Office of
Energy Projects

March 2024

ANR Pipeline Company **Docket No. CP23-523-000**

Oak Grove Enhancement Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
OFFICE OF ENERGY PROJECTS

In Reply, Refer To:
OEP/DG2E/Gas 3
ANR Pipeline Company
Oak Grove Enhancement Project
Docket No. CP23-523-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Oak Grove Enhancement Project (Project) proposed by ANR Pipeline Company (ANR) in Docket No. CP23-523-000. ANR requests a Certificate of Public Convenience and Necessity pursuant to Section 7(c) and Authorization pursuant to Section 7(b) of the Natural Gas Act to construct, operate, and abandon certain natural gas pipeline facilities in Richland and West Carroll Parishes, Louisiana. The proposed Project would include construction of 34.1 miles of new 30-inch-diameter natural gas pipeline to replace 33.6 miles of existing 30-inch-diameter natural gas pipeline. According to ANR, its project would improve the integrity and reliability of ANR's system by replacing vintage pipeline facilities installed in the 1950's with new pipeline facilities.

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

The Project would consist of the following facilities:

- installation of 34.1 miles of new 30-inch-diameter segment of natural gas pipeline, which will begin at ANR's existing Delhi Compressor Station (CS) in Richland Parish, Louisiana and primarily parallel the existing Line 0-501, 1-501, and 2-501 pipelines before the new segment ties into the existing route just south of State Route 586 in West Carroll Parish, Louisiana.

- Abandonment in place and by removal of 33.6 miles of existing 30-inch-diameter natural gas pipeline, which begins at ANR's existing Delhi CS in Richland Parish and terminates just south of State Route 586 in West Carroll Parish. Approximately one percent (0.25 mile) of the existing Line 0-501 segment would be abandoned by removal, while the remaining existing pipeline segments (totaling 33.35 miles) would be abandoned in place.

- Replacement, modification, and installation of mainline valves and tie-ins at existing ANR aboveground facilities.

The Project would not increase or reduce service to any existing ANR customer and no changes to system capacity are proposed. ANR's Project design would allow the existing segment to remain in operation until the replacement pipeline is placed into service.

The Commission mailed a copy of the *Notice of Availability* of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and a library in the Project area. The EA is only available in electronic format. It may be viewed and downloaded from the 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 the 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, excluding the last three digits (i.e., CP23-523). 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 pm Eastern Time on April 1, 2024.**

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 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 (CP23-523-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Acting 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, Acting Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 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 CFR 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, environmental justice communities, 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.

OAK GROVE ENHANCEMENT PROJECT
ENVIRONMENTAL ASSESSMENT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

TECHNICAL ABBREVIATIONS AND ACRONYMS

APE	area of potential effect
ATWS	additional temporary workspace
ANR	ANR Pipeline Company
BMPs	best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CS	Compressor Station
dB	decibels
dBA	A-weighted decibels
DOT	U.S. Department of Transportation
EA	environmental assessment
ECS	*Environmental Construction Standards*
EI	environmental inspector
EFA	ecological focus area
EO	Executive Order
ESA	Endangered Species Act
fbs	feet below the ground surface
FERC	Federal Energy Regulatory Commission
FEMA	Federal Emergency Management Agency
g	gravity
GHG	greenhouse gases
HAPs	hazardous air pollutants
HCA	high consequence area
HDD	horizontal directional drill
HDD Plan	Plan for Containment of Inadvertent Release of Drilling Mud During Horizontal Directional Drilled Waterbody Crossings
hp	horsepower
IR	inadvertent return of fluids to the ground surface
IWG	The Interagency Working Group
LaDOT	Louisiana Department of Transportation
L_{dn}	day-night sound level
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
L_{eq}	24-hour equivalent sound level
MLV	mainline valve
MOU	Memorandum of Understanding
MP	milepost

TECHNICAL ABBREVIATIONS AND ACRONYMS (continued)

NAAs	nonattainment areas
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969 (as amended)
NGA	Natural Gas Act
NOS	*Notice of Scoping Period Requesting Comments on the Environmental Issues for the Proposed Oak Grove Enhancement Project*
NO_2	nitrous dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conversation Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NWI	National Wetlands Inventory
O3	ozone
OEP	Office of Energy Projects
PAH	polycyclic aromatic hydrocarbon
PCBs	polychlorinated biphenyls
PHMSA	Pipeline and Hazardous Materials Safety Administration
PGA	peak ground acceleration
Plan	FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan*
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
Procedures	FERC's *Wetland and Waterbody Construction and Mitigation Procedures*
Project	Oak Grove Enhancement Project
psig	pounds per square inch gauge
SCC	Social Cost of Carbon
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCC	Spill Prevention, Containment, and Countermeasures
tpy	tons per year
USACE	United States Army Corps. of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGCRP	United States Global Change Research Program
USGS	United States Geological Survey
VOC	volatile organic compound

SECTION A – PROPOSED ACTION

1.0 INTRODUCTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) prepared this environmental assessment (EA) to assess the environmental impacts of the Oak Grove Enhancement Project (Project), proposed by the ANR Pipeline Company (ANR). On August 1, 2023, ANR filed an application with the Commission (Docket No. CP23-523-000) pursuant to Section 7(b) and 7(c) of the Natural Gas Act (NGA), as amended, and Part 157 of the Commission's regulations. ANR is seeking authorization to replace approximately 33 miles of its existing 30-inch diameter natural gas pipeline Line 0-501 with new 30-inch diameter natural gas pipeline in Richland and West Carroll Parishes, Louisiana. According to ANR, its Project would improve the integrity and reliability of ANR's system by replacing vintage pipeline facilities installed in the 1950's with new pipeline facilities.

We prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA),[1] the Council on Environmental Quality (CEQ) regulations for implementing NEPA[2], and the Commission's implementing regulations.[3]

The assessment of environmental impacts is an integral part of the Commission's decision-making process on whether to issue ANR a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed facilities under Section 7(c) of the NGA, and to abandon facilities under section 7(b) of the NGA. We prepared this EA to assess the environmental impacts that would likely occur as a result of abandonment, construction, and operation of the Project. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from the implementation of the proposed action;
- identify and recommend 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 PROJECT PURPOSE AND NEED

ANR's stated purpose of the Project is to improve the integrity and reliability of ANR's system by replacing vintage pipeline facilities installed in the 1950's with new, more modern pipeline facilities. The segment of Line 0-501 proposed for abandonment contains a high concentration of external corrosion. ANR has determined that abandoning and replacing this section of Line 0-501 is necessary to continue to provide safe and reliable service to its existing

[1] National Environmental Policy Act of 1969, 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).

[2] 40 CFR Parts 1500-1508.

[3] 18 CFR Part 380.

customers. The proposed Line 0-501 would have the same pipeline diameter and maximum allowable operating pressure as the existing segment and would provide no new transportation capacity.

Under Section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation and/or storage facilities are in the public convenience and necessity and, if so, grants a 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 would not negatively affect the present or future public convenience or necessity. The Commission bases its decisions on economic issues, including need, and environmental impacts.

3.0 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

The topics addressed in section B of this EA include geology; soils; water resources; vegetation, wildlife, and special status species; land use and visual resources; cultural resources; environmental justice; air quality and noise; reliability and safety; and cumulative effects, including climate change. The EA also assesses alternatives to the proposed action (see section C). The EA describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, identifies measures proposed by ANR to reduce impacts, and presents our additional recommended mitigation measures, which are summarized in section D.

As the lead federal agency for the Project, FERC is required to comply with Section 7 of the Endangered Species Act (ESA), as amended, Section 106 of the National Historic Preservation Act, and Coastal Zone Management Act (CZMA). These statutes have been considered in the preparation of this EA. 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. Permits, approvals, and regulatory consultations for the Project are discussed in section A.10.

4.0 PUBLIC REVIEW AND COMMENT

On August 23, 2023, FERC issued a *Notice of Scoping Period Requesting Comments on Environmental Issues for the Proposed Oak Grove Enhancement Project* (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. In response to the NOS, we received recommendations from one state agency, the Louisiana Department of Wildlife and Fisheries (LDWF). We also received a response for Choctaw Nation of Oklahoma. We did not receive any comments from landowners.

This EA addresses the potential environmental impacts of the Project as proposed by ANR and concerns identified in response to the NOS and presents our independent review of the environmental issues. The comments received that are within the scope of the environmental analysis are addressed in this EA.

5.0 PROPOSED FACILITIES

The Oak Grove Enhancement Project would consist of the following facilities:

- Installation of 34.1 miles of new 30-inch-diameter segment of natural gas pipeline, which would begin at ANR's existing Delhi Compressor Station (CS) in Richland Parish, Louisiana and primarily parallel the existing Line 0-501, 1-501, and 2-501 pipelines before the new segment ties into the existing route just south of State Route 586 in West Carroll Parish, Louisiana at the terminus of the existing Line 0-501 segment to be abandoned.

- Abandonment in place and by removal of 33.6 miles of existing 30-inch-diameter natural gas pipeline, which begins at ANR's existing Delhi CS in Richland Parish and terminates just south of State Route 586 in West Carroll Parish. Approximately one percent (0.25 mile) of the existing Line 0-501 segment would be abandoned by removal, while the remaining existing pipeline segments (totaling 33.35 miles) would be abandoned in place.

- Replacement of one mainline valve (MLV), modification of an existing MLV, and five tie-ins to existing facilities, at existing ANR aboveground facilities.

The Oak Grove Enhancement Project would not increase or reduce service to any existing ANR customer and no changes to system capacity are proposed. ANR's Project design would allow the existing segment to remain in operation until the replacement pipeline is placed into service. The general location of the Project is shown in figure A.5-1.

6.0 LAND REQUIREMENTS

The Project would require the use of a total of about 688.6 acres of land during construction, which is inclusive of 170.3 acres that would be utilized during operation. Table A.6-1 provides a summary of land requirements for the Project.

Pipeline Right-of-way

Construction of the new 30-inch Line 0-501 would require a typical construction right-of-way width of 110 feet in uplands and 75 feet through wetlands. In areas where the new Line 0-501 would be co-located with the existing Lines 0-501, 1-501, and/or 2-501 pipelines, the construction right-of-way would be split into a 90-foot working side and a 20-foot spoil side (55 feet and 20 feet in wetlands, respectively). Primarily, a 40-foot permanent right-of-way, including 25 feet of new permanent right-of-way and 15 feet of existing permanent right-of-way, would be maintained where the proposed Line 0-501 is co-located with the existing system. Along greenfield segments of the new Line 0-501, the construction right-of-way would be split into an 80-foot working side and a 30-foot spoil side (55 feet and 20 feet in wetlands, respectively) and a 50-foot permanent right-of-way.

Figure A.5-1 Project Overview Map

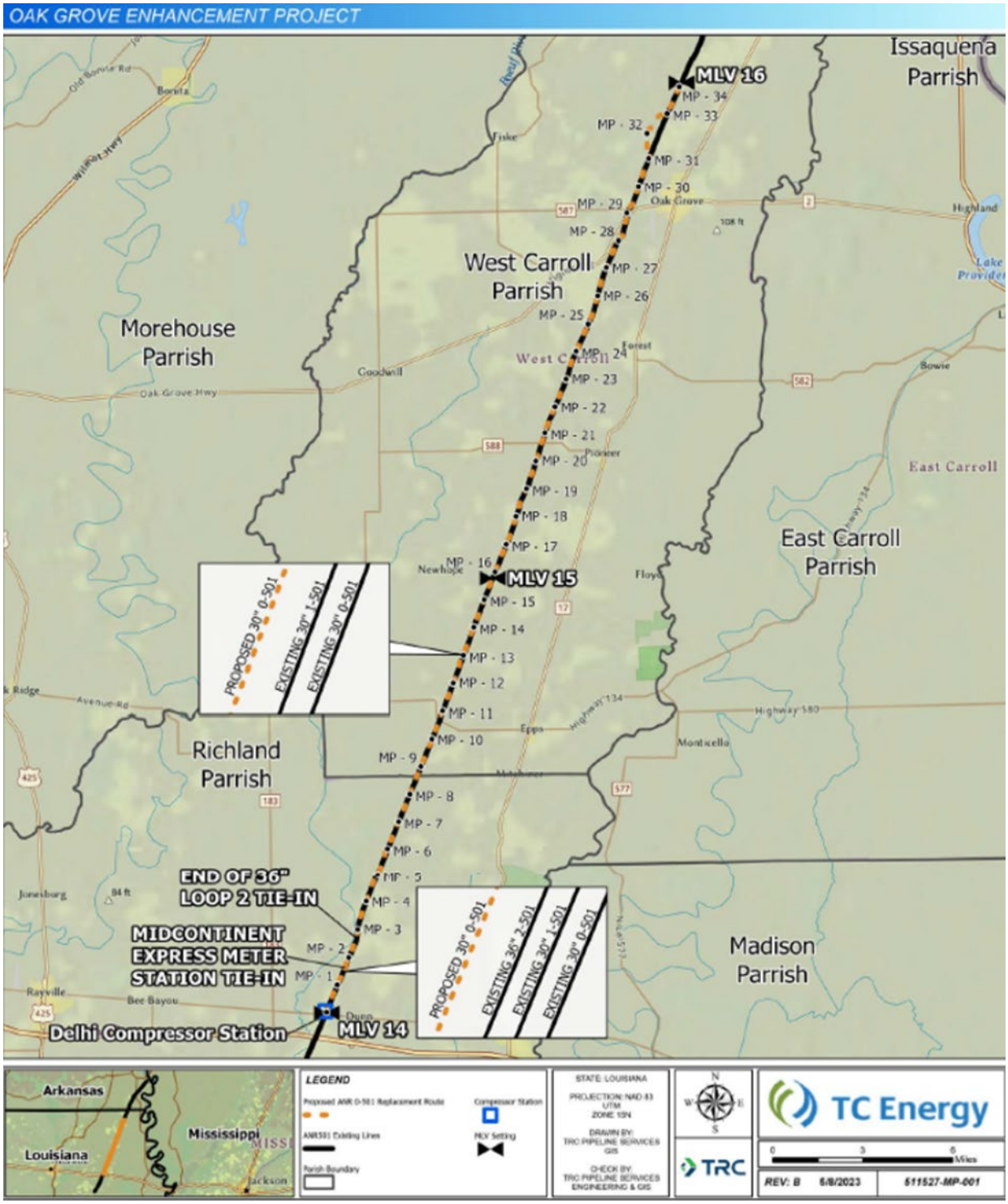

Table A.6-1 Summary of Land Requirements Associated with the Project		
Facility	**Land Affected During Construction (acres) [a]**	**Land Affected During Operation (acres) [b]**
Pipeline Facilities		
Line 0-501 Right-of-Way [c]	443.7	169.7
Line 0-501 Additional Temporary Workspace	45.1	0.00
Existing Line 0-501 Abandonment Temporary Workspace	14.8	0.00
Access Road	17.3	0.00
Contractor/Staging/Pipe Yards	143.1	0.00
Pipeline Facilities Subtotal	**663.8**	**169.7**
Aboveground Facilities		
Delhi compressor Station	19.2	0.00
Midcontinent Express Meter Station	1.9	0.0
End of 36-inch Loop # 2	0.60	0.0
Mainline Valve 15	0.6	0.1
Mainline Valve 16	0.4	0.10
Access Roads	2.0	0.4
Aboveground Facilities Subtotal	**24.7**	**0.6**
Project Total	**688.6**	**170.3**

Note: The sum of the addends may not equal the totals in all cases due to rounding.

[a] Land affected during construction is inclusive of operational impacts (permanent).
[b] Land affected during operation consists only of operational areas associated with the permanent easement and permanent access roads, as well as new permanent impacts at the expanded aboveground facilities.
[c] The acreage presented is partially inclusive of ANR's existing easements (i.e. Lines 0-501, 1-501, and 2-501), which would be utilized for the new Line 0-501, as well as the proposed easement.

As shown in Table A.6-1, the total acreage of land that would be affected by construction of the new Line 0-501 (not including additional temporary workspaces (ATWS), contractor/staging/pipe years, and access roads) is 443.7 acres. However, in order to minimize the Project footprint, ANR has proposed to co-locate about 31.1 miles (approximately 91 percent) of the new Line 0-501 within or adjacent to an existing corridor. A 110-foot-wide construction right-of-way is required for the construction of Line 0-501 for spoil storage and a full right-of-way topsoil segregation in agricultural lands and residential areas.

Following construction, a primarily 40-foot-wide permanent right-of-way where the proposed Line 0-501 is co-located with the existing system and a 50-foot-wide permanent right-of-way where the proposed Line 0-501 deviates from the existing system corridor would be near-center or centered on the Line 0-501.

In upland areas, to facilitate periodic corrosion/leak surveys ANR would maintain as needed a 10-foot-wide cleared area centered over the pipeline. ANR would maintain a 10-foot-wide cleared permanent right-of-way through wetlands in accordance with the *FERC's Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures). All areas disturbed by construction that are not part of the permanent right-of-way for the new pipeline would be

restored to approximate pre-construction conditions following the completion of construction activities.

Pipeline Abandonment

In addition to construction of the new Line 0-501, ANR proposes to abandon the exiting Line 0-501 via in-place abandonment and localized removal. As shown in Table A.6-1, the total acreage of land that would be affected exclusively by abandonment of the existing Line 0-501 (not including ATWS, contractor/staging/pipe years, and access roads) is about 14.8 acres. Pipeline abandonment activities associated with the existing Line 0-501 would primarily occur within ANR's existing, previously disturbed right-of-way.

Additional Temporary Workspace

As indicated in Table A.6-1, additional temporary workspace needed for the Project would total about 45.1 acres. ANR would utilize ATWS outside of its construction right-of-way where site-specific conditions warrant the use of specialized construction procedures to allow for the safe operation and staging of equipment and materials for installation of the pipeline. ATWS would be required for road, wetland, waterbody, pipeline, and utility line crossings, and certain areas where topsoil segregation is required. In addition, ATWS would be required at several locations along the existing pipeline where abandonment and removal or relocation of existing auxiliary facilities are proposed to occur.

Contractor/Staging/Pipe Yards

ANR has identified a total of 12 contractor/staging/pipe yards (e.g., 7 contractor yards and 5 staging yards) in their application to facilitate construction of the Project. These yards would be located at various points along the length of the Project at locations with convenient and safe access to the Project area. The total acreage of the 7 contractor yards and 5 staging yards identified are about 143.0 acres. All areas used for contractor/staging/pipe yards throughout the Project would be restored to approximate pre-construction conditions upon Project completion unless otherwise agreed upon with the landowner and submitted to FERC for review and approval. Below is table of the contractor yards and staging yards in table A.6-2.

Access Roads

A total of 33 access roads, requiring 19.3 acres, would be used during construction and operation of the Project. ANR would use 29 temporary access road (TARs) and 4 permanent access roads (PARs) for the Project. The four permanent access roads would total 0.36 acres. As indicated in Table A.6-1, twenty-nine of the temporary access roads would be used during the pipeline construction (17.3 acres) and for aboveground facilities (2.0 acres). These access roads would impact various lands including agricultural, residential, forest, industrial, and wetlands. Appendix 10 identifies the location of the TARs and PARs by land use.

Table A.6-2 Summary of Contractor/Staging pipe Yards for the Project				
Name	Parish	Proposed Use	Current Land Use	Size (acres)
Contractor Yard 002	Richland	Construction trailer, pipe storage, and equipment storage	Industrial, Open Land	10.8
Contractor Yard 003	West Carroll	Construction trailer, pipe storage, and equipment storage	Agricultural	27.9
Contractor Yard 004	West Carroll	Construction trailer, pipe storage, and equipment storage	Agricultural	16.4
Contractor Yard 005	West Carroll	Construction trailer, pipe storage, and equipment storage	Open Land, Forest	15.7
Contractor Yard 006	West Carroll	Construction trailer, pipe storage, and equipment storage	Open Land, Forest	19.1
Contractor Yard 007	West Carroll	Construction trailer, pipe storage, and equipment storage	Industrial, Open Land	6.9
Contractor Yard 008	West Carroll	Facility/Pipeline workspace construction	Open land, Forest	31.3
Staging Area 001	Richland	Equipment unload/storage, hydrotest storage tank, and parking	Agricultural, Industrial	2.6
Staging Area 002	Richland	Equipment storage and parking	Agricultural	3.1
Staging Area 003	West Carroll	Equipment Storage and parking	Open Land, Industrial	1.2
Staging Area 004	West Carroll	Pipe storage and hydrostatic test water discharge	Agricultural	3.8
Staging Area 005	West Carroll	Equipment load/unload and storage	Agricultural	4.3
Total				143.1
Note: although some contractor/staging/pipe yards appear to impact wetland and/or open water features, these features would be avoided during Project construction.				

Aboveground Facilities

The total acreage of land that would be affected by construction of the aboveground facilities is 24.7 acres, which is inclusive of 0.61 for acres that would be used during operation. A total of 19.2 acres, 1.9 acres, and 0.60 acre would be required for construction of the tie-ins at the existing Delhi CS, Midcontinent Express Meter Station, and End of 36-inch Loop # 2. All construction activities at the Delhi CS would occur within the existing fence line and would not result in any new permanent impacts. Table A.6-1 shows the breakdown in acres for each facility.

7.0 CONSTRUCTION AND ABANDONMENT SCHEDULE

ANR plans to commence construction pending receipt of all necessary authorizations and permits. ANR anticipates mobilization for contractor/staging/pipe yards and land clearing to begin by January 2025. Start of construction for the new Line 0-0501 is anticipated to begin by March 2025 which would allow ANR to meet its target in-service date of November 2025. Abandonment activities of the existing Line 0-501 would begin following the new Line 0-501 being placed into service and abandonment activities are anticipated to be complete by April 2026.

Construction of the proposed Project would occur in stages, from initial surveying and staking to testing and restoration. ANR currently anticipates that construction activities would occur primarily Monday through Saturday for 10 hours a day, and between the hours of 7:00 AM and 7:00 PM. In order to address the potential for delays associated with weather, site conditions, specialized construction techniques, emergencies, or other atypical circumstances, ANR may need to conduct construction activities on Sundays, federal holidays and/or between the hours of 7:00 PM and 7:00 AM. We discuss nighttime construction further, in section B.8 of this EA.

8.0 CONSTRUCTION, OPERATION, AND MAINTENANCE PROCEDURES

The Project would be designed, constructed, operated, and maintained in accordance with the U.S. Department of Transportation (DOT) regulations in 49 CFR 192 *Transportation of Natural and Other Gas by Pipeline: Minimum Safety Standards*, FERC's siting and maintenance requirements at 18 CFR 380.15, and other applicable federal and state regulations.

ANR would implement FERC's *Upland Erosion Control, Revegetation and Maintenance Plan* (Plan), and the FERC Procedures[4] for the Project, with some requested site-specific deviations (see Appendix 1).

In order to minimize potential environmental impacts, ANR has developed the following Project-specific construction plans,[5] which we have reviewed and find acceptable:

- Spill Prevention, Countermeasures, and Control Plan (SPCC Plan);
- Plan for the Unanticipated Discovery of Contaminated Environmental Media;
- Plan for the Unanticipated Discovery of Historic Properties or Human Remains During Construction; and
- Fugitive Dust Control Plan

ANR would employ at least one environmental inspector (EI) to oversee and document environmental compliance at all proposed facilities for the Project and prepare regular construction status reports throughout construction. The EI(s) would report directly to ANR's Environmental Compliance Manager and coordinate with the Chief Inspector and would have stop-work authority.

[4] The FERC Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. They can be viewed on the FERC Internet website at: http://www.ferc.gov/industries/gas/enviro/plan.pdf and http://www.ferc.gov/industries/gas/enviro/procedures.pdf

[5] Project-specific construction plans are available on the Project docket in FERC's eLibrary, under accession no. 20230801-5106.

FERC staff would also maintain compliance oversight of the Project throughout construction and restoration.

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

ANR would operate and maintain the newly constructed Project facilities in the same manner as it currently operates and maintains its existing system and in accordance with the requirements of FERC and DOT's regulations.

Conventional Pipeline Construction

Conventional open-cut pipeline construction techniques would be used for the majority of the proposed Project. This typically consists of a sequential process of surveying and marking, clearing, grading, trenching, pipe stringing and bending, welding, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration.

Following construction, ANR would restore disturbed areas as close as possible to their original contours, and disturbed areas would be stabilized and revegetated. Permanent erosion and sediment controls would be installed, and revegetation measures would be implemented according to the FERC Plan and Procedures, landowner requests, and Project-specific plans.

Specialized Pipeline Construction

In addition to conventional pipeline construction techniques, specialized construction techniques would be utilized in sensitive resource areas including waterbody crossings, wetland crossings, residential areas, agricultural areas, road crossings, and areas requiring reduced workspace. Specialized construction procedures are described below.

Construction methods utilized at waterbody crossings are highly dependent on the characteristics of the waterbody encountered at the time of construction. Waterbody crossing methods anticipated to be used during construction of the Project include conventional open cut and conventional bore. The proposed construction method for each waterbody crossed by the Project is identified in Appendix 3.

Project pipeline would cross areas characterized as agricultural land. In these areas, ANR would implement the FERC Plan during construction and restoration. During construction activities, to prevent the mixing of topsoil with subsoil; the topsoil from actively cultivated and rotated cropland and improved pasture would be stripped from the Project temporary workspaces and segregated from the subsoil in accordance with the FERC
Plan.

Construction activities in residential areas would be completed as quickly and safely as practicable to minimize disturbances to residents. ANR would make all reasonable efforts to maintain access to the residences during construction; however, if access is temporarily impeded, ANR would coordinate with landowners to minimize the disturbance.

Pipeline Abandonment and Removal Procedures

Approximately 1 percent (0.25 mile) of the existing Line 0-501 segment would be abandoned by removal, while the remaining existing pipeline segments (totaling about 33.4 miles) would be abandoned in place. ANR would remove a segment of the existing Line 0-501 where it is exposed in a waterbody. Table A.8-1 provides a summary of the existing Line 0-051 segments which ANR would abandon by removal. Additionally, ANR would remove short portions of the existing pipeline adjacent to permitted road crossings to facilitate filling the pipeline beneath the road with grout.

ANR anticipates submitting their permit package detailing the abandonment activities occurring within the Louisiana Department of Transportation's (LaDOT's) right-of-way in August 2024. The permit package would depict where the pipeline would cross the LaDOT's right-of-way and where the pipeline would be cut, capped, and grouted. ANR anticipates approval of the permit package by October 2024. No further approval is needed from LaDOT for the Project abandonment activities.

Activities associated with the localized segments of pipeline abandonment by removal would include excavating the trench over the existing pipeline, cutting the existing pipe into segments, lifting the pipe out of the trench, and transporting the pipe to an authorized facility in accordance with applicable federal and state regulations.

Table A.8-1
Existing Pipeline Segments Identified for Removal

Existing Line 0-501 Segment	Reason for Removal	Existing Milepost			Length (linear Feet)
		Begin	End		
MLV 14 to 15: Pipe Removal 1	Waterbody Exposure	155.29	155.30		55
MLV 15 to 16: Pipe Removal 1	Cathodic Protection Disruption Prevention	176.37	176.46		476
MLV 15 to 16: Pipe Removal 2	Cathodic Protection Disruption Prevention	179.38	179.44		324
MLV 15 to 16: Pipe Removal 3	Cathodic Protection Disruption Prevention	184.08	184.17		479
Total					**1,334**

Prior to abandoning in place or localized removal, the existing Line 0-501 would be cleaned with a pig tool[6] to remove any residual materials. Containment would be placed under the door of the pig receiver to capture the foreign material, and a collected materials would be disposed of at an approved facility.

[6] Pipeline pigging allows the removal of debris, sediment, or other buildups from the pipeline's interior walls using a specialized device called a "pig".

Most of the existing Line 0-501 would be abandoned in place by cutting and capping the pipe with weld caps or steel plates and filled with grout, including areas of existing pipeline beneath permitted road crossings. Following pipe removal, the excavated trench would be backfilled with the previously excavated native material, approximate pre-construction contours would be restored, and disturbed areas, except annual cropland, would be seeded with a perennial seed mix. If additional backfill material is required to achieve pre-construction contours, ANR would obtain suitable clean fill material from offsite sources and would temporarily store this material within the proposed contractor/staging/pipe yards, and/or other proposed temporary workspaces. In areas where topsoil segregation is required, the native topsoil would be spread over the imported subsoil.

All removed piping and other materials would be stored or disposed of by the contractor at authorized facilities in accordance with all federal, state, and local regulations.

Aboveground Facility Construction Procedures

Construction of the new tie-ins and MLVs at the existing ANR aboveground facilities would be concurrent with the replacement of the existing Line 0-501. Landowner notification, surveying, and staking of the Project areas associated with the Project aboveground facilities would be conducted using the same general procedures described above for the pipeline facilities.

9.0 NON-JURISDICTIONAL FACILITIES

Non-jurisdictional facilities are those facilities related to the Project that are constructed, owned, and operated by others that are not subject to FERC jurisdiction. At this time, non-jurisdictional facilities necessary to operate the Project are anticipated to include two new overhead electric lines, with four supporting poles. Impacts associated with these electric lines are described in Section B.10, Cumulative Effects.

10.0 PERMITS, APPROVALS, AND REGULATORY CONSULTATIONS

Federal, state, and local permits, authorizations, or clearances, as applicable, for the construction of the Project is identified in table A.10-1 below. ANR is responsible for obtaining all permits and approvals required to construct and operate its Project, regardless of whether they appear in the below table.

Table A.10-1

Applicable Permits, Licenses, Authorizations, and Clearances for the Project

Agency	Permit/Clearance/Approval	Submittal Date	Receipt Date (anticipated)
Federal			
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity	August 1, 2023	Pending
U.S. Army Corps of Engineers – Vicksburg District	Clean Water Act, Section 404 (Nationwide Permit 12)	August 1, 2023	(March 2024)

Table A.10-1			
Applicable Permits, Licenses, Authorizations, and Clearances for the Project			
Agency	**Permit/Clearance/Approval**	**Submittal Date**	**Receipt Date (anticipated)**
U.S. Fish and Wildlife Service – Louisiana Ecological Service Field Office	Endangered Species Act, Section 7 Consultation; Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act	August 1, 2023	January 9, 2024
Natural Resources Conservation Service	Compatible Use Permits	January 22, 2024	February 1, 2024
State			
Louisiana Department of Environmental Quality	Clean Water Act Section 401 Water Quality Certification	August 1, 2023	(March 2024)
Louisiana Department of Wildlife and Fisheries	Threatened and Endangered Species Consultation/Clearance	August 1, 2023	September 18, 2023
Louisiana Office of Cultural Development Division of Historic Preservation	National Historic Preservation Act Section 106 Consultation	May 24, 2023	January 24, 2024
Louisiana Department of Transportation	Review and approval of a permit package detailing the abandonment activities within the right-of-way at LaDOT crossing.	(August 2024)	(October 2024)

SECTION B – ENVIRONMENTAL ANALYSIS

1.0 GEOLOGY

The Project would be located within the Mississippi Alluvial Plain section of the Coastal Plain physiographic province (U.S. Geological Survey [USGS], 2008; National Park Service, 2017). The Mississippi Alluvial Plain section consists of Holocene to Pleistocene age deposits. It is characterized as a low flood plain delta that was created by sedimentary deposits within thick sandy channels that are separated by muddy or muddy-sandy deposits terminating at the lower Mississippi River. In southern Louisiana, the distribution of sediment has created a delta that extends east to southeast over clayey sediments in the Gulf of Mexico (USGS, 2016a). ANR states that based on Google Earth data accessed in February 2023, elevations within the Project area range from 81 to 120 feet above mean sea level. Subsurface geology within this section consists of Holocene age alluvial clay with local sand and gravel, and Pleistocene age braided stream terraces comprised of fine to coarse sand, clay silt, and gravel (USGS, 2023a).

The Project does not cross soils with shallow bedrock (Natural Resources Conservation Service [NRCS], 2023); therefore, blasting is currently not proposed for the Project. ANR plans to break apart large stones or bedrock using mechanical rock trenching methods such as excavation

with a backhoe, rock hammering, or ripping. In the event that blasting becomes necessary, ANR would coordinate with local authorities, conduct appropriate blasting surveys, develop a Project-specific blasting plan in accordance with local, state, and federal regulations, notify all appropriate entities, and obtain any required permits prior to blasting. As blasting is not anticipated, and ANR would coordinate with the appropriate entities if blasting were determined to be necessary, we conclude that the Project area would not be significantly affected by blasting.

Mineral and Paleontological Resources

There are no active or historic quarries, mines, or mine spoil areas located within one mile of the Project area (USGS, 2023b; 2023c; 2003). ANR identified one well associated with oil and gas activities within 0.25 mile of Project workspaces, approximately 0.04 mile southeast of milepost 5.49 (LDNR, 2023). In the event an additional oil or gas well is identified within the Project workspaces prior to or during construction, mitigation measures for avoiding impacts on the well would be implemented, workspaces would be adjusted, and FERC would review and approve or disapprove any needed workspace modifications.

Geologic Hazards

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people.

Seismicity, Surficial Faults, and Soil Liquefaction

Seismic hazards include ground shaking due to earthquakes, surface faulting, and soil liquefaction, a phenomenon in which saturated, unconsolidated, granular material loses cohesive strength due to strong, prolonged shaking. Portions of the Project area may exhibit soil and shallow groundwater conditions that are necessary for liquefaction to occur. However, as discussed below, due to the low potential for strong and prolonged ground shaking in the region, the potential for soil liquefaction to occur is also low. Furthermore, there have been no modern occurrences of soil liquefaction due to earthquake shaking documented in the Project area (NRCS, 2023a).

Louisiana is not considered a seismically active region, although occasionally low-magnitude earthquakes have occurred (Stevenson and McCulloh, 2001; USGS, 2014). Regions with high magnitude and frequency of earthquakes are generally associated with major faults along tectonic plate boundaries; Louisiana and Texas are in the middle of the North American plate and, thus, earthquakes in the region are associated with smaller fault systems (Stevenson and McCulloh, 2001; USGS, 2019). Displacement of the earth's surface along a fault line during an earthquake is extremely rare in Louisiana.

USGS National Seismic Hazard Probability Mapping shows that for the Project area, within a 50-year period, there is a 10 percent probability of an earthquake with an effective PGA of 2 to 4 percent g being exceeded (USGS, 2015). For reference, a PGA of 10 percent g (0.1g) is generally considered the minimum threshold for damage to older structures or structures not constructed to resist earthquakes.

Ground subsidence, involving the localized or regional lowering of the ground surface, may be caused by karst dissolution, sediment compaction due to oil, natural gas, and/or groundwater extraction, and underground mines. No karst terrain is present and the lithology that could lead to bedrock dissolution and karst development do not generally occur within the Project area. Further, subsurface mines were not identified within one mile of any Project area. There would be no adverse impacts from regional subsidence cause by fluid extraction (e.g., groundwater, oil, natural gas), should it occur, given the scope of the Project.

2.0 SOILS

Soil characteristics for the Project were assessed using the NRCS Soil Survey geographic database (NRCS, 2023). We evaluated the soil types and characteristics of the soils that would be crossed by the Project to identify potential impacts from Project construction and restoration. Soil characteristics present in the Project workspaces include highly erodible soils, hydric soils, soils with high compaction potential, soils with poor revegetation potential, and prime farmland. Additionally, we evaluated the potential for soil contamination. No Project area soils were classified as having a shallow depth to bedrock (bedrock within 60 inches of the ground surface). The major soil limitations crossed by the Project are depicted in Appendix 7C of Resource Report 7 in ANR's application.[7]

A total of 696.4 acres (approximately 99% of the Project area) of prime farmland and farmland of statewide importance would be impacted during construction of the Project. However, only 0.72 acre would be permanently encumbered by the Project. While the Project would cross and disturb soils classified as prime farmland and farmland of statewide importance, this disturbance would be temporary and minor. While use of drain tiles is uncommon in the Project area, and no impacts on drain tiles are anticipated, if drain tiles or irrigation systems are damaged as a result of construction, they would be repaired or replaced in coordination with the affected landowner.

Restoration of impacted agricultural areas, including segregated topsoil replacement, stone removal, and final stabilization methods would be conducted in accordance ANR's ECS, which incorporates the FERC Plan, and following consultation and recommendations of appropriate agencies and landowners. Active pastureland would be protected during construction with a combination of temporary fencing; alternative construction corridor livestock crossing locations, as needed; and grazing deferment plans, as negotiated with the landowner. ANR stated it would negotiate with landowners and agricultural producers regarding compensation for Project-related damages and/or loss of agricultural production.[8]

To reduce and minimize other impacts on soil resources, ANR would implement measures detailed in its ECS which incorporates the FERC Plan. These measures include minimizing the quantity and duration of soil exposure; protecting critical areas during construction by redirecting and reducing the velocity of runoff; installing and maintaining erosion and sediment control measures during construction; reestablishing vegetation as soon as possible following final grading; and inspecting and maintaining erosion and sedimentation controls as necessary until final stabilization is achieved. ANR would also implement measures for proper handling of saturated

[7] FERC eLibrary accession no. 20230801-5106.

[8] We note the Commission does not have the authority to adjudicate disputes regarding compensation.

wetland soils as outlined in the FERC Procedures and would implement measures to reduce potential soil compaction and revegetate disturbed upland areas with seed mixes developed in coordination with landowners and the NRCS.

ANR reviewed the U.S. Environmental Protection Agency (USEPA) and Louisiana Department of Environmental Quality (LDEQ) databases to identify potential current or historic areas of contamination. Based on this review no known contaminated sites were identified within 0.5 mile of the Project workspace (USEPA, 2022a, 2022b; LDEQ, 2022, 2020b). In the event contaminated soils are encountered, ANR would implement its *Plan for the Unanticipated Discovery of Contaminated Environmental Media*. We have reviewed this plan and found it adequate.

Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely affect soils. ANR's SPCC Plan (included in the ECS) specifies measures to prevent contamination from accidental spills or leaks of fuels, and lubricants, as well as cleanup procedures in the event of inadvertent spills during Project construction. Given the minimization and mitigation measures described above and the scope of the Project, we conclude that Project activities would not significantly impact soils.

3.0 WATER RESOURCES

Groundwater Resources

The USEPA defines a sole source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer where there are no reasonably available alternative drinking water sources, should the aquifer become contaminated. No sole source aquifers are in the Project area (USEPA, 2023a).

The primary freshwater-bearing aquifer in the Project vicinity is the Mississippi River Valley alluvial aquifer (USGS, 2003). The Mississippi River alluvial aquifer grades from gravel and coarse sand near the base to fine sand, silt, and clay at the land surface.

Public and Private Water Supply Wells and Springs

There are two public water supply wells approximately 370-390 feet from contractor yard CY-007. There are forty-five private water supply wells within 150 feet of the Project area, of which four are abandoned. Nineteen of the total wells would be within Project construction workspaces or construction yards. Based on field surveys of the Project area, discussions with landowners, and/or review of the USGS National Water Information System tool, no active or inactive springs would be within 150 feet of any Project component (USGS, 2020).

The LDEQ established the Source Water Assessment Program, Louisiana Wellhead Protection Program, and Drinking Water Protection Program to delineate source water protection areas around public water supplies (inclusive of both groundwater and surface water supplies) to protect drinking water supplies from contamination (LDEQ, 2011). The LDEQ defines a source water protection area as "the zone through which contaminants, if present, are likely to migrate and reach a drinking water well or surface water intake" (LDEQ, 2011). For groundwater resources,

drinking water protection area includes the surface and subsurface areas surrounding public water supply wells (LDEQ, 2011). While no public water supply wells are within the Project workspaces, the Project crosses through five wellhead protection areas.

Groundwater Contamination

Project activities would not intersect areas of known groundwater contamination (USEPA, 2022a, 2022b; LDEQ, 2022, 2020b). In the event contaminated groundwater is encountered, ANR would implement its *Plan for the Unanticipated Discovery of Contaminated Environmental Media*.

Groundwater Impacts and Mitigation

Construction activities associated with the Project that have the potential to impact groundwater include shallow excavations, dewatering, and potential spills or leaks of hazardous materials. Clearing, grading, trenching, and soil stockpiling activities within the right-of-way may cause fluctuations in local groundwater levels or increased turbidity due to erosion and sediment runoff, especially where shallow aquifers exist. Groundwater could be encountered during pipeline trenching; however, ANR would conduct trench dewatering by implementing the measures in its ECS and applicable federal, state, and local permits. Construction associated with the Project would result in minor increases of impervious area but is unlikely to affect infiltration rates beyond facility limits.

ANR would determine an appropriate buffer and construction procedure around wells within Project workspaces based on site-specific conditions and coordination with the owner of the well. Additionally, ANR would implement additional measures to reduce the likelihood of impacts to groundwater wells such as flagging wells within the construction workspace or reducing the construction workspace, if necessary, to keep a safe buffer between stockpiled spoil and equipment and wells within Project workspaces. ANR would offer pre- and post-construction monitoring for well yield and water quality for any public or private wells within 150 feet of the construction workspaces, with landowner permission. If the Project does affect private or public well quality or yield, ANR would provide alternative water sources or offer compensation to the well owner. If the Project adversely affects a groundwater supply, ANR would work with the landowner to resolve the damaged supply through compensation, repair, or replacement.

Soils along the Project may become compacted due to the operation of heavy machinery which could reduce infiltration and the recharge of groundwater along the right-of-way. However, these potential impacts would be minimized by ANR's commitment to implement the measures identified in the FERC Plan, which includes testing for and mitigating compacted soils.

Dewatering of the pipeline trench would be necessary if shallow groundwater is encountered within the excavation zone. The water pumped from the excavation would be discharged in accordance with the FERC Procedures that stipulates the trench water to be discharged to well-vegetated areas or into properly constructed temporary retention structures that would promote infiltration and minimize or eliminate runoff.

Accidental spills of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up properly. Spill-related impacts

would be minimized by implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedure, ensuring equipment is in good operating condition and regularly inspecting equipment.

The Project's impacts on groundwater resources would be temporary and minor due to the limited vertical extent of excavations and other ground disturbances and the relatively short duration of construction. Additionally, ANR's commitment to offer pre- and post-construction monitoring of wells and implement the best management practices (BMPs) in its ECS and the Project-specific SPCC Plan would mitigate potential impacts on groundwater resources. We therefore conclude that impacts on groundwater would be temporary and less than significant.

Surface Water Resources

The Project is located in the watersheds for Big Colewa Creek, Little Creek, Congo Creek, and Tiger Bayou. Specifically, the Project is situated across seven U.S. Geological Survey Hydrologic Unit Code (HUC) 12 sub-watersheds shown in table B.4-1 below. Waterbody and wetland delineation surveys were completed in October and December 2022 and in January and April 2023 for the Project, except between milepost 31.49 and 32.01 due to lack of access.

Table B.3-1. Hydrologic Unit Code (HUC) 12 sub-watersheds crossed by the Project

Watershed name	HUC-12 code	Pipeline milepost / Facility
Tiger Bayou	080500010701	MP 33.66 – 34.14 TAR-33.59; TAR-34.13; TAR-34.14 PAR-34.14 MLV-16 CY-005, CY-006 SA-005
Upper Big Colewa Bayou	080500010901	MP 28.74 – 33.66 TAR-28.87; TAR-30.71; TAR-31.30; TAR-33.59 CY-008 SA-003; SA-004; SA-005
Indian Bayou – Hurricane Creek	080500010902	MP 17.85 – 28.74 TAR-17.80; TAR-18.59; TAR-21.10; TAR-24.27; TAR-24.60; TAR-25.19; TAR-26.08; TAR-27.68 CY-003; CY-004; CY-007
Little Colewa Creek	080500010904	MP 6.40 – 7.89; MP 9.29 – 10.87 TAR-7.42; TAR-10.56; TAR-10.76
Little Creek	080500011001	MP3.27 – 6.40; MP7.89 – 9.29; MP 10.87 – 17.85 TAR-4.55; TAR-5.71; TAR-7.42; TAR-12.79; TAR-13.91; TAR-16.68; TAR-17.40; TAR-17.80 PAR-15.75; PAR-15.76 MLV-15
Congo Creek – Big Creek	080500011002	MP0.00 – 3.27 Delhi Compressor Station Midcontinent Express Meter Station End of 36-inch Loop #2 TAR-0.00; TAR-0.02; TAR-0.19; TAR-1.60; TAR-1.61; TAR-2.60 PAR-1.60 CY-002 SA-001; SA-002

Table B.3-1. Hydrologic Unit Code (HUC) 12 sub-watersheds crossed by the Project		
Watershed name	**HUC-12 code**	**Pipeline milepost / Facility**
Alligator Bayou	080500020503	CY-008
MP = milepost; TAR = temporary access road; PAR = permanent access road; CY = contractor yard; SA = staging area		

The Project would cross 12 perennial, 16 intermittent, and 28 ephemeral waterbodies (Appendix 3). Of these waterbodies, 10 would be crossed in Richland Parish and 46 in West Carroll Parish. None of the Project's proposed modifications for aboveground facilities or staging areas would cross waterbodies.

None of the waterbodies crossed by the Project are considered as major by the FERC Procedures; the Project would cross 39 minor and 17 intermediate waterbodies. All waterbodies would be crossed using the open cut method except for one waterbody: SP14012 (intermittent roadside waterbody) would be crossed twice: once via the conventional jack and bore method due to the proximity of a road bore location and the second time with a plate. All waterbodies crossed by temporary access roads and contractor yards would be crossed via timber matting or existing culvert.

Sensitive Surface Water

Impaired Waterbodies

Under the Clean Water Act, Section 303(d) requires states to identify waterbodies that are impaired, the water quality standard(s) that was not met, and the cause of the impairment. Every two years, the State submits this list of waterbodies, known as the 303(d) list, to USEPA for approval. Subsequently, the State develops a plan to establish the Total Maximum Daily Load (TMDL) and the actions to address the source or cause of impairment for each waterbody on the list. ANR has indicated that the Project does not cross any waterbodies on the section 303(d) list.

Surface Water Protection Area

In general, a source water protection area (SWPA) refers to an area that contributes to a surface water drinking water supply. Surface waters in SWPAs are subject to testing for potential contaminants affecting the water quality entering a designated drinking water intake. Thus, activities which may affect surface waterbodies within a SWPA may affect the water quality entering a public water supply. ANR reviewed LDEQ data and identified nine SWPAs that are within three miles of the Project area. The nearest surface water intake to a SWPA is approximately 2.3 miles east of the pipeline at milepost (MP) 7.3, although the other eight SWPA have similar approximate distance from Project workspaces (three SWPAs at 2.41 miles east of MP 11.10 and four SWPAs around 2.5 miles east of MP 11.50).

Freshwater Usage

Hydrostatic Test Water

An estimated 6,612,700 gallons of freshwater would be required for hydrostatic testing of the proposed facilities. Sections of Line 0-501 to be abandoned by removal or in-place would not require hydrostatic testing. All freshwater used for the Project would be from municipal sources.

ANR intends to reuse water from test segments until hydrostatic testing is completed at the end of the pipeline. Hydrostatic test water would be discharged through an energy dissipation device to a vegetated upland area. Water used for hydrostatic testing of the four aboveground facilities would be disposed at an approved facility. In accordance with ANR's General Hydrostatic Test Water Discharge Permit (LAG-67), ANR would notify LDEQ at least 48 hours in advance of hydrostatic test water discharge for water sampling.

Fugitive Dust Suppression

Because the Project would involve soil disturbance and Project construction activities would occur over the summer months, an estimated 1,500,000 gallons of water would be needed for fugitive dust suppression. All water would be sourced from municipal supplies. Hydrostatic test water would be stored for use between sections; thus, water for hydrostatic pipe testing also may be used for dust suppression. ANR developed and would implement a project-specific Fugitive Dust Control Plan. We reviewed the Plan and found it acceptable.

Floodplains

The U.S. Federal Emergency Management Agency (FEMA)'s Flood Insurance Rate Maps designated areas that may flood as Special Flood Hazard Areas. These areas termed "zones" are based on a probability of flooding. A floodplain with a 100-year flood designation (Zone A) has a greater than or equal to one percent probability of inundation in any given year. Specifically, a Zone AE designation refers to a 100-year floodplain with measured base flood elevations, while Zone X designation is used to refer to areas with moderate flood hazards, areas of future-conditions flood hazard, or minimal hazards (as defined in 44 CFR 64.3). Therefore, areas labeled as Zone X can be applied to those areas where the 100-year floodplain would be inundated at an average depth of less than 1.0 foot, areas that are protected by levees from a 100-year flood, or outside of a 500-year floodplain (FEMA 2020; 2023). Both A and AE zone designations denote areas with high flood risk.

The Project's Line 0-501 pipeline would cross Zones A, AE, and X (Appendix 4). Additionally, construction for the new Line 0-501 may temporarily affect floodplain storage capacity from soil disturbance and removal of vegetation. However, no discernable reductions in flood storage capacity in Zones A, AE, and X are expected.

Modifications at existing aboveground facilities could reduce floodplain acreage and thereby, area available for water storage. The construction of four permanent access roads would add 0.36 acre of impervious surfaces to mostly Zone X.

Surface Water Impacts and Mitigation

Pipeline construction and abandonment activities would affect surface water quality. During waterbody crossings, a temporary increase in localized and downstream sedimentation and turbidity is expected. Removal of riparian vegetation also could contribute to a temporary increase in sedimentation and turbidity of surface water from disturbance of streambanks. The magnitude of streambank erosion contributing to reductions in surface water quality would depend on several factors, including stream geomorphology, weather conditions, crossing time, and crossing method. As many of the waterbodies crossed are in, or drains adjacent agricultural fields, disturbance of

bottom sediments could potentially disperse nutrients and resuspend contaminants and pesticides into the water column; thereby, leading to a decrease in dissolved oxygen levels and an increase in nutrient pollution downstream. Inadvertent releases due to fuel spillage, lubricants, or solvents from equipment could degrade surface water quality. The consequence is impairment of these waterbodies and potential effects on drinking water quality in the SWPA. The Project would not cross the Boeuf River, Big Creek, or Bayou Macon, which did not attain their designated uses, based on monitoring data downstream of the Project area. No other types of sensitive waterbodies (National Wild and Scenic Rivers, waterbodies in Louisiana Scenic Rivers Program, Section 10 Navigable Waters) would be affected by the Project.

As feasible, ANR would minimize waterbody crossing time, reduce disturbance of streambed and banks by using equipment bridges/pads/mats, and install erosion control devices, such as silt fences, to decrease transport distance of disturbed soil and stormwater runoff from construction workspaces. One waterbody (SP14012) would be crossed by conventional bore, which would avoid direct impacts on the waterbody and spoil piles from excavation of the entry and exit bore pits would be placed at least 10 feet from the water's edge in accordance with the FERC Procedures. Additionally, ANR would implement its ECS, which includes best management practices during construction and revegetation procedures, and their Unanticipated Discovery of Contaminated Media (UDCM) Plan. We have reviewed ANR's ECS and UDCM Plan (incorporating the FERC Plan and Procedures) and find them acceptable.

ANR would adhere to the FERC Procedures except for requested modifications to section V.B.2. These modifications regard siting ATWS on and within 50 feet of a waterbody. The main rationale for not maintaining the 50-foot setback to a waterbody is temporary workspace to cross the waterbody and for pipeline inflection/crossovers (Appendix 1). ANR proposes to site four ATWS within four waterbodies (two ephemeral and two intermittent). Both intermittent waterbodies are intermediate in size: ATWS-038 in waterbody 14014 (tributary to Big Creek) and ATWS-105 in waterbody 14012 (roadside ditch). ATWS-038 is situated in the tributary to Big Creek to facilitate crossing wetlands WP2001_PEM and WP2001_PSS for the construction of the new Line 0-501 from around MP 4.54 to MP 5.5. ATWS-105 in roadside waterbody SP14012 is needed for crossing Dummyline Road using a road bore. We determined that the justifications to modify the FERC Procedures V.B.2 are acceptable.

ANR would implement temporary erosion control to minimize sediment transport, place spoil piles at least 10 feet from the waterbody, and use timber mats at waterbody crossings. ANR would comply with the FERC Procedures to minimize the potential for inadvertent spills to waterbodies by setting oil, lubricants, and other hazardous materials needed for equipment operation and maintenance at least 100 feet away from waterbody and in secondary containment.

Because ANR would adhere to the FERC Procedures—except for requested modifications— and would implement best management practices listed in their ECS and UDCM during construction and restoration, impacts on surface water quality are expected to be temporary and short-term. Therefore, we determined that impacts on surface water quality from Project activities would not be significant. Additionally, as ANR plans to use water from municipal sources and reuse hydrostatic test water for testing pipelines as well as fugitive dust suppression, we also determine that impacts on surface water quantity would not be significant.

Project construction activities would affect FEMA-designated floodplains as the construction of the pipeline and modifications to existing aboveground facilities would be situated on 100-year and 500-year floodplains. An estimated 0.004 acre of all 100-year floodplain acreage in Richland and West Carroll counties would be affected; all workspaces would be restored and revegetated in accordance with the FERC Plan and Procedures. Therefore, no significant effects on floodplain storage capacity are expected.

Wetlands

ANR conducted wetland delineation surveys for the Project in 2022 (October and December) and in 2023 (January and April). Using the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual, in addition to the Regional Supplement for the Atlantic and Gulf Coastal Plain (version 2.0), ANR representatives identified wetlands and categorized wetland types by their dominant hydrophytic vegetation in accordance with the nomenclature used by U.S. Fish and Wildlife Service (USFWS)'s National Wetland Inventory. Specifically, the delineations identified palustrine forested wetlands (PFO), palustrine scrub-shrub wetlands (PSS), and palustrine emergent wetlands (PEM).

During wetland delineation surveys, American elm, bald cypress, Chinese privet, water oak, and willow oak were observed in the PFO wetlands. Vegetation characterized as shrubs based on their growth form growing in PSS wetlands included black willow, common buttonbush, sweetgum, and water oak. Predominant vegetation in PEM wetlands included alligatorweed, bermudagrass, big bluestem, Canada goldenrod, common rush, and green flatsedge.

The Project would cross 17 PEM wetlands, 10 PFO wetlands, and 4 PSS wetlands (Appendix 5). A total of 19.9 acres wetlands would be impacted, of which 4.5 acres would be permanent. One PFO wetland (WP9006_PFO_DT) with an estimated 0.24 acre in the proposed Line 0-501 construction workspace has not been delineated yet due to lack of access. Construction of the new Line 0-501 would impact approximately 6.0 acres of PFO wetlands and 1.3 acres of PSS wetlands temporarily, while a total of 4.5 acres of wetlands (3.3 acres PFO and 1.2 acres PSS) would be permanently converted due to operation of the permanent right-of-way for the new pipeline. Permanently impacted acreage is based on a 10-foot-wide and 30-foot-wide maintenance corridor for PSS and PFO wetlands, respectively. As for PEM wetlands, which are wetlands with primarily vegetative growth, no permanent impacts are expected. Temporarily, 8.1 acres of PEM wetlands would be disturbed during Project construction activities, which includes 0.20 acre of a PEM wetland situated in the temporary workspace for abandonment activities for existing Line 0-501. Timber mats would be laid down for the temporary workspace in the wetland to complete abandonment activities.

Based on ANR's review, five land parcels enrolled in U.S. Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS) Wetland Reserve Program (WRP), an easement program now incorporated into the Agricultural Conservation Easement Program, were identified in the Project area. Three of these WRP parcels are located three feet east of Project's pipeline workspaces: MP 5.72 and MP 6.44; MP 31.5 – 32.0; and MP 32.7 – 33.0 with the two others approximately 222 feet west of MP 5.20 and 260 feet east of MP 8.90. A section of existing Line 0-501 for abandonment would occur across Densmore Road, which is bordered on both sides of the road by two parcels registered in the WRP. Abandonment activities would require

temporary workspaces to be situated on both properties. ANR received permission from USDA – NRCS for a Compatible Use Permit for temporary workspaces ABD-TWS-056 and ABD-TWS-057 on WRP tract WC-104.000 and WC-106.000, respectively. Temporary workspace ABD-TWS-057 would be sited on WP12010_PEM.

As the Project would impact wetlands, ANR is coordinating with the U.S. Army Corps of Engineers regarding required mitigation and compensation measures. To minimize impacts on wetlands during construction, ANR would use low-ground pressure equipment, limit equipment travel, and implement temporary erosion control devices during open cut crossings. ANR also would install permanent erosion control devices in disturbed upland areas to decrease sedimentation to downslope wetlands and energy dissipation devices may be constructed at the downslope end of surface water diversion devices from upland areas to lower erosion potential to these downslope wetlands.

No permanent impacts on wetlands would occur from the siting and use of contractor yards, staging areas, or access roads. ANR has requested modifications to FERC Procedures VI.B.1, which is to site ATWS at least 50 feet from wetland borders. ANR proposed to site ATWS on three wetlands. Two ATWS would be situated in wetland WP2001_PEM, while two other ATWS would be sited on wetland WP2001_PSS. ATWS-038 would be on wetland WP2001_PEM and WP2001_PSS. CY-008 would be partially situated on wetland WP14002_PEM. These wetlands and rationale for placement of ATWS within wetlands are identified in Appendix 1. For ATWS located within 50 feet or within a wetland, ANR would use timber mats to avoid rutting and spoil piles would not be placed within wetlands. Given that ATWS sited in wetlands would be used to support construction of the new Line 0-501 to parallel existing pipelines' rights-of-way, would use timber matting, and comply with the revegetation and restoration process outlined in their ECS and detailed in the FERC Procedures, we determined that the siting of ATWS in or within 50 feet of a wetland acceptable.

There would be short-term impacts on PEM and PSS wetlands and long-term impacts on PFO wetlands. Based on the climate and growing conditions, most of the affected wetland areas, 9.4 acres of PEM and PSS wetlands, are expected to be revegetated within three years. If revegetation is not successful per the criteria outlined in the FERC Procedures, ANR would submit a remediation plan. The removal of 6.0 acres of forested wetlands would result in long-term impacts due to the length of time for trees to reestablish.

Over 90 percent of the Project would be collocated or parallel to existing pipeline and utility rights-of-ways; thus, many wetlands crossed by the Project already have been disturbed by previous projects. As ANR would comply with the FERC Procedures and their ECS to revegetate, restore, and monitor impacted wetlands, in addition to any other federal and state requirements, the Project is expected to have short and long-term, but not significant, impacts on wetland resources.

Fisheries

Common recreational fish found in Louisiana waters include black and white crappie, blue and channel catfish, and various bass (largemouth, striped, white, yellow) (LDWF 2023 a, b). Other popular recreational fish species are also commercially important; these include flathead catfish, alligator gar, freshwater drum, and common carp.

All 56 waterbodies crossed by the Project are considered warmwater fisheries and capable of supporting fish and other aquatic life. Half of the streams are classified as ephemeral. USGS defines ephemeral streams as those that flow only in direct response to precipitation or snowmelt. Consequently, their suitability for fish is at best limited to short periods during and following rain events. All waterbodies crossed would be minor or intermediate—ranging from 2 to 30 feet in width—and would be crossed by the open cut method or in-stream work would be avoided except for one waterbody, which would be crossed by conventional jack and bore.

A review of the National Oceanic and Atmospheric Administration (NOAA) Fisheries data mapper did not demonstrate that the Project would be in areas designated as Essential Fish Habitat (EFH) for federally managed species or fisheries of special concern (NOAA Fisheries 2023). EFHs are identified as all aquatic habitat with the characteristics to support fish spawning, breeding, feeding, or growth to maturity, which includes wetlands, coral reefs, seagrasses, and rivers. No EFH, Habitat Areas of Particular Concern, or EFH Areas Protected from Fishing would be affected.

Crossing waterbodies by open cut would result in an increase of turbidity and sedimentation at the crossing and downstream of the cut, due to stream bed and bank disturbance. An increase in turbidity could obscure fish visibility and limit foraging success. An increase in sedimentation could decrease viability of fish eggs, spawning success, and viability of developing fish (larval, fry, juveniles). Turbidity and sedimentation could also impact aquatic benthic communities, which may constitute substantial food sources for fish at various life stages.

Timber matting across minor and intermittent waterbodies potentially could block fish movement from a change in flow patterns. Streambed disturbance of waterbodies in an agricultural landscape could resuspend nutrients, resulting in a reduction of dissolved oxygen levels; thereby potentially affecting fish survival at varying developmental stages. In general, intermittent streams could serve as important nursery habitat, particularly those connected to perennial, higher order, downstream waterbodies.

Effects of construction and abandonment activities would be temporary and short-term, limited to the time of construction. Effects on streambeds and potential fish habitat are limited broadly to the timeframe between the crossing of the waterbody and streambank stabilization by vegetation. Impacts on fish from an increase in turbidity and sedimentation would be greatest for larval and juvenile stages of fish, while longer term effects from streambed disturbance and streambank erosion have larger consequences for adults.

ANR would minimize impacts on fisheries from erosion and sedimentation resulting from waterbody crossings by minimizing the time to cross waterbodies and implementation of their ECS, along with the requirements in the FERC Procedures. To limit fish injury and mortality, ANR would adhere to their SPCC Plan, which details setbacks for storage of oil, chemicals, and other hazardous materials for equipment operation, as well as spill cleanup procedures. ANR's proposed construction schedule runs from January to November 2025 for the new Line 0-501, while abandonment activities would commence after the new Line 0-501 is place in-service. Given the construction schedule and the first waterbody crossing would be at milepost 0.05, ANR would not be in compliance with FERC Procedures V.B.1, which is to conduct in-stream work in

warmwater waterbodies only from June 1 to November 30. ANR has requested a waiver from the LDWF to conduct in-stream work for this time period and is committed to crossing waterbodies within the time frame specified in the FERC Procedures—within 24 hours for minor and within 48 hours for intermediate waterbodies—and implement sediment barriers to limit increases in sedimentation and turbidity in the waterbody.

While direct and indirect impacts on fish habitat would occur, many of the fish species (e.g., catfish and bass) have a relatively large tolerance range for perturbations. On March 8, 2023, LDWF indicated that the Project likely would not affect fisheries or aquatic resources, including coldwater fisheries, aquatic species of concern, and commercial fisheries. On February 20, 2024, LDWF further clarified that no timing restrictions would be required for waterbodies crossed by the Project. No waterbodies in Louisiana are designated as coldwater; all waterbodies are warmwater fisheries. Based on the location of the Project primarily located in agricultural lands and most waterbodies crossed considered low quality habitat—waterbodies receiving agricultural runoff or channelized—we conclude that impacts on fisheries would not be significant.

4.0 VEGETATION, WILDLIFE, AND SPECIAL STATUS SPECIES

Vegetation

The Project would be in the Mississippi Alluvial Plain Ecoregion of Louisiana. Specifically, the Project—situated between Bayou Macon to the east and Boeuf River to the west—is in the Macon Ridge ecoregion level IV, which historically contained bottomland and upland hardwood forests (Daigle et al 2006). Currently, much of the formerly forested areas have been converted for crop production (cotton, corn, soybeans, and wheat).

Vegetation in open lands is a mix of native (eastern baccharis, roundleaf greenbrier, Canada goldenrod, and common persimmon) and nonnative species (Chinese privet, Japanese honeysuckle, Chinese tallow, and Brazilian vervain). Forested areas crossed by the Project are vegetated with a mix of upland hardwoods, bottomland, and pine species: American beech, American elm, loblolly pine, slash pine, sweetgum, and various oaks, including water, white, and willow oaks. A description of wetland vegetation is described above in B.3.

Construction of the Project would affect 688.6 acres of land in Richland and West Parish, with about three-quarters of the acreage affected in West Carroll Parish (Table B.5-1). Over half of the total affected land is categorized as agricultural (360.4 acres), followed by 142.0 acres of forest (20.6 percent of total Project acres disturbed during construction). For operation of the Project, nearly one-quarter of the total Project area (24.7 percent) would be retained after construction as permanent easement, including 40.5 acres of currently forested land of which are 9.7 acres of hardwood flatwoods.

Construction and abandonment activities would result in soil disturbance from removal of vegetation, soil grading, and establishment of impervious surfaces (e.g., permanent access roads, aboveground facilities). Both nonnative invasive and noxious weeds grow in the Project area. Field surveys detected invasive weeds in the existing pipeline right-of-way and proposed Project workspaces. Of note, two noxious weeds listed on the Louisiana noxious weed list were observed in the Project area: bermudagrass (*Cynodon dactylon*) and red rice (*Oryza sativa*). Bermudagrass was detected in many upland areas and one wetland, while red rice was found in one wetland.

Field surveys conducted in October and December 2022 and January and April 2023, indicated that noxious weeds were observed to cover about 25 to 100 percent of sample points. Furthermore, two invasive plant species (Chinese privet and Chinese tallowtree) were observed in the Project area, with the latter observed in a few wetlands.

On March 16, 2023, USDA-NRCS provided recommendations on a revegetation plan specific for West Carroll Parish, including revegetation of affected areas with a spring planting of common bermudagrass, which is on the state of Louisiana's Noxious Weed Seed List. ANR clarified that bermudagrass would not be used for the Project.

ANR provided their Noxious and Invasive Weed Control Plan to control and limit the spread of invasive and noxious weeds from Project sites. Several methods include limiting sediment movement containing non-native seeds, using weed-free erosion control devices, equipment checks for seeds and vegetation debris, minimizing exposure time of bare soil to decrease opportunities for noxious and invasive seed establishment, and monitoring/spot eradication during revegetation. We reviewed ANR's Noxious and Invasive Weed Control Plan and consider it to be adequate.

Generally, impacts on agricultural and open lands would be temporary. Disturbed agricultural and open lands would be revegetated in accordance with landowner agreements and ANR would follow revegetation requirements specified in the FERC Plan and Procedures as well as their ECS. Except for forested wetlands, impacts on wetlands would be short-term, until revegetation is successful as defined in the FERC Procedures. Removal of 40.5 acres of trees would have a long-term effect, especially the tracts of forests that are identified as natural communities.

Because a majority of Project is located in areas that were previously disturbed—agricultural fields and existing aboveground facilities, easements, and corridors—and ANR would comply with the FERC Plan and Procedures to restore and monitor revegetation success to approximate pre-construction status, we conclude that short-term and long-term impacts on vegetative resources from the Project would not be significant.

Wildlife Resources

Wildlife in northeastern Louisiana's native hardwood, flatwood, and loblolly pine forests include the Louisiana black bear (*Ursus americanus luteolus*), long-tailed weasel (*Mustela frenata*), American alligator (*Alligator mississippiensis*), gopher tortoise (*Gopherus polyphemus*), American bullfrog (*Lithobates catesbeianus*), and southern cricket frog (*Acris gryllus*). Many animals in the Project region are available for game hunting: mammals (white-tailed deer, rabbit, squirrel, coyote, fox, muskrat, nutria, opossum); birds (eastern wild turkey, quail, dove, woodcock), migratory waterfowl (various ducks, teals, goose), as well as alligators (LDWF 2023d).

The Project is located in the vicinity of a state wildlife management areas (WMA); one of six management units aggregated under Big Colewa Bayou WMA is 0.27 mile east of MP 17.35. Game hunting is permitted in this WMA. Project construction activities that produce noise and light may potentially disturb wildlife in the WMA. No Project workspaces, inclusive of access

roads and contractor/staging yards, would occur within either WMA; therefore, a Special Use Permit would not be required.

In general, construction activities, coinciding with an increase in human presence, noise, vegetation removal, and soil disturbance, would lead to localized decreases in wildlife. Mobile wildlife would avoid the areas with active construction and abandonment activities for more suitable habitat. Less mobile wildlife, such as amphibians and small mammals, may be disturbed, harmed, injured, or potentially killed as habitat is removed by heavy equipment and machinery. The Project is situated in a rural region with a patchwork of agricultural fields and low-density residential areas. Thus, wildlife likely are habituated to occasional disturbance (e.g., light and noise). However, wildlife displacement and impacts are expected with a disturbance of nearly 700 acres of land, over 34 miles of new construction, and anticipated to occur over the course of 16 months. Construction and abandonment activities are anticipated to occur sequentially. Construction would begin in January of 2025 (i.e., land clearing and contractor yards); installation of the pipeline would begin in March of 2025 with an anticipated in-service goal in November 2025 for the new Line 0-501; and abandonment activities would begin after in-service at the end of 2025 until April 2026. The construction and abandonment activities would collectively take about a total of 16 months.

To reduce impacts on wildlife, ANR would limit the period that the pipeline trench is exposed, conduct daily inspections of open trenches by an Environmental Inspector, relocate wildlife as appropriate by suitable personnel, and provide environmental training to construction workers. In addition to adherence to the FERC Plan and Procedures during construction, ANR would also adhere to the FERC Plan and Procedures during operation, including limiting routine vegetation maintenance of the pipeline right-of-way to a nominal 10-foot-wide corridor to minimize removal of wildlife habitat. The Project is situated in an agricultural landscape with over 90 percent of construction workspace in or adjacent to existing pipeline and utility easements; We conclude that effects on local wildlife populations would be short-term and would not lead to significant population-level changes.

Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act ([MBTA] – 16 U.S. Code § 703-711); bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (BGEPA, 16 U.S. Code § 668-668d). Executive Order (EO) 13186 (66 FR 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the USFWS. EO 13186 was issued in part to ensure that environmental analyses of federal actions assess the impacts of these actions 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 MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. In March 2011, FERC entered into a Memorandum of Understanding with the USFWS, which focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies.

The Project is located in Bird Conservation Region (BCR) 26 – Mississippi Alluvial Valley, which encompasses approximately 24 million acres of floodplain habitat (NABCI 2021). Although a majority of the historically forested areas and wetlands have been converted for agricultural purposes, an estimated 60% of migratory birds in North America still use the landmass within BCR 26 as overwintering habitat or migration stopovers (LMVJV 2023).

In 1988, an amendment to the Fish and Wildlife Conservation Act stated that the USFWS must identify migratory non-game bird species requiring conservation actions to avoid listing candidacy under the Endangered Species Act (ESA). These identified species (including subspecies and populations) in need of conservation measures are labeled as Birds of Conservation Concern (BCC). The USFWS's Information for Planning and Consultation (IPaC) database identifies BCC potentially impacted based on a particular project's location. A review of IPaC results for the Project revealed that nine migratory BCC and the bald eagle are expected to occur within the Project area. These species along with their breeding status and breeding season in the Project area are listed in table B.4-3 below.

Table B.4-1. Potential Occurrence of Birds of Conservation Concern (BCC) in the Project Area and their Breeding Characteristics

Common Name	Scientific Name	Breeding Dates	Breeding Status
Bald eagle	*Haliaeetus leucocephalus*	Sept 1 – Jul 31	Breeding
Cerulean Warbler	*Dendroica cerulea*	Apr 25 – Jul 20	Breeding
Chimney swift	*Chaetura pelagica*	Mar 15 – Aug 25	Breeding
Kentucky warbler	*Oporornis formosus*	Apr 20 – Aug 20	Breeding
Little blue heron	*Egretta caerulea*	Mar 10 – Oct 15	Breeding
Prairie warbler	*Demndroica discolor*	May 1 – Jul 31	Breeding
Prothonotary warbler	*Protonotaria citrea*	Apr 1 – Jul 31	Breeding
Red-headed woodpecker	*Melanerpes erythrocephalus*	May 10 – Sept 10	Breeding
Rusty blackbird	*Euphagus carolinus*	Elsewhere	Non-breeding
Wood thrush	*Hylocichla mustelina*	May 10 – Aug 31	Breeding

As the Project's construction and abandonment timeline would be from January 2025 to April 2026, Project activities are expected to affect breeding and nonbreeding migratory birds. Peak breeding season for migratory birds is March to September. All species, except for the rusty blackbird, are listed in IPaC as potentially using the Project area for breeding. Moreover, cerulean and prairie warblers may also be in the Project area during their migration, while the red-headed woodpecker could be found in the Project area during their breeding and overwintering season (The Cornell Lab of Ornithology 2023). All BCC identified in IPaC and the bald eagle have been observed within five miles of the Project area (ebird 2023).

Direct and indirect impacts from construction and abandonment activities include human-wildlife interactions, noise and light pollution, and vegetation disturbance and removal. Noise from equipment and human presence probably would result in changes in bird behavior, relocation, and avoidance of established territories. Night-time lighting, especially during the migratory bird season, may result in injury and potentially mortality to species that migrate at night (e.g., songbirds like warblers and sparrows). Habitat disturbance and loss from clearing of forested

areas would decrease success of breeding, nesting, and raising chicks to adulthood. Depending on the season, these environmental stressors could cause localized reductions in avian communities if natural breeding and nesting patterns are disrupted. As an estimated 142.0 acres of forest habitat would be cleared for the Project and an estimated 40.5 acres would be retained for operations and maintenance, including 0.07 acre for aboveground facilities and permanent access roads; impacts on migratory birds using these habitats would be long-term.

ANR would minimize direct impacts on migratory birds during the breeding season by conducting most vegetation clearing before the beginning of the core breeding period in April (before April 15). Nesting birds, migrants, and individuals arriving in the Project area for the winter would avoid the Project area, especially sections with active construction activities, for more suitable habitat. In the event that night-time work would be required to complete a construction activity (e.g., tie-ins, hydrostatic pipe testing, recompression, service transferring), ANR would minimize noise impacts on migratory birds and wildlife by decreasing night-time light effects with downward facing lights at specific work locations. During operation, ANR would install permanent lights that are downward-facing with full-cut lenses.

Because ANR intends to clear most of the vegetation before the main migratory bird nesting period and forested areas to be cleared are adjacent to existing pipeline and utility corridors, we conclude that the Project would have long-term impacts on migratory birds dependent on forested habitat in the area for breeding and primarily short-term effects on migratory birds with foraging or overwintering habitat, but no significant population-level effects on migratory birds are expected.

Special Status Species

Special status species are afforded protection by law, regulation, or policy by state and federal agencies. Special status species generally include federally listed species that are protected under the ESA; species proposed or petitioned for listing under the ESA; species considered as candidates for such listing by the USFWS or National Marine Fisheries Service (NMFS); or species that are state listed as threatened, endangered, or have been given other state designations.

The Commission 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 the designated critical habitat of a federally listed species. Per 18 CFR 380.13 (b)(1), Project proponents, such as ANR, serve as FERC's designated non-federal representative for informal consultation with the USFWS. A review of USFWS's IPaC database for federally listed, proposed, and candidate species indicated that three species may potentially be affected by the Project: endangered northern long-eared bat, proposed threatened alligator snapping turtle, and candidate monarch butterfly. No species designated by NMFS or critical habitat for federally listed species would be affected by the Project. Species' habitat information and Project's effect determination are discussed below.

Northern long-eared bat (*Myotis septentrionalis*): Federal – endangered; State – threatened

Northern long-eared bats (NLEB) are small bats with an average body length of 3 – 4 inches. Once widespread east of the Mississippi River, steep population declines, primarily due to

white-nose syndrome, lead this species to be federally listed as threatened in 2015, and uplisted to endangered status in 2023 (87 FR 73488).

In general, NLEBs begin migration to summer habitats in mid-March to mid-May and can be found nesting, roosting, and foraging in riparian forests and wooded wetlands in the summer months. Construction or abandonment activities during the summer months in NLEB habitat could affect the NLEB population by disturbing its breeding and roosting patterns and increasing the potential for injuries or mortalities. Clearing and removal of forests, which would remove roost trees, foraging habitat, as well as shelter during migration between summer and winter habitats. NLEBs overwinter in caves and mines (hibernacula). In Louisiana, NLEBs may be active year-round.

Suitable foraging and roosting habitats are present in the Project area. According to ANR, the Project is not located within 150 feet of known occupied maternity roost trees and no known hibernaculum are within 0.25 mile of the Project. To minimize potential impacts on NLEB, ANR would not clear trees between June 1 and July 31, which is the peak roosting period. Given that suitable roosting and foraging habitat is available in the Project area, but ANR would not clear trees during the main roosting period, ANR indicated that the Project *may affect, but not likely to adversely affect* the NLEB.

Alligator snapping turtle (*Macrochelys temminckii*): Federal – proposed threatened; State – restricted harvest.

Alligator snapping turtles prefer large freshwater habitat (rivers, canals, lakes, and oxbows), although individuals may be present in wetlands (swamps and coastal marshes). In addition to a reduction in wetland habitat and alteration of waterbodies from dredging, overharvesting contributed to steep declines of the alligator snapping turtle (LDWF 2023d). Currently, this species is proposed for federal listing as threatened under the ESA; while no state-listed status exist, harvest restrictions are in place.

Based on the characteristics of delineated waterbodies (most are minor and ephemeral or intermittent), adherence to the FERC Procedures, including waterbody crossing time limits, and their ECS Plan to reduce sedimentation of waterbody crossings, ANR determined that the Project likely would *not jeopardize the continued existence* of the alligator snapping turtle.

Monarch butterfly (*Danaus plexippus*): Federal - candidate

Open fields with native pollinator plants are important for foraging adult monarch butterflies during their spring and fall migration. Pollinator plants (e.g., goldenrods and clovers) provide nectar for their long migration journey to and from central Mexico and across the United States. Adults only lay eggs on milkweed plants (*Asclepias* spp.) and the presence of milkweeds potentially indicate monarch habitat. Suitable foraging habitat was identified during field surveys in 2022 and 2023, but no milkweed plants were observed during field surveys of the Project area.

Due to the absence of milkweed plants and ANR would follow the FERC Plan for revegetation and monitoring, ANR determined that Project activities likely *would not contribute to a trend towards federal listing*. At the time of this EA, the monarch butterfly is still a candidate for species listing, thus, Section 7 consultation is not required.

ESA Species Effect Determinations

The Project would clear 142.0 acres of forests. As ANR has committed to clearing all trees, including forested wetlands, before the NLEB roosting period from June 1 to July 31, we conclude that the Project *may affect, but is not likely to adversely affect* the NLEB. On August 1, 2023, ANR representative initiated informal consultation with the USFWS Louisiana Ecological Services Field Office requesting concurrence on the effect determination for the NLEB. On October 12, 2023, USFWS requested that ANR complete the NLEB determination key within IPaC, which ANR completed on November 9, 2023. Based on the Project activities, the NLEB determination key stated that Project *may affect, but not likely to adversely affect* the NLEB and unless the USFWS comments within 15 calendar days, USFWS concurs with the determination key and informal consultation under Section 7 ESA is complete. On January 9, 2024, USFWS confirmed that the NLEB effect determination is appropriate, and no further consultation is necessary. We concur.

For the alligator snapping turtle, based on the waterbody characteristics crossed by the Project, preferred suitable habitat would not be affected. We conclude that the Project is not likely to jeopardize the continued existence of the species. Species proposed for listing under the ESA do not require consultation. However, if the alligator snapping turtle becomes listed during construction of the Project, FERC would require ANR to stop construction activities that may affect the alligator snapping turtle until FERC staff completes Section 7 consultation.

State-listed Species

ANR representatives reviewed the LDWF' Rare Species and Natural Communities by Parish for the presence of state-listed species in the Project area. The NLEB and the alligator snapping turtle may potentially be present in Richland Parish, while the Project in West Carroll Parish would not affect state-listed species. On March 2, 2023, LDWF's Wildlife Diversity Program reviewed the Project and indicated that the Project area may overlap with several natural communities, five rare plants of concern, and the razor-backed musk turtle. Natural communities identified are mesic and hardwood flatwoods, hardwood slope forest, and mixed hardwood-loblolly pine forest. Another review of the Project by LDWF, on August 30, 2023, indicated that only mesic and hardwood flatwoods may be present in the Project area; no rare, threatened, or endangered species or critical habitat are expected.

ANR acknowledged that the Project would impact hardwood flatwood natural communities from the construction of new Line 0-501 from milepost 3.1 to 6.7 and milepost 32.5 to 34.1, resulting in a loss of 9.7 acres of these forests to an herbaceous status within the permanent right-of-way. To minimize further impacts on natural communities in the region, ANR would survey and remove invasive species and revegetate with plant species in their ECS or per landowner agreements for the temporary workspaces. Removal of 9.7 acres of hardwood flatwoods by Project construction activities would result in long-term impacts for this forest community. In the most recent assessment of natural communities by the LWDF, mesic hardwood flatwoods are found only in four parishes in northeast Louisiana (West Carroll, Richland, Franklin, and Morehouse), while wet hardwood flatwoods are found more broadly on Macron Ridge in northeast Louisiana and Pleistocene Red River Channels in northwest Louisiana (LDWF 2009). Therefore, given the limited geographic range of these two natural communities, we determine that the

removal of 9.7 acres of mesic and wet hardwood flatwood forests in Richland and West Carroll parishes by the Project would not be significant.

5.0 LAND USE, RECREATION, AND VISUAL RESOURCES

Land Use

ANR would impact a total of 688.6 acres of land, including 170.3 acres of permanent impacts associated with the Line 0-501 permanent pipeline easement, permanent access roads, and new permanent areas at the expanded aboveground facilities. The land within the Project area is characterized as agricultural, open land, industrial, forest, wetlands, and residential land. Table B.5-1 below summarizes the land use impacts associated with the construction (temporary and new permanent) and operation (new permanent) of the Project.

Agricultural

Agricultural land accounts for approximately 51 percent of the total project area. The agricultural land consists of actively cultivated row crops, some small areas of improved pasture utilized for livestock grazing, and farmed wetlands. A total of 360.4 acres of agricultural land would be utilized for construction of the Project, of which 0.1 acre would be permanently affected as it would be converted to industrial use as part the aboveground facility (an access road and part of the Midcontinent Express Meter Station expansion). Operation of Line 0-501 would not result in a change of land use from agricultural land, as the 95.6 acres of agricultural land located within the Line 0-501 permanent right-of-way would be allowed to return to pre-construction uses. To prevent the mixing of topsoil with subsoil, in agricultural areas, topsoil would be segregated from all construction right-of-way and temporary workspaces subject to grading and excavation. Before topsoil redistribution, the construction right-of-way and temporary workspaces would be tested for compaction and compared to adjacent undisturbed soils. Agricultural areas would not be mulched, but an annual cover crop may be seeded in areas subject to runoff if compatible with the existing land use/farming operation. With the exception of areas with permanent access roads installed and expansion of an aboveground facility, all agricultural land impacted by the Project would be restored as close as practical to the condition prior to construction, including the permanent pipeline right-of-way.

Forest

A total of 142.0 acres (20 percent) of forested land would be utilized for construction of the Project. Maintenance of the permanent right-of-way for Line-0501 (40.4 acres) would preclude the reestablishment of trees and shrubs following construction, thereby permanently converting forest to open land. In addition, a total of 0.07 acres of forest would be converted to industrial land to allow permanent operation of the existing End of 36-inch Loop 2 facility, MLV 16, and permanent access roads associated with MLV 15 and MLV 16. Temporary workspace areas that are cleared for construction would result in long-term impacts due to the time required for trees to reestablish.

Table B.5-1
Summary of Land Use Impacts for the Project

Facility	Agricultural		Forest		Industrial		Open Land		Residential		Wetlands		Project Total	
	Temp[a]	Op[b]	Temp[a]	Op[b]	Temp[a]	Op[b]	Temp[a]	Op[b]	Temp[a]	Op[b]	Temp[a]	Op[b]	Temp[a]	Op[b]
Pipeline Facilities														
Line 0-501 Right-of-Way	254.5	95.6	115.8	40.4	4.2	1.7	46.6	20.	3.8	1.1	18.9	10.2	443.7	169.7
Line 0-5-1 Additional Temporary Workspace	25.3	0.00	12.1	0.00	1.2	0.00	4.9	0.00	1.00	0.00	0.6	0.00	45.1	0.00
Existing Line 0-501 Abandonment Temporary Workspace	7.8	0.00	1.00	0.00	1.5	0.00	4.00	0.00	0.3	0.00	0.2	0.00	14.8	0.00
Access Road	12.9	0.00	1.3	0.00	0.2	0.00	2.5	0.00	0.2	0.00	0.2	0.00	17.3	0.00
Contractor Yard/Staging/Pipe Yards	57.9	0.00	11.1	0.00	9.5	0.00	64.6	0.00	0.00	0.00	0.00	0.00	143.1	0.00
Pipeline Facilities Subtotal	**358.3**	**95.6**	**141.4**	**40.4**	**16.5**	**1.7**	**122.6**	**20.6**	**5.3**	**1.1**	**19.8**	**10.2**	**663.8**	**169.7**
Aboveground Facilities														
Delhi Compressor Station	0.0	0.00	0.00	0.00	19.2	0.00	0.00	0.00	0.00	0.00	0.0	0.00	19.2	0.00
Midcontinent Express Meter Station	1.8	0.01	0.00	0.00	0.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	0.0
End of 36-inch Loop 2	0.00	0.00	0.0	0.0	0.2	0.00	0.4	0.0	0.00	0.00	0.00	0.00	0.6	0.0
MLV 15	0.00	0.00	0.3	0.00	0.00	0.00	0.3	0.11	0.00	0.00	0.00	0.00	0.6	0.1
MLV 16	0.00	0.00	0.3	0.0	0.1	0.0	0.1	0.0	0.00	0.00	0.00	0.00	0.4	0.1
Access Roads	0.2	0.1	0.0	0.0	0.3	0.2	1.5	0.1	0.00	0.00	0.00	0.00	2.00	0.4
Aboveground Facilities Subtotal	2.0	0.1	0.6	0.1	19.8	0.2	2.2	0.2	0.00	0.00	0.0	0.00	24.7	0.6
Project Total	**360.4**	**95.7**	**142**	**40.5**	**36.3**	**2.00**	**124.7**	**20.8**	**5.3**	**1.1**	**20**	**10.2**	**688.6**	**170.6**

Note: The sum of the addends may not equal the totals in all cases due to rounding.

[a] Land affected during construction is inclusive of operation impacts (permanent).
[b] Land affected during operation consists only of operational areas associated with the permanent easement and permanent access roads, as well as new permanent impacts at the expanded aboveground facilities.
[c] The acreage presented is partially inclusive of ANR's existing easements (i.e., Line 0-501, 1-501, and 2-501), which would be utilized for the new Line 0-501, as well as the proposed easement.

Open Land

A total of 133.2 acres (19 percent) of open land would be utilized for construction of the Project. Operation of Line 0-501 would not result in a change of land use from open land, as the 20.6 acres of open land located within the Line 0-501 permanent right-of-way would be restored and allowed to return to pre-construction uses. A total of 0.23 acre of open land would be converted to industrial land to allow permanent operation of the expanded footprint at End of 36-inch Loop # 2, MLV 15, and MLV 16. After the completion of construction activities, open land within all other temporary workspaces would be allowed to revegetate in accordance with the ANR's ECS, which adopts and incorporates the FERC Plan.

Industrial

A total of 41.7 acres (6 percent) of industrial land would be used during construction of the Project, of which about 2 acres would be required for operation. Most of the industrial land areas are either sparsely vegetated or lack vegetation due to the presence of impervious surfaces.

Wetlands

A total of 19.9 acres of wetlands or 3 percent of the Project area would be impacted by construction of the Project. These are comprised of palustrine emergent, palustrine scrub/shrub, and palustrine forested wetlands. The permanent pipeline right-of-way would encompass 10.2 acres of wetlands, but only a 10-foot-wide corridor centered on the pipeline would be maintained in an herbaceous state. Trees located within 15 feet of the pipeline that have roots that could threaten the structural integrity of the pipeline would be selectively removed.

Residential

A total of 5.3 acres (0.8 percent) of residential land would be used for construction of the Project, of which 1.1 acres would be used during operation of Line 0-501. Residential land includes both single and multiple family dwellings that are in developed subdivisions or rural area. Residential land also includes landscaped areas associated with a residence. Construction activities in residential areas would be completed as quickly and safely as practicable to minimize disturbances to residents. ANR would make all reasonable efforts to maintain access to the residences during construction; however, if access is temporarily impeded, ANR would coordinate with landowners to minimize the disturbance.

ANR provided a list of all structures within 100 feet of the Project along with the MP location, structure type, and approximate distance from the Project. Of these, 46 structures are located within 25 feet of Project workspaces. These include 1 residence, 11 structures used by ANR for operation of the Delhi Compressor Station (STR-001-STR-011), 5 sheds, 9 barns, and 20 other unoccupied structures. One residence (STR-046) is located within 25 feet of the Project area. A site-specific *Residential Construction Plan* drawing for the residence located within 25 feet of the Project area is provided in Appendix 7.

Impacts and Mitigation

To minimize the Project footprint, ANR has proposed to co-locate 31.1 miles (approximately 9 percent) of the new Line 0-501 within or adjacent to existing corridors. In addition, ANR would be overlapping temporary workspaces for the new Line 0-501 with its existing Line 0-501, 1-501, and/or 2-502 easements. Although impacts on agricultural land use (preclusion and physical impacts to the land and drain tiles and irrigation systems) are generally temporary, occurring over only one growing season, several short-term impacts, generally observed following restoration of affected lands, could occur as a result of the Project. These impacts include soil disturbance, soil compaction, uneven grading and settling resulting in ponding, soil mixing (soil horizons and/or rock), unsuitable drainage, and the spread or introduction of non-native plant species. These short-term impacts which are also addressed in other sections of this EA could affect agricultural land use and crop production for multiple years. Additionally, occasionally observed long-term impacts on soils (changes to soil composition and chemistry) could also affect agricultural land use and crop production. Given implementation of our Plan and ANR's ECS Plan, we conclude impacts on agricultural would be short-term and not significant. Revegetation of agricultural areas would be considered successful when crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Resumption of agricultural operations following Project construction and/or planting of a cover crop would aid in the restoration of soil structure and productivity that could take several years to achieve success, depending on site-specific conditions and land use practices. Commission environmental staff would monitor restoration efforts until deemed successful.

One residence (STR-046) is located within 25 feet of the Project area at MP 27.9. A site-specific *Residential Construction Plan* drawing for the residence is provided in Appendix 7. **We have reviewed the site-specific residential plan drawing and have found it acceptable. However, we encourage the owner of this residence to provide comments on the plan, if there are any outstanding concerns or issues.**

Project activities could result in short-term impacts on residential areas, including removal of existing vegetation and landscaping from the construction workspace, increase construction related traffic on local roads, as well as dust and noise generated during construction. ANR would minimize these potential impacts through implementation of the mitigation measures listed below.

- Construction activities would generally occur during daytime hours, except as indicated in Section A.7 and B.8 of this EA.
- Construct safety fencing around the edge of the construction area adjacent to the residence for a distance of 100 feet on either side of the residence.
- As many trees as possible would be left on the property. Branches may be trimmed to allow for safe operation and passage of construction equipment. Any vegetation cleared from the property would be disposed of as negotiated by the landowner and ANR.
- Lawns and landscaping would be restored to approximate pre-construction conditions, as would any walls or other structures that were damaged or removed during construction as negotiated by the landowner and ANR.
- Topsoil would be segregated where appropriate or at the request of the landowner.

- ANR would take all measures necessary to ensure that utilities are not disrupted during construction. If the need to disrupt utilities arises, ANR will provide as much notice as possible to the landowner prior to disruption, or if utilities are inadvertently disrupted, repairs to restore service will be expedited.
- Traffic flow and emergency vehicle access would be maintained on residential roadways. Traffic detail personnel and/or detour signs would be used where appropriate.
- To control fugitive dust, areas disturbed during construction would be watered periodically and as needed based on site-specific conditions (anticipated to require approximately 1.5 million gallons of municipal water during construction).
- Specialized construction techniques designed to minimize disturbances to residences, such as the stovepipe or drag section techniques, would be used where feasible. Specialized construction techniques designed to minimize disturbances to residences, such as the stovepipe or drag section techniques, would be used where feasible.
- Affected landowners and adjacent landowners would be notified no later than a week prior to the start of construction.
- Any section of the trench left open at the end of the workday would be fenced off or covered with a steel plate.
- Road surfaces near residences would be periodically inspected and, if necessary, cleaned of any soil and other debris.
- All lawn areas and landscaping would be immediately restored following cleanup operations.

If construction in proximity to residences requires the removal of private property features, such as gates or fences, ANR would notify the landowner prior to removal. Following the completion of construction activities within the residential property, ANR would restore the property, including landscaping, in accordance with ANR's ECS and any agreements with the landowner.

Recreation

No designated natural landmarks, recreational, or scenic areas are located within 1.0 mile of the Project area. However, the Project is located 0.27 mile east at MP 17.35 from one management unit of the Big Colewa Bayou Wildlife Management Area (WMA). The Big Colewa Bayou WMA serves as a recreational area for hunting, trapping, fishing, hiking, horseback riding, birding, and wildlife viewing. Project activities could result in temporary increases in noise impacts in the vicinity of the Project, resulting in a temporary disruption of local hunting activities; however, construction would be short-term and localized. We do anticipate any significant adverse impact to recreational activities at the Big Colewa Bayou WMA.

Operation of the Project would not have an impact on recreation. There would be no new long-term noise impacts associated with operation of the Project.

Visual Resources

Within the Project area, residential areas and public lands may be sensitive to visual impact changes. The closest residences to the contractor yards range from 0.02 mile to 0.78 mile away. The closest contractor yard to a residence is located across the street on developed land with existing structures; therefore, no significant change to the viewshed is anticipated. Based on existing land use, the fact that construction is primarily along an existing right-of-way, the visual character of the Project area, and the mostly temporary project-related impacts on these resources, we conclude that the Project would not significantly impact visual resources.

Operation of the Project would not have an impact on visual and/or aesthetic resources. The Project does not involve the addition of new compressor facilities. The proposed modifications at the existing MLV 15 and MLV 16 would require expansion of both facilities, in addition to the construction of two new permanent access roads at MLV 15 and the expansion of one existing access road at MLV 16 for access during Project operation. Also, the proposed tie-ins would require minor expansion of the respective existing aboveground facilities, with the exception of the replacement tie-in at the Delhi CS and the new tie-in at the end of Line 0-501. ANR would also expand an existing permanent access road at the Midcontinent Express Meter Station. After construction, the viewshed may change due to the expansions, but would be consistent with the current viewshed of the existing right-of-way.

6.0 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effects of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation an opportunity to comment. ANR, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and the FERC's implementing regulations at 36 CFR Part 800.

Survey Results and State Historic Preservation Office Consultation

ANR completed cultural resources surveys for the Project and provided survey reports to the FERC and the Louisiana State Historic Preservation Officer (SHPO). During these surveys ANR revisited 3 archaeological sites (16RI80, 16RI186, 16WC137) recorded 7 newly discovered archaeological sites (16WC138, 16WC139, 16WC140, 16WC141, 16WC142, 16WC143, and 16WC144) and discovered four isolated finds which, by definition, are not eligible for listing in the NRHP. Archaeological sites 16WC137 and 16WC140 were found outside of the Project area and would not be impacted by construction, while the remaining sites were recommended not eligible for the NRHP. Based on these findings ANR completed further investigations on 16WC138 and 16WC142 to determine their eligibility for the NRHP. On June 26, 2023, the SHPO commented on the survey reports and agreed with ANR that 16WC139, 16WC141, 16WC142, 16WC143, and 16WC144, as well as the portions of sites 16RI180 and 16RI186 within the Project area are not eligible for listing in the NRHP. The SHPO also requested revisions to the report, follow up information concerning the eligibility of 16WC138, and further information on 16WC140. On August 15, 2023, ANR provided a revised report to the SHPO. On September 6, 2023, the SHPO requested additional revisions specific to the analysis of 16WC138. ANR submitted a revised

report to the SHPO in November of 2023. To date we have not received comments from the SHPO and compliance with Section 106 of the NHPA has not been completed for the Project. Therefore, **we recommend**:

ANR should <u>not begin</u> construction or abandonment of facilities and/or use of all staging, storage, or temporary work areas and new or to-be-improved access roads <u>until</u>:

- **a. ANR files with the Secretary of the Commission (Secretary):**
  - **(1) remaining cultural resources survey report(s);**
  - **(2) site evaluation report(s) and avoidance/treatment plan(s), as required; and**
  - **(3) comments on the cultural resources reports and plans from the Louisiana State Historic Preservation Office.**
- **b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and**
- **c. the FERC staff reviews and the Director of the Office of Energy Projects (Director of OEP), or the Director's designee, approves the cultural resources reports and plans, and notifies ANR in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "<u>CUI//PRIV- DO NOT RELEASE</u>."

Native American Consultations

On September 14, 2023, we sent tribal consultation letters for the Project to eleven federally recognized Native American Tribes: Apache Tribe of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee Creek Nation, Quapaw Nation, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and the Tunica-Biloxi Tribe of Louisiana. On October 13, 2023, we received comments from the Seminole Nation of Oklahoma stating that the Project is located within the Forced Removal route of the tribe and requested notification if any human remains, or funerary objects are uncovered during the Project. On May 31, 2023, the Quapaw Nation requested copies of the Project reports and SHPO correspondence. On November 20, 2023, ANR stated that they would provide the requested documents upon the completion of these reports and consultations. On June 1, 2023, the Chickasaw Nation informed ANR that the Project was outside of their tribal area of interest, and that no further consultation was warranted. On June 13, 2023, the Caddo Nation informed ANR that the Project would have no effect to known cultural, traditional, or sacred sites of interest to the Caddo Nation. On October 13, 2023, we responded to the Seminole Nation of Oklahoma and thanked them for their response, notified them that we would include their comments in our analysis, and that we would inform ANR of their comments as well. On November 13, 2023, the Choctaw Nation of Oklahoma requested shapefiles of the Project, and on November 15, 2023, ANR provided the requested shapefiles to the Choctaw Nation of Oklahoma. To date, we have not received correspondence from any of the other contacted Tribes.

Unanticipated Discovery Plan for Cultural Resources and Human Remains

ANR provided a plan for the Unanticipated Discovery of Historic Properties or Human Remains During Construction, which we find acceptable.

7.0 ENVIRONMENTAL JUSTICE

In conducting NEPA reviews of proposed natural gas projects, the Commission follows Executive Order 12898 and Executive Order 14096, which direct federal agencies to identify and address disproportionate-and adverse human health or environmental effects of their actions on minority and low-income populations (i.e., environmental justice communities).[9] Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate- related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[10] Environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[11] The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution.[12]

Commission staff used, *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*)[13] which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this Project. Additionally, consistent with USEPA recommendations, Commission staff used USEPA's Environmental Justice Screening and Mapping Tool (EJScreen) as an initial screening tool to better understand locations that require further review or additional information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors.[14]

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[9] Exec. Order No. 12,898, 59 Fed. Reg. 7629, at 7629, 7632 (Feb. 11, 1994); Exec. Order No. 14,096, 88, Fed. Reg. 25251 (Apr. 21, 2023).

[10] Exec. Order No. 14,008, 86 Fed. Reg. 7619, at 7629 (Jan. 27, 2021).

[11] USEPA, *Learn About Environmental Justice*, https://www.epa.gov/environmentaljustice/learn-about-environmental-justice (Sep. 6, 2022). Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Id.* Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public's contributions can influence the regulatory agency's decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected. *Id.*

[12] Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See* USEPA, *EJ 2020 Glossary* (Aug. 18, 2022), https://www.epa.gov/environmentaljustice/ej-2020-glossary.

[13] Federal Interagency Working Group on Environmental Justice & NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/-files/2016-08/documents/depa_promisng_practices_document_2016.pdf.

[14] The USEPA recommends that screening tools, such as EJScreen, be used for a "screening-level" look and a useful first step in understanding or highlighting locations that may require further review.

Meaningful Engagement and Public Involvement

The CEQ *Environmental Justice Guidance Under the National Environmental Policy Act (CEQ Environmental Justice Guidance)*[15] and *Promising Practices* recommend that federal agencies provide opportunities for effective community participation in the NEPA decision-making process, including: identifying potential effects and mitigation measures in consultation with affected communities; improving accessibility of public meetings, crucial documents, and notices and use adaptive approaches to overcome potential barriers to effective participation. In addition, Executive Order 13985 and Executive Order 14096, strongly encourage independent agencies to "consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, federal policies and programs."[16] and "provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities."[17]

There have been opportunities for public involvement during the Commission's environmental review processes.[18] FERC issued a Notice of Application, and a Notice of Scoping, which were published in the Federal Registry on August 11, 2023, and August 23, 2023, respectively. Issuance of the notices opened separate formal scoping periods that expired October 10, 2023, and September 25, 2023, respectively. The notices were mailed to the parties on FERC's environmental mailing list (see section 4.0 Public Review and Comment). The Commission staff has also included various stakeholders on the mailing list, as well as homeowner associations, realtor association, business association, parish school board, pilot associations, farm bureau, associations of business and industry, environmental organizations, and rotary, to engage local communities, including environmental justice communities, near the Project.

We recognize that not everyone has internet access or is able to file electronic comments. Each notice was physically mailed to all parties on the environmental mailing list and made available at West Carroll Parish Library and Richland Parish Library.

All documents that form the administrative record for these proceedings are available to the public electronically through the internet on the FERC's website (www.ferc.gov). Anyone may comment to FERC about the Project, either in writing or electronically.[19] We did not receive any substantive environmental justice comments prior to the issuance of this EA.

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[15] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf.

[16] Exec. Order No. 13985, 86 Fed. Reg. at 7011 (Jan. 20, 2021).

[17] Exec. Order No. 14,096, 88, Fed. Reg. 25254 (Apr. 21, 2023).

[18] *See supra at* FERC Docket, Accession #: 20230811-3018 and Accession #:20230823-3019.

[19] The Office of Public Participation (OPP) provides members of the public, including environmental justice communities, landowners, Tribal citizens, and consumer advocates, with assistance in FERC proceedings—including navigating Commission processes and activities relating to the Project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable deadlines for such filings, members of the public are encouraged to contact OPP directly at 202-502-6595 or OPP@ferc.gov for further information.

Identification of Environment Justice Communities

According to the CEQ's *Environmental Justice Guidance* and *Promising Practices*, minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in *Promising Practices*, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EA where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the parish. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* **low-income threshold criteria** method, low-income populations are identified as block groups where the percent of low-income population in the identified block group is equal to or greater than that of the parish. Here the Commission staff selected in Richland Parish and West Carroll Parish as the reference communities to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

Table B.7-1 below identifies the minority populations (by race and ethnicity) and low-income populations within West Carroll Parish and Richland Parish affected by the Project, census block groups[20] in which project facilities are located. For the purpose of analyzing impacts of the proposed construction modification on environmental justice communities, this Project considers block groups in which the facilities are located as the appropriate unit of geographic analysis. We believe this geographic scope is sufficiently broad considering the likely concentration of air emissions, noise, and traffic impacts proximal to the construction of the Project. To ensure we are using the most recent available data, we use the U.S. Census American Community Survey[21] as the source for race and ethnicity data and poverty data at the census block group level.

As presented in table B.7-1, there are minority and low-income communities within the Project area. Portions of the new 30-inch-diameter pipeline and portions of Line 0-501 segment, which would be abandoned, are within environmental justice communities. Additionally, contractor yard CY-006 is located within an environmental justice community.

[20] Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people. U.S. Census Bureau. 2022. Glossary: Block Group. Available online at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_4. Accessed December 2023.

[21] U.S. Census Bureau, American Community Survey 2021 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, https://data.census.gov/cedsci/table?q=B17017; File #B03002 *Hispanic or Latino Origin By Race*, https://data.census.gov/cedsci/table?q=b03002.

Table B.7-1 - Populations by Races and Ethnicity and Low-Income in the Project Area

	RACE AND ETHNICITY COLUMNS (7 block groups out of 15 block groups are considered environmental justice communities)											LOW-INCOME COLUMN
State/ Parish/Census Tract/Block Group	**Total Population**	**White Alone Not Hispanic (%)**	**African American (%)**	**Native American/ Alaska Native (%)**	**Asian (%)**	**Native Hawaiian & Other Pacific Islander (%)**	**Some Other Race (%)**	**Two or More Races (%)**	**Hispanic or Latino (%)**	**Total Minority [a] (%)**		**Below Poverty Level[b] (%)**
Louisiana	**4,531,545**	**57.8**	**31.7**	**0.5**	**1.7**	**0.0**	**0.4**	**2.6**	**5.3**	**42.2**		**18.5**
8.7 miles of proposed new Line 0-501, 9 miles existing Line 0-501 abandonment section, and aboveground sites[c]: (Delhi CS, Midcontinent Express meter station, End of 36" loop 2 tie in, MLV 14) and CY-002												
Richland Parish	**19,149**	**60.7**	**35.3**	**0.1**	**0.3**	**0**	**0**	**1.4**	**2.3**	**39.3**		**26.5**
Census Tract 9702, Block Group 01	1,008	69.7	25.3	0.0	0.0	0.0	0.0	5.0	0.0	30.3		13.1
Census Tract 9702, Block Group 02[c] (CY-002)	947	57.1	38.6	0.0	0.0	0.0	0.0	0.3	3.9	42.9		26.1
Census Tract 9703, Block Group 02	1,249	92.3	7.6	0.0	0.0	0.0	0.0	0.1	0.0	**7.7**		**32.6**
Census Tract 9703, Block Group 03	1,053	91.3	8.5	0.0	0.0	0.0	0.0	0.3	0.0	8.7		26.3
25.5 miles of proposed new Line 0-501, 24.8 miles of existing Line 0-501 abandonment section; aboveground sites: MLV 15 and MLV 16, CY-003, -004, -005, -006, -007, -008												
West Carroll Parish	**9,642**	**77.9**	**16.1**	**0.2**	**0.0**	**0.3**	**0.4**	**0.8**	**4.2**	**22.1**		**21.3**

Table B.7-1 - Populations by Races and Ethnicity and Low-Income in the Project Area												
	RACE AND ETHNICITY COLUMNS (7 block groups out of 15 block groups are considered environmental justice communities)											**LOW-INCOME COLUMN**
State/ Parish/Census Tract/Block Group	**Total Population**	**White Alone Not Hispanic (%)**	**African American (%)**	**Native American/ Alaska Native (%)**	**Asian (%)**	**Native Hawaiian & Other Pacific Islander (%)**	**Some Other Race (%)**	**Two or More Races (%)**	**Hispanic or Latino (%)**	**Total Minority [a] (%)**		**Below Poverty Level[b] (%)**
Census Tract 1, Block Group 01 (CY-006)	731	66.2	28.9	0.0	0.0	0.0	0.0	4.9	0.0	**33.8**		16.8
Census Tract 1, Block Group 02 (CY-005) (MLV 16)	862	91.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0		18.7
Census Tract 1, Block Group 03	615	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3		7.9
Census Tract 1, Block Group 04	648	44.4	55.6	0.0	0.0	0.0	0.0	0.0	0.0	**55.6**		**41.9**
Census Tract 1, Block Group 05 (CY-008)	580	76.7	22.4	0.0	0.0	0.0	0.9	0.0	0.0	23.3		21.1
Census Tract 2, Block Group 01	1,539	78.1	20.3	0.0	0.0	0.0	0.0	0.6	0.9	21.9		**25.2**
Census Tract 2, Block Group 02 (CY-007)	1,565	88.5	3.5	0.0	0.0	0.4	0.4	0.0	7.2	11.5		11.7

Table B.7-1 - Populations by Races and Ethnicity and Low-Income in the Project Area

	RACE AND ETHNICITY COLUMNS (7 block groups out of 15 block groups are considered environmental justice communities)											**LOW-INCOME COLUMN**
State/ Parish/Census Tract/Block Group	**Total Population**	**White Alone Not Hispanic (%)**	**African American (%)**	**Native American/ Alaska Native (%)**	**Asian (%)**	**Native Hawaiian & Other Pacific Islander (%)**	**Some Other Race (%)**	**Two or More Races (%)**	**Hispanic or Latino (%)**	**Total Minority [a] (%)**		**Below Poverty Level[b] (%)**
Census Tract 2, Block Group 03	686	88.8	0.0	0.0	0.0	3.9	0.0	3.9	3.4	11.2		**27.7**
Census Tract 3, Block Group 01 (CY-003 and CY-004)	1,067	77.8	17.1	1.3	0.0	0.0	2.6	0.0	1.2	22.2		20.1
Census Tract 3, Block Group 02 (MLV 15)	778	91.9	3.6	0.0	0.0	0.0	0.0	0.0	4.5	8.1		**22.1**
Census Tract 3, Block Group 03	921	47.6	26.8	0.5	0.0	0.0	0.0	0.8	24.3	**52.4**		**27.5**

Sources: U.S. Census, 2023a, 2023b, 2023c

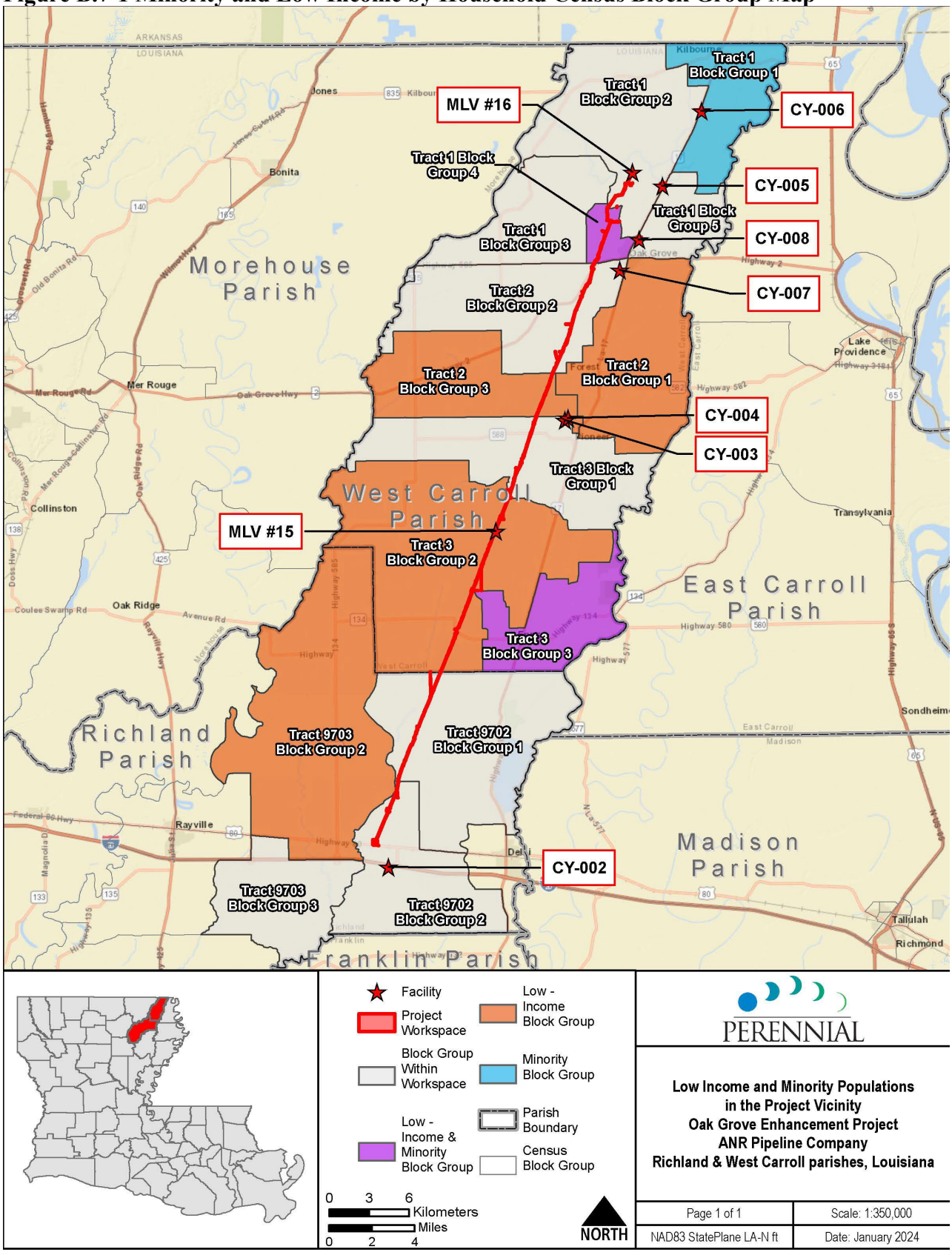
a "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.

b Low-income or minority populations exceeding the established thresholds are indicated in red, bold, type and blue shading.

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

c Aboveground facility sites (Delhi CS, Midcontinent Express meter station, End of 36" loop 2 tie in, MLV 14) are located in this block group.

Figure B.7-1 Minority and Low Income by Household Census Block Group Map



For Project activities at aboveground facilities, the valve replacement and tie-in work at MLV 15 in West Carroll Parish is located in an environmental justice community, and Project activities at the remaining aboveground sites (existing Delhi Compressor Station, existing Midcontinent Express Meter Station, End of 36" loop #2, existing MLV 16) are not located in environmental justice communities.

As noted above, CY-006 is the only contractor yard located within an environmental justice community. CY-003, -004, -005, -007, and -008 are located nearby environmental justice communities. Table B.7-2 below provides the distance and direction of the nearest residence within nearby environmental justice communities for each contractor yard.

Table B.7-2 List of Block Groups in which Contractor/Staging/Pipe Yard are Located

Contractor/Staging/Pipe Yard	Environmental Justice Community	Distance/Direction of the Nearest Residence from the Contractor/Staging/Pipe Yard
CY-003	Tract 2, Block Group 3	0.20 mi SE
	Tract 2, Block Group 1	0.69 mi SE
CY-004	Tract 2, Block Group 3	0.19 mi SE
	Tract 2, Block Group 1	0.60 mi SE
CY-005	Tract 1, Block Group 1	0.59 mi SW
CY-006	Tract 1, Block Group 1	0.02 mi N
CY-007	Tract 2, Block Group 1	0.18 mi E
	Tract 1, Block Group 4	0.44 mi N
CY-008	Tract 2, Block Group 1	0.78 mi S
	Tract 1, Block Group 4	0.11 mi SW

Impacts on Environmental Justice Communities

Promising Practices provides methodologies for evaluating environmental justice impacts related to human health or environmental hazards; the natural physical environment; and associated, and cultural factors. Consistent with *Promising Practices* and Executive Order 14096, we reviewed the Project to determine if its resulting impacts would be disproportionate and adverse on minority and low-income populations and also whether impacts would be significant. [22] *Promising Practices* provides that agencies can consider any of a number of conditions in this determination and the presence of any of these factors could indicate a potential disproportionate and adverse impact.

[22] *See Promising Practices* at 33 (stating that "an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA" and in other circumstances "an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA"); *see also Promising Practices* at 45-46 (explaining that there are various approaches to determining whether an impact will cause a disproportionately high and adverse impact). We recognize that CEQ and USEPA are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

For this Project, a disproportionate and adverse effect on environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations include the location of the Project facilities and the Project's human health and environmental impacts on identified environmental justice communities, including direct, indirect, and cumulative effects.

Impacts on the natural and human environment from construction and operation of Project facilities are identified and discussed throughout this document. Factors that could affect environmental justice communities in which the project facilities are located include, socioeconomic impacts, including traffic impacts and increased demand for temporary housing and public services, visual impacts (see sections below), and air and noise impacts from construction and operation (section B.8). For the identified environmental justice communities, Commission staff determined that potential impacts may relate to traffic, socioeconomics, increased demand for temporary housing and public services, visual impacts, and air and noise impacts from construction and operation due to the overall distance and minimal impacts the Project would have on the identified communities. Environmental justice concerns are not present for wetlands, vegetation and wildlife, geology, and soils and will not be discussed further.

Socioeconomics

ANR anticipates approximately 660 workers to be employed throughout the total duration of the construction of the Project. ANR estimates that approximately 10 percent of the total workforce would be local residents. During the peak construction period of 10 weeks, ANR estimates the Project would require up to 315 workers, while the construction workforce is anticipated to average approximately 110 workers during non-peak times. Abandonment activities are anticipated to require up to 70 workers. Given the nominal non-local workforce required for Project construction relative to the parish populations (at most 283 non-local workers during the 10-week peak construction period, representing a low of 1.5 percent change in Richland Parish and a high of 2.9 percent change in West Carrol Parish, respectively) and no new operational workforce required to operate the facilities. The increase in non-local workers could have a positive economic effect on community through increased tax revenues. Within the rural, sparsely populated portions of the Project area, this increase in the tax revenue would provide local benefits to those communities. We believe that impacts on socioeconomic resources within the environmental justice communities (e.g., population, housing demand, or the provision of community services such as police, fire, or schools) would be minor and temporary, as there would be a negligible change from current conditions.

Traffic

Traffic impacts on the environmental justice communities would be temporary and minimal as the number of vehicles anticipated to arrive and/or depart from the contractor yards as well as the pipeline workspace and aboveground facilities would be a total of approximately 80 to 90 vehicles per day within the identified environmental justice communities. ANR anticipates that only 22 large semi-trucks would be required over the course of the Project. The majority of the traffic attributed to the Project would comprise of light-duty pickups. During the peak of construction activities, ANR estimates an average of approximately 240 round trips per day for

construction of the pipeline facilities and approximately 60 round trips per day for construction of the aboveground facilities. During non-peak construction phases of the Project (i.e., existing Line 0-501 abandonment), ANR estimates an average of 85 round trips per day for abandonment activities along the pipeline.

ANR would implement mitigation measures such as, work with local authorities to ensure that the route utilized by large trucks making deliveries or hauling pipe is the most efficient and least disruptive route for the surrounding communities. Implementing appropriate traffic control measures, such as flagmen and signs, as necessary to ensure safety of local traffic during construction, minimizing the amount of heavy traffic, including oversize/overweight loads, during the peak travel times of the day.

We conclude that the proposed increase in workforce for the Project would result in temporary traffic impacts during peak hours for the environmental justice communities along the pipeline right-of-way. However, with implementation of the mitigation measures discussed above, these traffic impacts on environmental justice communities would remain at an acceptable level and would be less than significant. Operation of the proposed Project would not contribute to traffic congestion, as four existing permanent employees would continue to be necessary for the Project.

Visual Resources

Impacts on visual and/or aesthetic resources associated with the Project would occur during construction of the Project, because of the presence of construction equipment in the Project area. Other visual impacts associated with use of the contractor yards, as well as the use of staging and pipe yards would also have an impact on visual and/or aesthetic resources. The closest residences are located 18 to 91 feet from the edge of the pipeline construction workspace as shown in Appendix 7. After construction, the viewshed may change due to some minor tree clearing but would be consistent with the current viewshed of the existing right-of-way. The closest residence to the contractor yard is 0.02 mile. The contractor yard would be located within developed land across the street from the residence, we do not anticipate any significant changes to the viewshed. Construction activities and use of the contractor yards may be visible from some residences.

During Project operation, visual and/or aesthetic resources in environmental justice communities may change due the expansion of MLV 15 and construction of a permanent access road. However, the viewshed would remain consistent with the of the existing right-of-way and no significant change to visual resource is anticipated.

Air Quality

The Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, would also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants.

Emissions during construction would increase pollutant concentrations in the surrounding environmental justice communities. However, their effect on ambient air quality would vary with time due to the construction schedule, and the mobility of the source. Construction emissions associated with the Project would be considered temporary (16 months) and cease at completion of construction. Fugitive dust would be reduced by use of the Fugitive Dust Plan. There are no new operational emissions associated with this Project.

Due to the temporary nature of construction emissions, implementation of mitigation measures, and that no new operational emissions are associated with the Project; we conclude that the Project would not have a significant impact on air quality within nearby environmental justice communities. Air Quality is discussed further in section B.8.

Noise

Noise associated with the Project would involve noise from activities being conducted during construction and use of the contractor yards. Construction noise would be highly variable due to the types of equipment in use and timing of activities. Construction equipment would be operated on an as-needed basis during the construction period, and construction activities are expected to occur for 16 months. The closest residences are located 18 to 91 feet from the edge of the pipeline construction workspace as shown in Appendix 7. The closest residences to the contractor yards range from 0.02 mile to 0.78 mile away. Construction noise would impact environmental justice communities.

ANR would minimize noise impacts on the environmental justice communities by primarily limiting Project activities to normal business hours (i.e., 7:00 AM to 7:00 PM). ANR states that construction outside of the typical workdays and times would only be performed on an as needed basis to meet scheduling concerns and would be limited to quiet activities such as tie-ins at critical locations; hydrostatically testing piping; and recompression and service transferring activities. (see section B.8). ANR states it would notify all affected landowners of the night-time work or work on Sundays or federal holidays, and should there be any landowner concerns, it would work with the landowners to address their concerns and if requested, landowners may have the option to be temporarily relocated. We further recommend that ANR provide a noise management plan prior to construction to ensure that any noise impacts during nighttime construction are appropriately minimized (see section B.8). The Project would not result in any new operational noise impacts.

Based on the mitigation measures implemented by ANR, our recommendation, and that there would be no additional operational noise, we conclude that the proposed Project would not significantly impact noise in the surrounding environmental justice communities.

Environmental Justice Impacts Mitigation

As described in *Promising Practices*, when an agency identifies potential adverse impacts, it may wish to evaluate practicable mitigating measures. ANR Project activities could result in temporary increased light, noise, and traffic within the environmental justice communities during construction activities. ANR has committed to certain mitigation measures to minimize and reduce impact to environmental justice communities.

Though not specifically targeted at mitigation impacts on environmental justice communities, mitigation measures would be implemented across the Project area, including within the identified environmental justice communities. ANR would:

- minimize noise impacts on the EJ communities by primarily conducting Project activities during normal business hours (i.e., 7:00 AM to 7:00 PM);
- construction crews working outside of normal business hours would utilize handheld equipment/tools and pipe lifting equipment; limiting night-time lighting by directing the fixtures only to specific locations where work is being performed;
- equipment deliveries would be limited to daytime operations to avoid increased traffic during the night-time hours; and
- all potentially affected landowners would be contacted in advance of commencing any construction activities outside normal hours, on Sundays, or on federal holidays.
- ANR would employ common construction practices to control fugitive dust emissions during construction as outlined in its *Fugitive Dust Control Plan*.

Determination of Disproportionate and Adverse Impacts on Environmental Justice Communities

As described throughout this EA, the Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project, including environmental justice populations. As previously described, portions of the 34.1 miles of new 30-inch-diameter segment of natural gas pipeline and portions of Line 0-501 segment, which would be abandoned, are within environmental justice communities. Additionally, contractor yard CY-006 is located within environmental justice community. For Project activities at aboveground facilities, the valve replacement and tie-in work at MLV 15 in West Carroll Parish is located in an environmental justice community. Based on the foregoing analysis, impacts associated with the Project construction, operation, and abandonment activities of certain Project components may be predominately borne by environmental justice communities, aside from these minor impacts, the project would not have disproportionately high and adverse impact on environmental justice communities. Moreover, Project impacts associated with socioeconomics, traffic, visual, air quality, and construction noise would be temporary and less than significant and would have no significant adverse impacts on the environmental justice communities.

8.0 AIR QUALITY AND NOISE

Air Quality

Federal and state air quality standards are designed to protect human health. The USEPA has developed National Ambient Air Quality Standards (NAAQS) for criteria air pollutants such as oxides of nitrogen (NO_x) and carbon monoxide (CO), sulfur dioxide (SO_2), and inhalable particulate matter ($PM_{2.5}$ and PM_{10}). $PM_{2.5}$ includes particles with an aerodynamic diameter less than or equal to 2.5 micrometers, and PM_{10} includes particles with an aerodynamic diameter less than or equal to 10 micrometers. The NAAQS were set at levels the USEPA believes are necessary to protect human health and welfare. Volatile organic compounds (VOC) are regulated by USEPA mostly to prevent the formation of ozone, a constituent of photochemical smog. Many VOCs form ground-level ozone by reacting with sources of oxygen molecules such as NO_x in the

atmosphere in the presence of sunlight. NO_x and VOCs are referred to as ozone precursors. Hazardous air pollutants (HAP) are also emitted during fossil fuel combustion and are suspected or known to cause serious health effects or adverse environmental effects.

Greenhouse Gases (GHG) produced by fossil-fuel combustion are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). GHGs status as a pollutant is not related to toxicity. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the Clean Air Act. GHGs emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age and are typically expressed in terms of carbon dioxide equivalents (CO_2e).

If measured ambient air pollutant concentrations for a subject area remain below the NAAQS criteria, the area is considered to be in attainment with the NAAQS. The Project areas are in attainment for all NAAQS.

The Clean Air Act is the basic federal statute governing air pollution in the United States. The project would only involve construction of the pipeline and construction of small aboveground facilities like valves Therefore, we have reviewed the following federal requirements and determined that they are not applicable to the proposed Project:

- New Source Review;
- Title V;
- National Emissions Standards for Hazardous Air Pollutants;
- New Source Performance Standards;
- Greenhouse Gas Reporting Rule; and
- General Conformity of Federal Actions

A general conformity applicability determination requires that direct and indirect emissions of nonattainment or maintenance pollutants (or precursors) resulting from the federal action, and not covered by an air quality permit, be compared with general conformity applicability emissions thresholds. If the thresholds are exceeded, general conformity applies, and a conformity determination is required. As indicated above, the Oak Grove Enhancement Project is in an area designated as in attainment for all NAAQS (USEPA 2023b). Therefore, the Project is not subject to General Conformity requirements.

During construction, a temporary reduction in ambient air quality may result from criteria pollutant emissions and fugitive dust generated by construction equipment. The quantity of fugitive dust emissions would depend on the moisture content and texture of the soils that would be disturbed. Fugitive dust and other emissions due to construction activities generally do not pose a significant increase in regional pollutant levels; however, local pollutant levels could increase. Dust suppression techniques, such as watering the right-of-way may be used as necessary in construction zones near residential and commercial areas to minimize the impacts of fugitive dust on sensitive areas. Construction emissions are shown in Table B.8-1 below.

Table B.8-1 Summary of Construction Emissions (Tons)								
Source	**CO**	**NO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**HAP**	**CO_{2e}**
Non-Road Equipment	7.73	26.4	1.74	1.32	1.28	0.09	0.26	4955.29
Diesel Gas On-Road Equipment	0.12	0.004	0.008	0	0	0	0	13.14
Construction Activity Fugitive Dust	-	-	-	75.41	10.39	-	-	-
Roadway Fugitive Dust	-	-	-	1.56	0.67	-	-	-
Venting	-	-	0.81	-		-	-	3000.0
Open Burning	64.68	1.85	8.09	7.85	7.85	-	-	1500.56
Land Clearing	-	-	-	0.76	0.11	-	-	-
Total	**72.53**	**28.25**	**10.65**	**86.9**	**20.3**	**0.09**	**0.26**	**9468.99**

Based on the scope of the Project, the short duration of activities (16 months occurring over the course of two year), and our review of the estimated emissions, we conclude that there would not be regionally significant impacts on air quality due to construction emissions.

Replacing the existing pipe with new pipe would reduce the chance of a leak which reduces fugitive emissions. ANR would continue to participate in USEPA's Methane Challenge Program through the One Future option. ANR would incorporate Natural Gas STAR recommended technologies as appropriate during this Project including pipeline pump-downs, pipeline pressure reductions prior to blowdowns, use of pipeline isolations systems, installation of cathodic protection and valve maintenance. The replacement of the existing Line 0-501 and other Project modifications would be used to continue existing service already provided by ANR. There would be no new operational emissions and no change in downstream capacity from this replacement and abandonment Project.

Noise

The noise environment can be affected both during construction and operation of pipeline projects. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} plus 10 decibels on the A-weighted scale (dBA) added to account for people's greater sensitivity to nighttime sound levels during late evening and early morning hours (between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise.

Construction noise is highly variable. Many construction machines operate intermittently, and the types of machines in use at a construction site change with the construction phase. The sound level impacts on residences along the pipeline right-of-way due the construction activities would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and machines used simultaneously, and the distance between the sound source and receptor. Nighttime noise due to construction would be limited since construction generally occurs during daylight hours, Monday through Saturday.

Construction Noise Impacts and Mitigation

Noise resulting from the modification and installation of the Project facilities would vary. Construction equipment and worker vehicles generally operate intermittently and may change depending on project activity/phase. 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. In general, construction activities would occur from 7:00 AM to 7:00 PM, or daylight hours, Monday through Saturday. ANR states that construction outside of the typical workdays and times would only be performed on an as needed basis to minimize the number of days required for the construction activities and meet the scheduled completion date for the Project.

Activities that may occur during night-time hours could include: (i) tie-ins at critical locations; (ii) hydrostatically testing piping; and (iii) recompression and service transferring activities. These night-time construction activities for the Project would be temporary in nature and are not expected to occur for the duration of construction. These impacts would be minimized through the implementation of ANR's proposed noise mitigation measures consisting of the following:

- construction crews using handheld equipment/tools and pipe lifting equipment;
- limiting night-time lighting by directing the fixtures only to specific locations where work is being performed; and
- restricting equipment delivery to daytime operations to avoid increased traffic during the night-time hours.

Before commencing any construction activities outside normal hours, on Sundays, or on federal holidays, ANR would contact all potentially affected landowners in advance.

Should there be any landowner concerns with construction activities during night-time or on federal holidays, ANR would continue to work with the landowners to address their concerns. Mitigation measures would include notifying all affected landowners of the night-time work, and if requested, landowners may have the option to be temporarily relocated. ANR would utilizing traffic flaggers and coordinate equipment deliveries so that they occur during non-peak traffic hours, to limit traffic noise and congestion. However, to address potential noise impacts during nighttime construction and ensure nighttime mitigation measures are adequate to meet FERC's standard noise requirements, **we recommend that:**

Prior to construction, ANR should file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a Nighttime

Construction Noise Management Plan, that includes the measures it would implement to reduce the projected nighttime (7 p.m. to 7 a.m.) construction noise levels to at or below 48.6 dBA Leq at noise sensitive areas.

Based on the limited duration of construction and abandonment activities, and our recommendations, we conclude that the Project's noise impacts on nearby residences would be minor and not significant. There would be no new operational noise impacts.

9.0 RELIABILTY AND SAFETY

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. Methane has an auto-ignition temperature of 1,000 °F and is flammable at concentrations between 5.0 and 15.0 percent in air. 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 space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

As described below, the safety of natural gas transmission pipelines and associated transmission facilities are regulated by the DOT. Transco operates its existing facilities in compliance with these standards and requirements. The abandoned facilities would be subject to the Pipeline and Hazardous Materials Safety Administration (PHMSA) safety standards and requirements.

Safety Standards

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

ANR would complete a pre-commissioning leak test per the requirement of 49 CFR 192 Pipeline Safety regulations. Any identified leaks would be repaired per the Project specifications before going into operational service.

Conclusion

The Project would improve the integrity and reliability of ANR's system by replacing vintage pipeline facilities installed in the 1950's with new, more modern pipeline facilities. The segment of Line 0-501 proposed for abandonment contains a high concentration of external

corrosion. ANR has determined that abandoning and replacing this section of Line 0-501 is required to continue to provide safe and reliable service to its existing customers. The new Line 0-501 would have the same pipeline diameter and maximum allowable operating pressure as the existing segment and would provide no new transportation capacity. ANR's upgraded facilities would represent a decrease in risk to the public once the Project is completed and compliance with PHMSA's safety regulations would ensure that the Project would be constructed and operated safely.

10.0 CUMULATIVE EFFECTS

The CEQ regulations for implementing NEPA, at 40 CFR 1508.1(g)(3), define cumulative effects as: "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". In accordance with NEPA and Commission policies (including relevant guidance from the CEQ), we evaluated the potential for cumulative effects on the environment. Our cumulative effects analysis considers actions that impact environmental resources affected by the proposed action, within all or part of the Project area affected by the proposed action, and within all or part of the time span of the impacts resulting from the proposed action. Appendix 2 identifies the projects we identified within the geographic scope.

In this analysis, we consider the impacts of past projects to have become part of the affected environment (environmental baseline), which was described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are considered.

Under this approach, the determination of whether to include an action in our analysis is based on identifying overlapping resource impacts from the other action with the potential impacts that would result from construction and operation of the Project. To adequately address and accomplish the purpose of this analysis, an action must first meet the following three criteria:

1. affect a resource that could also be affected by the proposed action;
2. cause this impact within resource-specific areal regions of influence, referred to as geographic scopes, as described below; and
3. cause an impact within the same time span as the potential impact from the proposed action.

Consistent with CEQ guidance, the scope of the cumulative effect analysis is related to the magnitude of the environmental impacts of the proposed action. As demonstrated in the previous analyses presented in this EA, the scope of the proposed action is minor, and we expect most of the direct and indirect impacts resulting from construction and operation of the Project to be limited to the work areas.

Geographic Scope

Consistent with CEQ guidance, and to determine a suitable scope for the analysis, we defined an appropriate "geographic scope" within which other projects, in combination with the

proposed Project, could have a cumulative effect. To determine the appropriate geographic scopes for this analysis, focus was placed on resources affected by the Project. Shown in Table B.10-1 below, we define the various geographic scopes for all resources assessed for cumulative effects. Appendix 2 summarizes the present and reasonably foreseeable projects or actions that occur within the geographic scope of the Project.

Table B.10-1
Geographic Scopes for Project

Resource	Geographic Scope	Rationale
Soils and Geology	Construction workspace	Impacts on soils and surficial geology would be highly localized and are not expected to extend beyond the area of direct disturbance associated with the Project.
Surface Water, Groundwater, Wetlands, Fisheries, Vegetation, and Wildlife	Watershed Boundary (HUC 12)	Watersheds are natural, well-defined boundaries for surface water flow. Impacts on surface water resources and wetlands could reasonably extend throughout a HUC-12 watershed. Cumulative effects on vegetation and wildlife (including special status species) typically are assessed within watershed boundaries due to the connectivity between biotic and abiotic resources that occurs within a drainage system.
Land Use, Recreation, Visual Resources	1-mile radius	Impacts on land uses, recreation, and aesthetics generally occur within the project work areas. Based on the proposed Project size and scope and the generally uniform character of the surrounding area, a 1-mile radius is anticipated to account for impacts on land uses, recreational areas, and viewsheds that would be experienced by people in the flat to gently undulating terrain in the Project vicinity.
Cultural Resources	APE, which typically includes overlapping, impacts within the Project's footprint (direct)	The impact area for direct effects (physical) includes areas subject to ground disturbance, while indirect effects (visual or audible) include aboveground ancillary facilities or other project elements that are visible from historic properties where the setting contributes to their NRHP eligibility.
Environmental Justice	affected block groups	The geographic scope of potential impacts for environmental justice includes all block groups affected by the Project.
Air Quality – Construction	0.25 mile (air quality – construction)	Air emissions during construction would be limited to vehicle and construction equipment emissions and dust and would be localized to the Projects' active construction work areas and areas adjacent to these active work areas.
Noise - Construction	0.25 mile from aboveground facilities	Noise impacts are highly localized and attenuate quickly as the distance from the noise source increases. Noise impacts from construction activities are evaluated at all noise sensitive areas within 0.25 mile.

Appendix 2 summarizes recent past, current, and reasonably foreseeable actions and affected resources potentially falling within one or more geographic scopes identified in Table B.10-1. Information about other actions were identified based on information provided by ANR; online research; FERC staff's knowledge of other planned, pending, and ongoing jurisdictional

natural gas projects; and by federal, state, and local agency and municipality websites. Cumulative effects were typically derived from our approximation of project boundaries as interpreted from publicly available project descriptions, maps, and aerial photography.

The following projects occur within the geographic scope for cumulative effects:

- Delhi HP Replacement
- 0-501 Pipe Recoat Project – MLV 16 to 18
- 1-501 Pipe Recoat Project – MLV 14 to 18
- 2-501 Pipe Recoat Project – MLV 14 to MP 154
- Mainline Valve 15 Electric Line
- Mainline Valve 16 Electric Line

The actions considered in our cumulative effect analysis are included based on the likelihood of their impacts coinciding with impacts from the Project, meaning the other actions have current or ongoing impacts or are "reasonably foreseeable." The actions we considered are those that could affect similar resources during the same timeframe as the Project. The anticipated cumulative effects of the Project and these other actions are discussed below.

Geology and Soils

Project impacts on geology and soils would be highly localized to the Project footprint during active construction and may extend for 1 to 2 years following construction until revegetation is successful. Other project's actions within the geographic scope for geology cumulative impacts, including expansion of the access roads and minor aboveground facilities in and around the existing facilities, and a construction of two electric lines would involve a similar surficial disturbance of unconsolidated materials and, thus, would not substantially alter the structural elements of the earth. Therefore, the geographic scope for geology and soils is the Project footprint. Cumulative effects on geology and soils would only occur if other geographically overlapping projects were constructed in a similar timeframe as the Project.

The Project's localized impact on geology and soils would result from shallow excavations within the Project work area. The past, present, and reasonably foreseeable future actions within geographic scope include the two ANR localized recoating actions (actions totaling 2.0 miles and 0.4 miles, respectfully) and the two non-jurisdictional power pole actions. These actions are also projected to overlap with the Project timeline. To further reduce impact potential, temporary erosion and sediment controls would be installed after initial disturbance, in accordance with ANR's Project-specific ECS. Therefore, the impacts from these projects would be localized and temporary. We conclude that construction and operation of the Project would not significantly contribute to cumulative effects on geology and soils when considered in conjunction with other past, present, and reasonably foreseeable projects in the geographic scope.

Groundwater

The geographic scope used to assess cumulative effects on groundwater includes the HUC-12 watersheds crossed by the Project (see table B.4-1). The project is located in 7 sub-watersheds, as described in table B.4-1. As discussed above, the construction activities for the three ANR

localized recoating actions and the two non-jurisdictional power pole actions are projected to overlap with the Project timeline. For this analysis, we assumed that all these projects would comply with state and federal permits in order to minimize impacts on groundwater. No SSAs were identified within the Project area. An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up properly. Spill-related impacts would be minimized by the implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedure, ensuring equipment is in good operating condition and regularly inspecting equipment.

Groundwater could be encountered during trenching; however, ANR would conduct trench dewatering by implementing the measures in its Project-specific ECS which incorporates the FERC Plan and Procedures. The Project's impacts on groundwater resources would be temporary and less than significant due to the limited vertical extent of excavations and other ground disturbances and the relatively short duration of construction. Additionally, ANR's commitment to implement the BMPs in its Project-specific ECS and SPCC Plan, along with the other projects' adherence to federal and state permit conditions, would mitigate any potential impacts on groundwater resources. We therefore conclude that construction and operation of the Project would not significantly contribute to cumulative effects on groundwater when considered in conjunction with other past, present, and reasonably foreseeable projects in the geographic scope.

Surface water and wetlands

Cumulative effects on surface waters from the Project along with other activities occurring within the same temporal and geographic scope would primarily be from increases in turbidity and sedimentation affecting surface water quality. ANR identified six projects within the geographic scope of the Project, five of which would occur within the same timeframe as the Project. Three associated projects may affect waterbodies in the same HUC-12 sub-watersheds as the Project (see table B.4-1). These projects with overlapping workspaces as the Project are for pipe recoating activities at Line 0-501 from MLV-16 to MLV-18, Line 1-501 from MLV-14 to MLV-18, and Line 2-501 at MLV-14 to MP 154 of Line 2-501. Waterbody crossings would result in streambed and bank disturbances from removal of riparian vegetation and equipment travel. Soil erosion contributes to turbidity levels and sedimentation rates; thereby affecting water clarity and dissolved oxygen levels at the crossing location and downstream sections. Compaction of streambanks and riparian habitat from heavy machinery and trenching may decrease revegetation success from changes to soil structure, contributing to longer term soil erosion. Concurrent in-stream construction activities within the same geographic scope (HUC-12 sub-watershed) would lead to additive effects on surface water quality.

Similarly, wetlands crossed by Project and other projects could contribute to degradation of surface water quality and source water protection areas if mitigation measures are not implemented properly. Compaction and disturbance of wetland soils from equipment travel and construction on wetlands may alter wetland hydrology and functions. Long-term effects may result if restoration and revegetation of wetlands are not successful due to mixing of wetland topsoil and subsoil layers. According to ANR, no additional acreage of wetlands would be impacted at MLV-15 or MLV-16

to install a new power pole and no information was provided about effects on wetlands due to pipe recoating activities for existing Lines 0-501, 1-501, and 2-501.

Impacts from waterbody and wetland crossings and mitigation measures are detailed in section B.4. Five other projects may occur in the same timeframe within three of the seven HUC-12 sub-watersheds that the Project crosses. These projects, contributing to cumulative effects are activities associated with the Project, include potential pipeline recoating activities on Lines 0-501, 1-501, and 2-501 from Mainline Valves 14 to 18. ANR estimated a total of 3.3 miles from pipeline recoat activities on these three lines may affected surface water and wetland resources. Based on the information provided by ANR, construction workspaces for these projects overlap with a majority of the construction workspace for the Project. Magnitude of cumulative effects are potentially greatest when the Project and other projects have direct impacts on the same waterbody or wetland within the same timeframe.

While information regarding federal and state permit requirements under the CWA for the other projects not under FERC jurisdiction is not available; general mitigation and avoidance practices are required by the CWA. The Project would require a CWA Section 401 and a Section 404 permit (as authorized under an approved usage of the NWP 12 permit); ANR would adhere to the FERC Plan and Procedures with modifications and their ECS and SPCC Plan; and ANR would implement construction best management practices. We conclude that overall cumulative effects on surface water and wetland resources would not be significant.

Fisheries

Construction of the Project would require 56 waterbody crossings; all are minor and intermediate waterbodies and deemed warmwater fisheries. Temporary impacts on fish potentially present in the waterbodies would be caused by in-stream crossings, disturbance to stream beds and banks, and removal of any associated riparian vegetation. While greatest impacts to fish would be localized to the location and time of in-stream work and adjacent soil disturbance, effects on fisheries would vary based on the incremental and cumulative consequences of turbidity and sedimentation across the fish lifecycle in the HUC-12 sub-watersheds. As stated in the surface water and wetlands cumulative assessment above, the Project would require CWA Sections 401 and 404 permits for water quality certification and discharge of fill or dredged materials into Waters of the United States, respectively, in addition to compliance with the FERC Plan and Procedures with modifications, including proper installation of erosion control devices. We conclude that the cumulative effects on fisheries in the region would not be significant.

Vegetation

Project construction would affect 688.6 acres of vegetation, of which 170.3 acres would be maintained for operation of the permanent right-of-way for the new Line 0-501, modifications at four aboveground facilities, and permanent access roads in Richland and West Carroll parishes. While over 75 percent of the disturbed land acreage would be affected temporarily—assuming successful control of invasive species and revegetation following the completion of construction—short-term impacts are expected for wetlands and long-term effects for forested areas and expanded footprints at existing aboveground facilities. Over 40.5 acres of forests would be permanently

cleared, 0.61 acre for aboveground facilities (inclusive of permanent access roads), while 10.23 acres of wetlands would be affected based on a 10-foot-wide maintenance corridor.

Potential cumulative effects from projects not subject to FERC jurisdiction in the geographic scope would be additive, as a majority of the associated workspace would already be within the disturbed temporary construction workspace for the Project. While five other projects may occur within the timeframe of the Project and would be within existing rights-of-way, additional workspaces leading to vegetation clearing, may be necessary should the Project workspaces not be sufficient for topsoil segregation and/or storage for pipeline recoat activities associated with Lines 1-501 and 2-501. Moreover, the estimated 0.9-mile total of pipeline recoat activities between MLV-16 and MLV-18 on the existing Line 0-501 may require vegetation clearing to accommodate construction equipment, topsoil segregation on agricultural lands, and workspaces for road crossings. Due to the limited additional vegetation cleared for the other foreseeable projects—proposed activities would be within existing maintained rights-of-way concurrent with the Project's construction activities, cumulative effects on vegetative resources would not be significant.

Wildlife Resources

Effects on wildlife resources are in response to removal of vegetation and resulting temporal duration on wildlife habitat. Removal of large intact vegetated areas may induce temporary population fluctuations from increased predation, decreased breeding success, and loss of food sources. However, cumulative effects from the six projects in Appendix 2 would not be significant as wildlife dispersal would have already occurred in tandem with vegetation clearing and the Project is located in an agricultural landscape with an existing generalist wildlife community. Furthermore, the only project within the geographic scope (Delhi HP replacement), which would result in an estimated additional wildlife habitat impact of 19.1 acres, is expected to be completed before the start of the Project. Therefore, cumulative effects of the six projects across three HUC-12 sub-watersheds would not be significant.

Cultural Resources

The projects listed in Appendix 2 that are within the geographic scope for cultural resources include those that overlap the Project's workspace or, for indirect effects, are closely adjacent. Those that are defined as federal actions (e.g., all FERC-regulated projects) would have to comply with section 106 of the NHPA and include mitigation measures designed to avoid or minimize additional impacts on cultural resources. Where impacts on significant cultural resources are unavoidable, mitigation (e.g., recovery of data and curation of materials) would take place before construction. Non-federal actions would need to comply with any mitigation measures required by the states.

Cultural resources surveys have been completed for the Project, and the Project would not adversely affect historic properties. ANR has developed a plan to address unanticipated discoveries of cultural resources and human remains during construction of the proposed Project. Given the previously mentioned state and federal laws and regulations that protect cultural resources, it is not likely that there would be significant cumulative effects on historic properties resulting from the Project when considering the other projects within the geographic scope.

Land Use

The geographic scope for assessing cumulative effects on land use affected by construction and operation of the Project includes areas within 1 mile radius of the Project workspaces. The potential cumulative effects associated with the Project may result from impacts with construction and operation of the Project facilities combined with the impacts from non-jurisdictional facilities.

The cumulative effects of the proposed Project and the other projects would be greatest in agricultural land (96 acres), which would be reverted back to its previous use, once construction is complete; with additional cumulative effects in wetlands (10.5 acres) and developed land (47.7 acres). Overall, cumulative effects on land use would not be significant.

Environmental Justice

The expansion of MLV 15 and contractor yard 006 of the proposed Project are within the same geographic scope for cumulative effects for environmental justice as the MLV 15 electric line project and the 0-501 Pipe Recoat Project – MLV 16 to 18 listed in appendix 2, respectively. The proposed Project along with the Projects listed in appendix 2 would contribute to cumulative effects for visual, traffic, air quality and noise impacts. Cumulative effects on environmental justice communities are not anticipated to have a significant impact on resources.

Construction of the Project, along with the other projects in the geographic scope for environmental justice in appendix 2 that occur at the same time as the Project, would contribute to temporary increases in emissions from combustion engines used to power construction equipment, emissions from vehicles traveling to and from the construction sites, and fugitive emission dust resulting from equipment movement on dirt roads and earth-disturbing activities. Based on the short-term nature of construction and the implementation of appropriate mitigation measures, the cumulative effects on air quality for environmental justice communities due to construction would not be significant.

Most of the Project would be constructed within or adjacent to existing maintained rights-of-way. Visual impacts would occur where the proposed pipeline diverges from the existing pipeline right-of-way. New pipeline right-of-way would generally have a similar visual character to ANR's existing maintained right-of-way once vegetation is established. Visual impacts would be long term in areas where trees are cleared due to the time required for forested areas to reestablish. Although the Project, when considered with the other reasonably foreseeable actions in the geographic scope, may contribute cumulative visual effects on environmental justice communities, the impacts would be less than significant.

Cumulative socioeconomic effects on environmental justice communities could occur from the Project in combination with the projects listed in appendix 2. Impacts on socioeconomics would be temporary and limited to periods of concurrent construction. Use of public roads and private access roads by the Project and nearby appendix 2 projects could result in temporary cumulative effects on road traffic within environmental justice communities that would be less than significant. Therefore, we conclude the proposed Project's contribution to cumulative socioeconomic effects would be less than significant.

Air Quality

The combined effect of multiple construction projects occurring in the same airshed, and timeframe could temporarily add to the ongoing air quality effects of existing activities. No major projects have been identified in the geographic scope of the Project (0.25-mile radius). Typically, smaller local projects have varying construction schedules and would take place over a relatively large geographic area. Therefore, we conclude after review of the past, present, and reasonably foreseeable future projects/actions occurring within the Project area and the small nature of the Project, that the Project would not have a significant long-term adverse impact on air quality and would not result in a significant cumulative effect on air quality. There would be no new operational emissions.

Noise

The Project could contribute to cumulative noise impacts. However, the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases. No major projects have been identified in the vicinity of the Project area that would overlap with the construction timeline of the Project. We identified other small projects that could cumulatively add to noise impacts during construction within a 0.25-mile radius. Typically, smaller local projects have varying construction schedules and would take place over a relatively large geographic area. Therefore, we conclude that cumulative noise impacts from construction and operations would not have a significant cumulative impact. There would be no change in operational noise.

Conclusion

As previously concluded in this EA, Project impacts would be minor and mostly temporary. Therefore, when considered with past, present, and reasonably foreseeable projects within the geographic scope, we conclude that cumulative effects on affected resources would not be significant.

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 GHGs 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.[23] The GHHs produced by fossil-fuel combustion are CO_2, CH_4, and N_2O.

In 2017 and 2018, the U.S. Global Change Research Program (USGCRP) issued its *Climate Science Special Report: Fourth National Climate Assessment*, Volumes I and II.[24] This report and

[23] 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.

[24] U.S. Global Change Research Program. *Climate Science Special Report: Fourth National Climate Assessment, Volume 1, Chapter 3 Detection and Attribution of Climate Change* (2017), available at: https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (accessed June 3, 2021).

the recently released report by the Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, state 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.[25] 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.[26] These impacts have accelerated throughout the end of the 20th and into the 21st century.[27]

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 GHGs would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting 1 ton of GHGs.

Climate change is a global phenomenon; however, for this discussion, we will focus on the existing and potential cumulative climate change impacts in the Project area. The USGCRP's Fourth Assessment Report notes the following observations of environmental impacts are attributed to climate change in the Southeast Region, including the Project area location in Louisiana:[28]

- temperatures cycled between warm and cool periods extending from 1920 to 1970. After 1970, annual average temperatures have warmed to levels above the 1930s; the decade of 2010 through 2017 has been warmer than any previous decade for average daily maximum and average daily minimum temperature;
- since 1960, there have been lower numbers of days above 95°F compared to the pre-1960 period but during the 2010's the number of nights above 75°F has been nearly double the average over 1901 – 1960. The length of the freeze free season was 1.5 weeks longer on average in the 2010s compared to any other historical period on record;
- number of days with 3 or more inches of rain has been historically high over the past 25 years. The 1990s, 2000s and 2010s rank first, third and second, respectively in number of events;
- summers have been either increasingly dry or extremely wet, depending on location;
- due to a combination of sea level rise and soil subsidence, approximately 2,006 square miles of land has been lost in Louisiana between 1932 and 2016, or about 23 square miles per year; and in southeast Louisiana, relative sea level is rising at a rate of 1 to 3 feet per 100 years.

[25] IPCC Report at SPM-5 to SPM-10.
[26] USGCRP Report Volume II at 73-75.
[27] *See, e.g.,* USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).
[28] USGCRP Report Volume I and II.

The USGCRP's Fourth Assessment Report notes the following projections of climate change impacts in the Project region (Southeast U.S.) with a high or very high level of confidence[29] (USGCRP, 2018):

- climate models project nighttime temperatures above 75°F and daytime maximum temperatures above 95°F become the summer norm. Nights above 80°F and days above 100°F, which are now relatively rare, would become common;
- lowland coastal areas are expected to receive less rainfall on average, but experience more frequent intense rainfall events followed by longer drought periods;
- coastal areas along the Gulf of Mexico are flat; therefore, expected sea level rises may cause inundation in certain low-lying areas;
- drought and sea level rise will create stressful conditions for coastal trees that are not adapted to higher salinity levels;
- other coastal species may also be stressed by sea level rise and warmer temperatures, prompting migration out of the area; and
- tropical storms and hurricanes may become more intense.

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.[30]

The GHG emissions from the Project were identified and quantified in Table B.8-1, in terms of CO_2e.[31] Construction activities would result in 9,468.99 tons (equivalent to 8,590.1 metric tons) of CO_2e emissions. These emissions would occur during a temporary period (a total of 16 months) as a result of equipment and commuting exhaust. Following replacement and abandonment; there would be no new operational emissions from the facilities.[32] Also, there would be no change in system capacity from this replacement and abandonment Project and therefore no downstream emissions.

Project construction activities would increase the atmospheric concentration of GHGs in combination with past, current, and future emissions from all other sources globally and 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

[29] 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/

[30] USGCRP Report Volume II.

[31] GHG gases are converted to CO_2e by means of the global warming potential, the measure of a particular GHG's ability to absorb solar radiation as well as 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.

[32] Replacing the existing vintage pipeline facilities installed in the 1950's with new pipe would likely reduce fugitive emissions; however, that reduction was not quantified.

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.[33] 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 emissions on a national level, we compare the Project's GHG emissions to the total GHG emissions of the United States as a whole. At a national level, 5,586 million metric tons of CO_2e were emitted in 2021 (inclusive of CO_2e sources and sinks). (USEPA, 2023) Construction emissions from the Project could potentially increase CO_2e emissions based on the national 2021 levels by 0.0002 percent; in subsequent years, the Project's operational emissions are not anticipated to change.

In order to provide context of the Project emissions on a state level, we compare the Project's GHG emissions to the Louisiana GHG inventories. At the state level, Louisiana energy related CO_2 emissions in 2021 were 189 million metric tons (Energy Information Administration 2023). Project construction could potentially increase CO_2e emissions based on the Louisiana's 2021 levels by 0.005 percent.

When states have GHG emissions reduction targets, we compare the project's operational and downstream GHG emissions to those state goals[34] to provide additional context. As indicated above, the Project would not result in any increased operational or downstream emissions.

Below, we include a disclosure of the social cost of GHGs (also referred to as the "social cost of carbon" [SCC]). Calculating the social cost of GHGs does not enable the Commission to determine whether the reasonably foreseeable GHG emissions associated with the project are significant or not significant in terms of their impact on global climate change.[35] In addition, there are no criteria to identify what monetized values are significant for NEPA purposes, and we are

[33] *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.)

[34] We reviewed the U.S. State Greenhouse Emission Targets site for individual state requirements at: https://www.c2es.org/document/greenhouse-gas-emissions-targets/. The State of Louisiana enacted executive targets in 2020 to reduce net GHG emissions 26-28 percent by 2025 and 40-50 percent by 2030, compared to 2005 levels. The targets also aim for net zero GHG emissions by 2050.

[35] *See Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P296, (2017), *aff'd sub nom*., *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019); *Del. Riverkeeper v. FERC*, 45 F.th 104, 111 (D.C. Cir. 2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023). The Social Cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging "significance."

currently unable to identify any such appropriate criteria. [36] The replacement of the existing Line 0-501 and other Project modifications would be used to continue existing service already provided by ANR; therefore, we did not evaluate downstream GHG emissions in our SCC calculations below.

As both USEPA and CEQ participate in the Interagency Working Group (IWG), Commission staff used the methods and values contained in the IWG's current draft guidance but note that different values would result from the use of other methods.[37] Accordingly, Commission staff calculated the SC-GHG for CO_2, nitrous oxide, and methane. For the calculation, staff assumed discount rates of 5 percent, 3 percent, and 2.5 percent.[38] Commission staff assumed that construction emissions would take place in years 2025 through 2026. Operational emissions are not anticipated to change, and the precedent agreements would not change. Noting these assumptions, the emissions from construction and operation of this Project are calculated to result in a total social cost of GHGs equal to $182,138, $507,945, and $714,859, respectively (all in 2020 dollars).[39] Using the 95th percentile of the social cost of GHGs using the 3 percent discount rate,[40] the total social cost of GHGs from the Project is calculated to be $1,448,765 (in 2020 dollars).

SECTION C -- ALTERNATIVES

In accordance with NEPA and Commission policy, we identified and evaluated alternatives to the Project to determine whether they would be reasonable and preferable to the proposed action while meeting the Project objective. These alternatives include the no action alternative and abandonment alternatives such as: abandonment in-place and abandonment by removal.

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[36] *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; *see also Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh'g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff'd*, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at 2 (D.C. Cir. Feb. 19, 2019) (unpublished) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes."); *Earth Reports*, 828 F.3d 949, 956 (D.C. Cir. 2016) (accepting the Commission's explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because "there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes"); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 91 (2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023).

[37] *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021 (IWG Interim Estimates Technical Support Document).

[38] IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5 percent discount rate to address the concern that interest rates are highly uncertain over time; the 3 percent value to be consistent with the U.S. Office of Management and Budget circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5 percent discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. Id. at 18-19, 23-24.

[39] The IWG draft guidance identifies costs in 2020 dollars. Id. at 5 (Table ES-1).

[40] This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO_2] distribution." Id. at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

1.0 No Action Alternative

NEPA requires the Commission to consider and evaluate the No-Action Alternative. According to CEQ guidance, in instances involving federal decisions on proposals for projects, no-action would mean the proposed activity would not take place and the resulting environmental effects from taking no-action would be compared with the effects of permitting the proposed activity. Further, the No-Action Alternative provides a benchmark for decisionmakers to compare the magnitude of environmental effects of the proposed activity and alternatives. We have prepared this EA to inform the Commission and stakeholders about the expected impacts that would occur if the Project is constructed and operated. The Commission would ultimately determine the Project need and could choose the No-Action Alternative.

If the no-action alternative is chosen by the Commission and the Project does not take place, the Project's goals would not be met. The no-action alternative would not allow ANR to address its pipeline safety concerns.

We did not receive comments regarding the proposed pipeline routing and did not identify any environmental impacts that would prompt us to evaluate alternate routes. None of the Project components would result in significant environmental impacts. Because over 90 percent of the Project would be collocated or parallel to existing pipeline and utility rights-of-ways we did not identify a route alternative that would provide a significant environmental advantage over the proposed action; thus, FERC staff did not evaluate route alternatives further.

2.0 Evaluation Process

The criteria used for selecting potentially environmentally preferable alternatives are: (1) the ability to meet the Project's objectives; (2) technical and economic feasibility and practicality; and (3) whether it provides a significant environmental advantage over the proposed Project. Alternatives that would not meet the Project's objective or would not be feasible were not brought forward to the next level of review (i.e., the third evaluation criterion).

Our evaluation of the identified alternatives is based on Project-specific information provided by the applicant; publicly available information; and our expertise and experience regarding the abandonment of natural gas transmission facilities and their potential impact on the environment.

Through environmental comparison and application of our professional judgement, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, GIS data, aerial imagery) and assume the same right-of-way widths and general workspace requirements. As described previously, our environmental analysis and this evaluation consider quantitative data (e.g., acreage, mileage) and uses common comparative factors such as total length, amount of collocation, and land requirements.

Our evaluation considers impacts on both the natural and human environments. Impacts on

the natural environment include open water, wetlands, forested lands, geology, and other common environmental resources. Impacts on the human environment include residences, roads, utilities, and industrial and commercial development near construction workspaces. In recognition of the competing interests and the different nature of impacts resulting from an alternative that sometimes exist (i.e., impacts on the natural environment versus impacts on the human environment), we also consider other factors that are relevant to a particular alternative or discount or eliminate factors that are not relevant or may have less weight or significance.

The purpose of the Project, which is described in greater detail in section A of this EA, is to replace approximately 34 miles of its existing 30-inch diameter natural gas pipeline in Richland and West Carroll Parishes, Louisiana. The Project would consist of the installation of 34.1 miles of new 30-inch-diameter segment of natural gas pipeline and abandoning in place of 33.4 miles of existing 30-inch-diameter natural gas pipeline and abandoning by removal 0.25 mile of existing 30-inch-diameter natural gas pipeline.

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 (factors), we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts from the current set of landowners to a new set of landowners.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. In the preceding analysis, we evaluated each environmental resource potentially affected by the Project and concluded that abandoning the proposed facilities would not significantly impact these resources. Consistent with our conclusions, the value gained by further reducing the (generally not significant) impacts of the Project were factored into our evaluation.

3.0 Abandonment In-Place and Abandonment by Removal

Given the scope of the Project and the impacts on the environment as described above, we conclude that abandoning all the proposed facilities in-place would likely result in less impact on the environment, especially in the short-term.

More than 90 percent (31.1 miles) of the new Line 0-501 would be co-located with existing rights-of-way or paralleling existing utility corridors. Areas where ANR was unable to co-locate the pipeline were primarily due to reroutes around Wetland Reserve Program easements, sensitive environmental areas, and constructability issues. Approximately 1 percent (0.25 mile) of the existing Line 0-501 segment would be abandoned by removal, while the remaining existing pipeline segments (totaling 33.4 miles) would be abandoned in place.

ANR would remove portions of the existing pipeline located on the adjacent sides of permitted road crossings with the portions of the pipeline beneath the road crossings left in place by cutting and capping the pipes with weld caps or a steel plate and filling them with grout. In total, these activities are expected to impact about 688.6 acres of land.

We considered abandonment by removal of the entire proposed pipeline and constructing the new pipeline in the existing right-of-way as an alternative to the proposed action of a combination of abandonment in-place and small portion abandonment by removal. Construction of the replacement pipeline affects about 13 acres per mile. Consequently, construction in the existing right-of-way would impact about 437.2 acres, assuming the same right-of-way and workspaces as the proposed replacement pipeline. This impact is comparable to the 443.7 acres needed for the proposed Project.

Removing approximately 33.6 miles of pipeline would also have impacts similar to constructing a new pipeline. That is, abandonment by removal requires excavation and trench spoil piles, which requires a disturbed right-of-way. Abandonment and removal of the old pipeline would impact the same right-of-way, resulting in an increased risk of soil compaction. In addition, end-users would go without natural gas until construction was complete and the Project was in-service. We conclude that abandonment by removal of the entire proposed pipeline and constructing the new pipeline in the existing right-of-way would not provide a significant environmental advantage over the proposed Project.

Conclusion

After reviewing the alternatives to the proposed Project, we conclude that none of the alternatives would satisfy the evaluation criteria. In summary, we have determined that the proposed action, as modified by our recommended mitigation measures, is the preferred alternative that can meet the Project's objectives.

SECTION D – STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if ANR constructs, abandons, 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's Order contain a finding of no significant impact and include the mitigation measures listed below as conditions in any authorization the Commission may issue.

1. ANR 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. ANR 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 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, operation and activities associated with abandonment of the Project. This authority shall allow:

    a. the modification of conditions of the Order;
    b. stop-work authority; and
    a. 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, operation and abandonment activities.

3. **Prior to any construction**, ANR shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, ANR 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.

ANR's exercise of eminent domain authority granted under Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. ANR's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipelines to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. ANR 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 workspace allowed by the FERC Plan and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

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

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

      (1) the completion of all required surveys and reports;
      (2) the environmental compliance training of onsite personnel;
      (3) the start of construction; and
      (4) the start and completion of restoration.

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

   a. how ANR will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;

b. how ANR will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
e. the location and dates of the environmental compliance training and instructions ANR will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);
f. the company personnel (if known) and specific portion of ANR's organization having responsibility for compliance;
g. the procedures (including use of contract penalties) ANR will follow if noncompliance occurs; and
h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;
(2) the environmental compliance training of onsite personnel;
(3) the start of construction; and
(4) the start and completion of restoration.

7. ANR shall employ at least one EI for the Project. The EI 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. 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
e. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, ANR shall file updated status reports with the Secretary on a **bi-weekly** basis until all construction, abandonment by removal, 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 ANR’s efforts to obtain the necessary federal authorizations;

b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
c. a listing of all problems encountered, and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
d. a description of the corrective actions implemented in response to all instances of noncompliance;
e. the effectiveness of all corrective actions implemented;
f. a description of any landowner/resident complaints, which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
g. copies of any correspondence received by ANR from other federal, state, or local permitting agencies concerning instances of noncompliance, and ANR's response.

9. ANR 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, ANR must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. ANR 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**, ANR shall file an affirmative statement with the Secretary, certified by a senior company official:

a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
b. identifying which of the conditions in the Order ANR 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.

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

a. ANR files with the Secretary:
(1) remaining cultural resources survey report(s);
(2) site evaluation report(s) and avoidance/treatment plan(s), as required; and

(3) comments on the cultural resources reports and plans from the Louisiana State Historic Preservation Office.

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

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

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

14. **Prior to construction,** ANR shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a Nighttime Construction Noise Management Plan, that includes the measures it will implement to reduce the projected nighttime (7 p.m. to 7 a.m.) construction noise levels to at or below 48.6 dBA Leq at NSAs.

15. **Within 5 days of the final determination of the use of the Nationwide Permit 12 issued by the United States Army Corps of Engineers**, ANR shall file the complete water quality certification issued categorically by the Louisiana Department of Environmental Quality, including all conditions. All conditions attached to the water quality certification constitute mandatory conditions of the Certificate Order. **Prior to construction**, ANR shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its Project design necessary to comply with the water quality certification conditions.

APPENDIX 1

Requested Site-Specific Deviations to FERC Plan and Procedures

Appendix 1						
Requested Site-Specific Deviations to FERC Plan and Procedures						
Workspace Type/ID	**Milepost/Facility**	**Waterbody or Wetland**	**Section of Plan/Procedures**	**Deviations to FERC Plan and Procedures**	**Applicant Justification**	**Equal Compliance Measures**
Construction Corridor	0.00-34.14	N/A	Plan Section IV.A.2	Construction corridor of 110 feet	Necessary to safely and efficiently accommodate installation of a large diameter pipeline (30-inch-diameter)	N/A
ATWS-037	4.96	WP2001_PEM	Procedures Section VI.B.1	ATWS within wetland	Workspace required for pipeline crossover, PI, and wetland crossings.	Timber mats to be installed to prevent rutting in wetland. Spoil will not be stored within wetland boundaries.
ATWS-038	5.00	SP14014; SP14015; WP2001_PEM; WP2001_PSS	Procedures Sections V.B.2 and VI.B.1	ATWS within waterbody; ATWS within 50 feet of waterbody and wetlands	Workspace required for working side switchover and topsoil storage for adjacent wetland crossings.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbodies and adjacent wetlands. Timber mats to be installed at waterbody crossing. Spoil will not be stored within waterbodies and at least 10 feet from waterbodies and wetlands.
ATWS-039	5.16	WP2001_PEM	Procedures Section V.B.2	ATWS within wetland	Workspace require for stream crossing	Timber mats to be installed to prevent rutting in wetlands. Spoil will not be stored within wetland boundaries.

Appendix 1						
Requested Site-Specific Deviations to FERC Plan and Procedures						
Workspace Type/ID	**Milepost/Facility**	**Waterbody or Wetland**	**Section of Plan/Procedures**	**Deviations to FERC Plan and Procedures**	**Applicant Justification**	**Equal Compliance Measures**
ATWS-040	5.20	WP2001_PSS	Procedures Section V.B.2	ATWS within wetland	Workspace required for stream crossing.	Timber mats to be installed to prevent rutting in wetlands. Spoil will not be stored within wetland boundaries.
ATWS-041	5.25	WP2001_PSS	Procedures Section V.B.2	ATWS within wetland	Workspace required for pipeline crossover, PI, and wetland crossings.	Timber mats to be installed to prevent rutting in wetlands. Spoil will not be stored within wetland boundaries.
ATWS-105	16.25	SP14012	Procedures Section V.B.2	ATWS within waterbody	Workspace required for bored crossing of Dummy line Road.	Timber mats to be installed to prevent rutting in wetlands. Spoil will not be stored within wetland boundaries.
ATWS-114	17.66	OW14004	Procedures Section V.B.2	ATWS within 50 feet of waterbody	Workspace necessary for tree felling and spoil storage for pipeline construction.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbodies. ATWS is set back greater than 10 feet from waterbody.
ATWS-139	21.94	SP14001	Procedures Section V.B.2	ATWS within waterbody	Workspace required for stream crossing.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbodies. ATWS is set back greater than 10 feet from waterbody.

Appendix 1						
Requested Site-Specific Deviations to FERC Plan and Procedures						
Workspace Type/ID	**Milepost/Facility**	**Waterbody or Wetland**	**Section of Plan/Procedures**	**Deviations to FERC Plan and Procedures**	**Applicant Justification**	**Equal Compliance Measures**
ATWS-153	24.3	SP12020	Procedures Section V.B.2	ATWS within 50 feet of waterbody	Necessary for wetland and stream crossings and spoil storage and topsoil segregation through an extensive crossing of agricultural land.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laded water into waterbody. ATWS is set back greater than 10 feet from waterbody.
ATWS-172	28.13	SP8023; SP8024	Procedures Section V.B.2	ATWS within waterbodies	Workspace required for stream and road crossing.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laded water into waterbody. Timber mats to be installed at waterbody crossing. Spoil will not be stored within waterbodies and wetlands.
Line 0-501	28.18 - 28.48	SP14009	Procedures Section V.B.3	Pipeline paralleling waterbody in construction ROW	Centerline siting limited to proposed route due to existing pipelines and large forested tract to the east and residence/structures to the west.	Temporary erosion and sediment controls to be implemented as needed to prevent erosion of waterbody into trench line. Temporary timber mats to be installed over waterbody in locations required to accommodate equipment travel lane.

Appendix 1						
Requested Site-Specific Deviations to FERC Plan and Procedures						
Workspace Type/ID	**Milepost/Facility**	**Waterbody or Wetland**	**Section of Plan/Procedures**	**Deviations to FERC Plan and Procedures**	**Applicant Justification**	**Equal Compliance Measures**
ATWS-178	28.94	SP12018	Procedures Section V.B.2	ATWS within 50 feet of waterbody	Workspace required for nearby road crossing, PI, and overhead utility line crossing, which has limited the available construction ROW.	Temporary erosion and sediment controls to be implemented as needed to prevent erosion of waterbody into trench line. Temporary timber mats to be installed over waterbody in locations required to accommodate equipment travel lane.
ATWS-181	29.18	SP12018	Procedures Section V.B.2	ATWS within 50 feet of waterbody	Workspace required for stream and road crossing as well as nearby Pls.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbody. ATWS is set back greater than 10 feet from waterbody.
ATWS-207; ATWS-208	33.09	SP12016	Procedure Section V.B.2	ATWS within 50 feet of waterbody	Workspaces required for pipeline system crossover and tie-in.	Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbodies.

Appendix 1						
Requested Site-Specific Deviations to FERC Plan and Procedures						
Workspace Type/ID	**Milepost/Facility**	**Waterbody or Wetland**	**Section of Plan/Procedures**	**Deviations to FERC Plan and Procedures**	**Applicant Justification**	**Equal Compliance Measures**
CY-003; CY-004	N/A	SP14016	Procedures Section V.B.2	Contractor/Staging/Pipe Yard within waterbody	Necessary for storage of pipe and equipment during construction	Temporary timber mats to be installed over waterbody in locations required to accommodate equipment travel. Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbody. Spoil will not be stored within waterbody and at least 10 feet from waterbody.
CY-008	N/A	SP14003; WP14002_PEM	Procedures Sections V.B.2 and VI.B.1	Contractor/Staging/Pipe Yard within waterbody and Wetland	Necessary for storage of pipe and equipment during construction	Temporary timber mats to be installed over waterbody and wetlands in locations required to accommodate equipment operation. Temporary erosion and sediment controls to be implemented as needed to prevent the flow of spoil or heavily silt-laden water into waterbody and wetland. Spoil will not be stored within waterbody and wetland and at least 10 feet from waterbody and wetland.

APPENDIX 2

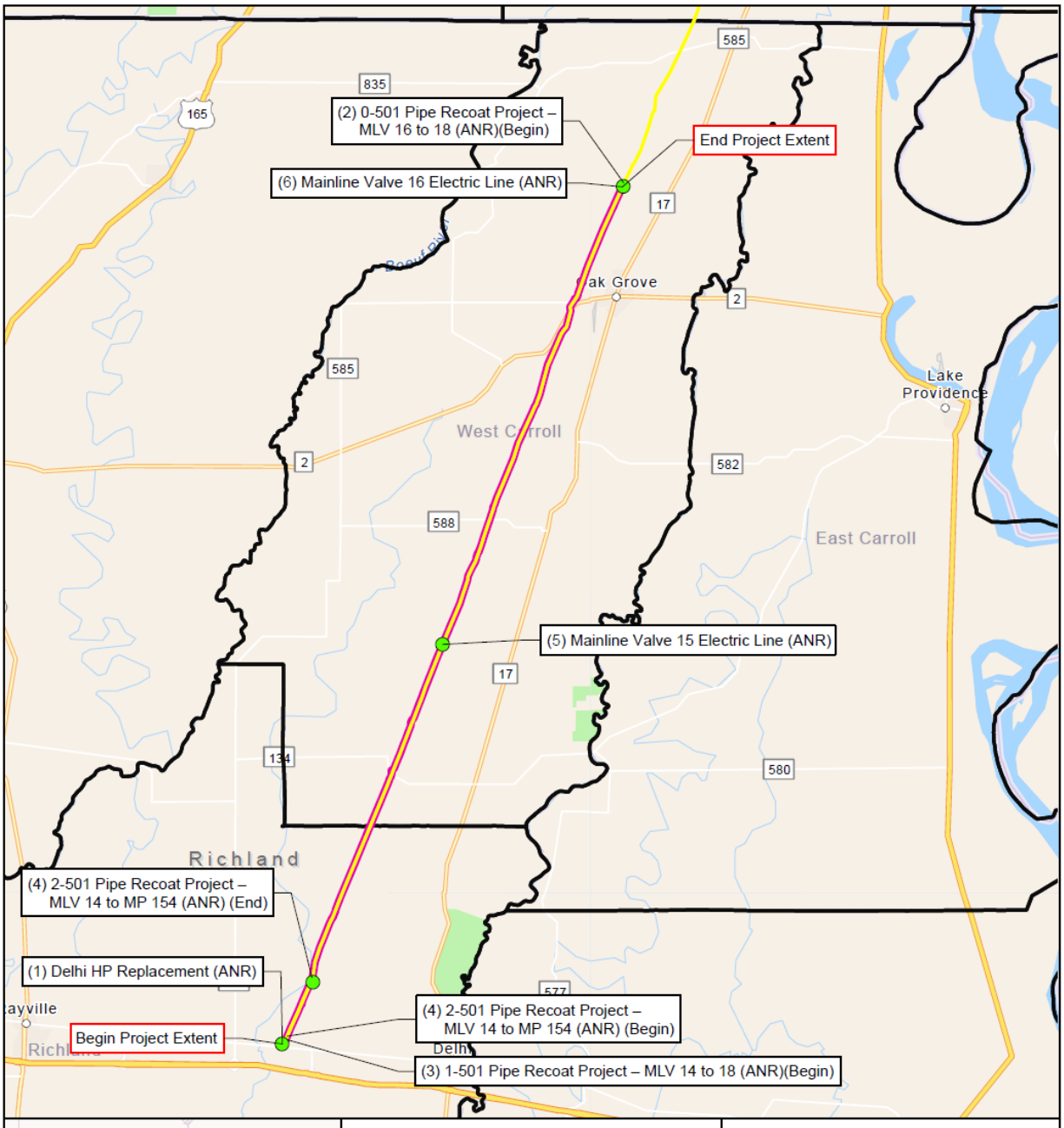
Past, Present, and Reasonably Foreseeable Projects with the Potential for Cumulative Effects when Combined with the Oak Grove Enhancement Project

APPENDIX 2					
Past, Present, and Reasonably Foreseeable Projects with the Potential for Cumulative effects when Combined with the Oak Grove Enhancement Project					
Project Name/Parish	**Company/Project**	**Construction/Operation Status**	**Project Impacts**	**Resources Affected**	**Distance and Direction**
OIL AND NATRUAL GAS TRANSPORTATION, PROCESSING AND STORAGE PROJECTS					
Delhi HP Replacement Richland Parish, Louisiana	ANR/ Replacing (6) TLA reciprocating engines and (1) GE Frame 3 turbine with (2) Solar Mars 100 and associated ancillary equipment	Construction would commence in March 2023 until March 2024	Developed land: 19.14 acres; wetland: 0.3 acre Agricultural land:0.3 acre	Wetlands; Vegetation; Visual Resources	Adjacent to Project at MP 0.00
0-501 Pipe Recoat Project West Carroll Parish, Louisiana and Chicot County, Arkansas	ANR/Localized recoats totaling approximately 0.9 mile of 30-inch pipeline	Construction would commence in March 2024 until May 2026	0.9-mile	Land Use and Visual Resources	Adjacent to MP 33.74 at MLV 16
1-501 Pipe Recoat Project Richland and West Carroll Parishes, Louisiana, and Chicot County Arkansas	ANR/ Localized recoats totaling approximately 2.0 miles of 30-inch pipeline	Construction would commence in March 2024 until May 2026	2 miles	Land Use; Visual Resources; Air Quality (Construction); Noise (Construction)	Overlaps the Project workspace in various locations from MP 0.00 to MP 33.74
2-501 Pipe Recoat Project Richland and West Carroll Parishes, Louisiana	ANR/ Localized recoats totaling approximately 0.4 miles of 36-inch pipeline	Construction would commence in March 2024 until November 2025	0.4 mile	Land Use; Visual Resources; Air Quality (Construction); Noise (Construction)	Overlaps the Project workspace in various locations from MP 0.00 to MP 33.74
NON-JURISDICTIONAL PROJECTS					

APPENDIX 2					
Past, Present, and Reasonably Foreseeable Projects with the Potential for Cumulative effects when Combined with the Oak Grove Enhancement Project					
Project Name/Parish	**Company/Project**	**Construction/Operation Status**	**Project Impacts**	**Resources Affected**	**Distance and Direction**
Mainline Valve 15 West Carroll, Louisiana	ANR/ Relocation of existing powerline at existing Mainline Valve 15, from the east side of the facility to the west side of the facility.	Concurrent with timeline of Project	70 linear feet	Visual Resources; Air Quality (Construction); Noise (Construction)	Within Project Workspace
Mainline Valve 16 West Carroll, Louisiana	Installation of new powerline at existing Mainline Valve 16 facility from existing power pole that is located on south side of Hwy 586.	Concurrent with timeline of Project	150 linear feet	Visual Resources; Air Quality (Construction); Noise (Construction)	Within Project Workspace

Appendix 2A

Overview Map of Cumulative Projects



TC Energy

Cumulative Projects Considered Map
Oak Grove Enhancement Project
ANR Pipeline Company
Richland & West Carroll Parishes, Louisiana

Page 1 of 1	Scale: 1:324,000
NAD1983 LA-S ft	Date: June, 2023

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Author: PW

APPENDIX 3

Waterbodies Crossed by the Project

Appendix 3 Waterbodies Crossed by the Project								
Pipeline milepost / facility name	**Waterbody ID**	**Flow regime**	**Waterbody name / type**	**State Water Quality Classified Use Impaired[1]**	**FERC Waterbody Classification[2]**	**Waterbody width (feet)[3]**	**Pipeline Crossing Length (feet)**	**Proposed Crossing Method**
Proposed Line 0-501								
Richland Parish								
0.05	SP8027 – 1st crossing	Perennial	Wildcat Slough	FWP	Minor	8	23	Open cut
0.72	SP8001	Intermittent	Wildcat Slough		Minor	7	11	Open cut
1.24	SP8002	Ephemeral	Agricultural ditch		Minor	7	8	Open cut
2.28	SP8003	Ephemeral	Unnamed tributary of Big Creek		Minor	5	5	Open cut
3.31	SP12001	Ephemeral	Unnamed tributary of Big Creek		Minor	4	N/A	Timber mat
3.88	SP12002 – 1st crossing	Intermittent	Little Creek		Intermediate	15	16	Open cut
4.56	SP12003 – 1st crossing	Ephemeral	Unnamed tributary of Little Creek		Minor	3	25	Open cut / timber mat
5.16	SP14014	Intermittent	Unnamed tributary of Big Creek		Intermediate	15	17	Open cut
6.69	SP8008	Ephemeral	Agricultural ditch		Minor	5	5	Open cut
7.74	SP8009 – 1st crossing	Ephemeral	Agricultural ditch		Minor	6.5	8	Open cut
West Carroll Parish								
9.48	SP8011	Ephemeral	Agricultural ditch	FWP	Minor	4	4	Open cut
9.75	SP8013	Intermittent	Agricultural ditch		Intermediate	13	11	Open cut
10.10	SP8004	Ephemeral	Agricultural ditch		Minor	2	3	Open cut
10.47	SP8025	Ephemeral	Agricultural ditch		Intermediate	12	14	Open cut
10.96	SP8015	Intermittent	Unnamed tributary of Big Creek		Intermediate	15	27	Open cut
11.92	SP8016	Perennial	Agricultural ditch		Intermediate	22	17	Open cut
12.36	SP8017	Ephemeral	Agricultural ditch	FWP	Minor	2	2	Open cut
12.79	SP8018	Ephemeral	Agricultural ditch		Intermediate	12	13	Open cut
13.23	SP8019	Ephemeral	Agricultural ditch		Minor	6	9	Open cut
14.84	SP12013	Ephemeral	Agricultural ditch		Minor	5	5	Open cut
15.38	SP12012	Perennial	Unnamed tributary of Little Creek		Intermediate	20	21	Open cut
15.64	SP12011	Ephemeral	Unnamed tributary of Little Creek		Minor	6	6	Open cut

Appendix 3 Waterbodies Crossed by the Project								
Pipeline milepost / facility name	**Waterbody ID**	**Flow regime**	**Waterbody name / type**	**State Water Quality Classified Use Impaired[1]**	**FERC Waterbody Classification[2]**	**Waterbody width (feet)[3]**	**Pipeline Crossing Length (feet)**	**Proposed Crossing Method**
16.29	SP14012 – 1st crossing	Intermittent	Roadside ditch		Minor	8	9	Bore
16.58	SP12010 – 1st crossing	Intermittent	Agricultural ditch		Intermediate	15	25	Open cut
16.65	SP12010 – 2nd crossing	Intermittent	Agricultural ditch		Intermediate	15	24	Open cut
17.25	SP12009	Perennial	Little Creek		Minor	10	16	Open cut
18.01	SP14011	Ephemeral	Unnamed tributary of Hurricane Creek		Minor	5	N/A	Timber mat
19.19	SP2004	Perennial	Agricultural ditch		Minor	5	21	Open cut
19.31	SP12006	Ephemeral	Hurricane Creek		Intermediate	15	15	Open cut
21.93	SP14001	Intermittent	Boggy Bayou		Intermediate	12	N/A	Timber mat
21.98	SP14002	Intermittent	Boggy Bayou		Intermediate	13	21	Open cut
22.93	SP12014	Ephemeral	Agricultural ditch		Minor	6	11	Open cut
23.88	SP12019	Intermittent	Deer Creek		Intermediate	15	14	Open cut
24.28	SP12020	Perennial	Deer Creek		Minor	10	10	Open cut
24.62	SP12015	Ephemeral	Unnamed tributary of Deer Creek		Minor	6	6	Open cut
25.36	SP8020	Ephemeral	Agricultural ditch		Minor	1	3	Open cut
27.45	SP8021 – 1st crossing	Ephemeral	Agricultural ditch		Minor	3	3	Open cut
27.79	SP8022	Ephemeral	Agricultural ditch		Minor	2	2	Open cut
28.04	SP8023	Ephemeral	Agricultural ditch		Minor	2	3	Open cut
28.05	SP8024 – 1st crossing	Ephemeral	Agricultural ditch		Minor	8	N/A	Timber mat
28.15	SP8024 – 2nd crossing	Ephemeral	Agricultural ditch	FWP	Minor	8	N/A	Timber mat
28.48	SP14009	Ephemeral	Agricultural ditch		Minor	1	2	Open cut
29.17	SP2009	Perennial	Unnamed tributary of Little Colewa Bayou		Intermediate	30	34	Open cut
29.22	SP12018	Perennial	Unnamed tributary of Little Colewa Bayou		Intermediate	30	N/A	Timber mat
30.02	SP14006	Perennial	Unnamed tributary of Little Colewa Bayou	PCR, SCR, FWP	Intermediate	15	20	Open cut

Appendix 3 Waterbodies Crossed by the Project								
Pipeline milepost / facility name	**Waterbody ID**	**Flow regime**	**Waterbody name / type**	**State Water Quality Classified Use Impaired[1]**	**FERC Waterbody Classification[2]**	**Waterbody width (feet)[3]**	**Pipeline Crossing Length (feet)**	**Proposed Crossing Method**
30.12	SP14005	Ephemeral	Unnamed tributary of Little Colewa Bayou		Minor	3	4	Open cut
30.15	SP14004	Perennial	Unnamed tributary of Little Colewa Bayou		Minor	10	50	Open cut
32.82	SP9001	Intermittent	Agricultural ditch		Intermediate	16	34	Open cut
33.92	SP12016	Perennial	Unnamed tributary of Tiger Bayou		Minor	8	13	Open cut
Temporary Access Roads (TAR) and Contractor Yards (CY)								
Richland Parish								
TAR-0.19	SP8027 – 2nd crossing	Perennial	Wildcat Slough	FWP	Minor	8	23	Timber mat
TAR-2.60	SP8005	Ephemeral	Unnamed tributary of Big Creek		Minor	4	N/A	Timber mat
TAR-4.55	SP12003 – 2nd crossing	Ephemeral	Unnamed tributary of Little Creek		Minor	3	N/A	Timber mat
TAR-7.42	SP8009 – 2nd crossing	Ephemeral	Agricultural ditch		Minor	7	N/A	Timber mat
West Carroll Parish								
TAR-10.76	SP2002	Intermittent	Roadside ditch	FWP	Minor	2	N/A	Timber mat / existing culvert
TAR-12.79	SP2003	Intermittent	Roadside ditch		Minor	4	N/A	Timber mat / existing culvert
TAR-16.68	SP12010 – 3rd crossing	Intermittent	Agricultural ditch		Intermediate	15	N/A	Timber mat / existing culvert
TAR-24.60	SP2005	Ephemeral	Roadside ditch		Minor	1	N/A	Timber mat / existing culvert
TAR-26.08	SP14010	Ephemeral	Unnamed tributary of Deer Creek		Minor	2	N/A	Timber mat
TAR-31.30	SP9003	Perennial	Unnamed tributary of Little Colewa Bayou	PCR, SCR, FWP	Minor	6	N/A	Timber mat

Appendix 3 Waterbodies Crossed by the Project								
Pipeline milepost / facility name	**Waterbody ID**	**Flow regime**	**Waterbody name / type**	**State Water Quality Classified Use Impaired[1]**	**FERC Waterbody Classification[2]**	**Waterbody width (feet)[3]**	**Pipeline Crossing Length (feet)**	**Proposed Crossing Method**
TAR-31.30	SP9002	Intermittent	Unnamed tributary of Little Colewa Bayou	PCR, SCR, FWP	Minor	4	N/A	Timber mat
CY-003	SP14016 – 1st crossing	Intermittent	Agricultural ditch	FWP	Minor	6	N/A	Timber mat
CY-004	SP14016 – 2nd crossing	Intermittent	Agricultural ditch		Minor	6	N/A	Timber mat
CY-008	SP14003	Intermittent	Unnamed tributary of Lyon Bayou		Minor	6	N/A	Timber mat
Line 0-501 Abandonment								
Richland Parish								
3.88	SP12002 – 2nd crossing	Intermittent	Little Creek	FWP	Intermediate	15	N/A	Timber mat
West Carroll Parish								
16.29	SP14012 – 2nd crossing	Intermittent	Roadside ditch	FWP	Minor	8	N/A	Plate / grout
27.45	SP8021 – 2nd crossing	Ephemeral	Agricultural ditch	FWP	Minor	3	N/A	Timber mat

Notes

1. All waterbodies crossed by the Project have the following designated use classifications: primary contact recreation (PCR), secondary contact recreation (SCR), and fish and wildlife propagation (LDEQ 2022).
2. Per FERC Wetland & Waterbody Construction & Mitigation Procedures 2013.
3. Waterbody width measured during field delineations in October 2022, December 2022, January 2023, and April 2023.

APPENDIX 4

Federal Emergency Management Agency Special Flood Hazard Areas Crossed by the Project's Proposed Line 0-501 Pipeline

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
0.00 to 0.03	X[b]	181
0.03 to 0.10	A	332
0.10 to 0.71	X[b]	3,224
0.71 to 0.78	A	365
0.78 to 1.98	X[b]	6,357
1.98 to 2.12	AE	757
2.12 to 2.23	X[b]	560
2.23 to 2.60	AE	1,928
2.60 to 2.70	X[b]	535
2.70 to 3.12	AE	2,222
3.12 to 3.13	X[b]	49
3.13 to 3.40	AE	1,426
3.40 to 3.76	X[b]	1,912
3.76 to 4.01	AE	1,337
4.01 to 4.09	X[b]	393
4.09 to 4.29	A	1,072
4.29 to 4.36	X[b]	367
4.36 to 4.69	A	1,763
4.69 to 4.71	X[b]	96
4.71 to 4.72	A	21
4.72 to 4.84	X[b]	657
4.84 to 4.84	A	2
4.84 to 5.15	X[b]	1,615
5.15 to 5.27	A	668
5.27 to 5.43	X[b]	829
5.43 to 5.47	A	217
5.47 to 6.62	X[b]	6,073
6.62 to 6.73	A	600
6.73 to 7.66	X[b]	4,870
7.66 to 7.69	A	168
7.69 to 7.7	X[b]	66
7.7 to 7.83	A	659
7.83 to 8.66	X[b]	4,405
8.66 to 8.66	X	20
8.66 to 8.67	A	14
8.67 to 8.67	A	10
8.67 to 8.67	X[c]	33
8.67 to 8.68	A	42
8.68 to 8.73	X[c]	243
8.73 to 8.76	X	158

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
8.76 to 8.81	X[c]	271
8.81 to 8.82	A	32
8.82 to 9.04	X[c]	1,173
9.04 to 9.2	A	863
9.2 to 9.21	X[c]	29
9.21 to 9.72	A	2,721
9.72 to 9.73	X[c]	59
9.73 to 9.74	X	51
9.74 to 9.75	A	50
9.75 to 9.77	X	79
9.77 to 9.77	X[c]	26
9.77 to 9.78	X	19
9.78 to 9.87	X[c]	495
9.87 to 9.89	A	108
9.89 to 9.94	X[c]	259
9.94 to 10.01	X	350
10.01 to 10.02	X[c]	89
10.02 to 10.19	A	868
10.19 to 10.2	X[c]	76
10.2 to 10.21	X	72
10.21 to 10.22	X[a]	39
10.22 to 10.24	X[c]	73
10.24 to 10.41	X	911
10.41 to 10.41	X[c]	14
10.41 to 10.5	X	458
10.5 to 10.56	X[c]	341
10.56 to 10.89	X	1,754
10.89 to 10.9	X[a]	12
10.9 to 10.91	X[c]	47
10.91 to 11.07	A	866
11.07 to 11.17	X[c]	547
11.17 to 11.18	A	40
11.18 to 11.19	X[c]	74
11.19 to 11.21	A	86
11.21 to 11.22	X[c]	24
11.22 to 11.22	A	36
11.22 to 11.24	X[c]	96
11.24 to 11.27	A	169
11.27 to 11.35	X[c]	430
11.35 to 11.37	X[a]	86

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
11.37 to 11.38	X	36
11.38 to 11.38	X[a]	27
11.38 to 11.52	X	723
11.52 to 11.52	X[a]	16
11.52 to 11.63	X[c]	580
11.63 to 11.67	A	207
11.67 to 11.72	X[c]	250
11.72 to 11.72	A	18
11.72 to 11.73	X[c]	64
11.73 to 11.88	A	775
11.88 to 11.89	X[c]	67
11.89 to 11.9	X[a]	14
11.9 to 11.9	X[c]	22
11.9 to 11.91	X[a]	66
11.91 to 11.93	A	73
11.93 to 11.96	X	183
11.96 to 12.01	X[a]	243
12.01 to 12.01	X	15
12.01 to 12.02	X[a]	54
12.02 to 12.02	X	18
12.02 to 12.08	X[a]	288
12.08 to 12.11	X	148
12.11 to 12.13	X[a]	149
12.13 to 12.16	X[c]	109
12.16 to 12.27	A	608
12.27 to 12.3	X[c]	179
12.3 to 12.72	A	2,204
12.72 to 12.74	X[c]	115
12.74 to 12.75	A	17
12.75 to 12.75	X[c]	29
12.75 to 12.76	A	25
12.76 to 12.76	X[c]	32
12.76 to 12.78	A	70
12.78 to 12.78	X[c]	37
12.78 to 13.3	A	2,718
13.3 to 13.31	X[c]	63
13.31 to 13.31	X[a]	12
13.31 to 14.21	X	4,732
14.21 to 14.22	X[c]	64
14.22 to 15.42	X	6,346

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
15.42 to 15.43	X[c]	33
15.43 to 15.44	X	47
15.44 to 15.47	X[c]	196
15.47 to 15.51	X	176
15.51 to 15.53	X[c]	118
15.53 to 15.57	X	213
15.57 to 15.6	X[c]	179
15.6 to 15.61	X	33
15.61 to 15.61	X[c]	1
15.61 to 15.61	X	8
15.61 to 15.62	X[c]	58
15.62 to 15.74	A	608
15.74 to 15.77	X[c]	171
15.77 to 15.77	A	11
15.77 to 15.78	X[c]	26
15.78 to 19.15	A	17,801
19.15 to 19.42	A	1,418
19.42 to 19.48	X[c]	304
19.48 to 19.49	A	71
19.49 to 19.49	X[c]	24
19.49 to 19.55	A	291
19.55 to 19.55	X[c]	22
19.55 to 19.56	X[a]	33
19.56 to 19.56	X	21
19.56 to 19.56	X[a]	6
19.56 to 19.57	X[c]	22
19.57 to 19.57	X[a]	4
19.57 to 19.57	X	20
19.57 to 19.59	X[a]	106
19.59 to 19.62	X	121
19.62 to 19.83	X[a]	1,136
19.83 to 20	X	876
20 to 20	X[a]	9
20 to 20.01	X[c]	53
20.01 to 20.09	A	438
20.09 to 20.09	X[c]	14
20.09 to 20.1	A	44
20.1 to 20.11	X[c]	36
20.11 to 20.11	X[a]	15
20.11 to 20.14	X	169

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
20.14 to 20.19	X[a]	254
20.19 to 20.36	X	861
20.36 to 20.37	X[a]	48
20.37 to 20.46	X[c]	480
20.46 to 20.47	X[a]	71
20.47 to 21.05	X	3,060
21.05 to 21.08	X[c]	188
21.08 to 21.2	X	590
21.2 to 21.22	X[c]	143
21.22 to 21.45	A	1,198
21.45 to 21.97	X	2,768
21.97 to 21.99	A	61
21.99 to 23.74	X	9,273
23.74 to 23.74	X[a]	12
23.74 to 23.76	X[c]	63
23.76 to 23.8	A	232
23.8 to 23.85	X[c]	248
23.85 to 24.09	A	1,278
24.09 to 24.09	X[c]	29
24.09 to 24.1	X	32
24.1 to 24.23	X[c]	681
24.23 to 24.26	A	180
24.26 to 24.27	X[c]	38
24.27 to 24.29	A	90
24.29 to 24.3	X[c]	36
24.3 to 24.3	A	23
24.3 to 24.47	X[c]	901
24.47 to 24.48	X[a]	44
24.48 to 24.48	X[c]	21
24.48 to 24.48	X[a]	6
24.48 to 24.48	X	4
24.48 to 24.49	X[a]	11
24.49 to 24.51	X	128
24.51 to 24.51	X[a]	21
24.51 to 24.54	X	126
24.54 to 24.54	X[a]	25
24.54 to 24.55	X	11
24.55 to 24.55	X[a]	2
24.55 to 24.55	X	46
24.55 to 24.56	X[a]	22

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
24.56 to 24.56	X[c]	11
24.56 to 24.56	X[a]	10
24.56 to 24.59	X	163
24.59 to 24.6	X[c]	59
24.6 to 24.72	A	597
24.72 to 24.72	X	29
24.72 to 24.79	A	377
24.79 to 24.81	X[c]	80
24.81 to 28.92	X	21,687
28.92 to 28.92	X[a]	4
28.92 to 28.92	AE	16
28.92 to 28.93	X[a]	31
28.93 to 29.14	AE	1,125
29.14 to 29.14	X[a]	5
29.14 to 29.16	X	80
29.16 to 29.21	AE	285
29.21 to 29.32	A	583
29.32 to 29.33	X[c]	59
29.33 to 29.39	X[a]	335
29.39 to 29.4	X[c]	47
29.4 to 29.48	A	394
29.48 to 29.48	X[a]	23
29.48 to 29.64	A	824
29.64 to 29.66	X[c]	111
29.66 to 29.66	X[a]	15
29.66 to 29.93	X	1,413
29.93 to 29.95	X[c]	84
29.95 to 29.95	A	10
29.95 to 29.96	X[c]	41
29.96 to 30.17	A	1,156
30.17 to 30.21	X	162
30.21 to 30.21	X[a]	32
30.21 to 30.21	X	3
30.21 to 30.21	X[a]	14
30.21 to 30.28	X[c]	357
30.28 to 30.29	A	23
30.29 to 30.3	X[c]	78
30.3 to 30.32	A	118
30.32 to 30.47	X[c]	753
30.47 to 30.47	X[a]	33

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
30.47 to 30.49	X	74
30.49 to 30.49	X[a]	31
30.49 to 30.51	X[c]	92
30.51 to 30.68	A	899
30.68 to 30.7	X[c]	95
30.7 to 30.7	X[a]	24
30.7 to 30.73	X	135
30.73 to 30.74	X[a]	59
30.74 to 30.79	X[c]	294
30.79 to 30.8	X[a]	22
30.8 to 30.87	X[c]	367
30.87 to 30.89	X[a]	123
30.89 to 30.9	X[c]	23
30.9 to 31.28	A	2,034
31.28 to 31.28	X[c]	4
31.28 to 31.28	A	0
31.28 to 31.28	X[a]	3
31.28 to 34.14	X	15,094
29.95 to 29.96	X[b]	657
29.96 to 30.17	A	2
30.17 to 30.21	X[b]	1,615
30.21 to 30.21	A	668
30.21 to 30.21	X[b]	829
30.21 to 30.21	A	217
30.21 to 30.28	X[b]	6,073
30.28 to 30.29	A	600
30.29 to 30.3	X[b]	4,870
30.3 to 30.32	A	168
30.32 to 30.47	X[b]	66
30.47 to 30.47	A	659
30.47 to 30.49	X[b]	4,405
30.49 to 30.49	X	20
30.49 to 30.51	X[b]	14
30.51 to 30.68	A	10
30.68 to 30.7	X[c]	33
30.7 to 30.7	A	42
30.7 to 30.73	X[c]	243
30.73 to 30.74	X	158
30.74 to 30.79	X[c]	271
30.79 to 30.8	A	32

Appendix 4 Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (Zones) Crossed by the Project's Proposed Line 0-501 Pipeline		
Milepost	**Special Flood Hazard Area (Zone)**	**Total Distance Crossed by the Centerline (feet)**
30.8 to 30.87	X[c]	1,173
30.87 to 30.89	A	863
30.89 to 30.9	X[c]	29
30.9 to 31.28	A	2,721
31.28 to 31.28	X[c]	59
31.28 to 31.28	X	51
31.28 to 31.28	A	50
31.28 to 34.14	X	79

Notes:
Zone A = 100-year annual flood probability;
Zone X = 500-year annual flood probability;
Zone X[a] = areas between 100-year and 500-year floodplain with 0.2% annual probability of flooding;
Zone X[b] = risk reduced by levee; and
Zone X[c] = areas between 100-year and 500-year floodplain with average flooding depth < 1 foot.

APPENDIX 5

Wetlands Resources Crossed or Affected by the Oak Grove Enhancement Project

Table A.5. Wetlands Resources Crossed or Affected by the Oak Grove Enhancement Project						
Pipeline milepost / facility name	**Wetland ID[1]**	**Proposed Crossing Method**	**Pipeline Crossing Length (feet)[2]**	**Temporary impacts (acres)**	**Permanent impacts (acres)[3]**	**Total acreage impacted**
Proposed Line 0-501						
Richland Parish						
2.04	WP8004_PSS	Open cut	123	0.12	0.09	0.21
2.49	WP8003_PEM	Open cut	25	0.03	0.00	0.03
2.71	WP8002_PEM	Open cut	0	0.01	0.00	0.01
3.15	WP12001_PEM	Timber mat	0	0.01	0.00	0.01
4.94	WP2001_PEM – 2nd crossing	Open cut	1,237	1.99	0.00	1.99
5.18	WP2001_PSS – 2nd crossing	Open cut	24	0.03	0.01	0.04
5.18	WP2001_PSS – 3rd crossing	Open cut	438	0.83	0.27	1.10
West Carroll Parish						
16.42	WP12007_PEM	Timber mat	0	<0.01	0.00	<0.01
16.59	WP12005_PFO	Open cut	308	0.41	0.18	0.59
16.59	WP12005_PEM	Open cut	63	0.13	0.00	0.13
16.66	WP12004_PEM – 1st crossing	Open cut	2,492	4.22	0.00	4.22
18.09	WP14008_PFO	Open cut	195	0.23	0.13	0.36
18.13	WP14008_PEM	Open cut	40	0.03	0.00	0.03
18.35	WP14007_PEM	Timber mat	0	0.06	0.00	0.06
23.91	WP12009_PSS	Open cut	726	0.09	0.36	0.45
23.91	WP12009_PFO	Open cut	0	0.64	0.14	0.78
24.59	WP12008_PFO – 1st crossing	Open cut	134	0.14	0.07	0.21
24.63	WP12008_PFO – 2nd crossing	Open cut	47	0.39	0.10	0.49
25.95	WP14005_PEM	Open cut	27	0.04	0.00	0.04
26.22	WP8005_PEM	Open cut	232	0.40	0.00	0.40
30.21	WP12011_PEM	Open cut	78	0.11	0.00	0.11
30.21	WP12011_PFO	Open cut	711	0.70	0.36	1.06
30.27	WP12011_PSS	Open cut	608	0.17	0.48	0.65
30.78	WP12012_PEM – 1st crossing	Open cut	76	0.10	0.00	0.10

Table A.5. Wetlands Resources Crossed or Affected by the Oak Grove Enhancement Project						
Pipeline milepost / facility name	**Wetland ID[1]**	**Proposed Crossing Method**	**Pipeline Crossing Length (feet)[2]**	**Temporary impacts (acres)**	**Permanent impacts (acres)[3]**	**Total acreage impacted**
Proposed Line 0-501						
30.82	WP12012_PFO	Open cut	2,392	2.39	1.58	3.97
31.12	WP12012_PEM – 2nd crossing	Open cut	0	0.14	0.00	0.14
31.66	WP9006_PFO_DT	Open cut	0	0.23	0.01	0.24
32.08	WP9002_PEM – 1st crossing	Open cut	53	0.07	0.00	0.07
32.11	WP9002_PEM – 2nd crossing	Open cut	9	0.34	0.00	0.34
32.43	WP9003_PFO	Open cut	213	0.21	0.15	0.36
32.46	WP9003_PEM	Open cut	0	0.02	0.00	0.02
32.51	WP9004_PFO	Open cut	46	0.07	0.03	0.10
32.59	WP9005_PFO	Open cut	852	0.61	0.58	1.19
Aboveground Facilities and Temporary Access Roads (TARs)[4]						
Richland Parish						
0.10 / Delhi Compressor Station	WP8001_PEM	Timber mat	N/A	0.03	0.00	0.03
TAR-4.55	WP2001_PSS – 1st crossing	Timber mat	N/A	0.04	0.00	0.04
TAR-4.55	WP2001_PEM – 1st crossing	Timber mat	N/A	0.01	0.00	0.01
West Carroll Parish						
TAR-16.68	WP12004_PEM – 2nd crossing	Timber mat	N/A	0.13	0.00	0.13
Line 0-501 Abandonment[4]						
West Carroll Parish						
32.00	WP12010_PEM	Timber mat	0	0.20	0.00	0.20
Richland Parish subtotal			*1,847*	*3.10*	*0.37*	*3.47*
West Carroll Parish subtotal			*9,302*	12.27	*4.17*	*16.44*
Project total			**11,149**	**15.37**	**4.54**	**19.91**

Notes

1. Wetland type: palustrine scrub-shrub (PSS); palustrine emergent (PEM); and palustrine forest (PFO) wetland. DT = not yet delineated.
2. Value of '0' = pipeline centerline does not cross wetland; wetland acreage refers to the area in the Project's construction right-of-way.
3. There will be no operational impacts on PEM wetlands crossed by the pipeline ROW, as these wetlands will revert back to the same type following construction. Operational impacts in this column are based on a 10-foot-wide area in PFO and PSS wetlands that will be converted to other

Table A.5. Wetlands Resources Crossed or Affected by the Oak Grove Enhancement Project						
Pipeline milepost / facility name	**Wetland ID[1]**	**Proposed Crossing Method**	**Pipeline Crossing Length (feet)[2]**	**Temporary impacts (acres)**	**Permanent impacts (acres)[3]**	**Total acreage impacted**
Proposed Line 0-501						
wetland types due to pipeline ROW maintenance. Additionally, operational impacts on forested wetlands in this column reflect potential for selective thinning of trees within 15 feet of the pipeline ROW that have roots that could compromise the integrity of the pipeline coating. 4. No wetlands are in aboveground facilities in West Carroll Parish, and no wetlands in Line 0-501 Abandonment workspaces in Richland Parish.						

APPENDIX 6

Summary of Habitat Impacts for the Oak Grove Enhancement Project (acres)

Table A.7. Summary of Habitat Impacts for the Oak Grove Enhancement Project (acres)												
Facility[1]	**Agriculture**		**Forest**		**Open Land**		**Developed**		**Wetland**		**Total**	
	Temp[2]	**Oper[3]**	**Temp[2]**	**Oper[3]**	**Temp[2]**	**Oper[3]**	**Temp[2]**	**Oper[3]**	**Temp[2]**	**Oper[3]**	**Temp[2]**	**Oper[3]**
Pipeline Facilities												
Richland Parish												
Line 0-501 ROW[4]	58.37	21.92	37.12	12.59	14.79	6.24	0.56	0.21	2.77	1.43	**113.61**	**42.39**
Line 0-501 ATWS	4.67	0.00	2.87	0.00	1.86	0.00	0.08	0.00	0.58	0.00	**10.06**	**0.00**
Line 0-501 Abandonment TWS	0.69	0.00	0.46	0.00	0.91	0.00	0.19	0.00	0.01	0.00	**2.26**	**0.00**
Temporary Access Roads	3.70	0.00	0.42	0.00	0.10	0.00	0.03	0.00	0.05	0.00	**4.30**	**0.00**
Contactor / staging / pipe yards	5.56	0.00	0.00	0.00	3.10	0.00	7.85	0.00	0.00	0.00	**16.51**	**0.00**
West Carroll Parish												
Line 0-501 ROW[4]	196.09	73.70	78.69	27.79	31.76	14.33	7.42	2.65	16.08	8.80	**33.04**	**127.27**
Line 0-501 ATWS	20.58	0.00	9.25	0.00	3.08	0.00	2.08	0.00	0.00	0.00	**34.99**	**0.00**
Line 0-501 Abandonment TWS	7.10	0.00	0.54	0.00	3.06	0.00	1.58	0.00	0.00	0.00	**12.49**	**0.00**
Temporary Access Roads	9.19	0.00	0.88	0.00	2.38	0.00	0.37	0.00	0.21	0.00	**12.95**	**0.00**
Contactor / staging / pipe yards	52.38	0.00	11.12	0.00	61.51	0.00	1.62	0.00	0.00	0.00	**126.63**	**0.00**
Aboveground Facilities												
Richland Parish												
Delhi Compressor Station	0.03	0.00	0.00	0.00	0.00	0.00	19.15	0.00	0.03	0.00	**19.21**	**0.00**
Midcontinent Express Meter Station	1.79	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	**1.87**	**0.01**
End of 36-inch Loop #2	0.00	0.00	0.01	0.01	0.39	0.02	0.21	0.00	0.00	0.00	**0.61**	**0.03**
Access Roads[5]	0.20	0.08	0.00	0.00	1.38	0.00	0.12	0.01	0.00	0.00	**1.70**	**0.09**
West Carroll Parish												
Mainline Valve 15	0.00	0.00	0.34	0.00	0.27	0.11	0.00	0.00	0.00	0.00	**0.61**	**0.11**
Mainline Valve 16	0.00	0.00	0.25	0.03	0.07	0.03	0.09	0.04	0.00	0.00	**0.41**	**0.10**
Access Roads[5]	0.00	0.00	0.04	0.03	0.08	0.08	0.19	0.16	0.00	0.00	**0.31**	**0.27**
Richland Parish subtotal	*75.01*	*22.01*	*40.88*	*12.60*	*22.53*	*6.26*	*28.27*	*0.22*	*3.44*	*1.43*	*170.13*	*42.52*
West Carroll Parish subtotal	*285.34*	*73.70*	*101.11*	*27.85*	*102.21*	*14.55*	*13.35*	*2.85*	*16.42*	*8.80*	*518.43*	*127.75*

Table A.7. Summary of Habitat Impacts for the Oak Grove Enhancement Project (acres)												
Facility[1]	**Agriculture**		**Forest**		**Open Land**		**Developed**		**Wetland**		**Total**	
	Temp[2]	**Oper**[3]	**Temp**[2]	**Oper**[3]	**Temp**[2]	**Oper**[3]	**Temp**[2]	**Oper**[3]	**Temp**[2]	**Oper**[3]	**Temp**[2]	**Oper**[3]
Project total	**360.35**	**95.71**	**141.99**	**40.45**	**124.74**	**20.81**	**41.62**	**3.07**	**19.86**	**10.23**	**688.56**	**170.27**

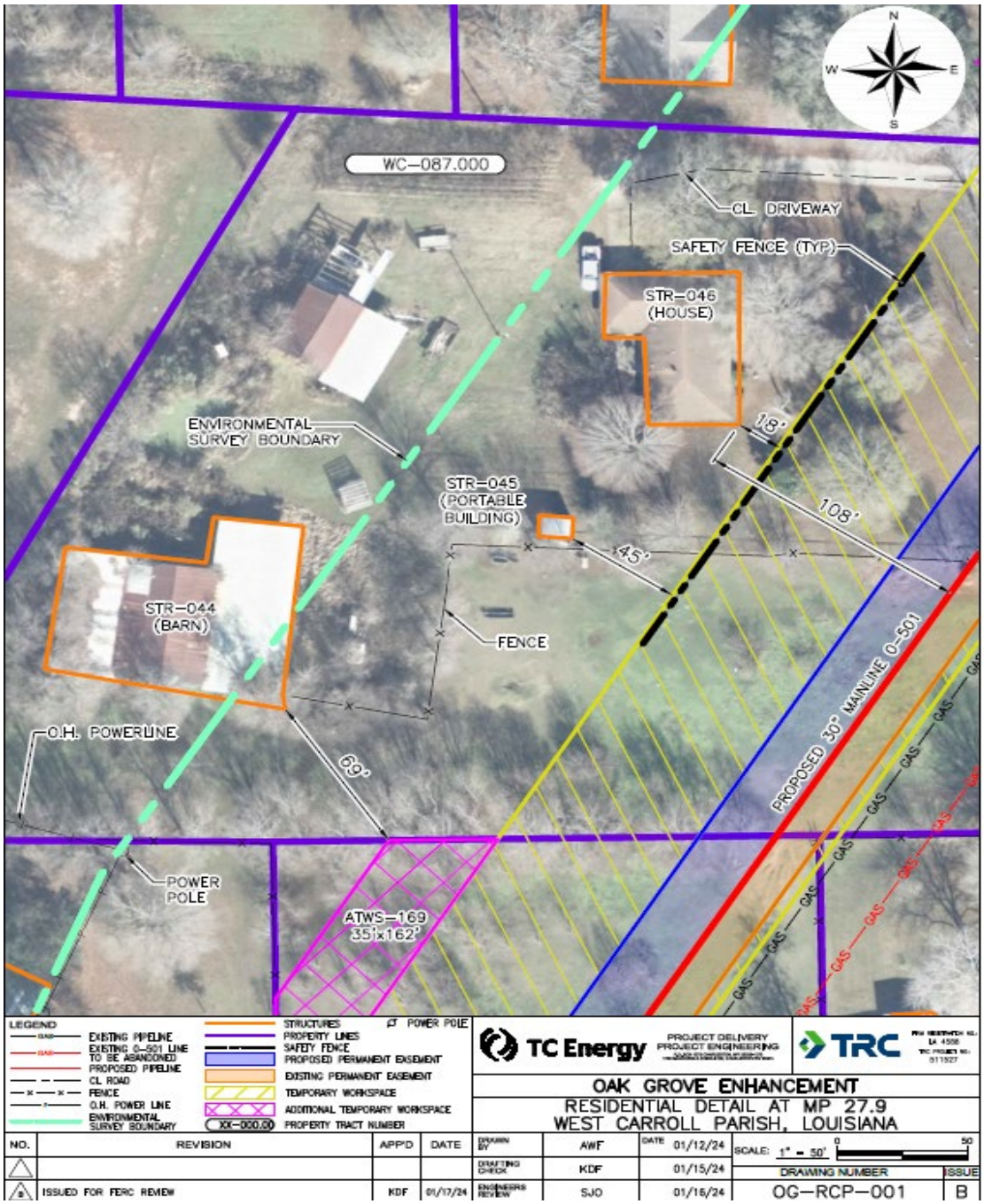
Notes

1. ROW = right-of-way; ATWS = additional temporary workspace; TWS = temporary workspace.
2. Temp = temporary; land affected during construction, inclusive of operational (permanent) impacts.
3. Oper = operation; land affected during operation (permanent); includes only operational areas associated with permanent easement, permanent access roads, and new permanent impacts at expanded aboveground facilities.
4. Acreage as presented is partially inclusive of existing permanent easements (i.e., Lines 0-501, 1-501, and 2-501), which would be used for the new Line 0-501 and proposed permanent right-of-way.
5. Access roads for aboveground facilities: values in the temporary column refer to acreage affected by temporary access roads; acreage under operation refer to permanent access roads.

APPENDIX 7

Site-specific Residential Drawing

Appendix 7 Site-specific Residential Drawing



APPENDIX 8

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APPENDIX 8 – REFERENCES

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APPENDIX 9

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APPENDIX 10

Temporary and Permanent Access Roads for the Project

Appendix 10 Temporary and Permanent Access Roads for the Project						
Access Road ID	**Milepost / Facility**	**Proposed Use**	**Existing Use**	**Upgrade Requirements**	**Approximate Length (feet)**	**Approximate Width (feet)**
Pipeline Facilities						
TAR-0-02	0.02	Temporary	Private Agricultural Field	Grading, gravel	382	25
TAR-0.19	0.19	Temporary	Private Agricultural Field	Tree trimming, grading, culvert, gravel	83	25
TAR-4.55	4.55	Temporary	Private Agricultural Access	Grading, culvert extension, widening, gravel	319	25
TAR-5.71	5.71	Temporary	Private Agricultural Field	Grading widening, gravel	683	25
TAR-7.42	7.42	Temporary	Private Agricultural Access	None	5952	25
TAR-10.56	10.56	Temporary	Private Agricultural Access	Tree trimming, grading, gravel	227	
TAR-10.76	10.76	Temporary	Private Agricultural Access	Tree trimming, grading, gravel	475	25
TAR-12.79	12.79	Temporary	Private Agricultural Access	Grading, culvert extension, widening, gravel	1359	25
TAR-13.91	13.91	Temporary	Private Agricultural Access	None	5644	25
TAR-16.68	16.68	Temporary	Private Agricultural Access	Culvert extension, widening, gravel	1718	25
TAR-17.40	17.40	Temporary	Private Dirt Road	Tree trimming, widening	647	25
TAR-17.80	17.80	Temporary	Private Gravel Road	None	968	25
TAR-18.59	18.59	Temporary	Private Agricultural Access	Grading, widening, gravel	1495	25
TAR-21.10	21.10	Temporary	Private Gravel Driveway	Grading, widening, gravel	90	25
TAR-24.27	24.27	Temporary	Private Agricultural Access	Tree trimming, grading, widening, gravel	2280	25
TAR-24.60	24.60	Temporary	Private Agricultural Access	Grading, widening, gravel	711	25
TAR-25.19	25.19	Temporary	Private Gravel Driveway	None	56	25
TAR-26.08	26.08	Temporary	Private Agricultural Field	Grading, gravel	1418	25

Appendix 10 Temporary and Permanent Access Roads for the Project						
Access Road ID	**Milepost / Facility**	**Proposed Use**	**Existing Use**	**Upgrade Requirements**	**Approximate Length (feet)**	**Approximate Width (feet)**
TAR-27.68	27.68	Temporary	Private Gravel Lane / Private Gravel Driveway	Grading, gravel	326	25
TAR-28.87	28.87	Temporary	Private Gravel Driveway	None	311	25
TAR-30.71	30.71	Temporary	Private Gravel Driveway	Tree trimming, widening, grading, gravel	1080	25
TAR-31.30	31.30	Temporary	Private Gravel Driveway/Private Trail	Tree trimming, grading, widening, gravel	2210	25
TAR-33.59	33.59	Temporary	Private Agricultural Field	Grading, culvert, gravel	1274	25
TAR-34.13	34.13	Temporary	Public Road ROW	Grading, culvert, gravel	51	25
Aboveground Facilities						
TAR-0.00	Delhi CS	Temporary	Paved	None	90	25
TAR-1.60	Midcontinent Express MS	Temporary	Gravel	None	1097	20
PAR-1.60	Midcontinent Express MS	Permanent	Private Agricultural Field	Grading, gravel	123	25
TAR-1.61	Midcontinent Express MS	Temporary	Gravel	None	174	20
TAR-2.60	End of 36" Loop #2	Temporary	Gravel	Tree trimming	1586	25
PAR-15.75	MLV 15	Permanent	Forested	Tree clearing, grading, gravel	209	25
PAR-15.76	MLV 15	Permanent	Existing Gravel / Grass	Grading, gravel	41	25
TAR-34.14	MLV 16	Temporary	Gravel	Widening, gravel	57	25
PAR-34.14	MLV 16	Permanent	Open land	Grading, gravel	54	25