assets, transportation systems, and power supply, is nearing the end of its planned life expectancy; climate-related disruptions would only exacerbate existing issues with aging infrastructure.

It should be noted that while the impacts described above taken individually may be manageable for certain communities, the impacts of compound events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of saturated soils) can be greater than the sum of the parts.[28]

The GHG emissions associated with construction and operation of the Project were identified and quantified in section B.7 of this EA. Emissions of GHG are typically expressed in terms of CO_2e.[29] Construction CO_2e emissions from the Project are estimated to be 9,716 tons (8,814 metric tons). Operational CO_2e emissions as a result of the Project are estimated to be 13,582 tpy (12,321 metric tpy). There are no downstream emissions associated with the Project as the 190,000 Dth/day of firm service would be effectuated using existing available compression capacity rather than new incremental system capacity.[30] Furthermore, there is no reasonably foreseeable end-use as the record in this proceeding does not identify specific end-use markets that could be directly or indirectly served by the Project-transported gas.[31] However, for disclosure purposes, we estimate that combustion of 190,000 Dth/day would result in 3.7 million metric tons of CO_2e emissions per year. We note that this represents an upper bound estimate of end-use combustion that could result from the subscribed natural gas transported by the Project. This estimate assumes that the maximum subscribed capacity is transported 365 days per year.

[28] USGCRP Report Volume II.

[29] GHG gases are converted to CO2e by means of the GWP; the measure of a particular GHG's ability to absorb solar radiation; and its residence time within the atmosphere, consistent with the USEPA's established method for reporting GHG emissions for air permitting requirements that allows a consistent comparison with federal regulatory requirements.

[30] Section 9.1.1.1 of Resource Report 9 of the application filing; eLibrary accession no. 20240821-5098.

[31] *See* Section 1.1 of Resource Report 1 of the application filing; eLibrary accession no. 20240821-5098. The Project would serve downstream delivery points with other interstate pipelines, including primary firm delivery to Tennessee Gas Pipeline Company, L.L.C. and Transcontinental Gas Pipe Line Company, LLC, secondary firm delivery to pipeline interconnections throughout National Fuel's system, and redelivery to additional pipeline interconnections on downstream pipelines, providing access to a wide range of markets in the United States and Canada.

Construction of Project facilities would increase the atmospheric concentration of GHG in combination with past, current, and future emissions from all other sources globally, and would contribute incrementally to future climate change impacts. To assess impacts on climate change associated with the Project, Commission staff considered whether it could identify discrete physical impacts resulting from the Project's GHG emissions or compare the Project's GHG emissions to established targets designed to combat climate change.

To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project's contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project's significance when compared to established GHG reduction targets at the state or federal level. Ultimately, this EA is not characterizing the Project's GHG emissions as significant or insignificant.[32] However, as we have done in prior NEPA analyses, we disclose the Project's GHG emissions in comparison to national and state GHG emission inventories.

In order to provide context of the Project GHG emissions on a national level, we compare the Project GHG emissions to the total current GHG emissions inventory for the United States as a whole. At a national level, 5,489.0 million metric tons of CO_2e were emitted in 2022 (inclusive of CO_2e sources and sinks)[33]. Construction emissions from the Project could potentially increase CO_2e emissions based on the national 2022 levels by 0.00016 percent. In subsequent years, Project operations could result in a potential increase in CO_2e emissions by 0.0002 percent based on the national 2022 levels.

To provide context on a state level, we compare the Project's estimated GHG emissions to the state emission inventories. The Project's construction and operational emissions would occur in Pennsylvania. At a state level, 213.5 million metric tons of CO_2 were emitted in 2022 from energy related sources.[34] Project construction could potentially increase CO_2 emissions based on statewide 2022 levels by 0.004 percent. In subsequent years, operational emissions in Pennsylvania could result in a potential increase in CO_2 emissions by 0.006 percent, based on statewide 2022 levels.

We also typically compare a project's operational emissions in the context of state GHG reduction goals.[35] Pennsylvania set a statutory target in 2019 to reduce GHG emissions 26 percent below 2005 levels by 2045 and 80 percent below 2005 levels by 2050. Statewide CO_2

[32] *See e.g.*, *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 63 (2023) ("…there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.").

[33] EPA (2024) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissionsandsinks-1990-2022 .

[34] U.S. Energy Information Administration (2024). "State carbon dioxide emissions from fossil fuels tables." https://www.eia.gov/environment/emissions/state/

[35] We reviewed the U.S. State Greenhouse Emission Targets site for individual state requirements at: https://www.c2es.org/document/greenhouse-gas-emissions-targets/.

emissions in 2005 were 281.3 million metric tons.[36] GHG emissions from the operation of the Project would represent 0.006 percent of Pennsylvania's 2045 GHG emissions level goal and 0.02 percent of the 2050 GHG emission level goal.

The USEPA requested that the EA quantify estimates of all upstream and downstream GHG emissions from the proposed Project over its anticipated lifetime for all alternatives. The proposed replacement of existing measurement, OPP devices, flow control, and other associated appurtenances at National Fuel's existing Ellisburg CS would use existing available compression capacity for the new transportation service described. No increase in horsepower or modification of compressor units is proposed. Alternatives are limited to several route variations, further discussed in section C of this EA, and there would be no quantifiable difference in GHG emissions.

The environmental effects resulting from natural gas production are generally neither caused by a proposed pipeline project nor are they reasonably foreseeable consequences of our approval of an infrastructure project.[37] Here, it is unknown whether there would be any incremental development of production wells. That natural gas production and transportation facilities are all components of the general supply chain required to bring domestic natural gas to market does not mean that the Commission's approval of a particular infrastructure project will cause additional gas production.[38] Even knowing the identity of a producer of gas to be shipped on a pipeline and the general location of that producer's existing wells, however, does not change that the number and location of any additional wells that might be induced would be a matter of speculation.[39] Accordingly, we conclude that the upstream GHG emissions are not reasonably foreseeable. Above, Commission staff compared the Project's reasonably foreseeable GHG emissions to national and state emissions inventories to contextualize the emissions; however, Commission staff are unable to determine how individual projects will affect climate action commitments and goals.[40]

USEPA also requested to avoid expressing the overall project-level GHG emissions as a percentage of the state or national GHG emissions. We note this recommendation; however, the Commission has found these comparisons useful for providing context of the potential Project impacts.

The USEPA also filed comments requesting the EA discuss carbon lock-in and stranded assets concerns and challenges. They further commented requesting a discussion how the

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[36] We consider the 2045 target to be 208.16 million metric tons (assuming a 26 percent reduction from 2005 levels). We consider the 2050 target to be 56.26 metric tons (assuming a 80 percent reduction from 2005 levels).

[37] See, e.g., Transcon. Gas Pipe Line Co., LLC, 182 FERC ¶ 61,148, at P 93 (2023); Cent. N.Y. Oil & Gas Co., LLC, 137 FERC ¶ 61,121, at PP 81-101 (2011), order on reh'g, 138 FERC ¶ 61,104, at PP 33-49 (2012), petition for review dismissed sub nom. Coal. for Responsible Growth v. FERC, 485 F. App'x. 472, 474-75 (2d Cir. 2012) (unpublished opinion); see also Nat'l Fuel Gas Supply Corp. Empire Pipeline, Inc., 164 FERC ¶ 61,084, at P 102 (2018).

[38] *Nat'l Fuel Gas Supply Corp. Empire Pipeline, Inc*., 158 FERC ¶ 61,145 at P 157 (2017), *order on reh'g*, 164 FERC ¶ 61,084 (2018).

[39] *Nat'l Fuel Gas Supply Corp. Empire Pipeline, Inc*., 158 FERC ¶ 61,145 at P 163.

[40] See Certificate Order, 180 FERC ¶ 61,056 at PP 59-60 (2022), 179 FERC ¶ 61,123, at P 54 (2022), 182 FERC ¶ 61,148 P 107 (2023) and Rehearing Order 181 FERC ¶ 61,234 at P 37 (2023).

Inflation Reduction Act may impact energy consumption patterns and GHG emissions. Staff find these issues to be beyond the scope of this assessment. Additional requests were included for National Fuel to incorporate robust climate resilience and adaption considerations into Project design and engineering; construction oversight; emergency response planning; commitments for protective measures related to stormwater and erosion; and routine monitoring during operations. The Project is intended to enhance resiliency in the pipeline system. The facilities must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR Part 192, including the provisions for written emergency plans. USEPA also request that National Fuel identify practices that could be taken to reduce and mitigate the expected GHG emissions from the Project. GHG emissions from the Project would be limited to fugitives leaks and pigging operations during maintenance, as well as an emergency generator. National Fuel would follow their internal operation and maintenance procedures to detect and repair leaks associated with the Project.

SECTION C – ALTERNATIVES

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

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

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

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

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

1.0 NO-ACTION ALTERNATIVE

NEPA requires the Commission to consider and evaluate the No-Action Alternative. Under the no-action alternative, National Fuel would not satisfy the Project's purpose and need

as described in section A.2. Although none of the impacts associated with the Project would occur, the Project objectives would not be met.

If National Fuel's proposed facilities were not constructed, it is speculative to determine what other actions may be proposed to serve National Fuel's stated need to provide 190,000 dekatherms per day of firm transportation service from the Tioga County, Pennsylvania natural gas production area to downstream delivery points with other interstate pipelines, which reach various end-use markets and demand centers in the United States and Canada and modernize a portion of National Fuel's existing Line Z20 pipeline system. We have prepared this EA to inform the Commission and stakeholders about the expected impacts that would occur if the Project were constructed and operated. We do not recommend the no-action alternative; however, the Commission will determine if the Project is in the public convenience and necessity, and could choose the no-action alternative.

2.0 SYSTEM ALTERNATIVES

System alternatives to the proposed action would make use of other existing, modified, or proposed pipeline systems to meet the stated objective of the Project. Implementation of a system alternative would make it unnecessary to construct all or part of the proposed Project, although some modifications, expansions, or additions to existing or proposed pipeline systems may be required to meet the objectives of the proposed Project. To be considered a viable system alternative, the system would need to be capable of transporting an equivalent amount of incremental natural gas volumes, be technically and economically practical, and offer a significant environmental advantage over the proposed Project.

Tennessee Gas Pipeline Company, LLC, and Transcontinental Gas Pipe Line Company, LLC both have Pipeline systems in the Tioga County area; however, neither company has the proximity to the Project customer's producing area, or the ability to replicate the service (delivery points) being provided by the Project. Therefore, both systems would require similar facilities than those proposed by National Fuel as part of the Project to provide the proposed level of service. Hence, we conclude that using nearby systems would require similar facilities/equipment than the proposed Project, and would result in similar environmental impacts and would not result in a significant environmental advantage.

3.0 ROUTE ALTERNATIVES AND VARIATIONS

We did not evaluate route alternatives for the proposed replacement of Line Z20. The entire 3.8 miles of replacement pipeline would be within the existing National Fuel right-of-way. We did not receive comments proposing route alternatives for the pipeline replacement nor did we identify any environmental impacts that would prompt us to evaluate alternate siting. National Fuel considered three route alternatives but ruled them out due to Project feasibility and additional environmental impacts. We did not identify a need to pursue these alternatives for the proposed route and are not analyzed further.

Route Variations

National Fuel evaluated 8 route variations during development of its project. Of these, National Fuel adopted 7 of them into the project route, and therefore we do not discuss them further. The remaining variation, "Route Alternative 2," was developed by National Fuel in order to avoid severe side slope construction and proximity to a residence and business along the south side of Dingman Hill Road. Specifically, this approximately 3.7-mile route variation starts at the end of Route Variation 1 and runs north for a short distance, then travels in an easterly direction until it crosses Lee Hill Road and turns south to connect with Midstream's Lee Hill Interconnect. Route Variation 2 would cross a lengthy stretch of severe side slope construction and a large, forested tract. We did not receive any comments from the landowner or business owner at MP 9.9 regarding the alternative or other issues. Therefore, we conclude that Route Variation 2 does not offer any environmental advantage over the proposed route.

We did not receive comments proposing route alternatives for the Line YM59 pipeline, nor did we identify any environmental impacts that would prompt us to evaluate alternate siting. Therefore, we did not evaluate further route alternatives for Line YM59.

4.0 ABOVEGROUND FACILITY ALTERNATIVES

We did not evaluate site alternatives for the new measurement facilities at Midstream's Lee Hill Interconnect, modifications at the existing Ellisburg Compressor Station, or the OPP Station. The proposed equipment at Midstream's Interconnect would be installed adjacent to the existing Midstream facility and all work at the existing Ellisburg Compressor Station would occur within the existing station boundary. The OPP station siting is driven by hydraulic modeling and must be at the connection between the Z20 and YM59 pipelines; therefore, there are limitations with regard to its location.

Alternatives Conclusion

In conclusion, we did not identify any alternatives that provide a significant environmental advantage over the Project as proposed. We have determined that the proposed action, with our recommended environmental conditions, is the preferred alternative that can meet the Project objectives.

SECTION D – CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if National Fuel constructs and operates the proposed facilities in accordance with its application and supplements and our additional recommended mitigation measures detailed below, approval of the Project would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and that the following environmental conditions be included as conditions to any Certificate the Commission may issue:

1. National Fuel 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. National Fuel must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of the Office of Energy Projects (OEP), or the Director's designee, before using that modification.

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:

    a. the modification of conditions of the Order;
    b. stop-work authority; and
    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, National Fuel shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel shall 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, abandonment, and restoration activities.

4. The authorized facility location 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**, National Fuel 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.

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

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

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

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

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

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

   a. how National Fuel would implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
   b. how National Fuel would incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications),

and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;
d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;
e. the location and dates of the environmental compliance training and instructions National Fuel would give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);
f. the company personnel (if known) and specific portion of National Fuel's organization having responsibility for compliance;
g. the procedures (including use of contract penalties) National Fuel would follow if noncompliance occurs; and
h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for the:

    i. completion of all required surveys and reports;
    ii. environmental compliance training of onsite personnel;
    iii. start of construction; and
    iv. start and completion of restoration.

7. National Fuel shall employ at least one EI per construction spread. The EI(s) shall be:

    a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
    b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
    c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
    d. a full-time position, separate from all other activity inspectors);
    e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
    f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, National Fuel 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 shall also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

    a. an update on National Fuel'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 work in environmentally sensitive areas;

c. a listing of all problems encountered, and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
d. a description of the corrective actions implemented in response to all instances of noncompliance;
e. the effectiveness of all corrective actions implemented;
f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
g. copies of any correspondence received by National Fuel from other federal, state, or local permitting agencies concerning instances of noncompliance, and National Fuel's response.

9. National Fuel must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction or abandonment by removal of any project facilities.** To obtain such authorization, National Fuel must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. National Fuel must receive written authorization from the Director of OEP, or the Director's designee, **before placing the project into service.** Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the project are proceeding satisfactorily.

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

a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities would be consistent with all applicable conditions; or
b. identifying which of the conditions in the Order National Fuel 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**, National Fuel shall file with the Secretary the results of two additional borings on the south side of the Cowanesque River. National Fuel shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, alignment sheets showing the final path and profile of the HDD bore, based on the geologic conditions encountered in the additional borings.

13. **Within 5 days of receipt of a water quality certification issued by the PADEP,** National Fuel shall file the complete certification, including all conditions. All conditions attached to the water quality certification constitute mandatory conditions of the Certificate Order. **Prior to construction**, National Fuel shall file, for review and

written approval by the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.

14. National Fuel shall **not begin** construction activities **until**:

    a. FERC staff receives comments from the USFWS regarding the effects of the proposed action on the NLEB;
    b. FERC staff completes ESA consultation with the USFWS; and
    c. National Fuel has received written notification from the Director of OEP, or the Director's designee, that construction or mitigation measures may begin.

SECTION E – LIST OF PREPARERS

Bloomfield, Andrea – Project Manager, Project Description, Surface Waters, Wetlands, Vegetation, Wildlife, Land Use, Visual Resources, Alternatives Analysis, and Cumulative Impacts
B.S. Environmental Management, 2018, University of Maryland

Cornwall, Joel – Geology, Groundwater, Soils
M.S., Hydrogeology, 2014, University of South Florida
B.S., Geology, 2002, Western Washington University

McDaniel, Nina – Air Quality, Noise, and Reliability and Safety
M.S., Engineering Management, 2012, University of New Orleans
B.S., Civil Engineering, 2010 University of New Orleans

Wazaney, Bradford – Cultural Resources
Ph.D., Anthropology, 2006, Washington State University
M.A. American Studies, 2000, University of Wyoming
B.A., History, 1995, Old Dominion University

SECTION F – REFERENCES

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Appendix A: Waterbodies Crossed by the Project

Waterbodies Crossed by the Project									
Approximate Milepost	**County**	**Feature ID[a]**	**Stream Name[b]**	**Flow Regime**	**Water Width (feet)**	**PA Chapter 93 Classification[c]**	**PAFBC Stream Designation**	**Anticipated Construction Timing Restriction[d]**	**Proposed Crossing Method[e]**
Pipelines and Associated Aboveground Facilities									
Replacement Pipeline (Z20 Pipeline)									
0.05	Potter	D-03z	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
0.05	Potter	D-04z	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
0.05	Potter	D-08z	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
0.10	Potter	S01	Marsh Creek	Perennial	8	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
0.10	Potter	S02	UNT to Marsh Creek	Perennial	0.5	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
0.65	Potter	S03	UNT to Marsh Creek	Perennial	3	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
0.75	Potter	S04	UNT to Marsh Creek	Perennial	3	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
0.80	Potter	S05	UNT to Marsh Creek	Ephemeral	Dry	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
1.85	Potter	S06	UNT to North Branch Cowanesque River	Intermittent	0.5	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
1.85	Potter	S07	UNT to North Branch Cowanesque River	Intermittent	0.5	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
1.90	Potter	S08	UNT to North Branch Cowanesque River	Ephemeral	Dry	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
1.98	Potter	S09	UNT to North Branch Cowanesque River	Ephemeral	Dry	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
1.98	Potter	S10	UNT to North Branch Cowanesque River	Ephemeral	Dry	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.18	Potter	S11	UNT to North Branch Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.20	Potter	S12	North Branch Cowanesque River	Perennial	4	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.30	Potter	D01	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
2.25	Potter	S13	North Branch Cowanesque River	Perennial	3	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.70	Potter	S14	UNT to North Branch Cowanesque River	Perennial	3	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.80	Potter	D02	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
2.80	Potter	D03	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
3.30	Potter	S15	UNT to North Branch Cowanesque River	Ephemeral	Dry	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
3.40	Potter	S16	UNT to North Branch Cowanesque River	Perennial	3	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
Mainline Pipeline (YM59 Pipeline)									
2.10	Potter	D05	N/A	Ditch	0.5	N/A	N/A	N/A	Dry Crossing
2.10	Potter/Tioga	S17	North Fork Cowanesque River	Perennial	3	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
2.87	Potter	D07	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
2.27	Tioga	S18a	UNT to North Fork of Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
3.00	Tioga	S19	UNT to North Fork of Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
3.25	Tioga	S20	North Fork Cowanesque River	Perennial	6	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
3.42	Tioga	Sw02	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
3.68	Tioga	S21	UNT to North Fork of Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
4.02	Tioga	S22	UNT to North Fork of Cowanesque River	Perennial	0.5	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
4.30	Tioga	S23	UNT to North Fork of Cowanesque River	Perennial	2	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
4.57	Tioga	S24	UNT to North Fork of Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
5.74	Tioga	S26	California Brook	Perennial	3	WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
5.78	Tioga	D10	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
5.59	Tioga	Sw04	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
5.33	Tioga	Sw05	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
5.34	Tioga	S28	UNT to California Brook	Perennial	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
6.40	Tioga	S29	UNT to California Brook	Ephemeral	Dry	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
6.45	Tioga	S30	UNT to California Brook	Ephemeral	Dry	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
9.56	Tioga	S62	UNT to Cowanesque River	Perennial	6	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
9.70	Tioga	S65	UNT to Cowanesque River	Ephemeral	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
9.91	Tioga	D32	N/A	Ditch	1	N/A	N/A	N/A	Dry Crossing
9.98	Tioga	S31	UNT to Cowanesque River	Perennial	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	HDD
10.04	Tioga	S32	Cowanesque River	Perennial	75	WWF	Stocked Trout Stream	February 15 – June 1	HDD
10.10	Tioga	S33	UNT to Cowanesque River	Ephemeral	Dry	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
12.24	Tioga	S36	Jemison Creek	Perennial	20	WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
12.05	Tioga	S39	UNT to Jemison Creek	Ephemeral	0.5	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
13.90	Tioga	Sw07	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
13.98	Tioga	Sw08	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
14.05	Tioga	Sw09	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
14.16	Tioga	S39a	UNT to Boatman Brook	Perennial	2	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
14.80	Tioga	D15	N/A	Ditch	0.5	N/A	N/A	N/A	Dry Crossing
14.80	Tioga	D16	N/A	Ditch	0.5	N/A	N/A	N/A	Dry Crossing
14.81	Tioga	S40	Boatman Brook	Perennial	3	WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
(Along PAR 10 near MP 14.97)	Tioga	D17	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
14.96	Tioga	D18	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
15.02	Tioga	D19	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
15.24	Tioga	S41	UNT to Crooked Creek	Ephemeral	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
15.66	Tioga	D21	N/A	Ditch	Dry	N/A	N/A	N/A	Dry Crossing
15.68	Tioga	S43	UNT to Crooked Creek	Intermittent	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
16.20	Tioga	S44	UNT to Crooked Creek	Intermittent	2	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
16.50	Tioga	S45	UNT to Crooked Creek	Intermittent	3	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
16.54	Tioga	D22	N/A	Ditch	1	N/A	N/A	N/A	Dry Crossing
17.04	Tioga	S47	UNT to Crooked Creek	Perennial	3	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
17.18	Tioga	S48	UNT to Crooked Creek	Perennial	3	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
17.2	Tioga	S49	UNT to Crooked Creek	Ephemeral	0	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
17.42	Tioga	D24	N/A	Ditch	0.5	N/A	N/A	N/A	Dry Crossing
17.50	Tioga	S50	UNT to Crooked Creek	Intermittent	3	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
17.50	Tioga	S51	UNT to Crooked Creek	Intermittent	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
18.32	Tioga	S52	UNT to Crooked Creek	Perennial	8	WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
18.67	Tioga	Sw11	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Dry Crossing
18.85	Tioga	S53	UNT to Losey Creek	Perennial	6	WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
19.15	Tioga	D26	N/A	Ditch	1	N/A	N/A	N/A	Dry Crossing

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
19.17	Tioga	S54	UNT to Losey Creek	Ephemeral	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Dry Crossing
Access Roads									
YM59 TAR 4	Tioga	S23	UNT to North Fork of Cowanesque River	Perennial	2	CWF	Drains to Stocked Trout Stream	February 15 – June 1	Temporary Bridge/Culvert
YM59 TAR 4	Tioga	S24	UNT to North Fork of Cowanesque River	Perennial	1	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Temporary Bridge/Culvert
YM59 TAR 4	Tioga	D09	N/A	N/A	Dry	N/A	N/A	N/A	Existing Culvert
YM59 TAR 6	Tioga	Sw04	N/A	Man-made swale	Dry	N/A	N/A	N/A	Dry Crossing
YM59 TAR 6	Tioga	S56	UNT to California Brook	Intermittent	3	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Existing Culvert
YM59 TAR 7	Tioga	S56a	UNT to California Brook	Ephemeral	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Existing Culvert
YM59 TAR 7	Tioga	S57	UNT to California Brook	Intermittent	2	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Existing Culvert
YM59 TAR 7	Tioga	S58	UNT to California Brook	Ephemeral	2	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Temporary Bridge/Culvert
YM59 TAR 7	Tioga	S59	UNT to California Brook	Ephemeral	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Temporary Bridge/Culvert
YM59 TAR 10	Tioga	S31	UNT to Cowanesque River	Perennial	1	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Existing Access Road
YM59 PAR 5	Tioga	S68	UNT to Cowanesque River	Perennial	2	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Permanent Bridge/Culvert
YM59 PAR 5	Tioga	S63	UNT to Cowanesque River	Perennial	12	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Permanent Bridge/Culvert
YM59 PAR 5	Tioga	S64	UNT to Cowanesque River	Perennial	4	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Permanent Bridge/Culvert

Approximate Milepost	County	Feature ID[a]	Stream Name[b]	Flow Regime	Water Width (feet)	PA Chapter 93 Classification[c]	PAFBC Stream Designation	Anticipated Construction Timing Restriction[d]	Proposed Crossing Method[e]
YM59 PAR 5	Tioga	S67	UNT to Cowanesque River	Perennial	6	Drains to WWF	Drains to Stocked Trout Stream	February 15 – June 1	Existing Culvert
YM59 TAR 11	Tioga	D36	N/A	N/A	Dry	N/A	N/A	N/A	Ditch runs alongside of existing access road; No impact
YM59 PAR 10	Tioga	D17	N/A	N/A	Dry	N/A	N/A	N/A	Existing Access Road
YM59 PAR 10	Tioga	D18	N/A	N/A	Dry	N/A	N/A	N/A	Existing Access Road
YM59 PAR 13	Tioga	D25	N/A	N/A	Dry	N/A	N/A	N/A	Existing Culvert
YM59 PAR 13	Tioga	Sw10	N/A	Man-made Swale	Dry	N/A	N/A	N/A	Existing Culvert
YM59 PAR 14	Tioga	Sw12	N/A	Man-made Swale	Dry	N/A	N/A	N/A	No Impact
YM59 PAR 14	Tioga	Sw13	N/A	Man-made Swale	Dry	N/A	N/A	N/A	No Impact
Aboveground Facilities									
Ellisburg CS	Potter	S55	Rose Lake Run	Perennial	2.5	HQ-CWF	Class A Trout Stream	February 15 – June 1	Access Road crosses with existing culvert and remainder will be avoided
Z20 Pipeline Valve Setting	Potter	S73z	UNT to Marsh Creek	Intermittent	6	Drains to CWF	Drains to Stocked Trout Stream	February 15 – June 1	Temporary mat
Staging/Contractor Yards									
Port Allegany Pipe Yard	McKean	D27	N/A	Ditch	Dry	N/A	N/A	N/A	Existing Culvert
Port Allegany Pipe Yard	McKean	D28	N/A	Ditch	Dry	N/A	N/A	N/A	Existing Culvert

Notes:

a Prefix to resource identification numbers are: S = stream, D = ditch, Sw = swale.

b UNT = unnamed tributary

c CWF = Coldwater Fishes, WWF = Warmwater Fishes

d Waterbody crossing timing restrictions reflect periods when no in-stream work is permitted. National Fuel would comply with the final required timing restrictions as defined in the PADEP Chapter 105 Water Obstruction and Encroachment Permit and any other applicable state agency approvals.

e Dry Crossing Method = either dam and flume or dam and pump method. If stream has no perceptible flow at the time of crossing, an open cut method may be used with materials and provisions on hand to quickly shift to a dry crossing method in the event stream begins to flow before completion of the crossing. In the event that no waterflow is observed at the time of construction, National Fuel would use an open-cut crossing method.

HDD = Horizontal directional drill (trenchless method)
N/A = Not Applicable – resource is a ditch or swale.

Appendix B: Wetlands Crossed by the Project

Wetlands Crossed by the Project								
Approximate Milepost	**County**	**Wetland I.D.**	**Cowardin Classification**	**Approximate Pipeline Centerline Crossing Length (ft)**	**Acreage Affected During Construction[a]**	**Acreage in Permanent ROW / Easement[b]**	**Acreage Affected During Operation[c,d]**	**Crossing Method**
Replacement Pipeline (Z20 Pipeline)								
0.00	Potter	W01z	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
0.10	Potter	W01	PSS	207	0.4	0.2	0.0	Conventional Wetland Crossing Method
0.70	Potter	W02	PEM	476	0.5	0.4	0.0	Conventional Wetland Crossing Method
			PSS	-	0.4	0.1	<0.1	Conventional Wetland Crossing Method
1.35	Potter	W03	PEM	16	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
			PFO	114	0.1	0.1	0.1	Conventional Wetland Crossing Method
1.84	Potter	W04	PEM	290	0.2	0.2	0.0	Conventional Wetland Crossing Method
			PFO	30	0.2	0.1	0.1	Conventional Wetland Crossing Method
1.95	Potter	W05	PEM	138	0.1	0.1	0.0	Conventional Wetland Crossing Method
2.16	Potter	W06	PEM	193	0.2	0.2	0.0	Conventional Wetland Crossing Method
			PSS	400	0.8	0.5	0.1	Conventional Wetland Crossing Method
2.72	Potter	W07	PEM	62	0.1	0.1	0.0	Conventional Wetland Crossing Method
			PFO	-	0.0	0.0	0.0	Conventional Wetland Crossing Method
3.38	Potter	W08	PEM	41	0.1	<0.1	0.0	Conventional Wetland Crossing Method
Total Replacement Pipeline (Line Z20)				1,967	**3.1**	2.1	0.2	
Mainline Pipeline (YM59 Pipeline)								
2.35	Potter	W10	PFO	43	0.1	0.1	<0.1	Conventional Wetland Crossing Method

2.96, 3.00, 3.16	Tioga	W14	PEM	5	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
			PSS	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
3.25	Tioga	W15	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
3.68	Tioga	W60	PEM	19	0.1	<0.1	0.0	Conventional Wetland Crossing Method
4.02	Tioga	W16	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
4.54	Tioga	W17	PEM	165	0.3	0.2	0.0	Conventional Wetland Crossing Method
			PSS	123	0.2	0.2	<0.1	Conventional Wetland Crossing Method
			PFO	35	0.2	0.2	0.1	Conventional Wetland Crossing Method
4.65	Tioga	W18	PSS	46	0.1	0.1	<0.1	Conventional Wetland Crossing Method
5.34	Tioga	W20	PEM	12	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
5.70	Tioga	W21	PEM	288	0.5	0.3	0.0	Conventional Wetland Crossing Method
10.00	Tioga	W23	PEM	48	0.1	0.1	0.0	HDD
10.05	Tioga	W24	PEM	-	<0.1	0.0	0.0	HDD
12.12	Tioga	W29	PEM	158	0.2	0.2	0.0	Conventional Wetland Crossing Method
14.82	Tioga	W31	PSS	16	<0.1	<0.1	<0.1	Conventional Wetland Crossing Method
14.78	Tioga	W32	PEM	-	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
15.50	Tioga	W34	PEM	346	0.6	0.4	0.0	Conventional Wetland Crossing Method
15.68	Tioga	W35	PEM	59	0.1	0.1	0.0	Conventional Wetland Crossing Method
15.74	Tioga	W36	PEM	113	0.2	0.1	0.0	Conventional Wetland Crossing Method
16.48	Tioga	W38	PEM	15	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
16.93	Tioga	W39	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
17.16	Tioga	W40	PFO	114	0.2	0.1	0.1	Conventional Wetland Crossing Method
17.50	Tioga	W41	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
		W42	PFO	-	0.2	0.1	<0.1	Conventional Wetland Crossing Method

18.30	Tioga	W42	PEM	245	0.3	0.0	0.0	Conventional Wetland Crossing Method
18.82	Tioga	W43	PEM	478	0.8	0.5	0.0	Conventional Wetland Crossing Method
Cathodic Protection Ground Bed A (YM59 3.8)	Tioga	W54	PEM	-	<0.1	0.0	0.0	Conventional Wetland Crossing Method
9.56	Tioga	W55	PFO	82	0.2	0.1	0.1	Conventional Wetland Crossing Method
9.70	Tioga	W57	PEM	-	<0.1	<0.1	0.0	Conventional Wetland Crossing Method
9.80	Tioga	W58	PEM	65	0.4	0.1	0.0	Conventional Wetland Crossing Method
9.85	Tioga	W59	PEM	66	0.1	0.1	0.0	Conventional Wetland Crossing Method
Total Mainline Pipeline (YM59 Pipeline)				**2,641**	5.0	2.8	0.34	
Aboveground Facilities								
Ellisburg CS	Potter	W45	PEM	-	0.0	0.0	0.0	Wetland lays within LOD but would be avoided during construction
Ellisburg CS	Potter	W46	PEM	-	0.0	0.0	0.0	Wetland lays within LOD but would be avoided during construction
Ellisburg CS	Potter	W47	PEM	-	0.0	0.0	0.0	Wetland lays within LOD but would be avoided during construction
Total Aboveground Facilities					**0.0**	**0.0**	0.0	
Access Roads								
Z20 TAR-1	Potter	W02	PEM	-	<0.1	0.0	0.0	Wetland is within LOD but access road would be matted or reduced in size to avoid wetland
YM59 TAR 10	Tioga	W23	PEM	-	<0.1	0.0	0.0	Would be matted if needed (existing road)
YM59 TAR-3	Tioga	W54	PEM		0.1	0.0	0.0	Conventional Wetland Crossing Method
YM59 (Newly changed/named) TAR-10A	Tioga	W56	PEM	-	<0.1	<0.1	0.0	Temporary Bridge
YM59 PAR-9	Tioga	W61	PEM	-	<0.1	<0.1	<0.1	Permanent Fill
				Total Access Roads	**0.2**	<0.1	<0.1	
Pipe/Contractor Yards								
Port Allegany Pipe Yard	McKean	W48	PEM	-	0.00	0.0	0.0	Would be Avoided

Port Allegany Pipe Yard	McKean	W49	PEM	-	0.0	0.0	0.0	Would be Avoided
Port Allegany Pipe Yard	McKean	W50	PEM	-	0.0	0.0	0.0	Would be Avoided
Port Allegany Pipe Yard	McKean	W51	PEM	-	0.0	0.0	0.0	Would be Avoided
Port Allegany Pipe Yard	McKean	W52	PEM	-	0.0	0.0	0.0	Would be Avoided
Total Pipe/Contractor Yards					**0.0**	**0.0**	0.0	
GRAND TOTAL FOR PROJECT				**4,608**	**8.3**	**4.9**	**0.6**	

Notes:

Due to rounding, the totals may not reflect the sum of the addends.

a Acreage Affected During Construction represents the total area of potential disturbance within the existing/proposed Permanent ROW, Temporary ROW, and Additional Temporary Workspace.

b Acreage in Permanent ROW / Easement means: for pipelines, the acreage of wetland in the 50-foot-wide permanent ROW easement, and for access roads, acreage of wetland within the approximately 30-foot-wide new permanent access roads (PARs).

c Acreage Affected During Operation *for the pipelines* represents acreage of vegetation cover type that would be converted from PFO or PSS to a lower successional cover type (e.g., PSS or PEM) because of vegetation maintenance procedures within the 30-foot-wide portion of the 50-foot-wide permanent ROW that would undergo routine vegetation maintenance. Specifically, in accordance with the FERC Procedures, National Fuel would not conduct routine vegetation mowing or clearing over the full width of the permanent ROW. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent ROW. National Fuel would not conduct any routine vegetation mowing or clearing in PFO wetlands that are between HDD entry and exit points.

d Acreage Affected During Operation *for the access roads* means acreage of permanent fill required in wetlands for permanent access roads.

Appendix C: Vegetation Affected by Project Construction and Operation

Vegetation Affected by Project Construction and Operation					
Facility	**Vegetation Type[a]**	**Distance Traversed**		**Temporary Construction Workspace (acres)[b]**	**Permanent Pipeline ROW or New Permanently Maintained Area (acres)[c]**
		Feet	**Miles**		
Mainline Pipeline	Cultivated Crops	1,858	0.35	1.9	2.1
	Deciduous Forest	34,871	6.60	26.2	40.0[d]
	Developed[e]	106	0.02	3.1	0.1
	Developed Open Space[f]	3,132	0.59	4.4	3.7
	Emergent Herbaceous Wetlands	106	0.02	0.1	0.2
	Evergreen Forest	1,115	0.21	0.7	1.3 [d]
	Hay/Pasture	51,750	9.80	60.8	58.8
	Mixed Forest	8,386	1.59	6.7	9.6 [d]
	Scrub/Shrub	1,221	0.23	1.5	1.4
Replacement Pipeline	Cultivated Crops	737	0.14	0.7	0.8
	Deciduous Forest	6,087	1.15	4.4	7.0
	Developed Open Space	1,248	0.24	1.8	1.5
	Evergreen Forest	21	0.00	0.1	<0.1
	Hay/Pasture	9,220	1.75	11.8	10.3
	Mixed Forest	2,941	0.56	1.6	3.3
	Woody Wetlands	20	<0.01	0.1	<0.1
McCutcheon Hill OPP Station	Developed Open Space	N/A	N/A	–	0.1
	Hay/Pasture	N/A	N/A	–	0.6
MIdstream's Lee Hill Interconnect	Hay/Pasture	N/A	N/A	7.1	0.3
Ellisburg CS	Deciduous Forest	N/A	N/A	0.2	0.0
	Developed	N/A	N/A	8.4	0.0
	Developed Open Space	N/A	N/A	3.1	0.0
	Emergent Herbaceous Wetlands	N/A	N/A	0.1	0.0
	Hay/Pasture	N/A	N/A	15.5	0.0
	Woody Wetlands	N/A	N/A	<0.1	0.0
Valve Setting (Z20 Pipeline)	Hay/Pasture	N/A	N/A	0.2	<0.1[g]
Valve Setting (YM59 Pipeline)	Mixed Forest	N/A	N/A	–	0.0[g]
	Hay/Pasture	N/A	N/A	–	<0.1 [g]
Cathodic Protection Ground Bed A	Hay/Pasture	N/A	N/A	–	0.8

Facility	Vegetation Type[a]	Distance Traversed		Temporary Construction Workspace (acres)[b]	Permanent Pipeline ROW or New Permanently Maintained Area (acres)[c]
		Feet	Miles		
Cathodic Protection Ground Bed B	Mixed Forest	N/A	N/A	–	<0.1
	Hay/Pasture	N/A	N/A	–	0.7
Temporary Access Roads (TARs)	Cultivated Crops	198	0.04	0.1	0.0
	Deciduous Forest	7,066	1.34	4.8	0.0
	Developed	382	0.07	0.4	0.0
	Developed Open Space	921	0.17	0.8	0.0
	Hay/Pasture	83,823	1.59	9.7	0.0
	Mixed Forest	235	0.04	0.2	0.0
Permanent Access Roads (PARs)	Deciduous Forest	2,930	0.01	–	2.0
	Developed	481	0.09	–	0.3
	Developed Open Space	593	0.11	–	0.4
	Hay/Pasture	7,578	1.44	–	2.3
	Mixed Forest	1,182	0.22	–	0.8
Port Allegany Pipe Yard[a]	Deciduous Forest	N/A	N/A	0.4	0.0
	Developed	N/A	N/A	2.4	0.0
	Developed Open Space	N/A	N/A	<0.1	0.0
	Hay/Pasture	N/A	N/A	10.5	0.0
	Woody Wetlands	N/A	N/A	0.5	0.0
Harrison Valley Contractor Yard[a]	Barren Land	N/A	N/A	2.9	0.0
	Cultivated Crops	N/A	N/A	<0.1	0.0
	Developed	N/A	N/A	0.3	0.0
	Developed Open Space	N/A	N/A	<0.1	0.0
	Hay/Pasture	N/A	N/A	7.1	0.0
	Mixed Forest	N/A	N/A	<0.1	0.0
Middlebury Contractor Yard[a]	Cultivated Crops	N/A	N/A	5.3	0.0
	Developed	N/A	N/A	0.8	0.0
	Developed Open Sace	N/A	N/A	0.2	0.0
	Hay/Pasture	N/A	N/A	0.8	0.0
	Mixed Forest	N/A	N/A	<0.1	0.0
PROJECT TOTAL				**207.9**	**148.7**

Notes:
N/A = Not Applicable.

a Vegetation type is based on mapped NLCD (Multi-Resolution Land Characteristics Consortium 2023). Note that vegetation types listed for the pipe and contractor yards (hay/pasture, cultivated crops) may not be representative of the current condition; these areas are currently in use as pipe/contractor yards.

b For pipelines, Temporary Construction Workspace consists of the 25-foot-wide temporary ROW and all ATWS to be disturbed temporarily during construction. This column does not include the 50-foot-wide permanent ROW (which is represented in the column entitled "Permanent ROW or New Permanently Maintained Area").

c Consists of only the 50-foot-wide permanent ROW to be permanently maintained land for the Replacement Pipeline, Mainline Pipeline, aboveground facilities, cathodic protection ground beds, and permanent access roads. The Replacement Pipeline has existing permanent ROW that would not be expanded as a result of the Project. The Mainline Pipeline would create a new Permanent ROW. These areas would also be used during construction.

d Forested area acreage calculated within the existing permanent ROW for the Z20 Pipeline may be significantly overestimated. The calculation is based on GIS analysis of proposed workspace and National Land Cover Data (NCLD 2023). The NCLD forest data in many areas does not recognize a cleared 50-foot-wide ROW corridor through surrounding forested areas, as it is largely based on aerial imagery in the foliated season, when narrow cleared corridors are difficult to discern through mature forest (because of overhanging tree canopy). However, the Z20 Pipeline existing permanent ROW undergoes periodic vegetation maintenance in the form of mowing, which has resulted in a cleared open corridor for much of the 50-foot-wide permanent ROW width.

e Developed areas consist of lands associated with existing roads, residential, and industrial/commercial use.

f Developed open space consists of areas with some constructed materials, but mostly vegetation in the form of maintained lawn grasses.

g Valve settings would typically be entirely within the permanent easement for pipeline or aboveground facility with which it is associated. Accordingly, "0 acres" means the acreage was already accounted for in the calculations of land requirements for the pipeline or other aboveground facilities, as applicable. One exception is the valve setting for the Z20 Pipeline; this valve setting would be on a 60-foot by 60-foot permanent pad, which would exceed the existing 50-foot-wide permanent ROW by 10 feet, for a total of 0.01 acre of new acquired easement outside of (adjacent to) the existing permanent ROW.

Appendix D: Non-Residential Structures within 50 feet of the Project

Non-Residential Structures within 50 feet of Project Areas					
Nearest MP	**County, State**	**Structure Type**	**Distance and Direction from Construction Workspace or ATWS Area (feet)**	**Distance from Centerline of Pipeline (feet)**	**Proposed Mitigation**
Replacement Pipeline (Z20 Pipeline)					
0.4-0.5	Potter, PA	Shed/Trailer	8 N	57	6
Access Roads for Replacement Pipeline (Z20 Pipeline)					
0.7 (Z20 TAR[a] 1)	Potter, PA	Oil and Gas Infrastructure	10 W	86	6
Mainline Pipeline (YM59 Pipeline)					
0.5	Potter, PA	Oil and Gas Infrastructure	16 S	64	6
3.0	Tioga, PA	Building/Trailer[b]	Within	4	5
3.0	Tioga, PA	Building/Trailer	Within	49	5
3.0	Tioga, PA	Building/Trailer	Within	0	5
3.0	Tioga, PA	Building/Trailer	Within	15	5
9.6	Tioga, PA	Building	Within	90	6
9.9	Tioga, PA	Building	Within	8	5
10.0	Tioga, PA	Building	Within	51	5
18.5	Tioga, PA	Oil and Gas Infrastructure	22 S	63	6
Access Roads for Mainline Pipeline (YM59 Pipeline)					
4.2 (YM59 PAR 3)	Tioga, PA	Building	13 E	500	6
5.5 (YM59 TAR 6)	Tioga, PA	Building	Within	467	5,6
5.5 (YM59 TAR 6)	Tioga, PA	Building	29 S	569	6
5.5 (YM59 TAR 6)	Tioga, PA	Building	41 S	582	6
5.5 (YM59 TAR 6)	Tioga, PA	Building	19 N	713	6
5.5 (YM59 TAR 6)	Tioga, PA	Building or tarped stack	34 W	770	6
6.0 (YM59 TAR 7)	Tioga, PA	Building	20 N	1,228	6
6.0 (YM59 TAR 7)	Tioga, PA	Building	Within	1,108	6
10.0 (YM59 TAR 19)	Tioga, PA	Building	29W	161	6
10.1 (YM59 PAR 5)	Tioga, PA	Building	24 W	2,023	6
10.1 (YM59 PAR 5)	Tioga, PA	Building	11 W	1,998	6
10.1 (YM59 PAR 5)	Tioga, PA	Building	9 W	2,007	6
10.1 (YM59 PAR 5)	Tioga, PA	Building	0 W	1,990	6
11.9 (YM59 TAR 11)	Tioga, PA	Building	26 W	133	6
15.0 (YM59 PAR 10)	Tioga, PA	Gas Well	Within ATWS	340	6
16.3 (YM59)	Tioga, PA	Building	Within	1,386	6
18.5 (YM59 PAR 13)	Tioga, PA	Oil and Gas Infrastructure	12 E	81	6
18.5 (YM59 PAR 13)	Tioga, PA	Oil and Gas Infrastructure	24 SE	280	6
Ellisburg Compressor Station					
N/A	Potter, PA	Oil and Gas Infrastructure	Within	N/A	6
Harrison Valley Contractor Yard					
N/A	Potter, PA	Building and multiple trailers	Within	N/A	5,6
N/A	Potter, PA	Building	6 NE	N/A	6

Midstream's Lee Hill Interconnect					
N/A	Tioga, PA	Oil and Gas Infrastructure	Within	N/A	6
Middlebury Contractor Yard					
N/A	Tioga, PA	Multiple buildings	Within	N/A	6
Port Allegany Pipe Yard					
N/A	McKean, PA	Multiple buildings	Within	N/A	6
N/A	McKean, PA	Building/Structure	36 S	N/A	6
N/A	McKean, PA	Building	10 E	N/A	6
N/A	McKean, PA	Building	28 W	N/A	6

a TAR: temporary access road
b "Trailers" does not refer to a residence.
1. National Fuel would restore lawns and residential landscaping within the construction work area immediately or as soon as possible after backfilling the trench.
2.National Fuel would install fencing along the residence and construction workspace areas extending past either side of the residential structure and would maintain this fencing throughout the open trench phase of construction.
3.National Fuel would attempt to reduce construction area to maintain a 25-foot construction workspace area for a distance of 100 feet on either side of a residence or structure, where possible.
4.National Fuel would implement a site-specific residential construction plan and would use either stove pipe or drag section construction technique, a 15-foot separation distance from the construction workspace would be maintained, orange safety fence would be installed along the construction ROW, and vehicle access to the residence would be maintained at all times during the construction period.
5. National Fuel would attempt to reduce construction ROW around structure.

Appendix E: Land Uses Affected by the Project

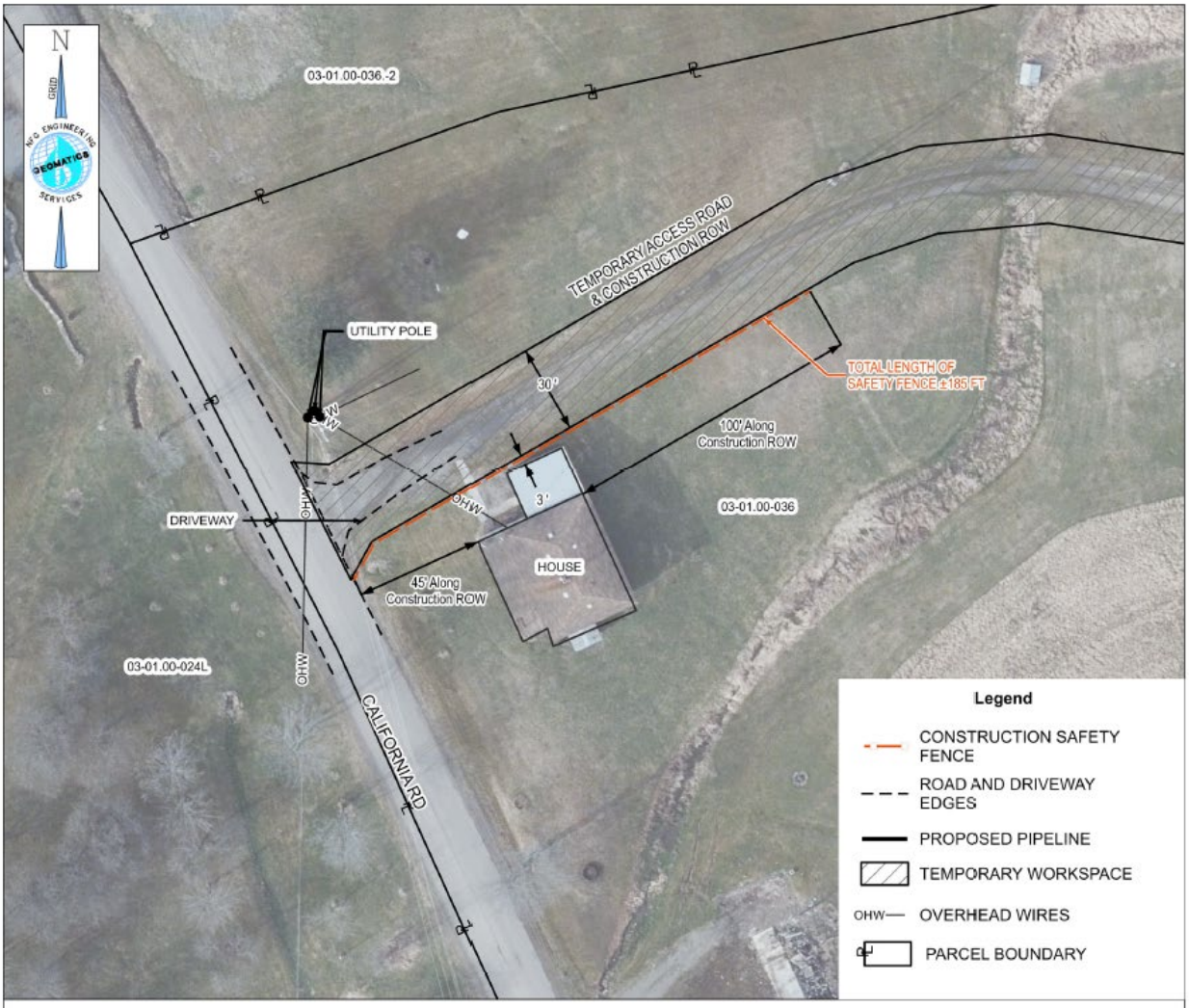
Land Use Impacts														
Facility County, State	**Agricultural Land (acres)**		**Forest/Woodland[a] (acres)**		**Open Land (acres)**		**Scrub/Shrub (acres)**		**Developed Land (acres)**		**Residential Land (acres)**		**Total (acres)**	
	TWS[b]	**PROW[c]**	**TWS[b]**	**PROW[c]**	**TWS[b]**	**PROW[c]**	**TWS[b]**	**PROW[c]**	**TWS[b]**	**PROW[c]**	**TWS[b]**	**PROW[c]**	**TWS[b]**	**PROW[c]**
Pipeline Facilities														
Mainline Pipeline (Potter and Tioga Counties, PA)	62.5	60.9	33.6	51.0	4.9	3.8	1.5	1.4	2.8	0.1	0.04	0.0	**105.2**	**117.2**
Replacement Pipeline (Potter County, PA)	12.6	11.2	6.2	10.4	1.7	1.5	0.0	0.0	0.0	0.0	0.08	0.0	**20.5**	**23.1**
Pipeline Subtotal	**75.0**	**72.1**	**39.7**	**61.3**	**6.5**	**5.3**	**1.5**	**1.4**	**2.8**	**0.1**	**0.12**	**0.0**	**125.7**	**140.2**
Aboveground & Auxiliary Facilities														
McCutcheon Hill OPP Station (Potter County, PA)	-	0.6	-	-	-	0.10	-	-	-	-	-	-	**0.0**	**0.7**
Midstream's Lee Hill Interconnect (Tioga County, PA)	7.4	-	-	-	-	-	-	-	-	-	-	-	**7.4**	**0.0**
Ellisburg CS (Potter County, PA)	15.5	-	0.3	-	3.2	-	-	-	8.4	-	-	-	**27.3**	**0.0**
Cathodic Protection Ground Bed A (Tioga County, PA)	-	0.8	-	-	-	-	-	-	-	-	-	-	**0.0**	**0.8**
Cathodic Protection Ground Bed B (Tioga County, PA)	-	0.7	-	<0.1	-	-	-	-	-	-	-	-	**0.0**	**0.7**
Aboveground & Auxiliary Facilities Subtotal	**22.8**	**2.2**	**0.3**	**0.0**	**3.2**	**0.1**	**0.0**	**0.0**	**8.4**	**0.0**	**0.0**	**0.0**	**34.7**	**2.3**
Support Facilities														
Temporary Access Roads (TARs) (Potter and Tioga Counties, PA)	6.6	-	4.9	-	0.7	-	-	-	0.3	-	0.3	-	**12.7**	**0.0**
Permanent Access Roads (PARs) (Potter and Tioga Counties, PA)	-	5.5	-	2.8	-	0.4	-	-	-	0.3	-	0.1	**0.0**	**9.0**
Port Allegany Pipe Yard (McKean County, PA)	10.5	-	0.9	-	<0.1	-	-	-	2.4	-	-	-	**13.8**	**0.0**
Harrison Valley Contractor Yard (Potter County, PA)	7.2	-	<0.1	-	3.0	-	-	-	0.3	-	-	-	**10.5**	**0.0**
Middlebury Contractor Yard (Tioga County, PA)	6.1	-	<0.1	-	0.2	-	-	-	0.8	-	-	-	**7.14**	**0.0**
Support Facilities Subtotal	**30.3**	**5.5**	**5.8**	**2.8**	**3.9**	**0.4**	**0.0**	**0.0**	**3.9**	**0.3**	**0.3**	**0.1**	**44.1**	**9.0**

PROJECT GRAND TOTAL	**128.1**	**79.7**	**45.8**	**64.1**	**13.7**	**5.8**	**1.5**	**1.4**	**15.1**	**0.4**	**0.4**	**0.1**	**208.4**	**149.4**

- Forested area acreage calculated within the existing permanent ROW for the Z20 Pipeline may be significantly overestimated. The calculation is based on GIS analysis of proposed workspace and National Land Cover Data (NCLD 2023). The NCLD forest data in many areas does not recognize a cleared 50-foot-wide ROW corridor through surrounding forested areas, and these areas are also difficult to discern on current aerial imagery. However, the Z20 Pipeline existing permanent ROW undergoes periodic vegetation maintenance in the form of mowing, which has resulted in a cleared open corridor for much of the 50-foot-wide permanent ROW width.
- TWS consists of 25-foot-wide temporary ROW workspace and ATWS and excludes the Permanent ROW. Acreages were calculated using polygon analysis and, therefore, totals may differ slightly from a straight length multiplied times width calculation.
- Permanent ROW (PROW) includes 50-foot-wide permanent ROW. Acreages were calculated using polygon analysis, and therefore, totals differ slightly from a straight length times width calculation.
- Totals in this table differ from the land requirements table because in this table, the TWS for the pipelines only included a 25-foot-wide temporary workspace ROW and all ATWS disturbed during construction, and did not include the 50-foot-wide permanent ROW that would also be used for construction workspace. “Permanent Operational Pipeline ROW” for the pipelines only included the 50-foot-wide ROW that would be permanently maintained.
- Modifications to the Project during the NEPA review altered totals by removing portions of the support facilities.

The totals may not equal the sums of the parts due to rounding.

Appendix F: Site Specific Residential Plans



CONSTRUCTION REQUIREMENTS:

1. ALL PROPOSED CONSTRUCTION WORK AREAS SHALL BE CONFINED TO THE LIMITS SHOWN ON THIS DRAWING.
2. CONTRACTOR SHALL ERECT AND MAINTAIN SAFETY FENCE AS SHOWN ON THIS DRAWING.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES AS REQUIRED BY APPLICABLE PERMITS AND PROJECT DOCUMENTS TO ENSURE THAT CONSTRUCTION SPOIL IS CONTAINED WITHIN THEAPPROVED CONSTRUCTION WORK AREA.
4. VEHICLE ACCESS SHALL BE MAINTAINED TO THE RESIDENCES/BUSINESSES DURING THE CONSTRUCTION PERIOD.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION IN THE AREA NEAR THE RESIDENCE SHOWN ON THIS DRAWING. DITCH SHALL BE EXCAVATED AND BACKFILLED IN THE SAME DAY. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
7. DISTURBED ITEMS SUCH AS DRIVEWAYS, LAWNS AND LANDSCAPED AREAS SHALL BE RESTORED IMMEDIATELY AFTER FINAL GRADING (WEATHER DEPENDENT) EXCEPT FOR CONTRACTOR TRAVEL LANE.
8. CONTRACTOR SHALL COMPLY WITH ALL LOCAL NOISE ORDINANCES (IF APPLICABLE). WORK WILL ONLY BE DONE DURING DAYLIGHT HOURS.
9. CONTRACTOR SHALL TAKE APPROPRIATE MEANS TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
10. CONTRACTOR TO NOTIFY LANDOWNER PRIOR TO PIPELINE INSTALLATION AND TO COORDINATE LANDOWNER ACCESS DURING CONSTRUCTION.

DESCRIPTION:

THIS DRAWING DOCUMENTS A RESIDENTIAL BUILDING NEAR THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

NOTES:

BASE MAPPING COMPILED FROM VARIOUS DATA SOURCES WITH VARYING DEGREES OF ACCURACY.

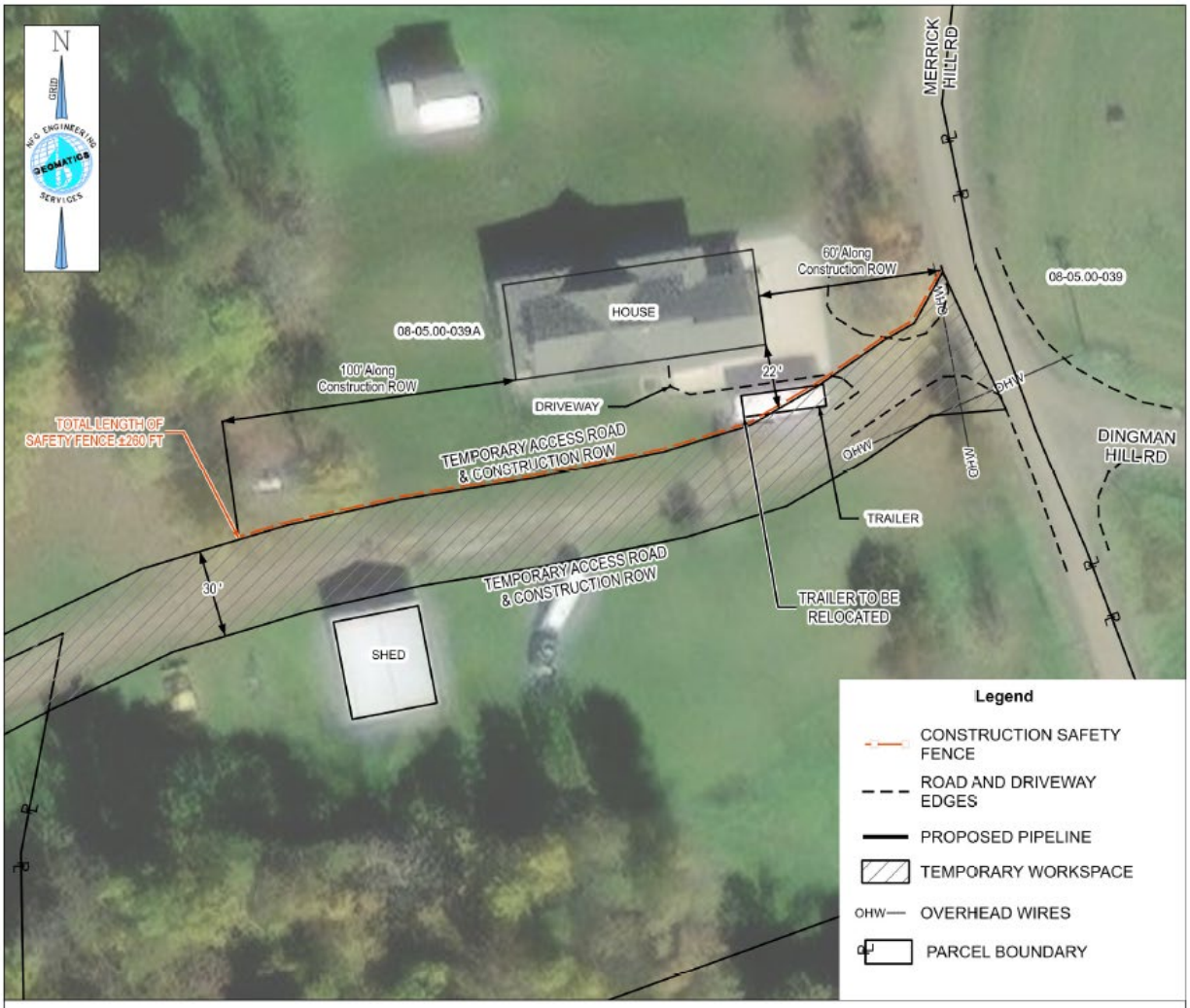
National Fuel Supply Corporation

ENGINEERING SERVICES
1100 STATE STREET
ERIE, PA. 16501
(814) 871-8676

0 25 50
Feet

NATIONAL FUEL GAS SUPPLY CORPORATION
TIOGA PATHWAY PROJECT
RESIDENCE(S) NEAR CONSTRUCTION WORK AREA
MP 5.71
BROOKFIELD TWP.
TIOGA COUNTY, PENNSYLVANIA

DRAWN BY:	FILE NAME:	SHEET:
KEYSTONE	Tioga Pathways FERC Mitigation Drawings.mxd	1
CHECKED BY:	SCALE:	OF
APPROVED BY:	DATE: 6/28/2024	1



CONSTRUCTION REQUIREMENTS:

1. ALL PROPOSED CONSTRUCTION WORK AREAS SHALL BE CONFINED TO THE LIMITS SHOWN ON THIS DRAWING.
2. CONTRACTOR SHALL ERECT AND MAINTAIN SAFETY FENCE AS SHOWN ON THIS DRAWING.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES AS REQUIRED BY APPLICABLE PERMITS AND PROJECT DOCUMENTS TO ENSURE THAT CONSTRUCTION SPOIL IS CONTAINED WITHIN THEAPPROVED CONSTRUCTION WORK AREA.
4. VEHICLE ACCESS SHALL BE MAINTAINED TO THE RESIDENCES/BUSINESSES DURING THE CONSTRUCTION PERIOD.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION IN THE AREA NEAR THE RESIDENCE SHOWN ON THIS DRAWING. DITCH SHALL BE EXCAVATED AND BACKFILLED IN THE SAME DAY. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
7. DISTURBED ITEMS SUCH AS DRIVEWAYS, LAWNS AND LANDSCAPED AREAS SHALL BE RESTORED IMMEDIATELY AFTER FINAL GRADING (WEATHER DEPENDENT) EXCEPT FOR CONTRACTOR TRAVEL LANE.
8. CONTRACTOR SHALL COMPLY WITH ALL LOCAL NOISE ORDINANCES (IF APPLICABLE). WORK WILL ONLY BE DONE DURING DAYLIGHT HOURS.
9. CONTRACTOR SHALL TAKE APPROPRIATE MEANS TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
10. CONTRACTOR TO NOTIFY LANDOWNER PRIOR TO PIPELINE INSTALLATION AND TO COORDINATE LANDOWNER ACCESS DURING CONSTRUCTION.

DESCRIPTION:

THIS DRAWING DOCUMENTS A RESIDENTIAL BUILDING NEAR THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

NOTES:

BASE MAPPING COMPILED FROM VARIOUS DATA SOURCES WITH VARYING DEGREES OF ACCURACY.

National Fuel Supply Corporation

ENGINEERING SERVICES
1100 STATE STREET
ERIE, PA 16501
(814) 871-8676

0 25 50
Feet

NATIONAL FUEL GAS SUPPLY CORPORATION
TIOGA PATHWAY PROJECT
RESIDENCE(S) NEAR CONSTRUCTION WORK AREA
MP 16.55
CHATHAM TWP.
TIOGA COUNTY, PENNSYLVANIA

DRAWN BY:	FILE NAME:	SHEET:
KEYSTONE	Tioga Pathways FERC Mitigation Drawings.mxd	1
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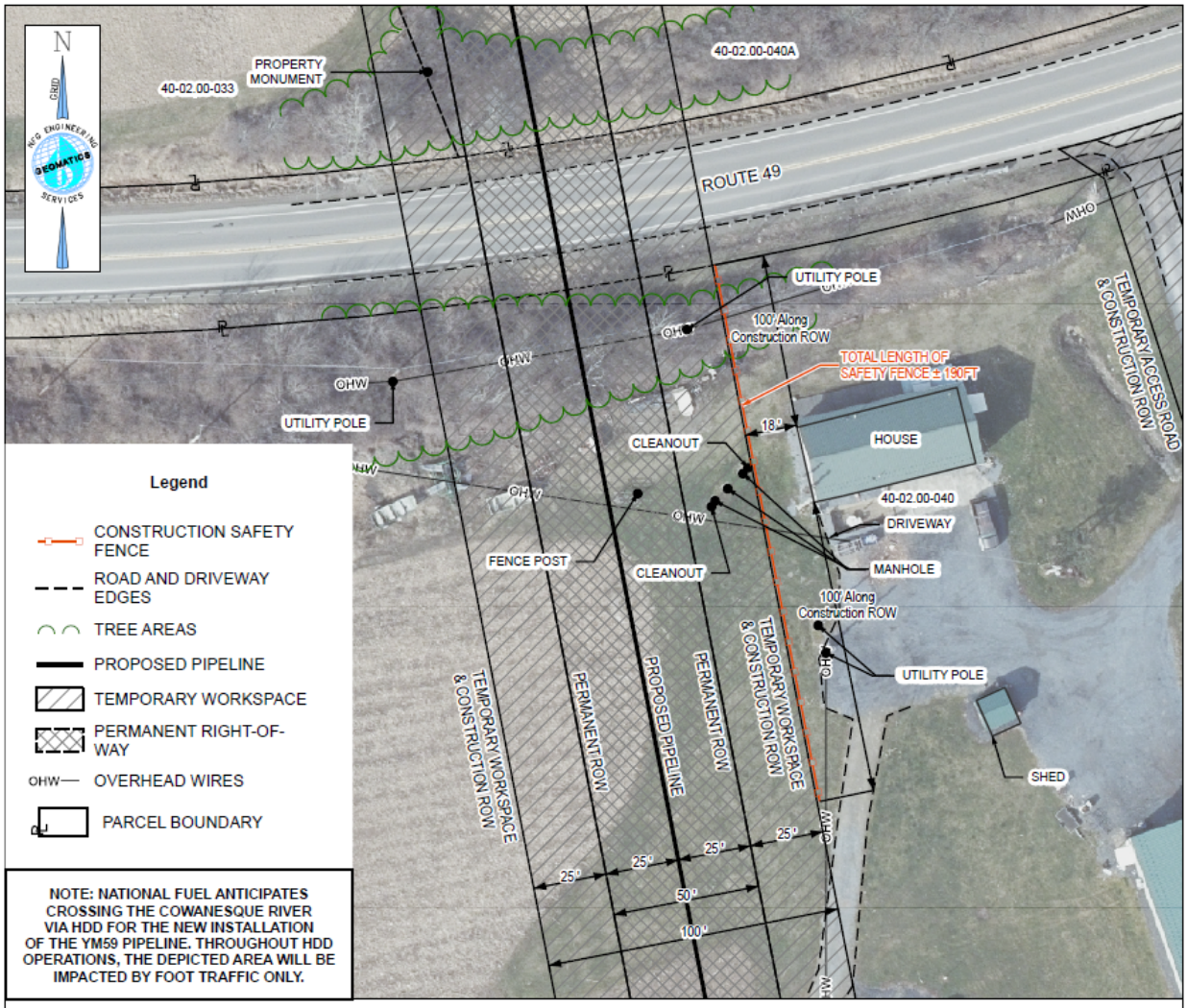
APPROVED BY:	DATE: 6/28/2024	1



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0 25 50
Feet

NATIONAL FUEL GAS SUPPLY CORPORATION
TIOGA PATHWAYS PROJECT
RESIDENCE(S) NEAR CONSTRUCTION WORK AREA
MP 9.92
WESTFIELD TWP.
TIOGA COUNTY, PENNSYLVANIA

DRAWN BY:	FILE NAME:	SHEET:
KEYSTONE	Tioga Pathways FERC Mitigation Drawings.mxd	1
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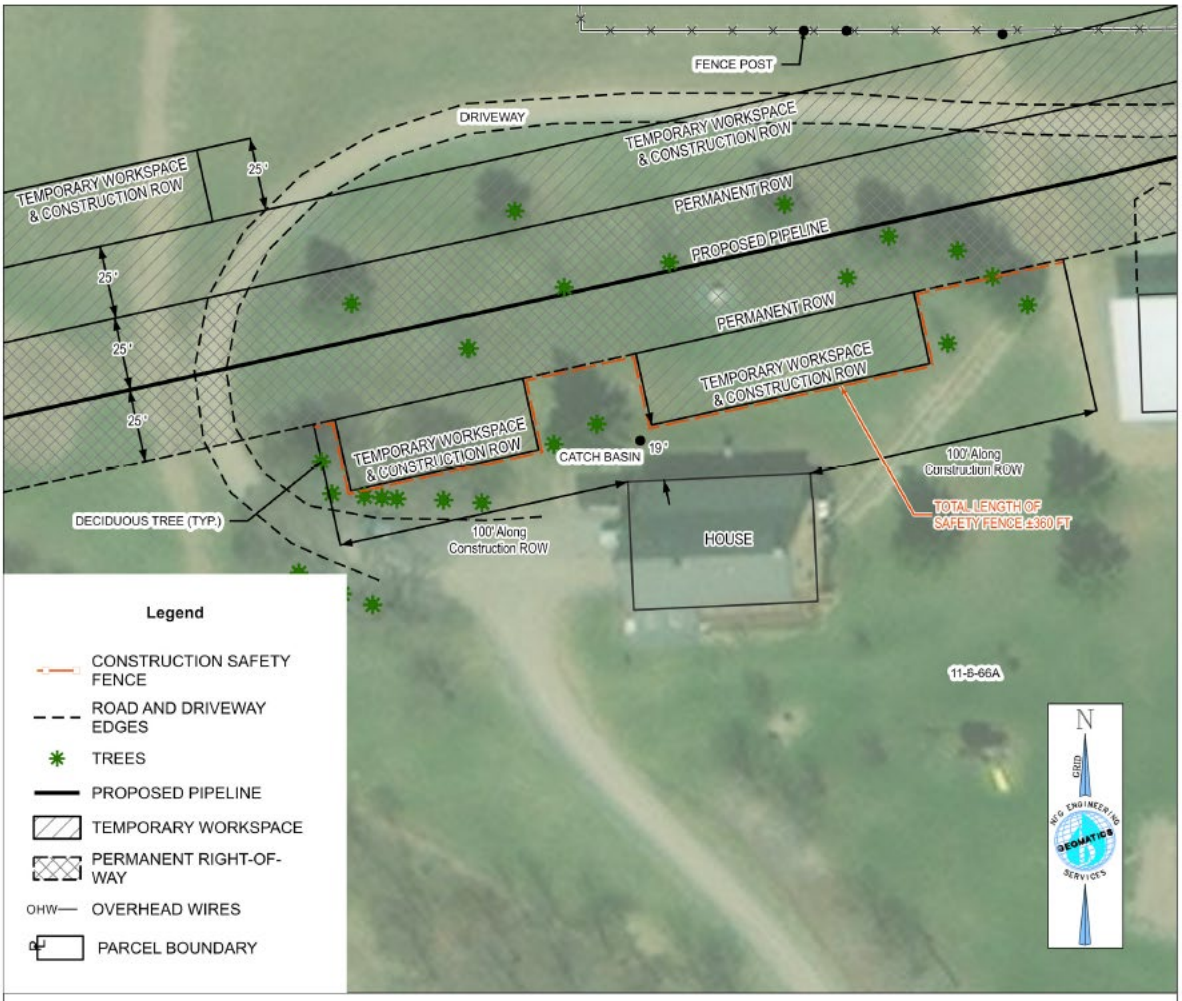

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ERIE, PA. 16501
(814) 871-8676

0 25 50
Feet

NATIONAL FUEL GAS SUPPLY CORPORATION
TIOGA PATHWAY PROJECT
RESIDENCE(S) NEAR CONSTRUCTION WORK AREA
MP 2.50
HARRISON TWP.
POTTER COUNTY, PENNSYLVANIA

DRAWN BY:	FILE NAME:	SHEET:
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	1in =50 ft	1
APPROVED BY:	DATE:	
	6/28/2024	

Appendix G: Past, Present, and Reasonably Foreseeable Future Projects

Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Cumulative Impacts					
Project	**Description**	**Location (County)**	**Nearest Distance to Project MP or Facility & Direction**	**Current Status and Schedule**	**Resources within Geographic Scope (Potentially Affected Resource Areas)**
FERC Jurisdictional Projects					
Line Z20 Modernization Project (National Fuel Gas Supply Corporation CP23-17)	Replacement of 11.6 miles of natural gas pipeline	Potter County	Connects with west end of Replacement Pipeline, same system. (0.0 mile)	Restoration complete December 2023	Water Use and Quality (including Groundwater, Surface Water and Wetlands), Noise (operation)
Various natural gas storage well fields	Natural gas storage well fields	Potter County PA, and Steuben County, NY	North of MP 3.40 within 1 mile	In operation	Air (operation)
PennDOT Projects					
NTIER Pedestrian Countdown Signals [a]	Installation of pedestrian countdown signals for safety improvement	Tioga County	Approximately 1.2 miles from new YM59 Mainline Pipeline MP 9.9	Under construction	Vegetation and Wildlife
SR 49 Trib Cowanesque Bridge Replacement	Planned for the future – bridge replacement	Potter County	Approximately 0.3 mile from HV Contractor Yard	Part of the State Transportation Improvement Plan (STIP) which are the first four years of the PennDOT Twelve Year Program	Water Use and Quality (including Groundwater, Surface Water and Wetlands), Fisheries, Vegetation and Wildlife
SR 4007 Over California B – Bridge Rehabilitation	Planned for the future – bridge rehabilitation	Tioga County	Approximately 0.4 mile from the south end of YM59 TAR 6	Part of the STIP which are the first four years of the PennDOT Twelve Year Program	Water Use and Quality (including Groundwater, Surface Water and Wetlands), Fisheries, Vegetation and Wildlife

SR 4008 Over North Fork C – Bridge Rehabilitation	Planned for the future – bridge rehabilitation	Tioga County	Approximately 0.13 mile from new YM59 Mainline Pipeline MP 3.2 and approximately 0.02 mile from the northern entrance to YM59 TAR 2	Part of the STIP which are the first four years of the PennDOT Twelve Year Program	Water Use and Quality (including Groundwater, Surface Water and Wetlands), Fisheries, Vegetation and Wildlife, Air (construction), Noise (construction)
a The NTIER Pedestrian Countdown signals would not impact water resources and are therefore not analyzed for cumulative impacts for water resources.					