

Attachment H-6 Potential Cumulative Water Quality Impacts

Potential Cumulative Water Quality Impacts

This section identifies and evaluates the potential cumulative water quality impacts of this project and other potential or existing projects like it, and the impacts that may result through numerous piecemeal changes to aquatic resources.

The first part of this assessment addresses cumulative impacts on water quality specific to the wetlands and streams within National Fuel's existing Z20 Pipeline ROW that will incur additional impacts due to the Z20 Pipeline replacement activities. The second part of this assessment presents potential cumulative water quality impacts of this project when combined with other potential or existing projects like it.

Potential Cumulative Impacts Specific to Z20 Pipeline ROW

The wetlands located in the existing Z20 permanent ROW will not experience any cumulative impacts, as the existing permanent ROW will not be expanded/widened following construction (i.e., it will remain a 50-foot-wide ROW), and the temporarily impacted areas will be restored and allowed to revert to their pre-existing cover. The wetlands located in the existing ROW included a variety of cover types (PEM, PSS, and PFO) and did not appear to lack wetland function and values when compared to adjacent, undisturbed wetland areas. In addition, no wetlands located in the Z20 Pipeline ROW will be permanently impacted as National Fuel will continue to operate and maintain the Z20 ROW in the same manner they have since 1936 when the original Z20 line was constructed.

Potential Cumulative Impacts of Project and Other Projects in Vicinity

The Council on Environmental Quality (CEQ) regulations defines cumulative impacts as the "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1(i)(3)) (CFR).

Potential cumulative impacts associated with the Project, are those that may potentially result from the combined effect on resources from construction and operation of the Project Facilities with other projects occurring in the vicinity of the Project. To evaluate the potential for cumulative impacts, National Fuel assessed recent, current, and reasonably foreseeable future projects or activities near the Project Facilities. Generally, if Project activities are deemed to have a minor or insignificant impacts on a particular resource, the cumulative impacts resulting from the Project would also be considered minor or insignificant on that particular resource.

This Cumulative Impact Analysis addresses the cumulative impact of the Project and other past, present, and reasonably foreseeable future projects within the Cumulative Impact Assessment Area (CIAA) of the Project. Specifically, National Fuel evaluated the Project's impacts from the and other project impacts within the vicinity of the Project on surface waters, wetlands, and groundwater resources. The CIAA for surface waters, wetlands, and groundwater resources are defined by the HUC 12 watershed. Watersheds are well-defined, natural boundaries for surface water flow and commonly contribute to the recharge of groundwater resources. HUC 12 is considered a local sub-watershed level that captures tributary systems. Surface water impacts may occur at waterbody crossings due to in-water construction and turbidity downstream from

the crossing location. Watershed boundaries are defined boundaries of surface water flow within which cumulative impacts can be assessed. Groundwater impacts from equipment use may occur within the construction workspace during construction until soils stabilize with vegetation and may temporarily affect the water quality or yield of a private or public well/spring. Watershed boundaries provide a reasonable distance where the groundwater impacts can be assessed.

Past, present, and reasonably foreseeable future actions within each of the resource-specific geographic areas were identified through federal, state, and local agency and municipal websites, database searches, and direct communications; permit applications; and third-party communications. Data was collected for energy projects, transportation improvement projects, and industrial development activities.

Actions with the potential to contribute to cumulative impacts within the same geographic scope and timeframe as the Project are provided in Table H-6-1. Specifically, Table H-6-1 provides a brief description of these actions, identifies the locations and distances of the actions from the Project, and characterizes the timeframe for these actions (e.g., past, present, and future). The Cumulative Impact Maps (provided at the end of this section) show these past, present, and reasonably foreseeable future actions within the resource-specific geographic areas.

It is anticipated that these projects either have involved or will involve grading and other ground-disturbing activities. Therefore, there is a potential for these projects to affect groundwater, surface water, wetlands, and water quality within the CIAA.

Table H-6-1. 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	Footprint/Layout and Anticipated Impacts	Permits and Authorizations/Description of Environmental Review, if required	Resources within Geographic Scope (Potentially Affected Resource Areas)
FERC Jurisdictional Projects							
Line Z20 Modernization Project CP23-17 (National Fuel Gas Supply Corporation)	Replacement of 11.6 miles of natural gas pipeline	Potter County	Connects with west end of Replacement Pipeline, same system.	Replacement complete	Slight overlap with Project footprint just west of Marsh Creek Road; within 0.5-mile, 1-mile, and 10-km buffer	FERC, PADEP Ch. 105 and 102 permits and associated clearances.	Surface waters; Wetlands; Groundwater resources
300 Line Project (Tennessee Gas Pipeline Company Docket No. CP09-444-000)	Expansion of 127.4 miles of new 30-inch diameter pipeline loops (including existing compressor stations in Potter and Tioga Counties)	Tioga and Potter Counties	Compressor Station 313 is located approximately 16 miles from new YM59 Mainline Pipeline MP 0.0 and pipeline is approximately 6.0 miles from MP 10.8 in	Project complete, in Year 6 of post-construction monitoring	No overlap with Project footprint: but within 10-km buffer	FERC, PADEP, USACE, USFWS consultation, SHPO consultation, Susquehanna River Basin Commission, Delaware River Basin Commission, NJDEP	Surface waters; Wetlands; Groundwater resources

			Potter and Tioga Counties				
Empire North Project (Empire Pipeline, Inc Docket No. CP18-89-000)	Installation of new compression along the existing Empire pipeline system.	Tioga County	New Jackson Compressor Station located approximately 17 miles from MP 19.5	Completed in 2021	No overlap with Project footprint, and not within 10-km buffer	FERC, PHMSA, USFWS consultation, PA and NY SHPO consultation, PADEP, PA Department of Transportation (PennDOT)	Surface waters; Wetlands; Groundwater resources
Various natural gas storage well fields ^a	Natural gas storage well fields	Potter County	Within 10-km buffer and one just north of MP 3.40 within the 1-mile buffer	Active	No overlap with project footprint; however, one storage field is within 1-mile buffer of Project footprint	FERC, PADEP, NYSDEC, PHMSA, USFWS consultation, PA and NY SHPO consultation, PADEP, PA Department of Transportation (PennDOT)	Surface waters; Wetlands; Groundwater resources
PennDOT Projects^b							
NTIER Pedestrian Countdown Signals	Installation of pedestrian countdown signals for safety improvement	Tioga County	Approximately 1.2 miles from new YM59 Mainline Pipeline MP 9.9	Under construction	No overlap with Project footprint; but within 10-km buffer	PennDOT	Surface waters; Wetlands; Groundwater resources
SR4027 over Cummings Creek – Bridge	Bridge replacement at Cummings Creek Road over Cummings Creek, Farmington Township	Tioga County	Approximately 5.56 miles from new YM59 Mainline Pipeline MP 19.5	Anticipated	No overlap with Project footprint; but within 10-km buffer	PennDOT	Surface waters; Wetlands; Groundwater resources
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	No overlap with Project footprint; but within 0.5-mile, 1-mile, and 10-km buffer	PennDOT	Surface waters; Wetlands; Groundwater resources
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	No overlap with Project footprint; but within 0.5-mile, 1-mile, and 10-km buffer	PennDOT	Surface waters; Wetlands; Groundwater resources
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	Part of the STIP which are the first four years of the PennDOT Twelve Year Program	No overlap with Project footprint; but within 0.5-mile, 1-mile, and 10-km buffer	PennDOT	Surface waters; Wetlands; Groundwater resources

			the northern entrance to YM59 TAR 2				
SR 4009 (Austinburg Road) over Troups Creek	Bridge improvement	Tioga County	Approximately 4 miles from MP 8.1	Under Construction, anticipated to be complete by 3/19/2024	No overlap with Project footprint; but within 10-km buffer	PennDOT, USACE Regional general permit issued 1/04/2024	Surface waters; Wetlands; Groundwater resources
Oil & Gas Production Wells and Midstream Gathering Projects							
Multiple conventional and unconventional oil and gas production wells	Oil and gas wells	Tioga and Potter Counties	Multiple within 1-mile buffer of Project footprint	Active	See Cumulative Impact Map, sheet 4 of 4	PADEP	Surface waters; Wetlands; Groundwater resources
HFS Waterline Project	Highland Field Services, LLC	Tioga County	Approximately 0.10 mile from Project Footprint	Completed in 2023	No overlap with Project footprint; but within 0.5-mile, 1-mile, and 10-km buffer	PADEP	Surface waters; Wetlands; Groundwater resources
Fuller to Cruttenden Pipeline Project	NFG Midstream Covington, LLC	Tioga County	Approximately 2.5 miles from Project footprint	Completed in 2023	No overlap with Project footprint; but within 10-km buffer	PADEP, USACE general permit issued	Surface waters; Wetlands; Groundwater resources
Keeneyville Dehydration Station	NFG Midstream Covington, LLC	Tioga County	Approximately 3 miles from Project Footprint	Active	No overlap with Project footprint; but within 10-km buffer	PADEP, USACE general permit issued	Surface waters; Wetlands; Groundwater resources
Bauer and Taft Pipeline Project	NFG Midstream Covington, LLC	Tioga County	Approximately 3 miles from Project Footprint	Completed in 2024	No overlap with Project footprint; but within 10-km buffer	PADEP, USACE general permit issued	Surface waters; Wetlands; Groundwater resources

Notes:

^a Storage fields may include storage and/or production wells that are under FERC jurisdiction.

^b Generally, for the listed PennDOT projects, only the closest (within approximately 5 miles) and/or most relevant (larger scale or more potential for cumulative effects) are included.

Sources (Accessed May 2024):

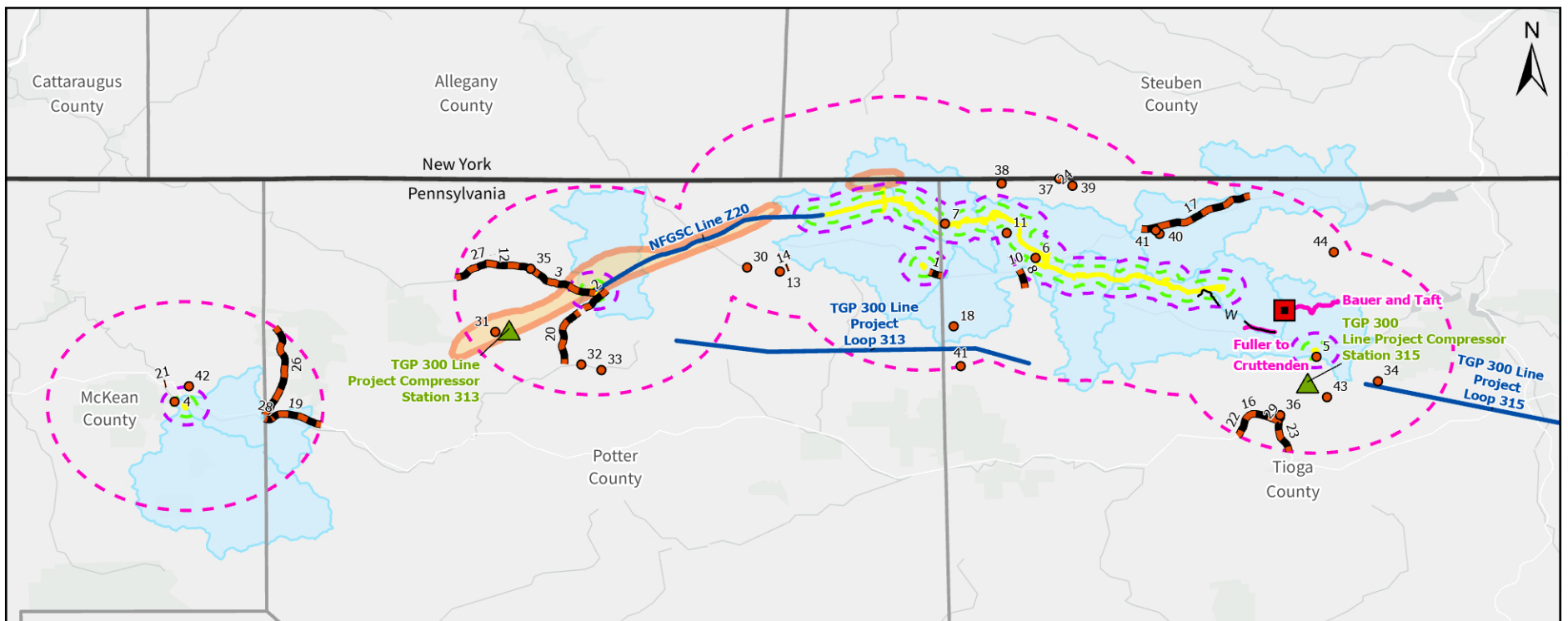
- FERC eLibrary accessed at <https://elibrary.ferc.gov/eLibrary/search>.
- U.S. Energy Information Administration (EIA) Pipeline projects data accessed at <https://www.eia.gov/naturalgas/data.php#pipelines>.
- USACE Jurisdictional Determinations and Permit Decisions at <https://permits.ops.usace.army.mil/orm-public#>
- USEPA Environmental Impact Statement (EIS) database at <https://cdxapps.epa.gov/cdx-enepa-II/public/action/eis/search>
- PADEP Pennsylvania Pipeline Portal at <https://www.dep.pa.gov/Business/ProgramIntegration/Pennsylvania-Pipeline-Portal/pages/default.aspx>
- PA Spatial Data Access at: <http://www.pasda.psu.edu/uci/SearchResults.aspx?originator=Pennsylvania+Department+of+Environmental+Protection>
- PADEP & PUC: Publicly available information (including pipeline and Oil and Gas Well records and permits) accessed at <https://www.dep.pa.gov/DataandTools/Pages/default.aspx>; <https://www.dep.pa.gov/DataandTools/Pages/GIS.aspx>; <https://www.dep.pa.gov/DataandTools/Reports/Pages/default.aspx>; <https://gis.dep.pa.gov/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>; <https://www.dep.pa.gov/About/Regional/RPCO/Pages/default.aspx>; <https://www.puc.pa.gov/filing-resources/>
- PennDOT Road and Bridge Project Construction Mapper accessed at

<https://gis.penndot.pa.gov/paprojects/ConstructionMap.aspx>

- PennDOT Transportation Improvement Program Mapper accessed at <https://gis.penndot.pa.gov/paprojects/TipVisMap.aspx>
- Oil and Gas and Other Industry websites:
https://informationalpostings.natfuel.com/supply/market/MktgNews/Presentations/documents/NFGSC_SYSTEM_MAP.pdf;
<https://www.nationalfuel.com/pipeline-storage/national-fuel-gas-supply-corp/maps-and-tables/>;
<https://www.nationalfuel.com/pipeline-storage/empire-pipeline/about-empire-pipeline/>

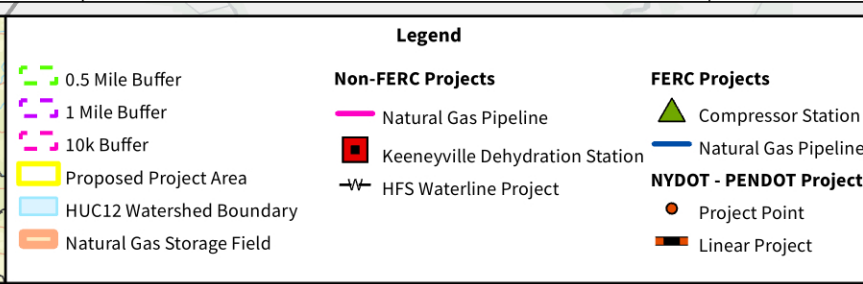
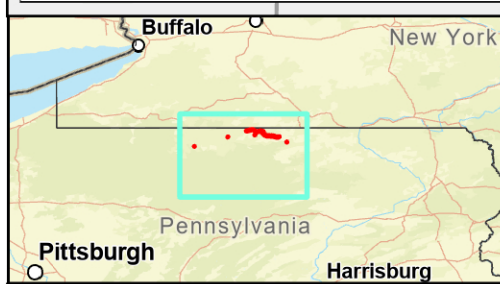
For the purpose of its cumulative impacts analysis, National Fuel has assumed that the past, ongoing, and reasonably foreseeable future projects listed on Table H-6-1 are undergoing appropriate reviews by the applicable federal and state regulatory agencies, which are designed to avoid, minimize, and mitigate impacts to environmental resources. Furthermore, National Fuel anticipates that these projects will be required to be constructed in compliance with all applicable environmental regulations and requirements to avoid and minimize environmental impacts, and that any significant unavoidable impacts on sensitive resources would be mitigated in accordance with the applicable federal and state requirements.

The cumulative impacts on groundwater, surface water, wetland resources, and water quality are expected to be temporary and limited to the construction phase of the Project. Most impacts can be avoided or minimized using both standard and specialized construction techniques. Cumulative impacts would be limited to project areas that are near the proposed Project. National Fuel will follow their Erosion and Sedimentation Control & Agricultural Mitigation Plan, Project-specific Erosion and Sedimentation Control Plan, and the required environmental permits, and will implement appropriate BMPs for the Project. The cumulative effect of the Project and other projects on groundwater, surface water, and wetland resources is expected to be insignificant.



NY-PA DOT Project Key

Within .5 Mile			Within 5 Miles		
Label	Project	Completion Date	Label	Project	Completion Date
1	SR 49 Trib Cowanesque Bridge Replacement	11/30/2031	12	Brizze Hollow Run Bridge Replacement	11/30/2025
2	Group 2-24-ST6	7/24/2024	13	Marsh Creek Bridge Improvement	11/30/2026
3	SR 244 North toward Osv	10/4/2023	14	SR 49 over Marsh Creek Bridge Restoration	11/30/2026
4	T-408 over Skinner Creek	11/30/2023	15	SR4007 ov N Brook Bridge Replacement	
5	SR 287 over Crooked Creek Bridge Rehabilitation	12/9/2021	16	Dantz Run to PA 287 Resurface	
6	SR 4007 Over California Bridge Rehabilitation	10/29/2021	17	East St to Renkin St Resurface	
7	SR 4008 Over North Fork Bridge Rehabilitation	10/30/2021	18	SR4001 ov Potter Brook Bridge Replacement	2/8/2026
			19	SR 6, McKeen Co to Fishin Resurface	10/24/2023
			20	Group 2-24-ST6 Resurface	7/24/2024
			21	2023 NC Bridge Preservati Bridge Improvement	10/11/2024
			22	Heise Run Rd to SR 287 Resurface	1/1/2025
			23	SR 287 to Charleston St Surface Treatment Micro-Surfacing	3/4/2025
			24	SR 4009 (Austinburg Roar over Troups Creek Bridge Improvement	3/19/2026
			25	2024 N. Central Bridge Epo Bridge Preservation Activities	8/20/2024
			26	SR 4001 Potter County Dra Drainage Improvement	11/17/2023
			27	SR 244 North to Oswayo (S Highway Restoration	11/17/2023
			28	Group 2-24/26RAR3 Guiderail Improvement	3/7/2026
			29	SR 6 to Marsh Creek Rd Surface Treatment Micro-Surfacing	3/4/2025
			30	SR 1011 over Genesee Riv Bridge Restoration	7/31/2023
			31	SR 44 over Campbell Run Bridge Replacement	10/17/2023
			32	SR 49 over Trib. Allegh Drainage Improvement	11/30/2028
			33	SR 4013 over Allegheny Rv Bridge Replacement	10/4/2022
			34	SR4039 ov Hills Creek Bridge Replacement	9/19/2023
			35	Tyler Hollow Run BOX Bridge Restoration	8/23/2023
			36	T-533 over Tributary to M Bridge Replacement	
			37	SR 249 over North Brook 2 Bridge Rehabilitation	12/9/2021
			38	SR 4007 over North Brook Bridge Rehabilitation	10/29/2021
			39	SR 4009 over Troups Creek Bridge Rehabilitation	10/29/2021
			40	SR 4013 over Yamell Broo Bridge Rehabilitation	12/9/2021
			41	SR 4013 over Cowanesque R Bridge Preservation Activities	12/9/2021
			42	Arnold Avenue Bridge (II) Bridge Restoration	11/1/2026
			43	SR 4035 Study Phase General Maintenance	
			44	SR4027 over Cummings Creel Bridge Replacement	1/1/2026



Tioga Pathway Project

Cumulative Impacts Map

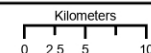
McKeen, Potter, and Tioga Counties, Pennsylvania

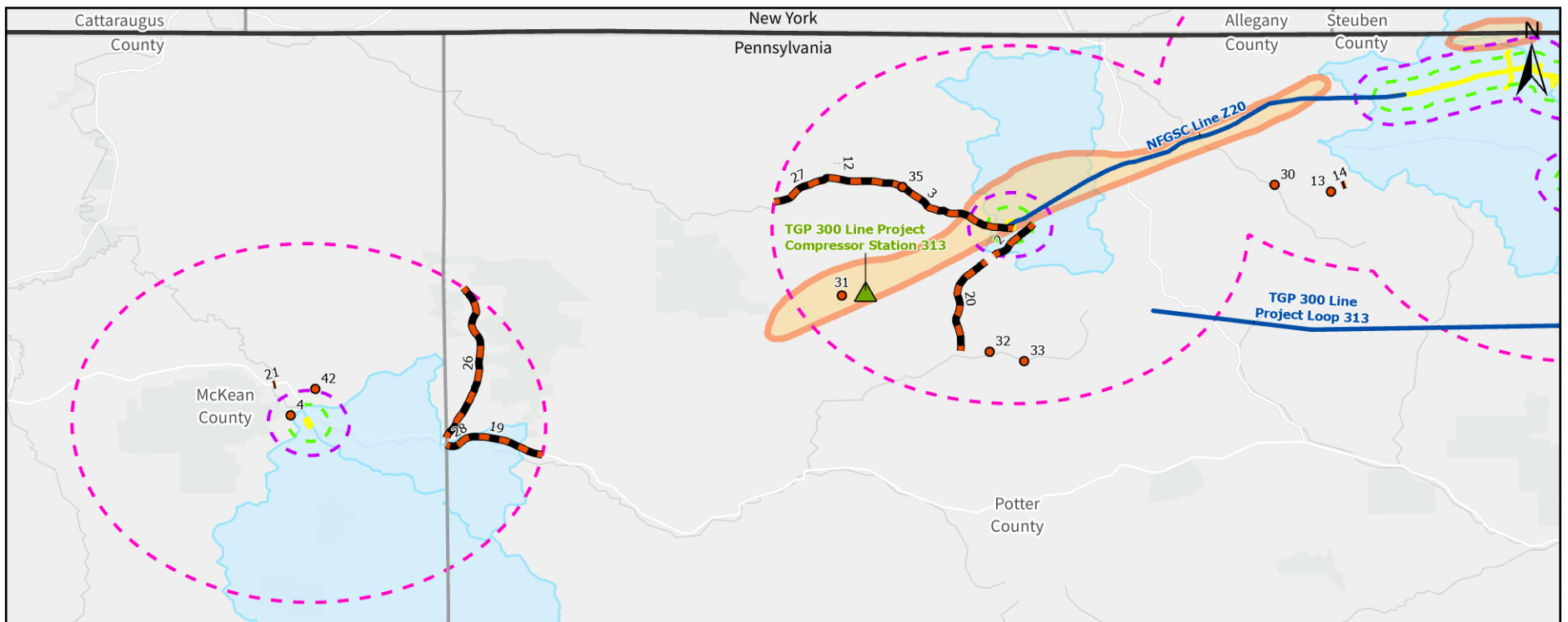
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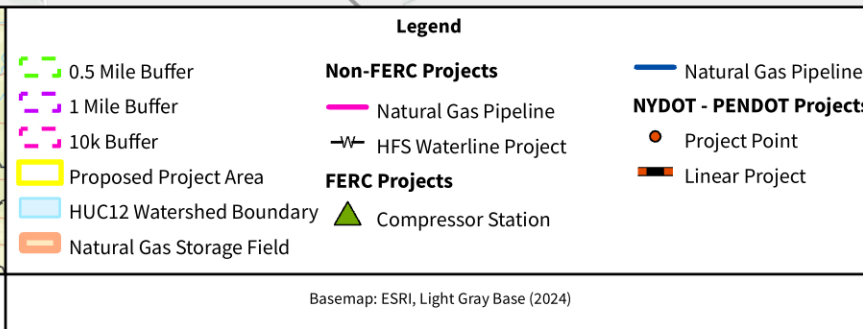
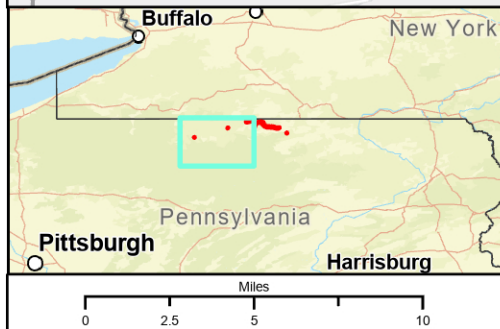
Basemap: ESRI, Light Gray Base (2024)





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Label	Project	Completion Date	Label	Project	Completion Date
8	Ladd Rd to SR 49 Highway Reconstruction	1/1/2037	24	SR 4009 (Austinburg Roar over Troups Creek Bridge Improvement	3/19/2026
9	Ladd Rd to SR 49 Resurfac Resurface		25	2024 N. Central Bridge Epo Bridge Preservation Activities	8/20/2024
10	NTIER Pedestrian Safety Improvement	6/24/2024	26	SR 4001 Potter County Dra Drainage Improvement	11/17/2023
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			36	T-533 over Tributary to M Bridge Replacement	
			37	SR 249 over North Brook 2 Bridge Rehabilitation	12/9/2021
			38	SR 4007 over North Brook Bridge Rehabilitation	10/29/2021
			39	SR 4009 over Troups Creek Bridge Rehabilitation	10/29/2021
			40	SR 4013 over Yamell Broo Bridge Rehabilitation	12/9/2021
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			43	SR 4035 Study Phase General Maintenance	
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Tioga Pathway Project

Cumulative Impacts Map

McKean, Potter, and Tioga Counties, Pennsylvania

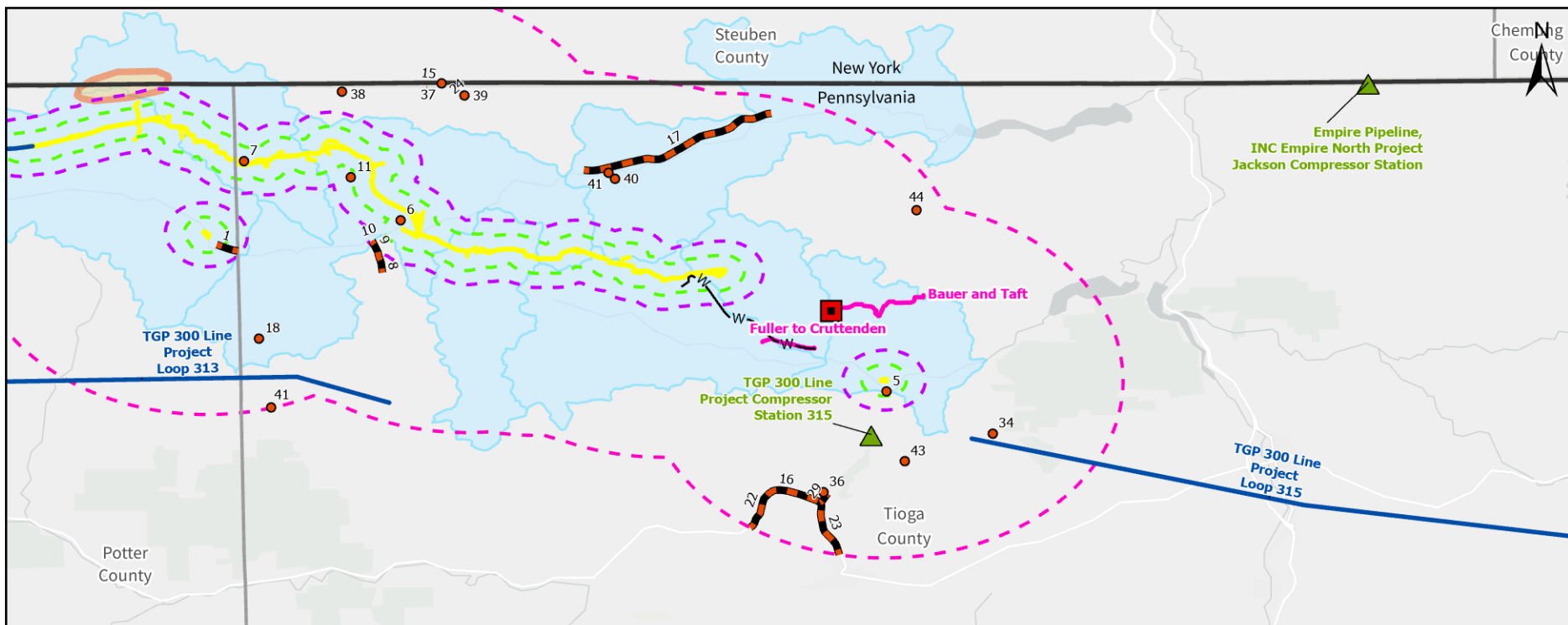
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Prepared For: **National Fuel**
Supply Corporation

Prepared By: **TETRA TECH**

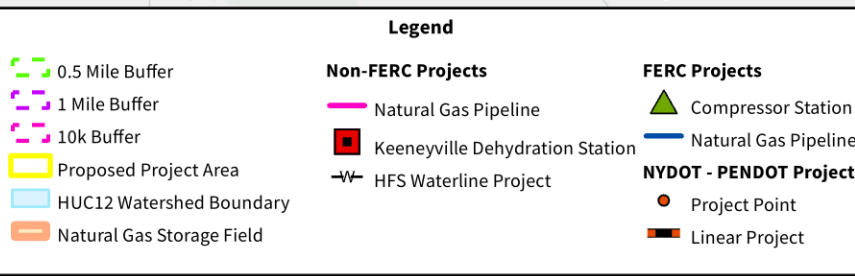
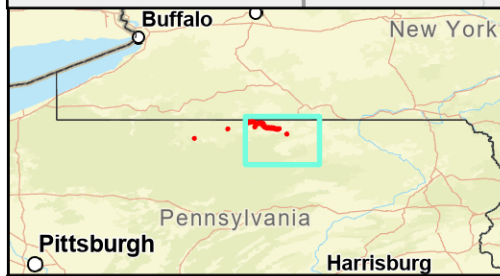
Kilometers

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Tioga Pathway Project

Cumulative Impacts Map

McKean, Potter, and Tioga Counties, Pennsylvania

Sheet 3 of 4

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

