Federal Energy Regulatory Commission

Office of Energy Projects

February 2020

Kinder Morgan Louisiana Pipeline LLC **Docket No. CP19-484-000**
Columbia Gulf Transmission, LLC **Docket No. CP19-488-000**

Acadiana Project and Louisiana Xpress Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas1
Kinder Morgan Louisiana Pipeline LLC
Columbia Gulf Transmission, LLC
Docket Nos. CP19-484-000 and
CP19-488-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Acadiana Project and Louisiana Xpress Project, proposed by Kinder Morgan Louisiana Pipeline LLC (KMLP) and Columbia Gulf Transmission, LLC (Columbia Gulf) respectively in the above-referenced dockets.

KMLP requests authorization to construct and operate three new natural gas-fired compressor units (31,900 horsepower [hp] each) at its existing Compressor Station 760 in Acadia Parish, Louisiana, make modifications to meter piping and new control valves at its existing meter station in Evangeline Parish, Louisiana, as well as install auxiliary facilities at both locations. The Acadiana Project would increase the north-south natural gas delivery capacity on KMLP's pipeline system by approximately 894 million cubic feet per day.

Columbia Gulf requests authorization to construct and operate three new greenfield compressor stations (totaling 46,940 hp each) and modify one existing compressor station in East Carroll, Catahoula, Evangeline, and Rapides Parishes, Louisiana. The Louisiana Xpress Project would provide an additional 850 million cubic feet of open access firm transportation capacity from a primary receipt point at Columbia Gulf's Mainline Pool to a primary delivery point at an interconnection with KMLP in Evangeline Parish, Louisiana.

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

The Commission mailed a copy of the *Notice of Availability* 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 libraries in both project areas. The EA is only available in electronic format. It may be viewed and downloaded from the FERC's website (www.ferc.gov), on the Environmental Documents page (https://www.ferc.gov/industries/gas/enviro/eis.asp). In addition, the EA may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (https://www.ferc.gov/docs-filing/elibrary.asp), click on General Search, and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e. CP19-484 or CP19-488). 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.

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 5:00pm Eastern Time on **March 9, 2020.**

For your convenience, there are three methods you can use to file your comments with 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 Documents and Filings. 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 Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You 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 following address. Be sure to reference the project docket number (CP19-484-000 or CP19-488-000) with your submission: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR section 385.214). Motions to intervene are more fully described at http://www.ferc.gove/resources/guides/how-to/intervene.asp. Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission may grant affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

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

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

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TECHNICAL ABBREVIATIONS AND ACRONYMS

Acadiana Project NOI	*Notice of Intent to Prepare an Environmental Assessment for the Planned Acadiana Project*
Alexandria CS	Alexandria Compressor Station
AMSL	above mean sea level
APE	area of potential effect
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Certificate	Certificate of Public Convenience and Necessity
Chicot CS	Chicot Compressor Station
CLECO	Central Louisiana Electric Company
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalents
Columbia Gulf	Columbia Gulf Transmission, LLC
Commission	Federal Energy Regulatory Commission
CS 760	Compressor Station 760
dBA	decibels on the A-weighted scale
Dth/d	dekatherms per day
DOT	U.S. Department of Transportation
EA	Environmental Assessment
ECS	Environmental Construction Standards
EI	Environmental Inspector
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
g	gravity
GHG	greenhouse gases
GWP	global warming potential
HAP	hazardous air pollutant
hp	horsepower
KMLP	Kinder Morgan Louisiana Pipeline LLC
L_{dn}	day-night sound level
L_{eq}	24-hour equivalent sound level
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
Louisiana Xpress Project NOI	*Notice of Intent to Prepare an Environmental Assessment for the Planned Louisiana Xpress Project*

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NLEB	northern long-eared bat
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
OEP	Office of Energy Projects
PEM	palustrine emergent wetland
PFO	palustrine forest
Plan	FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan*
ppm	parts per million
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
Procedures	FERC's *Wetland and Waterbody Construction and Mitigation Procedures*
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub/shrub
Red Mountain CS	Red Mountain Compressor Station
Secretary	Secretary of the Commission
Shelburn CS	Shelburn Compressor Station
SHPO	State Historic Preservation Office(r)
SO_2	sulfur dioxide
SONRIS	Strategic Online Natural Resource Information System
SPCC Plan	*Spill Prevention, Control, and Countermeasure Plan*
TAR	temporary access road
tpy	tons per year
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compounds

A. PROPOSED ACTION

1. INTRODUCTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) prepared this environmental assessment (EA) to assess the environmental impacts of the proposed Acadiana Project and the Louisiana Xpress Project. We[1] prepared this EA in compliance with the requirements of the *National Environmental Policy Act of 1969* (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508]) and the Commission's implementing regulations under 18 CFR 380.

On June 28, 2019, Kinder Morgan Louisiana Pipeline Company LLC (KMLP) filed an application with the Commission pursuant to Section 7(c) of the Natural Gas Act (NGA), as amended, under Docket No. CP19-484-000, seeking authorization to construct and operate three new natural gas-fired compressor units at its existing Compressor Station 760 (CS 760), make modifications to meter piping and new control valves at an existing meter station, as well as install auxiliary facilities at both locations.

On July 15, 2019, Columbia Gas Transmission, LLC (Columbia Gulf) filed an application with the Commission pursuant to Section 7(c) of the NGA, as amended, under Docket No. CP19-488-000, seeking authorization to construct and operate three new greenfield compressor stations and modify its existing Alexandria Compressor Station (Alexandria CS).

The capacity associated with the Louisiana XPress Project will provide 800,000 Dth/d of transportation service to Sabine Pass Liquefaction, LLC's Export Terminal, from a primary receipt point at Columbia Gulf's Mainline Pool to a primary delivery point at an interconnection with KMLP in Evangeline Parish, Louisiana. The Acadiana Project will increase firm north-to-south transportation capacity on KMLP's system by 894,000 Dth/d (94,000 Dth/d is not subscribed by Sabine Pass Liquefaction) from the existing pipeline interconnects to the existing delivery point with Sabine Pass Liquefaction, LLC at the Sabine Pass Liquefaction Export Terminal. Both the Acadiana Project and the Louisiana XPress Project have the same in-service date. Further, because the precedent agreements terms and in-service dates are similar, we have combined both the Acadiana Project and the Louisiana Xpress Project into this EA.

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

Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that would result from the implementation of the proposed action;
- identify and recommend alternatives and specific mitigation measures, as necessary, to avoid and minimize environmental impacts; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

2. PROJECT PURPOSE AND NEED

KMLP's stated purpose of the Acadiana Project is to increase the north-south natural gas delivery capacity on its pipeline system by approximately 894 million cubic feet of natural gas per day.

Columbia Gulf's stated purpose of the Louisiana Xpress Project is to provide open access 850,000 Dth/d firm transportation from a primary receipt point at Columbia Gulf's Mainline Pool to a primary delivery point at an interconnection with KMLP in Evangeline Parish, Louisiana.

Under Section 7(c) of the NGA, the Commission determines whether interstate natural gas facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The assessment of environmental impacts is an integral part of the Commission's decision on whether to issue KMLP and Columbia Gulf a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed facilities. However, the Commission also bases its decision on financing, rates, market demand, gas supply, and other issues concerning a project. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the projects are in the public interest.

3. SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

The topics addressed in this EA include geology and soils; groundwater, surface water, and wetlands; fisheries, vegetation, wildlife, and special status species; cultural resources; socioeconomics; land use and visual resources; air quality and noise; reliability and safety; cumulative impacts; and alternatives. The EA describes the affected environment as it currently exists, discusses the environmental consequences of the projects, and presents the applicants' proposed and our recommended mitigation measures.

4. PUBLIC REVIEW AND COMMENT

Acadiana Project

On August 28, 2019, we issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Acadiana Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to 118 entities including federal, state, and local officials; Native American groups; agency representatives; potentially affected landowners and other interested individuals; and local libraries.

To date, we have received comment letters from four different groups in response to the NOI, including from the Louisiana Department of Wildlife and Fisheries (LDWF), the Tunica-Biloxi Tribe, the Choctaw Nation of Oklahoma, and Cheniere Energy. Cheniere Energy left comments in support of the Acadiana Project. Table 1 summarizes the environmental issues that were raised during scoping and indicates the section of this EA in which each issue is addressed.

Table 1
Comments Provided During the Comment Period for the Acadiana Project

Comment	EA Section Addressing Comment
LDWF raised concerns for the wild coco orchid and recommends that KMLP use additional avoidance measures during project construction.	Section B.4.2
Tunica-Biloxi Tribe request for environmental impact analysis on various resources.	Sections B.1, B.2.1.3, B.4.2, B.4.3, B.5.2, B.6.2, B.7.6, B.8.1, B.9, and C.1
Choctaw Nation Historic Preservation Department request for GIS shapefiles, cultural resources survey, and EA.	Section B.6.2

Louisiana Xpress Project

On August 28, 2019, we issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Louisiana Xpress Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to 117 entities including federal, state, and local officials; Native American groups; agency representatives; potentially affected landowners and other interested individuals; and local libraries.

To date, we have received comment letters from four different groups in response to the NOI, including from SKL Farm Inc., the Tunica Biloxi Tribe, and the Choctaw Nation of Oklahoma. A comment from Janice E. Gilbert provided wage rates for Area 2 New Orleans. Table 2 summarizes the environmental issues that were raised during scoping and indicates the section of this EA in which each issue is addressed.

Table 2 Comments Provided During the Comment Period for the Louisiana Xpress Project	
Comment	EA Section Addressing Comment
SKL Farm raised concerns regarding adverse effects of artificial light, noise, activity, and additional environmental risks.	Section B.5.2, B.8.2.3, and B.9.1
Tunica-Biloxi Tribe request for environmental impact analysis on various resources.	Sections B.1, B.2.1.3, B.4.2, B.4.3, B.5.2, B.6.2, B.7.6, B.8.1, B.9, and C.1
Tunica-Biloxi Tribe request for government-to-government consultation request.	Section B.6.2
Choctaw Nation Historic Preservation Department request for GIS shapefiles, cultural resources survey, and EA	Section B.6.2

5. PROPOSED FACILITIES

Acadiana Project

The Acadiana Project would include three new compressor units at KMLP's existing CS 760 in Acadia Parish, Louisiana, and miscellaneous auxiliary facilities. The project would also include piping modifications and new control valves at the existing Columbia Gulf Meter Station (CGT Meter Station), in Evangeline Parish, Louisiana. The general location of the facilities is shown in figure 1.

Louisiana Xpress Project

The Louisiana Xpress Project would include three new compressor stations in Louisiana; the Shelburn Compressor Station (Shelburn CS) in East Carroll Parish, the Red Mountain Compressor Station (Red Mountain CS) in Catahoula Parish, and the Chicot Compressor Station (Chicot CS) in Evangeline Parish, as well as modifications at the existing Alexandria Compressor Station (Alexandria CS) in Rapides Parish. These facilities would tie in to Columbia Gulf's existing 30-inch-diameter Mainline 100, 30-inch-diameter Mainline 200, and 36-inch-diameter Mainline 300. The general location of the facilities is shown in figure 2.

6. LAND REQUIREMENTS AND FACILITIES

Acadiana Project

The Acadiana Project would affect 85.4 acres of land during construction and 3.1 acres of land during operation, including 2.2 acres for the CS 760 expansion, 0.7 acre for the CGT Meter Station expansion, and 0.3 acre for proposed permanent access roads.

KMLP proposes to use the Pine Prairie Meter Station for temporary workspace, and the Eunice Yard as a temporary contractor yard. However, if the Eunice Yard is unavailable at the time of project construction, KMLP would use either the Cole Pit Yard or the Manco Yard for project construction. Therefore, all potential contractor yards are considered in this EA and the impact discussion below is greater than what would be expected for this project.

Land requirements for the Acadiana Project are provided in table 3.

Table 3
Land Requirements for the Acadiana Project

Facility	Temporary workspace for construction (acres)	New permanent easement for operation (acres) [2]
CS 760	57.0	2.2
CGT Meter Station	3.8	0.7
Pine Prairie Meter Station	4.8	N/A
Eunice Yard (preferred)	7.1	N/A
Manco Yard (alternate)	5.5	N/A
Cole Pit Yard (alternate)	6.8	N/A
Access Roads	0.4	0.3
Total[1]	**88.5[3]**	**3.1**

[1] Addends may not equal the sums due to rounding.

[2] No new permanent facilities or impacts would occur within the Pine Prairie Meter Station or any of the proposed yards.

[3]Temporary workspaces would not be inclusive of permanent workspaces.

CS 760

KMLP would install three 31,900 International Organization for Standardization horsepower (hp) Solar Turbines Incorporated (Solar) Titan 250 natural gas-fired compressor units within two new compressor buildings at its existing CS 760 in Acadia Parish, Louisiana. KMLP would also install miscellaneous auxiliary facilities, including gas cooling, two compressor buildings, two master control buildings, a switchgear building, emergency generation, filter separators, fuel gas skids, fuel gas heaters, and the re-wheeling of two existing compressor units at CS 760. CS 760 would require temporary and new permanent workspace. The operational area of CS 760 would expand

by 2.2 acres within the existing 18-acre compressor station for a new operational acreage of 20.2 acres.

CGT Meter Station

KMLP proposes to replace header piping at the CGT Meter Station. The existing 16-inch-diameter piping on the control valve run would be replaced with new 24-inch-diameter piping, and the existing 30-inch-diameter outlet header piping from the control valve run would be replaced with new 48-inch-diameter piping. KMLP would also replace two control valves and six concrete pipe supports. To accommodate these changes, KMLP plans to increase the existing operational area of the CGT Meter Station to the south and west by 0.7 acre.

Contractor yards

The Acadiana Project would require one staging yard and one contractor yard. KMLP would use its existing almost 5-acre Pine Prairie Meter Station for staging equipment and temporary workspace adjacent to CS 760. Additionally, KMLP would use the 7.1-acre Eunice Contractor Yard. The Eunice Yard is an existing industrial graveled lot that has been previously used by KMLP for projects. Alternately, should the Eunice Yard not be available at the time of construction, KMLP would use the 5.5-acre Manco Yard and the 6.8-acre Cole Pit Yard, which are both existing graveled lots. All contractor yard impacts would be temporary. The Acadiana Project would require three public temporary access roads, totaling about 5.1 acres; however, no improvements to these roads are proposed. Table 3 summarizes the approximate land requirements for construction and operation of the proposed facilities.

Louisiana Xpress Project

The Louisiana Xpress Project would affect 167.1 acres of land during construction and 35.8 acres of land during operation. Land requirements for the Louisiana Xpress Project are provided in table 4.

Table 4 Land Requirements for the Louisiana Xpress Project		
Facility	Temporary workspace for construction (acres)	New permanent easement for operation (acres)
Shelburn Compressor Station	37.4	13.6
Shelburn Compressor Station Access Roads	2.3	2.3
Red Mountain Compressor Station	29.6	11.5
Red Mountain Compressor Station Access Roads	0.8	0.8
Chicot Compressor Station	61.9	7.5
Chicot Compressor Station Access Roads	0.9	0.9
Alexandria Compressor Station	34.9	0.0
Alexandria Compressor Station Access Roads	0.1	0.0
Total[1]	**167.1**	**35.8**
[1] Addends may not equal the sums due to rounding.		

New Compressor Stations

Columbia Gulf proposes to construct three 46,940 hp greenfield compressor stations, designated as the Shelburn CS, in East Carroll Parish, the Red Mountain CS in Catahoula Parish, and the Chicot CS in Evangeline Parish, Louisiana. Each compressor station would include two Solar Turbine Titan 130 (23,470 hp) natural gas driven compressors, filter/separators, gas cooling bays, 48-inch-diameter suction and 42-inch-diameter discharge piping, and related appurtenant facilities. No new contractor yards are proposed for the new compressor stations.

Alexandria CS

Columbia Gulf proposes to add cooling bays with associated piping and appurtenant facilities at its existing Alexandria CS in Rapides Parish, Louisiana.

Figure 1. Acadiana Project Proposed Facilities

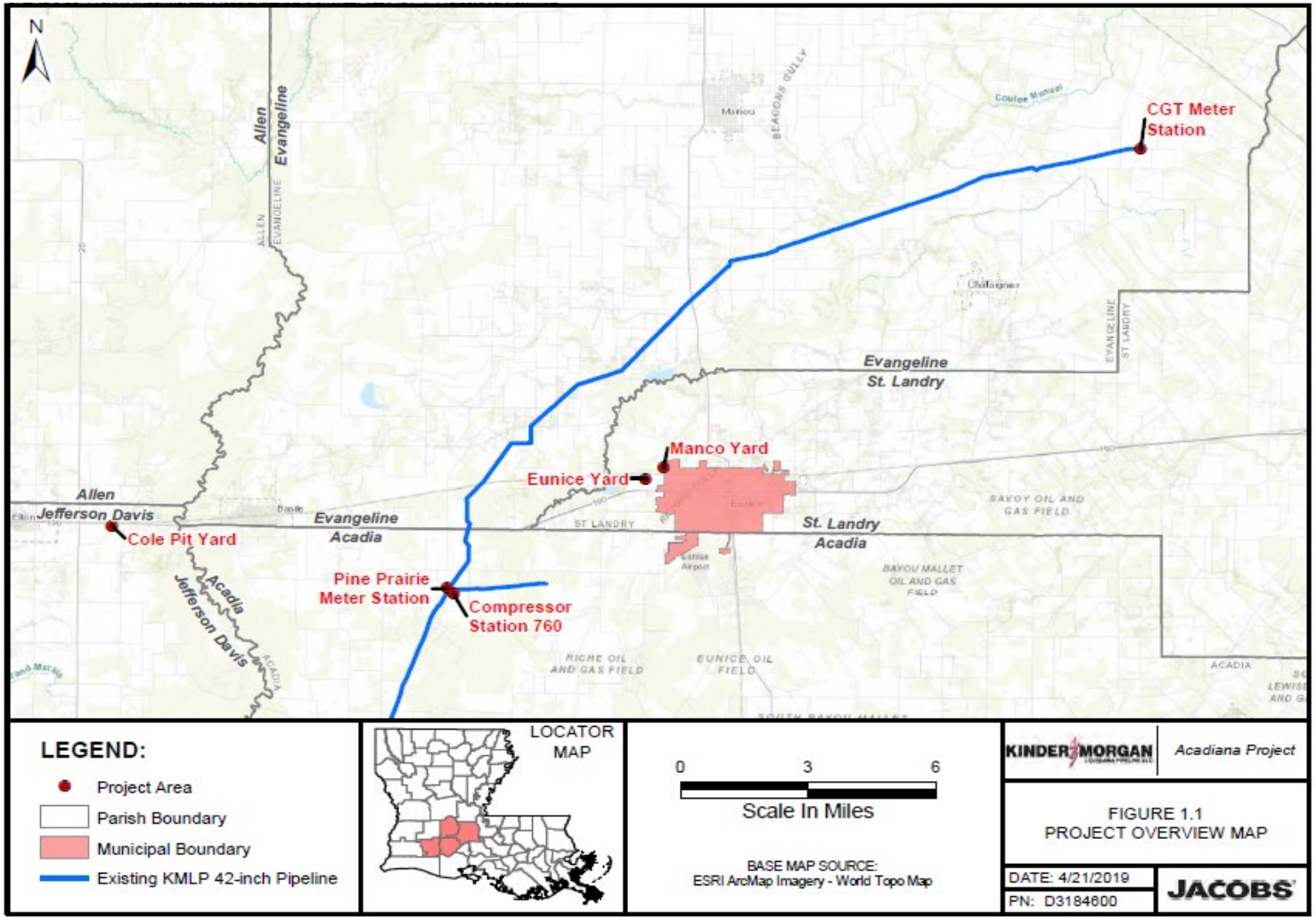
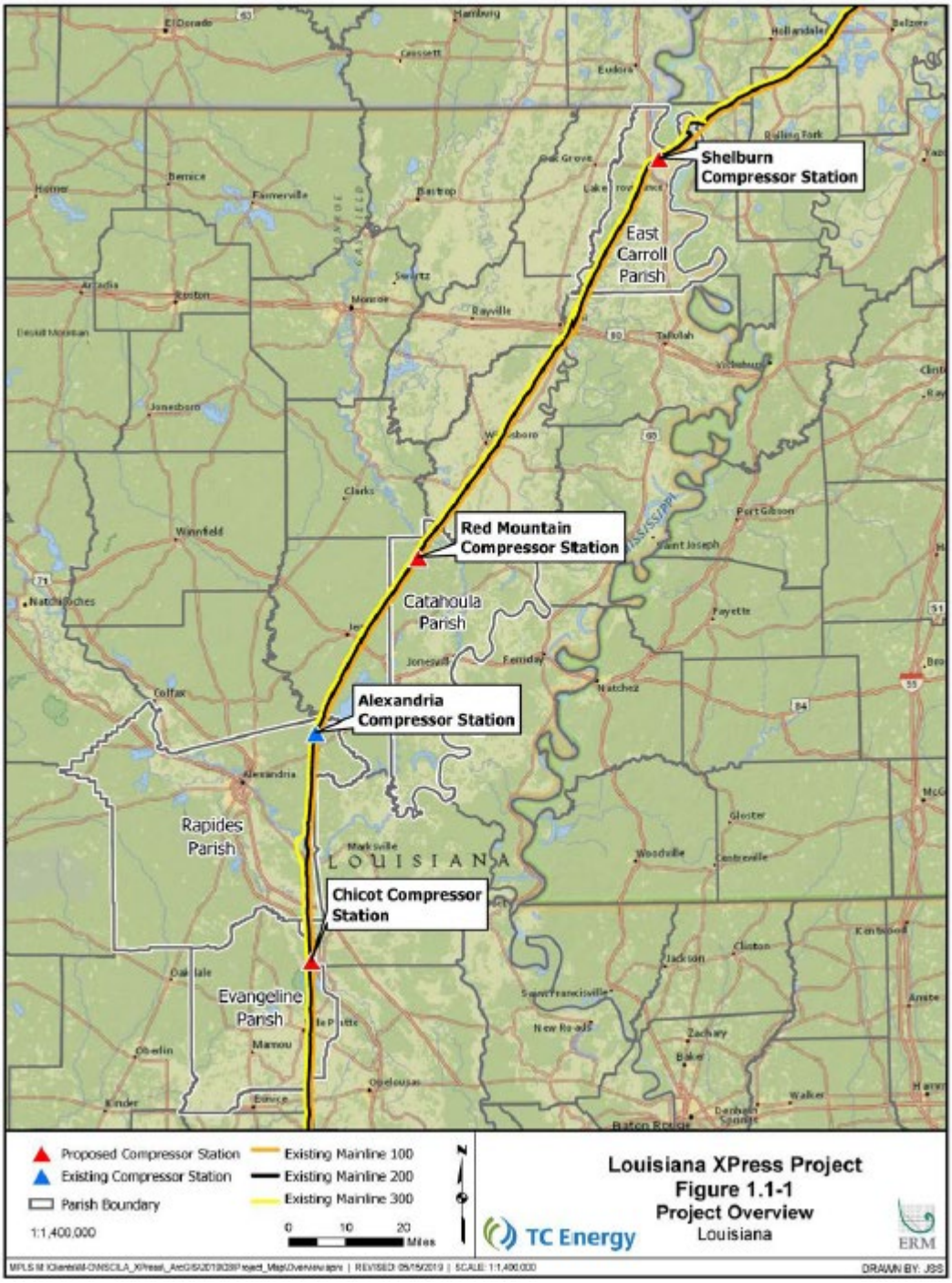


Figure 2. Louisiana Xpress Proposed Facilities



7. CONSTRUCTION SCHEDULES

Acadiana Project

KMLP anticipates beginning construction by August 2020 and placing the Acadiana Project in operation by February 2022.

Louisiana Xpress Project

Columbia Gulf anticipates beginning construction in September 2020 and placing the project in service in November 2021. The construction schedules would vary per site based on site-specific conditions; however, activities would occur concurrently at multiple facilities.

8. CONSTRUCTION, OPERATION, AND MAINTENANCE PROCEDURES

KMLP and Columbia Gulf would design, construct, operate, and maintain their respective projects in accordance with the U.S. Department of Transportation's (DOT) *Minimum Federal Safety Standards* in 49 CFR 192. KMLP and Columbia Gulf would adopt our *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures)[2] for each project. Both companies propose certain modifications of the Plan and Procedures and are discussed further below.

KMLP and Columbia Gulf would operate and maintain the proposed facilities in compliance with the Commission's siting and maintenance regulations in 18 CFR 380.15, and the maintenance requirements in our Plan and Procedures. Project facilities would be marked and identified in accordance with applicable regulations. Both companies would also participate in the local One Call system. These standards are in accordance with the *National Pipeline Safety Act of 1968*, as amended.

KMLP and Columbia Gulf would each employ at least one EI for the project during construction and restoration, as specified in our Plan. The EIs would be on-site during project construction activities to ensure KMLP's and Columbia Gulf's compliance with the measures outlined in our Plan and Procedures and the environmental permit requirements from construction through restoration. The EIs would have the authority to stop activities that are not in compliance with agency requirements until corrective action has been taken.

KMLP would construct from Monday through Saturday, from 7 am to 7 pm and discussed further in section B.8.2. Columbia Gulf would mostly construct from Monday

[2] Copies of our Plan and Procedures are available for review on the FERC website (www.ferc.gov) under the environmental guidelines for the natural gas industry at: http://www.ferc.gov/industries/gas/enviro/guidelines.asp.

through Saturday, from 7 am to 7 pm; therefore we recommend that Columbia Gulf should file a nighttime construction noise management plan which is discussed further in section B.8.2. Emergencies or other non-typical circumstances may necessitate limited nighttime work. See section B.5.1.1 for further information on residential areas.

KMLP and Columbia Gulf would each conduct environmental training sessions in advance of construction to ensure that all individuals working on the project are familiar with the environmental mitigation measures appropriate to their jobs and the EI's authority.

Foundation Pouring

KMLP and Columbia Gulf would excavate as necessary to accommodate the reinforced concrete foundations required for the compression equipment, metering equipment, pigging equipment, and buildings. Concrete pours would be sampled to verify compliance with minimum strength requirements. KMLP and Columbia Gulf would backfill removed spoil into the excavation and compact it in place. Excess spoil would be distributed across the station sites or used as backfill elsewhere on the project.

Piping Installation

Piping connections that are not flanged or screwed would be welded. KMLP and Columbia Gulf would perform welding procedures, including visual inspections and non-destructive testing, in accordance with the safety standards and regulations in the U.S. Department of Transportation's (DOT) Minimum Federal Safety Standards in 49 CFR 192.

Foundations and Building Installations

Columbia Gulf would excavate as necessary to accommodate the reinforced concrete foundation required for the new compressor units and buildings. Concrete pours would be sampled to verify compliance with minimum strength requirements. Backfill would be compacted in place, and excess soil would be used elsewhere or distributed around the site.

Once the concrete foundations have been completed and determined to meet the design requirements, installation of the buildings and machinery for each compressor station would commence. The steel frames would be erected, followed by installation of the roofs, interior skin, insulation, and exterior skin. Cutouts for protrusions through the siding (e.g., inlet and exhaust vents) would be flashed to ensure the buildings are weather-tight. Various piping and electrical conduit systems would be connected once the machinery is placed. Electrical wiring would be installed for power and instrumentation. Compression equipment would be shipped to the site by truck after construction commences. The compressors would be offloaded, positioned on the foundation, leveled, grouted, and secured.

Acadiana Project

In order to minimize potential environmental impacts, KMLP has developed the following project-specific construction and reclamation plans,[3] which we have reviewed and find acceptable:

- Project-specific *Spill Prevention, Control, and Countermeasures Plan* (SPCC Plan);
- *Plan for the Unanticipated Discovery of Contaminated Environmental Media*; and
- *Fugitive Dust Control Plan*.

Louisiana Xpress Project

In order to minimize potential environmental impacts, Columbia Gulf has developed the following project-specific construction and reclamation plans,[4] which we have reviewed and find acceptable:

- Project-specific SPCC Plan
- *Environmental Construction Standards;*
- *Plan for the Unanticipated Discovery of Contaminated Environmental Media*; and
- *Fugitive Dust Control Plan*.

9. NON-JURISDICTIONAL FACILITIES

Acadiana Project

The Central Louisiana Electric Company (CLECO) would permit, construct, and operate approximately 400 feet of overhead 34.5 kilovolt power line, originating at an existing power pole and transformer outside the existing CS 760. Additionally, CLECO would permit, construct, and operate approximately 200 feet of underground 34.5 kilovolt power line connecting the new overhead line to a new transformer by the proposed switchgear building. The installation of the electric powerlines is regulated by the state

[3] Copies of KMLP's project-specific construction and reclamation plans have been filed with the Commission and can be viewed on eLibrary at http://www.ferc.gov/docs-filing/elibrary.asp under docket CP19-484-000.

[4] Copies of Columbia Gulf's project-specific construction and reclamation plans have been filed with the Commission and can be viewed on eLibrary at http://www.ferc.gov/docs-filing/elibrary.asp under docket CP19-488-000.

and local agencies; cumulative Impacts associated with these facilities are addressed in section B.10.

Louisiana Xpress Project

Utility infrastructure expansions are anticipated at three locations associated with the project, including the construction of electrical supply to service the proposed compressor stations. Table 5 provides a list of the non-jurisdictional facilities associated with the Louisiana Xpress Project. Cumulative impacts associated with these facilities is addressed in section B.10.

Table 5
Louisiana Xpress Project Non-Jurisdictional Facilities Associated with the Project

Compressor Station/ Project Sponsor	Location	Description
Shelburn		
Entergy Electric Company	East Carroll Parish, Louisiana	Approximately 6,200 feet of new power line extension and upgrades to bring power to the Shelburn CS.
Red Mountain		
Concordia Electric Company	Catahoula Parish, Louisiana	Approximately 10,500 feet of new power line extension and upgrades to bring power to the Red Mountain CS.
Chicot		
CLECO	Evangeline Parish, Louisiana	Approximately 900 feet of new power lines to bring power to the Chicot CS.

10. PERMITS, APPROVALS, AND REGULATORY CONSULTATIONS

Tables 6 and 7 list the major federal, state, and local permits, approvals, and consultations for construction and operation of the Acadiana Project and the Louisiana Xpress Project respectively and provides the current status of each. KMLP and Columbia Gulf would each be responsible for obtaining and abiding by all permits and approvals required for construction and operation of their respective projects regardless if they appear in these tables.

Table 6 Permits for the Acadiana Project		
Agency	Permit/Approval/Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act	Application filed June 28, 2019.
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 Consultation	Project review completed through project screening website tool with no impacts anticipated on federally listed threatened or endangered species, February 21, 2019.
Louisiana Department of Environmental Quality	Air Quality Permit	Application filed June 17, 2019.
State Historic Preservation Office – Louisiana	National Historic Preservation Act, Section 106 Consultation	Consulting request letter and cultural resources report submitted on April 29, 2019. Concurrence letter received June 18, 2019 from the Louisiana State Historic Preservation Office.
U.S. Army Corps of Engineers, New Orleans District	Clean Water Act, Section 404 permit	Nationwide Permit 12. Preconstruction Notification and Preliminary JD submitted June 21, 2019.
State		
Louisiana Department of Wildlife and Fisheries Natural Heritage Program	Threatened and Endangered Species Consultation	Consulting agency request letter submitted on March 12, 2019. Response received on April 25, 2019.
Louisiana Department of Environmental Quality	Section 401 Water Quality Certification	Anticipated to be approved with Section 404 Nationwide Permit 12 for the project. Application filed June 2019.
Louisiana Department of Environmental Quality	National Pollutant Discharge Elimination System for Discharge of Hydrostatic Test Water	KMLP's Louisiana Pollutant Discharge Elimination System General Permit for Hydrostatic Test and Vessel Testing Wastewater has been reissued effective March 23, 2018. Must comply with all permit conditions to be eligible.

Table 7 Permits for the Louisiana Xpress Project		
Agency	Permit/Approval/Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act	Application filed July 15, 2019.
U.S. Army Corps of Engineers, New Orleans and Vicksburg District	Permits under Section 404 of the Clean Water Act and Section 10 of the Rivers	Application submitted July 2019 and received October 2019.

	and Harbors Act (Joint Permit Application)	
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 Consultation	Consultation initiated July 2019.
State		
Louisiana Department of Environmental Quality	Air Permit – Title V	Application submitted July 2019 and anticipated approval by June 2020.
Louisiana Department of Wildlife and Fisheries	State-listed threatened and endangered species clearance	Application submitted May 2019 and received June 2019.
Louisiana Department of Culture Recreation & Tourism, Office of Cultural Development, Division of Archaeology	Section 106, NHPA – Review and comment on undertakings potentially affecting cultural resources	Application submitted May 2019 and received June 2019.
Local		
Parish Floodplain Permits	Floodplain Permits (where required)	Anticipated submittal by August 2020 and anticipated approval by October 2020.

B. ENVIRONMENTAL ASSESSMENT

In this section, we discuss the affected environment, general construction and direct and indirect operational impacts, and proposed mitigation to minimize or avoid impacts for each resource. When considering the environmental consequences of the proposed projects, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of a project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

KMLP and Columbia Gulf, as part of their respective proposals, agreed to implement certain measures to reduce impacts on environmental resources. We evaluate the proposed mitigation measures to determine whether additional measures would be necessary to reduce impacts. Where we identify the need for additional mitigation, the measures appear as bulleted, boldfaced paragraphs in the text. We will recommend that these measures be included as specific conditions to any authorization that the Commission may issue to KMLP or Columbia Gulf.

1. GEOLOGY

All Acadiana and Louisiana Xpress Project sites are within the Coastal Plain physiographic province. Acadiana Project sites are within the West Gulf Coastal Plain section of the Coastal Plain physiographic province. The West Gulf Coastal Plain is characterized by nearly level to moderately rolling irregular plains, which were formed by the deposition and subsequent uplift of continental marine sediments from the end of the Cretaceous period to the Pleistocene (The Nature Conservancy, 2003). In general, Acadiana Project areas are relatively flat and range in elevation from 40 to 65 feet above mean sea level (AMSL).

The Louisiana Xpress Project's Shelburn, Red Mountain, and Alexandria CS sites are in the Mississippi Alluvial Plain physiographic section, and the Chicot CS site is in the West Gulf Coastal Plain physiographic section (described above).

The Mississippi Alluvial Plain section is mostly a broad, flat alluvial plain with river terraces, swales, and levees providing the main elements of relief (U.S. Department

of Agriculture, 2006). In general, Louisiana Xpress Project areas are relatively flat and range in elevation from 75 to 100 feet AMSL for the Shelburn, Chicot, and Alexandria CS sites. The Red Mountain CS site is at an elevation of approximately 200 feet AMSL but has significant topography, with slopes ranging from 5 to 40 percent and 20 feet of topographic relief.

1.1. MINERAL RESOURCES

Louisiana's primary mineral resources include fuel (oil and gas production) and non-fuel mineral resources (salt, sand and gravel, crushed stone, and lime). A search of oil and gas production and non-fuel mineral resources in the projects' vicinity utilizing the Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resource Information System (SONRIS) (LDNR, 2019) and the U.S. Geological Survey (USGS) Mineral Resource Data System (USGS, 2011) showed that within 0.25 mile of proposed workspaces there are no past or present mines, mining prospects, or mining processing plants. There is a soil and aggregate supplier ("pit") just south of the proposed Cole Pit Yard (Acadiana Project); however, the proposed construction yard at this location occupies the area north of this pit and would not impact the pit itself. KMLP would maintain access to the pit throughout construction. Oil and gas exploration and extraction activities within the project vicinities are described below.

Acadiana Project

Current and historic oil or gas wells were not identified within 0.25 mile of the CGT Meter Station, the Cole Pit, the Manco Yard, or the Eunice Yard. Eight total oil and/or gas wells were identified within 0.25 mile of the Pine Prairie Meter Station and CS 760. Of these features, one is shut-in for future use and the remainder are plugged and abandoned. One of these abandoned wells would be within temporary workspace for CS 760. All other wells are greater than 100 feet from proposed work areas.

Louisiana Xpress Project

Six oil and/or gas wells were identified within 0.25 mile of the proposed workspaces for the Louisiana Xpress Project. All identified wells have been plugged and abandoned and are over 300 feet from the edge of the construction workspace for the Red Mountain CS.

Based on the distance from both projects to active mineral extraction and the limited depth of disturbance (approximately 30 feet or less), we conclude that the projects would not significantly impact availability of, or access to, mineral resources.

1.2. GEOLOGIC HAZARDS

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards typically are seismic-related, including

earthquakes, surface faulting, and soil liquefaction. Geologic hazards discussed below also include landslides, ground subsidence (including karst terrain), and flood hazards (floodplains are discussed in section B.3.2).

1.2.1. Seismicity and Soil Liquefaction

Historically, very few earthquakes have been recorded in the vicinity of the projects. Based on a review of the USGS Earthquake Archive search tool, no earthquakes with a magnitude greater than 2.5 on the Richter scale have occurred within 10 miles of either project from January 1, 1900 through November 2019 (USGS, 2019a).

The shaking during an earthquake can be expressed in terms of the acceleration as a percent of gravity (g), and seismic risk can be quantified by the motions experienced at the ground surface or by structures during a given earthquake expressed in terms of g. For reference, a peak ground acceleration of 10 percent g (0.1g) is generally considered the minimum threshold for damage to older structures or structures not constructed to resist earthquakes. USGS National Seismic Hazard Probability Mapping shows that, for a 50 year period, there is a 2 percent probability of an earthquake with an effective peak ground acceleration of 4 to 10 percent g occurring.

Both projects would be within the Gulf-margin normal fault system, a belt of poorly defined, mostly seaward-facing normal faults that trend parallel to the Gulf Coast in westernmost Florida, southwestern Alabama, southern Mississippi, all of Louisiana and southernmost Arkansas, and eastern and southern Texas (USGS, 2019b). Movement along active growth faults in this system tends to be minimal (less than 0.2 millimeters/year) and non-seismogenic; the Louisiana Geological Survey (2001) describes this process as gradual creep instead of sudden break or displacement. Project facilities are not anticipated to be affected by faults given the nature of fault movement (gradual creep) and the composition of sediments and rocks that underlie the fault system, which are likely unable to generate the energy required to produce significant seismic events (Wheeler and Heinrich, 1998).

Both projects are in areas of low seismicity and, as such, the potential for soil liquefaction to occur is negligible. Given these conditions, we conclude that there is a low potential for prolonged ground shaking, ground rupture, or soil liquefaction to occur or significantly impact either project facilities.

1.2.2. Landslides and Slope Stability

Landslides are defined as the movement of rock, debris, or soil down a slope. Slope failure causing a landslide can be initiated by precipitation, seismic activity, slope disturbance due to construction, or a change in groundwater conditions, such as a seasonal high groundwater table, and soil characteristics. Construction factors that may

increase the potential for slope failure could include trenching along slopes and the burden of construction equipment or spoil on unstable surfaces.

Acadiana Project areas are generally flat (mapped soil unit slopes range from 0 to 1 percent) and/or have been previously graded. Therefore, landslide risk in this project area is negligible.

With the exception of the Red Mountain CS, Louisiana Xpress Project area slopes range from 0 to 1 percent. Therefore, landslides from slope instability at these workspaces are negligible. The Red Mountain CS site has slopes that range from 5 to 40 percent, with 20 feet of topographic relief. Columbia Gulf has stated that special construction measures may be required at this location to maintain safety, including development of a Hazardous Slope Work Plan where the slope exceeds 30 percent at a length greater than 33 feet. Columbia Gulf would install drainage measures at the start of construction to direct water away from the construction areas and avoid saturation of soils, including French drains, temporary drainage swales, and/or well point dewatering systems. Columbia Gulf would identify or grade areas where spoil would be stored to distribute the weight of the soil over a greater area and avoid overburdening slopes. To further control erosion and runoff, Columbia Gulf would implement measures identified in its Environmental Construction Standards (ECS) and would develop a site-specific erosion and sediment control plan to address stormwater during construction.

To stabilize the slopes prior to revegetation, Columbia Gulf would use one or more of the following measures: water bars directed to a stable, well vegetated area, or an energy dissipating device; straw mulch applied at a rate of at least 2 tons/acre; and/or erosion control blankets. During operation, Columbia Gulf would inspect the restored project area on a monthly basis for the first 6 months. If erosion or slope instability is identified, Columbia Gulf would implement corrective measures.

Based on these proposed measures, we conclude that the Louisiana Xpress Project is not likely to significantly adversely impact or be adversely impacted by slope instability.

1.2.3. Ground Subsidence

Ground subsidence, involving the localized or regional lowering of the ground surface, may be caused by karst dissolution, sediment compaction due to oil, 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 any project areas proposed to be affected. Further, active oil and gas extraction and subsurface mines were not identified within 0.25 mile of project areas for either project. Subsidence issues from large-scale groundwater pumping have been prevalent and well documented along the Gulf Coast; however, there are no publicly available records of these events occurring in Acadia, East Carroll, Evangeline, or

Rapides Parishes (Louisiana State University, 2016a; 2016b; 2017a; 2017b). Therefore, and because both project facilities would not significantly impact groundwater resources (refer to section B.3), the projects are not anticipated to be significantly impacted by ground subsidence.

Based on the above assessment, we conclude the projects would not significantly impact or be significantly impacted by geologic resources or hazards, or mineral resources.

2. SOILS

Soil characteristics for both projects were assessed using the Natural Resources Conservation Service (NRCS) Soil Survey geographic database (NRCS, 2019). Soils were evaluated according to the characteristics that could affect construction or increase the potential for soil impacts during construction or operation. These characteristics include prime farmland designation, compaction potential, highly erodible soils, revegetation potential, and the presence of shallow bedrock. No project area soils were classified as having a shallow depth to bedrock (bedrock within 60 inches of the ground surface). Other soil limitations are depicted in table 8. Additional soil-related issues considered in the analysis include soil contamination.

Table 8
Soil Limitations Impacted by Construction (acres)

Facility	Prime Farmland [a]	High Compaction Potential [b]	Low Revegetation Potential [c]	High Erosion Potential	
				Water [d]	Wind [e]
Acadiana Project					
CS 760	59.2	0	0	59.2	0
CGT Meter Station	4.5	0	0	4.0	0
Pine Prairie Meter Station	4.8	0	0	4.8	0
Eunice Yard	7.1	0	0	7.1	0
Manco Yard	5.5	0	0	5.5	0
Cole Pit Yard	6.8	0	0	6.8	0
Access Roads	0.6	0	0	0.6	0
Project Totals	**88.5**	**0**	**0**	**88.0**	**0**
Louisiana Xpress Project					
Shelburn CS	37.4	37.4	0	1.8	0
Red Mountain CS	0	1.3	27.7	29.0	19.9

Chicot CS	61.9	0	0	0	0
Alexandria CS	22.9	22.9	11.6	11.9	0
Access Roads	3.3	2.4	0.8	3.1	0.6
Project Totals	**125.6**	**64.1**	**40.1**	**45.8**	**20.5**

[a] Includes prime farmland, unique farmland, and farmland of statewide or local importance (per the NRCS).

[b] Soil components have: 1) a surface texture of sandy clay loam or finer; and 2) a drainage class of somewhat poorly, poorly, or very poorly drained.

[c] Soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained, and soils with an average slope greater than 8 percent.

[d] K Factor of 0.48 to 0.69 and/or with an average slope greater than or equal to 9 percent

[e] Wind erodibility group values of 1 and 2.

Source: NRCS, 2019

Soil characteristics could affect construction performance or increase the potential for adverse construction-related soil impacts, as described in more detail below.

2.1.1. Prime Farmland

The U.S. Department of Agriculture defines prime farmland as land that has the best combination of physical and chemical characteristics for growing food, feed, forage, fiber, and oilseed crops. Unique farmland is land, other than prime farmland, that is used for production of specific high-value food and fiber crops. Soils that do not meet all of the requirements to be considered prime or unique farmland may be considered farmland of statewide or local importance if soils are capable of producing a high yield of crops when treated or managed according to accepted farming methods.

Acadiana Project

All project area soils are classified as prime farmland; however, approximately 32 of those acres of proposed workspaces have been previously converted to industrial or road use. New, permanent impacts on prime farmland would be limited to expansions of the fenceline for existing facilities (CS 760 and CGT Meter Station) and associated new, permanent access roads. Therefore, approximately 3.1 acres of prime farmland would be permanently impacted by the Acadiana Project, of which 0.7 acre is currently in agricultural use.

Louisiana Xpress Project

Approximately 125.6 acres of project area soils are classified as prime farmland; however, approximately 35.0 of those acres (at the Alexandria CS) have been previously converted to industrial or road use. New, permanent impacts on prime farmland would occur where soils are permanently converted to industrial use at the Shelburn CS (13.5 acres) and the Chicot CS (8.4 acres). The majority of new permanent impacts on prime farmland are in areas currently in agricultural use.

The acreage of prime farmland that would be permanently impacted by the projects is negligible when compared to the total acreage of prime farmland in Acadia Parish (378,935 acres), East Carrol Parish (223,093 acres), and Evangeline Parish (337,988 acres) Louisiana (NRCS, 2019). Therefore, we conclude impacts on the availability of prime farmland would not be significant.

2.1.2. Compaction-Prone Soils

Soil compaction modifies the structure of soil and, as a result, alters its strength and drainage properties. Soil compaction decreases pore space and water-retention capacity, which restricts the transport of air and water to plant roots. As a result, soil productivity and plant growth rates may be reduced, soils may become more susceptible to erosion, and natural drainage patterns may be altered. Consequently, soil compaction is of particular concern in residential, agricultural, and wetland areas. The susceptibility of soils to compaction varies based on moisture content, composition, grain size, and density of the soil.

Acadiana Project area soils are not highly compaction prone; however, KMLP would follow the soil compaction mitigation measures outlined in its Plan during construction. Approximately 64.1 acres (38 percent) of the soils that would be impacted by the Louisiana Xpress Project are highly compaction prone. Columbia Gulf would minimize compaction and rutting impacts in temporary workspaces that it would revegetate by using measures outlined in its ECS during construction.

KMLP's Plan and Columbia Gulf's ECS specify measures for the segregation of topsoil/subsoil/hydric soil, the use of timber mats in wetlands, compaction testing and decompaction in agricultural areas prior to restoration, preparation of a proper seed bed prior to seeding, and conducting follow-up inspections to evaluate the success of revegetation efforts. As such, we conclude any adverse impacts due to rutting and compaction would be adequately mitigated. Soils underlying permanent aboveground facility foundations would be permanently affected by compaction; however, these effects would be highly localized and minor.

2.1.3. Erosion and Revegetation

Clearing removes protective vegetative cover and exposes soils to the effects of wind and water which increases the potential for soil erosion and the transport of sediment to sensitive resource areas. Construction activities such as clearing, grading, trench excavation, backfilling, heavy equipment traffic, and restoration along the in the construction work areas have the potential to adversely affect natural soil characteristics such as water infiltration, storage and routing, and soil nutrient levels, thus reducing soil productivity.

Acadiana Project

Acadiana Project area soils are classified as highly susceptible to erosion by water. To minimize or avoid potential impacts due to soil erosion, KMLP would implement measures in accordance with its Plan and Procedures. These measures include installation of temporary erosion controls such as silt fences and erosion control fabric. KMLP would inspect temporary erosion controls on a regular basis and after each rainfall event of 0.5 inch or greater to ensure proper functioning, and would maintain these devices until the project areas are successfully revegetated or stabilized. KMLP would additionally utilize dust-control measures, including routine wetting of work areas, as needed.

Acadiana Project area soils do not generally have poor revegetation potential, and because most disturbance would occur at existing facilities and industrial lots, there would be minimal areas of revegetation. Project areas that are currently vegetated and temporarily disturbed during construction would be revegetated. KMLP would revegetate these areas in accordance with its Plan and Procedures, and would utilize seed mix and fertilizer/lime applications in conjunction with NRCS critical area planting standards for Louisiana.

Louisiana Xpress Project

Approximately 45.8 acres (27 percent) of the soils that would be impacted by project construction are considered highly susceptible to erosion by water and approximately 20.5 acres (12 percent) of soils are considered highly wind erodible. To minimize or avoid potential impacts due to soil erosion and sedimentation, Columbia Gulf would implement the measures in its ECS, including installation of temporary and permanent slope breakers to slow the velocity of runoff and move water off-site; installation of sediment barriers (e.g., silt fences, straw bales, and straw logs); use of mulch consisting of straw, hay, erosion-control fabric, or other equivalent; and controlling wind erosion and fugitive dust emissions as described in its Fugitive Dust Control Plan.

Approximately 40.1 acres (24 percent) of Louisiana Xpress Project area soils have poor revegetation potential. In addition, steep slopes at the proposed Red Mountain CS could impede reestablishment of vegetation. Construction and restoration measures at the Red Mountain CS are previously described in section B.1.2.2.

Columbia Gulf would revegetate disturbed areas per its ECS. Following final grading and cleanup, Columbia Gulf would condition the temporary construction areas for planting, including the preparation of a seedbed and application and incorporation of soil amendments. Temporary workspaces outside the permanently fenced sites would be restored with the seed mixes in Columbia Gulf's ECS. For temporary work areas outside

the permanently fenced sites in agricultural land at the Shelburn and Chicot CSs, seeding may be conducted by the lessee if the land would be returned to agricultural use.

Given Columbia Gulf and KMLP's proposed mitigation measures and that disturbed areas would be returned to pre-construction conditions, maintained in an herbaceous state, or otherwise stabilized (e.g., gravel or pavement), we conclude that significant and permanent impacts due to soil erosion or poor revegetation would not occur.

2.1.4. Soil Contamination

Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely affect soils. KMLP and Columbia Gulf would implement the measures outlined in their respective SPCC Plans, which include 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 construction, to minimize the risk of potential impacts from fuel or hazardous material spills.

Acadiana Project

Based on a review of state and federal databases, sites with existing or historic soil contamination were not identified within 0.25 mile of project facilities (U.S. Environmental Protection Agency [EPA], 2019a; LDEQ, 2019; LDNR, 2019).

Louisiana Xpress Project

Based on a review of state and federal databases, sites with existing or historic soil contamination were not identified within 0.25 mile of project facilities (U.S. Environmental Protection Agency [EPA], 2019a; LDEQ, 2019; LDNR, 2019).

In addition, Columbia Gulf searched its internal databases for historic site contamination of existing infrastructure. Soils at the Alexandria CS were previously remediated to the Louisiana Department of Environmental Quality (LDEQ)-approved cleanup level for industrial land use of 510 parts per million (ppm) of total petroleum hydrocarbons. Confirmation samples identified several areas at the station where residual total petroleum hydrocarbons impacts (below 510 ppm) remain. If excavation occurs in areas where petroleum hydrocarbons remain, excavated soil would be re-used as fill in the same area. One known un-remediated area of total petroleum hydrocarbons - contaminated soils (concentrations greater than 510 ppm) remains within the site; however, ground disturbance would not occur at this location. Should work become necessary in this location, Columbia Gulf would coordinate with its remediation team and conduct additional investigation/remediation, as necessary.

Columbia Gulf also identified a closed non-hazardous "oilfield waste pit" at the Alexandria CS. No ground disturbance of the former pit would occur. This pit has a low

permeability cap (2 feet of compacted clay) and is covered with 1 foot of clean fill/topsoil sloped at a gradient of 3 to 5 percent to promote runoff and minimize the potential for erosion. There are no other institutional controls at the station and no known contaminated groundwater at the Alexandria CS. It is possible that localized pre-existing evidence of contamination may be encountered during construction of the Louisiana Xpress Project. If encountered, Columbia Gulf would adhere to its Unanticipated Contamination Contingency Plan. This plan identifies the steps Columbia Gulf would follow in the event that contaminated sediments or soils, as identified by evidence of subsoil discoloration, odor, sheen, or other such indicators, are encountered during construction.

Given the minimization and mitigation measures described above, we conclude that soils would not be significantly impacted by the projects' construction and operation.

3. WATER RESOURCES AND WETLANDS

3.1. GROUNDWATER RESOURCES

Acadiana Project

All project areas are within the Coastal Lowlands aquifer system. The Coastal Lowlands aquifer system is a regional aquifer spanning from coastal Texas to Florida. Groundwater withdrawn from the aquifer is used for agricultural, public supply, industrial, and other domestic and commercial purposes (USGS, 1999). In 2000, approximately 2.4 billion gallons per day of water were withdrawn from the Coastal Lowlands aquifer system (Maupin and Barber, 2005). The Acadiana Project is within the locally named Chicot aquifer system. The Chicot aquifer system consists of fining upward sequences of gravels, sands, silts, and clays of the Pleistocene Prairie, intermediate, and high terrace deposits of southwestern Louisiana. The medium to coarse-grained sand and gravel aquifer units dip and thicken toward the Gulf, thin slightly toward the west into Texas, and thicken toward the east where they are overlain by alluvium of the Atchafalaya and Mississippi rivers. The aquifers are confined, have a finer texture, and are increasingly subdivided by silts and clays southward from the northern limit of the outcrop area in southern Vernon and Rapides parishes (LDEQ, 2014).

Louisiana Xpress Project

The Chicot and Alexandria CS sites are within the Coastal Lowlands aquifer system, described above. The Red Mountain CS would be in an area mapped as "other rocks." These areas are typically underlain by crystalline rocks of minimal permeability. Areas mapped as "other rocks" are considered minor aquifers and normally yield only small quantities of water to wells (USGS, 1998).

The Shelburn CS would overlie the Mississippi River Valley alluvial aquifer. This principal surficial aquifer consists of sediments deposited by rivers and streams, primarily the Mississippi River. The geologic character of the aquifer is reflected in the layered sequence of sediments typically found braided throughout the region, including gravel and coarse sand overlain by a confining unit of sand, silt, and clay (USGS, 1999). As of 2000, water withdrawals from the Mississippi River Valley alluvial aquifer totaled approximately 9.3 billion gallons per day (Maupin and Barber, 2005).

3.1.1. Sole Source Aquifers and Source Water Protection Areas

The EPA oversees the Sole Source Aquifer Protection Program to protect high production aquifers that supply 50 percent or more of the region's water supply and for which there are no reasonably available alternative drinking water sources, should the aquifer become contaminated. The Acadiana Project would be within the sole source Chicot aquifer system. The Chicot CS would also be within the sole source Chicot aquifer system; other Louisiana Xpress Project facilities would not overlie sole source aquifers (EPA, 2019b).

The LDEQ Drinking Water Protection Program establishes and protects wellhead areas associated with public water supply systems from contaminants that may have adverse effects on public health (Safe Drinking Water Act Amendments of 1986). KMLP's consultation with LDEQ and field surveys identified no wellhead protection areas within 150 feet of any Acadiana Project component (Molieri, 2019). Based on a review of LDNR SONRIS information, which did not identify public water supply wells within 1 mile of Louisiana Xpress Project areas, Columba Gulf determined that the Louisiana Xpress Project also does not overlie source water protection areas (LDNR, 2019).

3.1.2. Water Wells and Springs

Acadiana Project

Public and private water supply wells within 150 feet of the construction workspace of the project footprint were identified using the LDNR SONRIS (LDNR, 2019). One active water supply well was identified within the CS 760 workspace and two abandoned water wells were identified, one each within the workspaces at the Pine Prairie Meter Station and the Eunice Yard. There are no identified springs within 150 feet of any Acadiana Project work areas.

The water well at CS 760 is owned by KMLP and used as a non-potable water supply. To protect this well from physical damage or destruction during project activities, KMLP would provide environmental training that would inform project personnel of its location and would install and maintain orange safety fencing around the

well demarcating a 10-foot buffer. KMLP would also install signage on all four sides of the orange fencing to identify the well.

This well may be used to supply water for hydrostatic testing. Although KMLP may withdraw up to 300,000 gallons of water from this well for use in hydrostatic testing, the water is obtained from the Chicot Aquifer, a highly productive aquifer which supplies more than 609 million gallons per day (USGS, 1994). We conclude that removal and use of 300,000 gallons of water from KMLP's existing and permitted well would not affect other users of water from the Chicot Aquifer. Operational water consumption related to the new Acadiana Project facilities would increase groundwater use by less than 1,000 gallons per year for maintenance activities. Based on this assessment, we conclude the Acadiana Project would not significantly impact availability of groundwater resources.

Prior to construction, KMLP would contact applicable landowners to confirm the locations of private wells within 200 feet of the construction workspace and public wells within 400 feet. KMLP would complete refueling activities and storage of hazardous materials outside a 200-foot radius of private wells and a 400-foot radius of community and municipal wells, and would offer to conduct pre- and post-construction water well testing for all water supply wells within 150 feet of construction workspaces, if identified.

Louisiana Xpress Project

Columbia Gulf identified public and private water supply wells within 150 feet of the construction workspace of the project footprint using the LDNR SONRIS (LDNR, 2019). Three plugged and abandoned wells, owned by Columbia Gulf, are within the fenceline of the Alexandria CS. Additionally, one active, private domestic water supply well and one plugged and abandoned test hole are 50 feet and 60 feet, respectively, west of the Alexandria CS. No water supply wells were identified within 150 feet of the proposed Shelburn, Red Mountain, or Chicot CSs.

During field surveys, Columbia Gulf identified two springs within the proposed Red Mountain CS footprint. These springs function as the headwaters to perennial stream S1 and intermittent stream S2, respectively. Neither spring is currently used as a source of domestic water. Additional detail regarding these two streams can be found in section B.3.2 below. No other springs were identified during field surveys for the project.

Columbia Gulf would survey for water wells prior to construction and would prohibit use and storage of hazardous materials and petroleum products within a 200-foot radius of any private water supply well and within a 400-foot radius of any public or municipal water supply well (unless plugged and abandoned). With the owner's permission, Columbia Gulf would conduct pre- and post-construction tests for both water quality and yield for all public and private water supply wells within 150 feet of

construction. Columbia Gulf would analyze any damaged well or water supply system and perform necessary repairs and/or modifications to return it to its former capacity. In the event that a private well or water supply system is damaged beyond repair due to construction-related activities, Columbia Gulf would provide a temporary water source and replace the well.

Municipal water supply connections are available at the proposed Chicot CS and no changes to water supply are anticipated at the existing Alexandria CS. Columbia Gulf would install a new well at both the Red Mountain and Shelburn CSs. The specific location of these wells has not yet been determined, but wells are anticipated to be installed in proximity to the facility's office building. Columbia Gulf anticipates that the wells would be installed towards the end of the construction period prior to facility commissioning. Each well would be protected during construction, at a minimum, with the use of high-visibility fencing.

The water wells would supply potable water during operation of the facilities. Operational water use is anticipated to be approximately 100 gallons per day per facility. Based on Columbia Gulf's minimal proposed operational water usage, its proposed mitigations measures to minimize impacts on wells and groundwater, its commitment to conduct pre- and post-construction well water quality and yield testing, and the generally ample supplies of available groundwater in Louisiana, we conclude that the Louisiana Xpress Project would not significantly impact groundwater resources.

3.1.3. Groundwater Contamination

The projects would not cross areas of known groundwater contamination (refer to section B.2.1.4 for further discussion). In the event that contaminated groundwater is encountered during construction, Columbia Gulf would follow its Unanticipated Contamination Contingency Plan.

Groundwater contamination could occur from accidental spills of fuels, solvents, and lubricants used during the projects' construction. KMLP and Columbia Gulf would implement the measures outlined in their respective SPCC Plans to minimize the risk of potential impacts from fuel or hazardous material spills.

Based on KMLP and Columbia Gulf's proposed measures, we conclude that the projects would not have a significant impact on availability of groundwater resources or groundwater quality.

3.2. SURFACE WATER RESOURCES

Acadiana Project

Construction for the Acadiana Project would occur within the Richards Gully/Bayou Des Cannes hydrologic unit code (HUC) 12 watershed. KMLP conducted

delineation surveys in February 2019 that identified one drainage ditch (S1AAC006) within the existing CS 760 site where two piping/utility crossings would be installed, and one roadside ditch within the construction workspace of temporary access road (TAR)-2. Waterbody S1AAC002 would be temporarily impacted by construction of the new TAR-2 from Coulee Road to the CS 760 site.

The surveys also identified three ephemeral roadside man-made ditches within the Manco Yard, and two roadside ditches within the CGT Meter Station. However, KMLP would avoid these three ditches during construction, and use its SPCC Plan to prevent potential spills. No other waterbodies would be affected by project construction, and no permanent impacts would occur on surface water from the operation of the Acadiana Project.

KMLP would ensure that culverts are sufficiently sized to maintain expected high-water flows and be installed at a depth to maintain low flows. The culvert associated with the installation of TAR-2, and the piping or utility crossings would be installed either when the stream is dry or using KMLP's Procedures to ensure adequate flows are maintained.

Several small waterbodies are within 100 feet of the Manco Yard; therefore, KMLP is requesting FERC approval to modify section IV.A.1.e of the FERC's Procedures to store lubricating oils within 100 feet of a wetland or waterbody at the Manco Yard (if used). KMLP and its contractors would implement additional measures, including secondary containment to prevent spills and impacts on surface water. Additionally, KMLP would ensure that all employees handling fuels and other hazardous materials are properly trained; all equipment is in operating order and inspected on a regular basis; and fuel trucks transporting fuel to on-site equipment travel only on FERC-approved access roads. Therefore, with these measures, we conclude that KMLP's Procedures are acceptable because they would provide an equal level of protection to the resource as the FERC's Procedures.

KMLP would minimize potential impacts on waterbodies by implementing the measures in its Procedures, including installation of temporary and permanent erosion control devices (ECD) in project workspaces. KMLP would obtain all necessary permits from the U.S. Corps of Engineers (USACE) before project construction. The Acadiana Project would not affect 100-year floodplains, public water supply intakes, impaired waters, or any designated surface water protection areas. Therefore, we conclude impacts on waterbodies from the Acadiana Project would be temporary and not significant.

Louisiana Xpress Project

Construction for the Louisiana Xpress Project would occur within four separate HUC 12 watersheds as shown in table 9.

Table 9 Louisiana Xpress Project Watersheds	
Facility	Watershed
Shelburn CS	Lake Providence – Tensas Bayou
Red Mountain CS	Gastis Creek
Chicot CS	Black Lake – Bayou Cocodrie
Alexandria CS	Big Saline Bayou

Columbia Gulf conducted a combination of desktop review and field delineations in February 2019 to identify any potential impacts on surface water. Eleven waterbodies were identified, including four perennial streams, one intermittent stream, and six ephemeral streams. Table 10 provides the waterbodies affected by the Louisiana Xpress Project. No waterbodies were identified within 100 feet of the proposed Chicot CS.

Table 10 Waterbodies affected by the Louisiana Xpress Project					
Facility/Waterbody Identification Number	Waterbody	Flow Regime	Water Quality Classification	Construction (acres)	Operation (acres)
Shelburn/SSHB1E	UNT to Jack Falls Bayou	Ephemeral	N/A	<0.1	<0.1
Shelburn/SSHB2E	UNT to Jack Falls Bayou	Ephemeral	N/A	<0.1	<0.1
Shelburn/SSHB3E	Jack Falls Bayou	Ephemeral	N/A	<0.1	<0.1
Shelburn/SSHB3P	Jack Falls Bayou	Perennial	PCR, SCR, FWP	<0.1	<0.1
Shelburn/SSHB4P	UNT to Jack Falls Bayou	Perennial	PCR, SCR, FWP	0.0	0.0
Shelburn/SSHB5P	UNT to Jack Falls Bayou	Perennial	PCR, SCR, FWP	<0.1	0.0
Red Mountain/SRMA1P	UNT to Hooter Creek	Perennial	PCR, SCR, FWP	<0.1	0.0
Red Mountain/SRMA2I	UNT to Hooter Creek	Intermittent	PCR, SCR, FWP	0.0	0.0
Alexandria/SP1RA001	UNT to Clear Bayou	Ephemeral	N/A	0.0	0.0
Alexandria/SP1RA002	UNT to Clear Bayou	Ephemeral	N/A	0.0	0.0

Alexandria/SP1RA003	UNT to Clear Bayou	Ephemeral	N/A	0.0	0.0
Total				**<0.6**	**<0.4**
UNT: unnamed tributary; PCR: primary contact recreation (i.e. swimming); SCR: secondary contact recreation (i.e. boating); FWP: Fish and wildlife propagation (i.e. fishing); N/A: not applicable					

Three ephemeral streams were identified in the existing Alexandria CS survey area; however, these streams would not be affected as all construction would occur at least 50 feet from these features.

At the Shelburn CS, permanent impacts on stream SSHB1E are anticipated for installation of a culvert. Permanent impacts would also occur at SSHB2E, SSHB3E, and SSHB3P to replace existing culverts with new, improved culverts. The installation of the suction/discharge pipelines and installation of a permanent span bridge would occur at SSHB5P, outside of the ordinary high watermark for the tie-in access road at the proposed Shelburn CS. However, Columbia Gulf would avoid impacts on SSHB5P by crossing this waterbody using the conventional bore technique, avoiding instream construction. Both SSHB5P and SSHB1E flow into SSHB4P; therefore, impacts from sedimentation would be temporary for this waterbody. Following construction, KMLP would return stream contours to preconstruction conditions from construction. Columbia Gulf would implement the waterbody crossing measures identified in its ECS to minimize impacts at stream crossings, including maintaining downstream flow, and stabilizing waterbody banks during and after construction.

At the proposed Red Mountain CS one perennial stream and one intermittent stream were identified. Temporary impacts are anticipated at SRMA1P for installation of the suction/discharge pipelines and installation of a permanent span bridge outside of the ordinary high watermark for the tie-in access road. Following construction, stream contours would return to preconstruction conditions. Columbia Gulf would implement the waterbody crossing measures identified in its ECS to minimize impacts at the stream crossing. Construction activities are not anticipated to affect intermittent stream SRMA2I.

No public water supplies were identified within a 10-mile radius of all project areas, and no impaired waterbodies were identified within the project area. However, the tributaries delineated within the project area discharge to waterbodies on the 303(d) list. These receiving waterbodies on the 303(d) list include Lake Providence (near the proposed Shelburn CS), Ouachita River (near the proposed Red Mountain CS), and Catahoula Lake (near Alexandria CS).

Columbia Gulf would conduct in-stream work in accordance with the methods described in its ECS, which incorporates the measures included in the FERC's

Procedures. Columbia Gulf would implement its SPCC Plan during construction activities to mitigate potential adverse impacts on waterbodies due to inadvertent releases of fuel or mechanical fluids. As specified in the SPCC Plan, Columbia Gulf would prohibit construction equipment, vehicles, hazardous materials, chemicals, fuels, lubricating oils, and petroleum products from being parked, refueled, or stored within 100 feet of any waterbody. With Columbia Gulf's proposed construction methods (including use of its ECS and SPCC Plan), we conclude that impacts on surface waters would be temporary and not significant. Further, Columbia Gulf would adhere to requirements contained within applicable federal, state, and local permits for construction activities associated with waterbodies, which may further reduce impacts.

Floodplains

Approximately 37.3 acres of construction workspace would occur within a 100-year floodplain, and about 2.3 acres of 100-year floodplain would be permanently impacted for the permanent easement of the suction and discharge lines, graveled tie-in, permanent access road, and mainline valves at the proposed Chicot CS. Columbia Gulf has initiated communication with the Evangeline Parish Police Jury regarding the requirements for floodplain permitting and would construct and mitigate for impacts in accordance with local floodplain permitting requirements, if necessary.

Based on the minimal volume of floodplain storage that would be lost associated with the Louisiana Xpress Project, we conclude that floodplain storage impacts would be permanent, but not significant.

3.3. WETLAND RESOURCES

Acadiana Project

There are two palustrine emergent (PEM) (freshwater) wetlands near the existing Pine Prairie Meter Station, and one PEM wetland adjacent to the Manco Yard (0.04 acre within survey boundary); however, no wetlands would be directly impacted by construction or operation of KMLP's project. Palustrine emergent wetlands are characterized by erect, rooted herbaceous vegetation (Cowardin et al., 1979).

KMLP's SPCC Plan provides restrictions and mitigation measures to limit potential impacts associated with the release of fuels, lubricants, or other potentially toxic materials used during construction. Refueling and storage of hazardous materials would be prohibited within 100 feet of wetlands, unless otherwise reviewed and approved by the EI. Additionally, KMLP would install ECDs such as erosion and sedimentation barriers in accordance with our Plan and Procedures to minimize impacts on nearby wetlands. Based on these measures, we conclude impacts on wetlands would be avoided.

Louisiana Xpress Project

Seven wetlands were identified within the project area, including two PEM wetlands, one palustrine scrub/shrub (PSS) wetland and four palustrine forested (PFO) wetlands. PSS wetlands are characterized by woody vegetation less than 20 feet tall that include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions (Cowardin et al., 1979). PFO wetlands are dominated by woody vegetation 20 feet or taller. Forested wetlands typically include an overstory of trees, an understory of young trees and shrubs, and an herbaceous layer (Cowardin et al., 1979). Table 11 provides the wetland impacts from the Louisiana Xpress Project.

Table 11
Louisiana Xpress Project Wetland Impacts

Facility/Wetland Identification Number	Classification	Construction (acres)	Operation (acres)
Shelburn/WSHB1F	PFO	<0.1	<0.1
Red Mountain/WRMA1F	PFO	0.2	0.1
Red Mountain/WRMA2F[1]	PFO	0.0	0.0
Chicot/WCHA1E	PEM	<0.1	<0.1
Chicot/WCHA2E	PEM	11.7	0.5[2]
Chicot/WCHA2F[3]	PFO	0.0	0.0
Chicot/WCHA3S[4]	PSS	0.0	0.0
Total		**12.1**	**0.8**

[1] WRMA1F is 50 feet from construction workspaces.

[2] The total permanent wetland impact at the Chicot CS is 0.46 acre, which is within the threshold for a Nationwide Permit 12.

[3] WCHA2F is 50 feet from construction workspaces.

[4] WCHA3S is 30 feet from construction workspaces.

The Shelburn CS project area contains less than 0.1 acre of PFO wetland (wetland WSHB1F) for the construction of a permanent road to the facility, and which requires a modification of section VI.B.1 of our Procedures. Columbia Gulf would grade, contour, and use the workspace for installation of buried utilities. Columbia Gulf would install a 50-foot-buffer to the east, north, and south sides of this wetland to reduce further impacts on this wetland. Columbia Gulf selected the proposed location over an alternative site (discussed further in section C.3) because the alternative site would be about 1,800 feet closer to the nearest noise sensitive area (NSA) (the proposed location is 2,400 feet from the nearest NSA). We find that wetland impacts to access the proposed compressor

station would be unavoidable as the access road must cross Jack Falls Bayou. Therefore, we conclude that the requested modifications to our Procedures and Columbia Gulf's justification are acceptable because impacts would be minimized to the extent practicable.

Wetland impacts at the Red Mountain CS (wetland WRMA1F) are anticipated for operation of the suction/discharge pipeline and permanent tie-in access road. Columbia has requested a deviation from sections VI.B.1 of our Procedures in its ECS at the proposed Red Mountain CS site to have permanent impacts within this wetland from placement of the access road. Due to the large diameters of the parallel suction and discharge piping (48-inch-and 42-inch-diameter, respectively), the need for a permanent access road, and the presence of Columbia Gulf's existing lines, a wider construction area is required across WRMA1F. The portion of the wetland feature associated with the permanent access road and mainline valves within the footprint of the Red Mountain CS would be graveled and not restored. Approximately 0.1 acre of the forested wetland WRMA1F would be within the proposed permanent access road. However, Columbia Gulf would construct and maintain the wetland crossing in accordance with its ECS by constructing a span bridge across waterbody SRMA1P, which would convert the forested wetland to PEM or PSS wetland. This bridge would extend across wetland WRMA1F, which would result in permanent impacts, including reduced light penetration. With these measures, we conclude that Columbia has minimized the impacts on wetlands to the extent practicable and the requested modifications to our Procedures are acceptable.

Two emergent wetlands (WCHA1E and WCHA2E), one forested wetland (WCHA2F), and one scrub-shrub wetland (WCHA3S) were identified at the Chicot CS. Columbia has requested a modification from sections VI.A.3 and VI.A.6 of our Procedures in its ECS at the proposed Chicot CS site for WHCA2E. Due to the large diameters of the parallel suction and discharge piping, the need for a permanent tie-in access road, and the presence of Columbia Gulf's existing lines, a wider construction area is required across this wetland. The portion of the wetland feature associated with the permanent tie-in access road and mainline valves within the footprint of permanent facilities would be graveled and not be restored. This wetland was previously disturbed for the construction and subsequent decommissioning of the old Bunkee Compressor Station in the same location. Approximately 11.7 acres of temporary workspace are within wetland WCHA2E for construction of suction/discharge pipelines, three mainline valves, a gravel tie-in access road, and construction-related temporary disturbance. Following construction, less than 0.5 acre would be retained for operation of a permanent, tie-in access road and three mainline valves. Columbia Gulf would allow the remaining workspace to revert to a PEM wetland. We find that impacts would be unavoidable on WCHA2E; therefore, we conclude that the requested modifications to our Procedures are acceptable because impacts would be minimized to the extent practicable, and find Columbia Gulf's justification acceptable.

Temporary and permanent fill of wetland areas would occur where engineering, construction, and topographic constraints exist. Following construction, temporary fill materials would be removed, and features would be restored to pre-construction contours. Permanent fill would occur in areas where permanent buildings, structures, and gravel/asphalt surfaces are proposed.

Columbia Gulf's SPCC Plan provides restrictions and mitigation measures to limit potential impacts associated with the release of fuels, lubricants, or other potentially toxic materials used during construction. Refueling and storage of hazardous materials would be prohibited within 100 feet of wetlands during construction, unless otherwise reviewed and approved by the EI.

Columbia Gulf would apply its ECS (which includes our Procedures) to mitigate impacts on wetlands. Emergent wetlands typically revegetate within one to two growing seasons. During operation of the project, Columbia Gulf would maintain a 10-foot-wide right-of-way in an herbaceous state. However, because the majority of the affected wetlands would be restored and the primary wetland type that would be impacted is emergent wetland, there would not be a significant change in wetland acreage or type as a result of operation of this project.

Based on the proposed mitigation measures and implementation of Columbia Gulf's ECS and SPCC Plan, we conclude that impacts on wetlands would be avoided and minimized to the extent practical, mostly short-term, and would not be significant.

3.4. HYDROSTATIC TEST WATER

Acadiana Project

KMLP would use approximately 300,000 gallons of water to hydrostatically test the newly installed gas pipe sections at the CS 760, and approximately 10,000 gallons at the CGT Meter Station. Water would be withdrawn from municipal sources and private wells and discharged into a well-vegetated upland area using hay bales for energy dissipation, or an existing stormwater system within the CS 760 facility or CGT Meter Station. KMLP would implement its Procedures to minimize any potential erosion. Therefore, we conclude that impacts from construction water use would temporary and not significant. In addition, KMLP would follow all federal, state, and local permit requirements regarding water discharge.

Louisiana Xpress Project

Columbia Gulf would use approximately 672,00 gallons of water to hydrostatically test the newly installed suction and discharge gas pipe sections. Water would be trucked from a commercial source and discharged into on-site storage tanks. Columbia Gulf would attempt to re-use water for fugitive dust control. Sodium bisulfite may be used to de-chlorinate the test water; however, no other chemical additives would

be used after testing (e.g. to dry the pipe). Columbia Gulf would implement its ECS to minimize any potential erosion. Therefore, we conclude that impacts from construction water use would be temporary and not significant. In addition, Columbia Gulf would follow all federal, state, and local permit requirements regarding water discharge.

4. FISHERIES, VEGETATION AND WILDLIFE

4.1. FISHERIES

Acadiana Project

No fisheries were identified or would be impacted from the Acadiana Project construction or operation.

Louisiana Xpress Project

All waterbodies Columbia Gulf would cross were identified as warmwater fisheries and impacts on fisheries are provided in table 12. Construction would occur at least 50 feet from waterbodies at the Alexandria CS; therefore, we conclude impacts on fisheries would not occur at the Alexandria CS. No Essential Fish Habitat are within the project area.

Additionally, the project could permanently impact less than 0.1 acre of aquatic resources in three ephemeral streams for the installation and replacement of culverts at the Shelburn CS. However, because these waterbodies are ephemeral, they are not likely to be used by fish species (especially if the work areas are dry during construction). Temporary impacts on one perennial waterbody at the Shelburn CS and one perennial waterbody at the Red Mountain CS would occur for installation of the suction/discharge pipelines and installation of permanent span bridges for the tie-in access roads. Temporary impacts may include sedimentation resulting from bed and bank disturbance.

Table 12
Representative Freshwater Fish Species in Waterbodies Crossed by the Louisiana Xpress Project

Facility Name	Species Common Name
Red Mountain CS	Bluegill, bowfin, catfish (blue, channel), common carp, crappie (black, white), largemouth bass, green sunfish
Shelburn CS	Bluegill, channel catfish, common carp, crappie (black, white), freshwater drum, gar (shortnose, longnose), green sunfish, largemouth bass, paddlefish

Columbia Gulf would implement the measures included in its ECS, which adopts the measures outlined in our Procedures. Columbia Gulf would conduct all stream work

from June 1 and November 30 to minimize impacts on spawning fish, installation and maintenance of sediment and erosion controls (e.g., silt fence, slope breaker), and restoration of pre-construction contours at waterbody crossings. Therefore, we conclude project impacts on fisheries would be temporary and not significant.

4.2. VEGETATION

Acadiana Project

The CS 760 site, Pine Prairie Meter Station, Eunice Yard, Manco Yard, and Cole Pit Yard are within the Northern Humid Gulf Coastal Prairies (34a) sub-ecoregion. The Northern Humid Gulf Coastal Prairies region historically consisted of tall grasslands with gallery forests along streams. However, most of the region has been converted to agricultural land and pastureland.

The Acadiana Project would occur within two dominant vegetation cover types, including herbaceous open land and agricultural land. The herbaceous open land consists of several herbaceous species, and agricultural land consists of rice fields. However, the majority of the project would occur on existing industrial land, which consists of sparsely vegetated land due to the presence of impervious surfaces such as cement foundations, pavement, or gravel.

There are no known unique or sensitive vegetation types affected by the project, and no tree clearing is anticipated. Table 15 in the land use section below lists the acreage of each cover type that would be temporarily and permanently impacted by construction and operation of the Acadiana Project.

Project construction would affect 64.2 acres of vegetation cover types. About 3.1 acres would be permanently converted to industrial land (including 0.7 acre of agricultural land) including CS 760, the CGT Meter Station, and permanent access roads.

The primary impact of the project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. Secondary effects associated with disturbances to vegetation could include the increased potential for soil erosion, increased potential for the introduction and establishment of invasive weedy species, increases in fugitive dust, and wildlife impacts.

The Louisiana Department of Wildlife and Fisheries (LDWF) commented that additional caution should be taken in the event that the state-listed wild coco orchid is encountered during project construction if the Cole Pit Yard is used. In response, KMLP agreed to install exclusion fencing around the area if wild coco orchid is found to avoid the species and report the sighting to the LDWF.

Impacts on vegetation during construction would be minimized by implementing KMLP's Plan and Procedures. Temporary workspace would be restored in compliance

with the landowner's request for agricultural land, natural revegetation, or revegetated using a native seed mix approved by the NRCS. KMLP would also implement its Plan and Procedures to prevent the introduction or spread of invasive species and/or noxious weeds.

Herbaceous vegetation impacts in the temporary workspaces within open land would be short-term (typically revegetating within one to three growing seasons). Given the lack of sensitive vegetation types and KMLP's commitment to restoring areas affected by construction, we conclude that the Acadiana Project's impacts on vegetation would be short-term and not significant.

Louisiana Xpress Project

The Shelburn CS is within the Mississippi Alluvial Plain ecoregion, and the Red Mountain CS, Chicot CS, and Alexandria CS occur within the South Central Plains ecoregion. The Louisiana Xpress Project would occur within four dominant vegetation cover types, including developed/open land, forest, wetlands, and agricultural land. Table 13 provides the vegetation types that would be impacted from construction and operation of the project.

Columbia Gulf is requesting a deviation of section V.A.5 in our Plan in its ECS. Columbia Gulf is requesting to spread excess spoil generated during construction of the Project on upland areas, outside of floodplains, within the footprint of disturbance on property owned by Columbia Gulf. This would allow Columbia Gulf more site stabilization within the proposed facility footprint and reduce impacts on local roads. Because this would not result in additional disturbance (i.e., provide an equal or greater level of environmental protection), we conclude that this proposed modification to our Plan in Columbia's ECS is acceptable.

Developed/Open Land

The project would temporarily impact 30.8 acres of developed/open land during construction, and no permanent impacts are anticipated. Developed/open land includes non-forested upland areas on previously disturbed land and facilities and utility rights-of-way as described in the land use section below. These areas typically consist of clover, fescue, and other grass species.

Forest

The project would impact 33.9 acres of forested areas during construction and permanently affect 11.4 acres for operation. The forested portions at the proposed Red Mountain CS are bottomland hardwood and mixed deciduous-coniferous forests. These areas are predominately upland forest, but may be adjacent or connected to forested wetlands. The forested portions at the proposed Chicot CS are deciduous forest. Tree

species observed in upland forests at the Chicot and Red Mountain CSs include sweetgum, loblolly pine, and water oak.

Several tree species are present at the Alexandria CS including blackjack oak, eastern black walnut, loblolly pine, red oak, and sweetgum. However, no tree removal is proposed within this site.

Wetlands

The project would impact 11.9 acres of wetland vegetation during construction, and permanently affect approximately 0.6 acre during operation. The types of wetlands found within the project area are palustrine forested, palustrine scrub-shrub, and palustrine emergent wetlands. Additional descriptions of wetlands are found in section B.3.3. Vegetation observed in these wetlands include water oak, American elm, red maple, giant cane, dwarf palmetto, black willow, muscadine, bald cypress, sweetbay, and American hornbeam.

Table 13
Louisiana Xpress Project Vegetation Impacts

Facility	Agriculture		Forest		Developed/Open Land		Wetlands		Total	
	Con.[1]	Op.[2]	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Shelburn CS	39.8	15.9	0.0	0.0	0.0	0.0	<0.1	N/A	**39.8**	**15.9**
Red Mountain CS	0.0	0.0	29.6	11.5	0.0	0.0	0.0	0.0	**29.6**	**11.5**
Chicot CS	51.1	7.9	0.0	0.0	0.0	0.0	11.7	0.5	**62.8**	**8.4**
Alexandria CS[3]	0.0	0.0	4.2	0.0	30.8	0.0	0.0	0.0	**35.0**	**0.0**
Total									**167.1**	**35.8**

[1] Construction
[2] Operation
[3] Although portions of the temporary workspace contain mixed forest, tree clearing or trimming is not required for modifications at the Alexandria CS.

Agriculture

Project construction would impact 90.9 acres of agricultural vegetation and permanently impact 23.8 acres during operation. These areas include actively cultivated row crops (i.e., soybeans) and uncultivated pasture lands and hay meadows.

Unique, Sensitive, and Protected Vegetation Communities

The project would affect 0.2 acre of cypress swamp at the proposed Red Mountain CS for construction and 0.1 acre for operation. Coastal cypress swamps provide a buffer against the effects of tropical storms, and also filter water pollution caused by agricultural runoff before it reaches the Gulf of Mexico. Inland cypress swamps filter pollution, and also provide habitat for a variety of native wildlife, including rare species (LDWF, 2018). Destruction of cypress swamps can lead to decreased biodiversity and wildlife habitat. The loss of cypress swamps, as with other wetlands, can negatively alter the drainage patterns of the landscape and make flood management and control more difficult. Louisiana has lost about 50 percent of its pre-settlement cypress swamps due to logging and development. Restoration is difficult because cypress are a slow-growing species, and invasive species often feed on young cypress plants (Kroschel, 2018).

To minimize impacts on the cypress swamp, Columbia Gulf would follow the measures for wetland construction in its ECS. Columbia Gulf would also establish a 50-foot buffer around the majority of the swamp and would limit workspace within the swamp to the minimum required for construction and operation of the suction and discharge pipelines and associated tie-in access road. Given the size of the affected area (0.2 acre) and the implementation of Columbia Gulf's ECS, we conclude that impacts on cypress swamps would not be significant. Additional restoration measures may be developed in consultation with the USACE.

Noxious Weeds and Invasive Species

Several invasive species and noxious weeds could potentially occur within project areas during construction. These species include cogongrass, Chinese privet, Chinese tallow tree, purple loosestrife, kudzu, hydrilla, water hyacinth, common Salvinia, giant Salvinia, and alligator weed. To avoid the spread of these species, Columbia Gulf would:

- minimize vegetation removal to the extent necessary to construct the project;
- prevent undue soil profile disturbance;
- reseed in accordance with NRCS guidelines;
- restore pre-construction ground contours, to the extent possible; and

- prevent topsoil erosion.

The primary impact of the project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area and permanently removing vegetation associated with aboveground structures. Secondary effects associated with disturbances to vegetation could include the increased potential for soil erosion, increased potential for the introduction and establishment of invasive weedy species, increases in fugitive dust, and wildlife impacts.

Impacts on vegetation during construction would be minimized by implementing Columbia Gulf's ECS. Temporary workspace would be restored in compliance with the ECS, and revegetated in accordance with the landowner's request for agricultural land, natural revegetation, or revegetated using a native seed mix approved by the NRCS.

Vegetation impacts in temporary workspaces within developed/open land, agricultural land, and wetlands would be short-term (typically one to three growing seasons). Impacts on forest vegetation would be long-term (up to 30 years) in the temporary workspaces. Given the lack of sensitive vegetation types and Columbia Gulf's commitment to restoring areas temporarily affected by construction, we conclude that the Louisiana Xpress Project's impacts on vegetation would be permanent in some areas, but would not be significant.

4.3. WILDLIFE

Acadiana Project

Representative wildlife within the project area includes common mammal, bird, and reptile species. There are no managed wildlife habitats along project workspaces.

The Eunice and Manco yards consist of highly disturbed industrial land, and therefore do not provide an abundant source of suitable habitat. The CS 760 site, CGT Meter Station, and Pine Prairie Meter Station consist of industrial, open, and agricultural land, which could provide suitable foraging habitat for the great egret, great blue heron, cattle egret, green heron, little blue heron, snowy egret, wood stork, yellow-crowned night-heron, black- crowned night-heron, white-faced ibis, and glossy ibis. Other wildlife species that inhabit agricultural land could occur within the vicinity of the sites, but are unlikely to be found in the industrial setting within the fenced station enclosures. Similar habitat is abundant and immediately adjacent to and within all the existing sites.

Displaced wildlife could relocate to similar habitat adjacent to the project area. Disruption of wildlife movement is expected to be minor because no permanent barriers to wildlife would be constructed.

Construction and operation activities would reduce feeding, nesting, and cover habitat components. Mobile species could be disturbed or displaced from portions of their habitats, and mortality of less mobile individuals, such as some small mammals, reptiles, or amphibians, may occur. Indirect wildlife impacts associated with construction noise and increased human activity would be temporary and could include abandoned reproductive efforts, displacement, and avoidance of work areas. However, both direct and indirect impacts on wildlife within the construction workspace and other work areas, generally would be temporary and short-term and limited to the period of construction.

Following construction, temporary workspaces would be allowed to revert to pre-construction conditions in accordance with KMLP's Plan. We conclude that any impacts on local wildlife would be short-term and not significant due to the minimally disturbed area and the abundance of similar habitat adjacent to the proposed Acadiana Project.

Louisiana Xpress Project

Representative wildlife within the project area includes common mammal, bird, and reptile species. There are no managed wildlife habitats along project workspaces.

Construction of the project would temporarily disturb 167.4 acres of wildlife habitat. Approximately 35.8 acres of wildlife habitat would be permanently impacted by operation of the aboveground facilities. Wildlife habitats that would be affected by construction and operation are relatively abundant in the open and agricultural areas, and displaced wildlife could relocate to similar habitat adjacent to the project area. Disruption of wildlife movement is expected to be minor and permanent due to the proposed fenced compressor stations.

Construction and operation activities would reduce feeding, nesting, and cover habitat components. Mobile species could be disturbed or displaced from portions of their habitats, and mortality of less mobile individuals, such as some small mammals, reptiles, or amphibians, may occur. Indirect wildlife impacts associated with construction noise and increased human activity would be temporary and could include abandoned reproductive efforts, displacement, and avoidance of work areas. However, both direct and indirect impacts on wildlife within the construction workspace and other work areas, generally would be short-term (until vegetation is reestablished).

Following construction, all temporary workspaces would be allowed to revert to pre-construction conditions in accordance with Columbia Gulf's ECS. Approximately 35.8 acres of wildlife habitat would be converted to fenced industrial sites; however, similar adjacent habitat is abundant in the project area. Based on the proposed avoidance, minimization, and restoration measures, we conclude that construction activities associated with the Louisiana Xpress Project would not have a significant impact on local wildlife populations or habitat.

4.3.1. Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (16 United States Code sections 703-711), which prohibits the taking of any migratory bird, or a part, nest, or eggs of any such bird, except under the terms of a valid permit issued pursuant to federal regulations. Bald and Golden Eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 United States Code sections 668-668d). Executive Order No. 13186 (66 Federal Register 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 effects on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (USFWS). Executive Order No. 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors and that particular focus should be given to addressing population-level impacts. On March 30, 2011, the USFWS and the Commission entered into a Memorandum of Understanding that focuses on avoiding or minimizing adverse effects on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies.

Based on biological field surveys, there is no suitable bald eagle habitat within any project areas.

Acadiana Project

In accordance with Executive Order No. 13186 and the Memorandum of Understanding, 44 Birds of Conservation Concern (BCC) species were identified within Bird Conservation Region (BCR) 37, where the project is proposed. Of the 44 BCC species listed for BCA 37 (table 1 appendix A), none were observed during KMLP's field surveys. No project areas were identified within any Important Bird Areas.

The nesting season for migratory birds in Louisiana is generally from April 15 to August 1; however, project construction would begin in November 2020 for an in-service date of February 2022. No project areas were identified within any Important Bird Areas. Tree clearing is not anticipated for the Acadiana Project.

Although construction activities may cause some migratory birds to avoid the project area during construction, impacts would be limited to the relatively short construction period. During project operation, KMLP's Plan prohibits routine vegetation maintenance clearing from occurring between April 15 and August 1 of any year, to minimize potential impacts on migratory birds. Given the relatively small area of disturbance, the availability of similar adjacent habitats, KMLP's proposed starting construction outside of the nesting season (which would likely preclude nesting) and the absence of tree clearing, we conclude that construction would not adversely impact migratory bird populations in the project area.

Louisiana Xpress Project

In accordance with Executive Order No. 13186 and the Memorandum of Understanding, 24 BCC species were identified between two BCRs: Region 25 West Gulf Coastal Ouachitas and Region 26 Mississippi Alluvial Valley. No project areas were identified within any Important Bird Areas. Table 2 in appendix A identifies the 24 migratory bird species that could potentially occur within the project area.

Columbia Gulf proposes to start construction by September 2020 and anticipates a mechanical completion date in November 2021. The project would require the clearing of 33.9 acres of forested vegetation for construction and maintenance of 11.4 acres for operation. In compliance with Columbia Gulf's Multi-Species Habitat Conservation Plan (MSHCP) Endangered Species Act (ESA) consultation, no tree clearing or side trimming would occur outside the region's nesting window (between March 1 and August 1). Additionally, Columbia Gulf would implement the USFWS Migratory Bird Nationwide Standard Conservation Measures including:

- educating employees, contractors, and/or site visitors of relevant rules and regulations that protect wildlife;
- providing enclosed solid waste receptacles at project areas to be collected and disposed by a local waste disposal contractor;
- reporting incidental take of a migratory bird to the local USFWS's Office of Law Enforcement;
- minimizing project creep by clearly delineating and maintaining project boundaries;
- scheduling vegetation removal, trimming, and grading of vegetated areas outside of peak bird breeding season (March 1 – August 30 in Louisiana);
- conducting surveys no more than five days prior to scheduled activities and establishing a suitable buffer zone if an active bird nest is present within the area of impact when project activities cannot occur outside the bird nesting season; and
- using down shielding or directional lighting when nighttime construction is necessary.

During project operation, Columbia Gulf's ECS prohibits routine vegetation maintenance clearing from occurring between April 15 and August 1 of any year, to minimize potential impacts on migratory birds. Given the seasonal clearing restriction,

Columbia Gulf's commitment to conducting pre-construction surveys and avoiding active nests, the limited area of disturbance, and the abundance of adjacent similar habitat associated with construction of the project facilities, we conclude that construction and operation would not significantly affect migratory bird individuals or populations.

4.3.2. Threatened, Endangered, and Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the ESA, as amended, and those species that are state-listed as endangered or threatened. Section 7 of the ESA requires that the lead federal agency ensures that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. FERC, as the lead federal agency for NEPA review of the projects, is required to consult with the USFWS to determine whether any federally listed endangered or threatened species or any of their designated critical habitat are near the projects and to determine the proposed action's potential effects on those species or critical habitats. If FERC determines that the project would have no effect on a listed species, further consultation with the USFWS is not required.

4.3.3. Federally-Listed Threatened and Endangered Species

Acadiana Project

KMLP, acting as our non-federal representative for the purpose of complying with Section 7(a)(2) of the ESA, completed informal consultation with the USFWS regarding federal species with the potential to be affected by the Acadiana Project. A project review was completed through the USFWS Louisiana Ecological Services project screening website tool which yielded a determination of no impacts anticipated on federally listed threatened or endangered species except for the endangered red-cockaded woodpecker (RCW). KMLP received correspondence from the USFWS on February 21, 2019 stating that no suitable habitat would occur within the proposed project area. Therefore, we conclude that the Acadiana would have *no effect* on any federally listed species (including the RCW).

Louisiana Xpress Project

NiSource (the parent company to Columbia) and the USFWS have developed a MSHCP (January 1, 2014) in order to streamline federally listed species consultations. In accordance with Columbia Gulf's MSHCP, species with a "likely to adversely affect (LAA)" determination, "not likely to adversely affect (NLAA)" finding, and non-MSCHP species with a NLAA determination require no further consultation if the

proposed project activities are consistent with the MSHCP, programmatic biological opinion concurrence letters, and consultation letter.

The Louisiana Xpress Project occurs entirely within lands as described and covered in the MSHCP. The MSHCP identified the interior least tern (endangered) and northern long-eared bat (NLEB) (threatened) as federally listed species that could occur in the project area. Columbia Gulf would follow the mitigation measures outlined in the MSHCP to avoid and minimize adverse impacts on the interior least tern and NLEB. Additionally, Columbia Gulf identified the endangered RCW, pallid sturgeon, and the fat pocket book as potentially occurring within project areas, and not covered under the MSHCP.

Northern Long-Eared Bat

There is suitable habitat for the NLEB at the proposed Shelburn CS, Red Mountain CS, and Alexandria CS sites. During the winter months, from late October to April, the NLEB live in hibernacula, in caves and cave-like structures including abandoned mine shafts or railroad tunnels. The bats emerge in the spring and travel to summer roost sites and/or maternity colonies in wooded or semi-wooded habitats and typically occupy their summer habitat from early April through mid-September each year. Spring staging and fall swarming habitats near hibernacula entranceways are occupied from mid-March to mid-May and mid-August to mid-November, respectively.

Direct impacts on northern long-eared bat may include tree felling or trimming causing death or injury by crushing bats when a roost tree is felled. Bats may also be killed by entrapment in waste pits, harassed by noise associated with construction equipment, or injured or killed by contaminated water in waste pits. Bats may be indirectly impacted from the loss or degradation of roosting or foraging habitat, and travel corridors. Permanent lighting at the compressor stations may negatively affect the bats' behavior at night.

The MSHCP determined that project activities are likely to adversely affect the northern long- eared bat. However, by creating open land and edge habitat at the proposed Red Mountain CS, the project may add available feeding corridors. Furthermore, the following Avoidance and Minimization Measures (AMMs) would be implemented by Columbia Gulf at the above-mentioned locations per the MSHCP:

- AMM 29. No clearing or "side-trimming" of known maternity colony or suitable summer habitat within the covered lands of the MSHCP from June 1 to August 1 to protect non-volant pups.
- AMM 32. Operators, employees, and contractors (working in areas of known or presumed northern long-eared bat habitat as described in this section) would be

educated on the biology of the northern long-eared bat, activities that may affect bat behavior, and ways to avoid and minimize these effects.

- AMM 35. Contaminants, including but not limited to oils, solvents, and smoke from brush piles, should be strictly controlled as provided for in the ECS, Section II.C.2 and Section IV so the quality, quantity, and timing of prey resources are not affected.
- AMM 36. Implement and strictly adhere to sediment and erosion control measures, ensure restoration of pre-existing topographic contours after any ground disturbance, and restore native vegetation (where possible) as specified in the ECS upon completion of work within suitable summer habitat and known or presume occupied spring staging and fall swarming habitat.
- AMM 37. Equipment servicing and maintenance areas would be sited at least 300 feet away from streambeds, sinkholes, fissures, or areas draining into sinkholes, fissures, or other karst features. However, karst is not present in the project area.

In accordance with the MSHCP, we conclude that the project is *likely to adversely affect* the NLEB; however, Columbia Gulf's proposed mitigation measures would minimize impacts on the species to the extent practicable. No additional consultation is required for the project under section 7 of the Endangered Species Act for this species.

Interior Least Tern

The MSHCP assessed interior least tern habitat and concluded that four Columbia Gulf pipeline crossings near Pittman Island on Carroll Parish may affect the interior least tern. However, per Columbia Gulf's MSHCP, project areas (the proposed Shelburn CS) would be greater than 0.25 mile from these locations. Therefore, we conclude the project is *not likely to adversely affect* the interior least tern and as this is a covered species under the MSHCP, no additional consultation is required for the project under section 7 of the Endangered Species Act for this species.

Red Cockaded Woodpecker

The RCW prefers mature (greater than 60 years) pine dominated forests. The vegetation onsite consists of mixed hardwood and pine early growth successional forest, which is not consistent with RCW habitat. Given that this habitat is not present, we conclude the Project would have *no effect* on the RCW.

Fat Pocket Book and Pallid Sturgeon

Large rivers are the preferred habitat for the fat pocket book mussel species and pallid sturgeon fish species. Because the project would not cross any large rivers or streams, no suitable habitat would occur within project areas. Therefore, we conclude the project would have *no effect* on the fat pocket book or pallid sturgeon.

4.3.4. State-Listed Threatened and Endangered Species and Special Concern Species

Acadiana Project

KMLP consulted with the LDWF regarding state-listed species of special concern in March 2019. In correspondence dated April 25, 2019 to KMLP, the LDWF indicated the occurrence of the wild coco orchid state-listed species near the Cole Pit Yard. The LDWF recommends that additional caution should be taken in the event the wild coco orchid is encountered during project construction if the Cole Pit Yard is used. As stated above, in response to the LDWF, KMLP agreed to install exclusion fencing around the area if the wild coco orchid is found to avoid the species and would report the sighting to the LDWF.

The LDWF determined the Acadiana Project would have no impact on any other state listed species. Given the limited area of disturbance from the project facilities and KMLP's commitment to follow the state's recommendation, we conclude that any impacts from the project on the state-listed species listed would be negligible.

Louisiana Xpress Project

Columbia Gulf consulted with the LDWF regarding state-listed species, and identified that the Louisiana black bear, RCW, interior least tern, pallid sturgeon, bald eagle, and the Louisiana pearlshell could potentially occur within project areas. However, no suitable habitat was identified for the Louisiana black bear or Louisiana pearlshell. Descriptions for the RCW, interior least tern, and pallid sturgeon are discussed above, and the bald eagle is described below.

In correspondence from June 2019, the LDWF recommended that if pines less than 30 years old that are at least 10 inches in diameter are removed within the project site, a survey of potential RCW nesting habitat be conducted. KMLP would adhere to the LDWF's recommendations for the RCW. The LDWF further indicated that no other impacts on state-listed species are anticipated. Due to the lack of suitable habitat within the project area, and Columbia Gulf's commitment to protecting state species, we conclude that impacts from Louisiana Xpress Project would not be significant on state-listed species.

5. LAND USE AND VISUAL RESOURCES

5.1. LAND USE

Acadiana Project

Land use categories identified in the Acadiana Project area consist of open, industrial, and agricultural land, and roadways. Construction of all project facilities would disturb 88.5 acres. A summary of the land use categories that would be affected by construction and operation of the project facilities is provided in table 15.

Table 15
Summary of Land Use Impacts for the Acadiana Project (acres)

Facility	Land Use	New Permanent Easement/Operation	Existing Facility[1]	Temporary Workspace
CS 760	Open Land	2.19	0.0	37.82
	Industrial	0.0	18.87	0.0
CGT Meter Station	Industrial	0.0	1.97	0.54
	Agricultural	0.65	0.0	1.19
	Open Land	0.01	0.0	0.01
	Road	0.0	0.0	0.13
Pine Prairie Meter Station	Industrial	0.0	0.0	2.36
	Open Land	0.0	0.0	2.22
	Road	0.0	0.0	0.22
Eunice Yard	Industrial	0.0	0.0	1.80
	Open Land	0.0	0.0	5.32
Manco Yard	Industrial	0.0	0.0	5.45
Cole Pit Yard	Industrial	0.0	0.0	0.32
	Open land	0.0	0.0	6.47
PAR-1 (at CS 760)	Open Land	0.28	0.0	0.0
TAR-1 (at CS 760)	Road	0.0	0.07	0.0
TAR-2 (at CS 760)	Open Land	0.0	0.0	0.03

TAR-3 (at Pine Prairie Meter Station)	Road	0.0	0.26	0.0
TAR-4 (at CGT Meter Station)	Open Land Road	0.0 0.0	0.0 0.0	<0.01 <0.01
Project Total		**3.14**	**21.17**	**64.21**
[1] Existing facility would be used as temporary workspace.				

The existing land use at CS 760 consists primarily of industrial and open land. The open land surrounds the fenced facility. The existing CGT Meter Station is maintained as graveled and paved surfaces within the existing facility and north of T. E. Bonnett Road. Areas surrounding the meter station consist of agricultural land primarily used for rice production. The existing Pine Prairie Meter Station consists of gravel and paved surfaces within the fenced area and surrounded by open land. The existing Eunice Yard is currently gravel and vegetation. The land surrounding the site is primarily industrial with some residential properties west of the yard. The existing Manco Yard is graveled and paved surfaces. The land use surrounding the Manco Yard is pasture and industrial land. The existing Cole Pit Yard is maintained as gravel and vegetation. The land surrounding the site is primarily forested with residential properties west of the yard.

Permanent impacts from access roads would result in a conversion of 0.28 acre of open land to a maintained access road to CS 760 (PAR-1). KMLP would use existing access roads to CS 760 (TAR-1) and Pine Prairie Meter Station (TAR-3), which are maintained gravel roads. A temporary access road (TAR-2) would be constructed from Coulee Road for access to the western portion of CS 760 during construction, temporarily affecting open land, and TAR-4 would be constructed from T. E. Bonnett Road for access to the CGT Meter Station, temporarily affecting open land and road.

Louisiana Xpress Project

Land use categories in the Louisiana Xpress Project area include agricultural, forested, developed land, open land, wetland, and open water. Construction of all project facilities would affect about 167 acres of land. A summary of the land use categories that would be affected by construction and operation of the project facilities is provided in table 16.

Table 16
Summary of Land Use Impacts for the Louisiana Xpress Project [a,b] (acres)

	Agriculture		Forest		Developed/Open		Wetlands		Total	
Facility	**Const**	**Perm**	**Const**	**Perm**	**Const**	**Perm**	**Const**	**Perm**	**Const**	**Perm**
Shelburn	39.8	15.9	0.0	0.0	0.0	0.0	<0.1	<0.1	39.8	15.9
Red Mountain	0.0	0.0	29.6	11.5	0.0	0.0	0.2	0.1	29.9	11.5
Chicot	51.1	7.9	0.0	0.0	0.0	0.0	11.7	0.5	62.8	8.4
Alexandria[c, d]	0.0	0.0	4.2	0.0	30.8	0.0	0.0	0.0	35.0	0.0
Total	**90.9**	**23.8**	**33.9**	**11.4**	**30.8**	**0.0**	**11.9**	**0.6**	**167.4**	**35.8**

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.
[b] The land affected during construction includes both temporary (construction) and permanent (operational) impacts.
[c] All workspace at the Alexandria CS would occur within the fenceline of the existing facility; therefore, no new permanent workspace is required.
[d] Although portions of the temporary workspace contain mixed forest, tree clearing or trimming is not required for modifications at the Alexandria CS.
Const = Construction
Perm = Permanent

Construction of the proposed Shelburn CS would require 39.8 acres of disturbance. The existing land use at the proposed compressor station site is comprised of agricultural land and less than 0.1 acre of wetland. Following construction, 15.9 acres would be retained as permanent workspace, a facility access road would extend from the fenced facility to Oswalt Road, and a tie-in access road would extend from the fenced facility to the mainline valves on Columbia Gulf's existing lines.

Construction of the proposed Red Mountain CS would require 29.6 acres of disturbance. The existing land use at the proposed compressor station site consists of forested land and wetland. Following construction, 11.5 acres would be retained as permanent workspace, a facility access road would extend from the fenced facility to Catahoula Church Road, and a tie-in access road would extend from the fenced facility to the mainline valves on Columbia Gulf's existing lines.

Construction of the proposed Chicot CS would require approximately 62.8 acres of disturbance. Current land use consists of agricultural land and wetlands. Following construction, 8.4 acres would be retained as permanent workspace, a facility access road would extend from the fenced facility to Catahoula Church Road, and a tie-in access road would extend from the fenced facility to the mainline valves on Columbia Gulf's existing

lines. Columbia Gulf would restore all temporary workspaces in accordance with its ECS.

Construction at the existing Alexandria CS would require approximately 34.7 acres of disturbance, all of which is within the existing facility fenceline. Current land use is comprised of developed/open land and forested land; however, tree clearing or trimming is not required for modifications at the compressor station. Modifications at the Alexandria CS would not require the acquisition of any additional permanent workspace.

5.1.1. Residential Areas

Acadiana Project

The nearest residences to the aboveground facilities are 637 feet east of CS 760, 2,045 feet south of the CGT Meter Station, and 143 feet west of the Pine Prairie Meter Station. Temporary impacts on residential areas include noise and fugitive dust during construction activities, altered traffic patterns, and increased traffic in the area of the project facilities. Given that these are existing facilities and the distance between construction and operation to the nearest residence, we do not anticipate a significant impact on residences during construction or operation of the facilities.

Louisiana Xpress Project

No residences are within 800 feet of any compressor station sites. The nearest residence to the existing Alexandria CS site is approximately 875 feet southwest of the facility. For the new proposed compressor station sites, the nearest residential structures are 2,400 feet from the Shelburn Compressor Station, 2,800 feet from the Red Mountain Compressor Station, and 975 feet from the Chicot CS.

Temporary impacts on residential areas include noise and fugitive dust during construction activities, altered traffic patterns, and increased traffic in the area of the proposed facilities. Permanent impacts on residential areas during operation of the compressor stations include noise (see section B.8.2) and visual impacts (see below). Given the distance to the nearest residences, we do not anticipate significant impacts on residences during construction or operation of the facilities.

5.1.2. Planned Developments

There are no known planned residential developments adjacent to the Acadiana Project area or within 0.25 mile of the Louisiana Xpress Project facilities.

5.1.3. Public Lands, Other Designated Areas, and Special Land Uses

No Native American reservations, Coastal Zone Management Areas, or lands owned or administered by federal, state, or local agencies or private

preservation/conservation groups are within the vicinities of the proposed Acadiana or Louisiana Xpress Projects. The project is not within a designated Coastal Zone Management Area.

No special land uses, such as orchards, nurseries, specialty crops, natural areas, national and state forests, or conversation lands are within 0.25 mile of the proposed Acadiana or Louisiana Xpress Projects.

5.1.4. Recreation and Public Interest Areas

The proposed Chicot CS borders a section of St. Landry Highway, which is included as part of the Zydeco Cajun Prairie Byway. The nearest point of interest on the byway is Chicot State Park, approximately 2.5 miles southwest of the proposed Chicot CS. Motorists traveling between Chicot State Park and Interstate 49 would pass the proposed site; however, other industrial facilities are present in the area. Columbia Gulf would also implement visual mitigation measures, as described below. Therefore, we conclude the project would not have a significant impact on motorists traveling on the Zydeco Cajun Prairie Byway.

No other national or state wild and scenic rivers, designated scenic areas or lands, registered natural landmarks, state or local designated trails, nature preserves, game management areas, national or state forests, parks, golf courses, or designated recreational areas are within 0.25 mile of the proposed Acadiana or Louisiana Xpress Projects sites.

5.2. VISUAL RESOURCES

Acadiana Project

Construction of the Acadiana Project would result in temporary visual impacts, including increased numbers of personnel, presence/storage of additional equipment and materials, removal of vegetative cover, and disturbance of soils. These impacts would cease following the completion of construction and successful restoration. The proposed activities would occur on property already consisting of, or adjacent to, aboveground facilities with an industrial land use.

KMLP would expand the existing CS 760 by 2.2 acres and install new compressor units, buildings, three exhaust stacks (each approximately 80 feet in height), and auxiliary facilities at CS 760. Similar facilities already exist at the CS 760, including two exhaust stacks; therefore, the additional facilities would not result in a significant change to the existing landscape. KMLP currently minimizes the visual effects at CS 760 with downward-directed lighting on the perimeter of the compressor buildings and turning off the perimeter lighting at night except when needed for nighttime work. In addition, KMLP implemented a visual screening plan following construction of the compressor station in 2018, which includes tree plantings at specific locations along the perimeter of the CS 760 property. KMLP stated it would not clear any trees for construction and

operation of the Acadiana Project. If required, KMLP would work with nearby landowners to identify painting, fencing, additional landscaping, and lighting schemes that would further minimize long-term aesthetic impacts related to the project.

KMLP would expand the existing CGT Meter Station by 0.66 acre and install piping modifications and new control valves. Similar facilities already exist at the CGT Meter Station; therefore, the additional facilities would not result in a significant change to the existing landscape

The Pine Prairie Meter Station and contractor yards would be used as temporary workspace for the project. Use of these areas would result in temporary impacts during construction. No permanent changes to any of these sites used as contractor yards are proposed, and there would be no permanent visual impacts.

The Tunica-Biloxi Tribe requested in their NOI response letters for the two projects to consider "visual effects of the project(s), especially on wilderness and natural and cultural landscapes." No cultural landscapes have been identified in the project areas and no information has been provided to KMLP, Columbia Gulf, or FERC by the tribes on any known or potential cultural landscapes that may be affected by the proposed projects.

Given the existing infrastructure and visual screening at CS 760 and the temporary impacts associated with the contractor yards, we conclude that impacts on visual resources from the Acadiana Project would be partially permanent and not significant.

Louisiana Xpress Project

Construction at the existing Alexandria CS would result in negligible visual impacts, including the presence of equipment and workers. The proposed installation of additional cooling would be at a lower elevation than the existing stack height; therefore, additional permanent visual impacts are not anticipated.

There are residences within 0.5 mile of the proposed Shelburn, Chicot, and Red Mountain CS sites. In addition, the Old Catahoula Baptist Church and Cemetery are approximately 800 feet south of the Red Mountain CS. The tallest item at each compressor station would be the combustion turbine exhaust stacks (approximately 60 feet above finished grade elevation), which may be visible to nearby homes.

During construction, the presence of construction equipment and personnel at the compressor station sites would have a visual impact on nearby residents. Following the completion of construction, the current land use at each of the proposed new compressor stations would be permanently converted to industrial use. The compressor station sites would be fenced and graveled.

Columbia Gulf would install a chain link fence with privacy slats to minimize the visual impact of the permanent facilities to nearby residences. The Red Mountain CS would be constructed in a forested area. In order to preserve a vegetative visual buffer at the proposed Red Mountain CS, Columbia Gulf would maintain a 50-foot tree buffer along Catahoula Church Road, which would mitigate visual impacts at the site. Minimal views may be possible during leaf-off season. In addition, Columbia Gulf would implement road curvature in its design to prevent a direct line of sight from Catahoula Church Road to the proposed facility.

The Shelburn and Chicot CSs would be constructed on agricultural land; therefore, there would be no vegetative buffer and the compressor stations would be visible to nearby residents (2,400 and 975 feet away, respectively). Columbia Gulf does not propose additional vegetative plantings, as portions of the temporary workspace at the Shelburn and Chicot CSs would be returned to agricultural use and it states installation of decorative trees and shrubs may interfere with the landowner/tenant's ability to farm. Should comments be received from landowners, Columbia Gulf has committed to engage the services of a professional landscaping firm to determine the specific species mix, spacing, and locations for plantings to provide the most effective screening of views from existing residences with direct views of the facilities. However, section 380.15(g)(5) of our regulations (Siting and Maintenance Requirements) states for Natural Gas Act projects, the site of aboveground facilities which are visible from nearby residences or public areas, should be planted in trees and shrubs, or other appropriate landscaping and should be installed to enhance the appearance of the facilities, consistent with operating needs. Therefore, we do not believe the Shelburn and Chicot CSs comply with our regulations, nor would they minimize the visual impact on the surrounding residents. For the reasons listed above, **we recommend that:**

- **Prior to construction, Columbia Gulf should file a visual screening plan for review and written approval by the Director of OEP to minimize visual impacts on nearby residents at the Shelburn and Chicot Compressor Stations. At a minimum, each plan should include privacy slats in the chain link fence and vegetative plantings to provide a visual buffer.**

Nighttime lighting could also contribute to visual impacts. Columbia Gulf would install outdoor lighting at compressor stations to provide adequate illumination for personnel safety and facility security. SKL Farm commented on the project regarding an increased amount of artificial light from construction and operation of the proposed project. Outdoor lighting would be designed to ensure that minimal stray light would leave the site. Columbia Gulf would direct the yard lighting inward to the center of the facility, and automate it so that the station lighting would only illuminate if maintenance work is being performed after hours. In addition, dark-sky compliant lighting would be installed to reduce light pollution and trespass when illuminated.

Given the distances from residences and Columbia Gulf's proposed mitigation measures, we conclude that visual impacts of the proposed project would be permanent, but not significant.

6. CULTURAL RESOURCES

In addition to accounting for impacts on cultural resources under NEPA, Section 106 of the National Historic Preservation Act (NHPA), as amended, requires FERC to consider the effects of its undertakings on historic properties listed, or eligible for listing, on the National Register of Historic Places (NRHP),[5] and to afford the Advisory Council on Historic Preservation an opportunity to comment. KMLP and Columbia Gulf, as non-federal parties, are assisting FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800.

6.1. Cultural Resources Investigations

Acadiana Project

In an effort to identify historic properties within the project area of potential effects (APE)[6] and to account for any direct or indirect effects to those properties by the proposed Project, KMLP completed a cultural resources investigation which included background research, a Phase I archaeological survey, and a historic architectural survey (Eberwine et al. 2019). KMLP provided the results in a report to FERC and the Louisiana State Historic Preservation Officer (SHPO). KMLP defined the project APE for direct effects as approximately 88.5 acres which includes all areas of construction, operations, and maintenance for the proposed project. To account for indirect effects, KMLP examined all visible historic standing structures, cemeteries, or engineering structures adjacent to the direct effects APE.

KMLP surveyed the entirety of the APE by pedestrian transects and supplemented with systematic shovel testing except for the Pine Prairie Meter Station site and the Manco Yard. As a result of consultation with the Louisiana SHPO, the Pine Prairie Meter Station site was not surveyed as many previous cultural resources surveys have been conducted around the meter station site with no cultural resources identified, indicating that the area has a low potential for cultural resources. At the Manco Yard,

[5] In accordance with 36 CFR 800.16(l)(1), a historic property is any prehistoric or historic district, site, building, structure, object, or property of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties. Cultural resources are those properties that have not been evaluated for NRHP eligibility.

[6] The APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)).

much of the yard is covered with gravel, preventing systematic shovel testing. Therefore, KMLP conducted judgmental shovel testing at that location. No archeological resources were identified during the cultural resources survey; however, two new historic structures were identified and recorded adjacent to the proposed Cole Pit Yard.

Historic Structure 27-00038 is a 1940s-era, one-story, front-gabled vernacular house with a rectangular plan. Historic Structure 27-00039 is a one-story, side-gabled vernacular residence with subtle French Colonial design elements and a rectangular plan that was likely constructed circa 1930. Both buildings were recorded as in poor condition. Neither structure possesses the qualities of significance and integrity as defined by the NRHP Criteria for Evaluation (36 CFR 60.4 [a-d]), and therefore, are not eligible for inclusion in the NRHP.

KMLP submitted their findings to the Louisiana SHPO for review and comment on April 29, 2019. The Louisiana SHPO provided comments on the draft cultural resources report on June 18, 2019. KMLP submitted the revised report on June 19, 2019 requesting concurrence from the Louisiana SHPO that no further cultural resources investigations are required and recommended a finding of no historic properties affected by the proposed project. On July 16, 2019, the SHPO reviewed and accepted KMLP's recommendations in the final report. FERC concurs with the recommendations and finds that the proposed project would not affect historic properties.

Louisiana Xpress Project

Columbia Gulf conducted a Phase I cultural resources survey to consider effects to historic properties by the proposed project and submitted the results in a report to FERC and the Louisiana SHPO (Stanyard and Tucker-Laird 2019). Columbia Gulf defined the project APE for direct effects as approximately 167.4 acres. For indirect effects, Columbia Gulf surveyed for historic resources within 0.5 mile of the direct effects APE. Columbia Gulf surveyed the entirety of the APE except for inundated locations. Columbia Gulf conducted the archaeological survey by pedestrian transects; supplemented with systematic shovel testing. Field methods for the historic structures survey involved driving along roadways to observe any historic structures within 0.5 mile of the direct APE.

Columbia Gulf recorded one archaeological site, 16EV85, within the Chicot CS area. The resource is a historic artifact scatter that Columbia Gulf recommended as not eligible for listing in the NRHP as the site lacks integrity. Fifteen historic structures were recorded within the Chicot CS's APE. These structures include the Little Bethel Baptist Church and Cemetery, a segment of the Texas and Pacific Railroad, an outbuilding, and 12 dwellings. The dwellings and the outbuilding date between the 1930s and 1970s. The Texas and Pacific Railroad was completed in 1908. The Little Bethel Baptist Church and

Cemetery originates circa 1940. Columbia Gulf evaluated all 15 resources as not eligible for listing in the NRHP.

Columbia Gulf recorded one historic structure immediately south of the Red Mountain CS site: the Catahoula Baptist Church and Cemetery (Historic Structure 13-00567). The Catahoula Baptist Church was built in 1906 and features a high-pitched, front-gabled, standing-seam metal roof, asphalt lap siding, and sits on precast concrete and fieldstone piers. The cemetery appears to have been in use from the 1880s to present day, pre-dating the construction of the current church building in 1906. Columbia Gulf recommended the Catahoula Baptist Church and Cemetery as eligible for inclusion in the NRHP under Criterion A for its association with the earliest settlement of the region, and its role as the mother church of central Louisiana. The proposed compressor station is expected to be set back some distance from the church and Columbia Gulf would maintain a 50-foot tree buffer along Catahoula Church Road; screening the church from the compressor station facilities. Therefore, Columbia Gulf recommended that the proposed Project would not adversely affect the resource.

On May 8, 2019, Columbia Gulf submitted the results and recommendations of the cultural resources survey to the Louisiana SHPO for review and concurrence. In a letter dated June 3, 2019, the Louisiana SHPO concurred with Columbia Gulf's recommendations. Columbia Gulf consulted with the SHPO again on May 20, 2019 regarding the installation of additional gas cooling elements at the existing Alexandria CS. No known cultural resources are present at the Alexandria CS site. Therefore, Columbia Gulf recommended modifications would have no effect on archaeological sites or historic structures. One June 24, 2019, the Louisiana SHPO replied to Columbia Gulf indicating that no known historic properties would be affected by this undertaking.

Subsequent to the Phase I cultural resources survey and consultation with the Louisiana SHPO, Columbia Gulf made further modifications to the project area by expanding the footprints of both the Red Mountain and Shelburn CS. Columbia Gulf completed a supplemental Phase I cultural resources survey of the expanded footprint areas in December 2019. No new cultural resources were identified during the survey. On January 17, 2020, Columbia Gulf submitted the supplemental cultural resources report to the SHPO for review and recommended that no historically significant archaeological resources would be affected by the proposed project, based on the results of the supplemental survey. Columbia Gulf has not provided FERC the SHPO's comments on the report, nor documentation that the supplemental report was submitted to interested tribes.

6.2. Tribal Consultation

Acadiana Project

For the Acadiana Project, KMLP contacted the following Native American tribes: Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Apache Tribe of Oklahoma, Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, and Tunica-Biloxi Indian Tribe. On March 29, 2019, KMLP sent project notification letters to the tribes to inform them about the project and to request information on any concerns they might have about potential impacts on traditional cultural properties and historic properties.

KMLP received responses from the Jena Band of Choctaw Indians, the Choctaw Nation of Oklahoma, the Coushatta Tribe of Louisiana, and the Alabama-Coushatta Tribe of Texas. The Jena Band of Choctaw Indians and the Choctaw Nation of Oklahoma requested additional project locational information from KMLP. The Coushatta Tribe indicated in an email dated April 23, 2019 that they did not wish to be involved with the project. Lastly, in a letter dated May 3, 2019, the Alabama-Coushatta Tribe requested further archeological assessment of the project components. KMLP followed up with the tribes and provided them with all requested information, including project maps, Geographic Information Systems (GIS) shapefiles, and the cultural resources survey report.

Louisiana Xpress Project

Columbia Gulf contacted the following Native American tribes for the Louisiana Xpress Project: Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, the Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, the Muscogee (Creek) Nation, the Quapaw Tribe of Indians, Seminole Tribe of Florida, and Tunica-Biloxi Indian Tribe. On May 28, 2019, Columbia Gulf sent project notification letters to the tribes providing them information on the proposed project and requesting input on the potential of the project to affect significant cultural resources, including archaeological sites, burials, and traditional cultural properties. In an email date August 8, 2019, the Choctaw Nation of Oklahoma requested additional project information from Columbia Gulf. On August 15, 2019, Columbia Gulf submitted a copy of the Phase I archaeology report and GIS shapefiles of the study area to the Choctaw Nation of Oklahoma as requested.

FERC Tribal Consultation

FERC also contacted the tribes by letter regarding both projects on October 31 and November 18, 2019. Prior to FERC contacting the tribes, the Tunica-Biloxi Indian Tribe and the Choctaw Nation of Oklahoma contacted FERC via letter on September 30, 2019 and October 9. 2019, respectively. Legal counsel for the Tunica-Biloxi Indian Tribe sent two letters for each project, one with comments in response to the projects' NOIs, and the other with their request for meaningful, government-to-government consultation with FERC for each project. FERC contacted the Tunica-Biloxi Indian Tribe by telephone on October 9, 2019 to discuss any concerns the tribe has regarding the two projects and to inquire about legal counsel representing the tribe. The Tunica-Biloxi Indian Tribe contacted FERC by telephone on November 7, 2019 indicating that their legal counsel would handle all tribal consultation matters for the two projects.

The Tunica-Biloxi Tribe indicated in their response letters to the project NOIs that KMLP and Columbia Gulf should expand their scoping to include "detailed cultural and archeological resource surveys, prepared in collaboration with the Tunica-Biloxi and other affected tribes." As previously stated, both KMLP and Columbia Gulf conducted detailed cultural resources surveys and notified the tribes of the proposed projects, along with requesting input from the tribes about potential impacts on traditional cultural properties and historic properties, or any concerns they may have regarding the proposed projects. The Alabama-Coushatta tribe, the Choctaw Nation of Oklahoma, and the Jena Band of Choctaw responded to the applicants' correspondence. FERC has requested that KMLP and Columbia Gulf provide the Tunica-Biloxi Tribe with the cultural resources survey reports for both projects for their review and comment. KMLP sent a copy of their project Phase I cultural resources report to the Tunica-Biloxi Tribe, as well as a copy to their legal counsel, on December 16, 2019. Columbia Gulf sent their project reports to the tribe on December 17, 2019.

The Tunica-Biloxi Tribe also requested in their NOI response letters to include "consideration, in collaboration with affected tribes, of animal and plant species that may represent traditional subsistence practices or crafting materials for tribes." As the Tunica-Biloxi Tribe has not provided FERC or the applicants with the specific information regarding animal and plant species that are important to the tribe's traditional subsistence and crafting practices, FERC cannot address the tribe's concerns over these resources in the EA. Further the tribe asked for FERC to consider "how traditional ecological knowledge of the Tunica-Biloxi and other tribes with ancestral ties to the region could be used to evaluate environmental impacts or develop alternatives." Again, the Tunica-Biloxi Tribe would need to provide FERC with any traditional ecological knowledge that may be pertinent to environmental impacts assessment and alternatives development for FERC to consider that information in our analysis.

The Choctaw Nation of Oklahoma indicated that the two projects lie within the tribe's area of historic interest. Additionally, the Choctaw Nation of Oklahoma requested copies of the project GIS shapefiles, cultural resources reports, and the EAs for both projects. FERC asked KMLP and Columbia Gulf to provide the Choctaw Nation of Oklahoma with the requested documents and information for both projects. KMLP sent project GIS shapefiles to the tribe on October 16, 2019, followed by the cultural resources survey report on November 15, 2019. On September 16, 2019, Columbia Gulf sent their project GIS shapefiles and cultural resources reports to date, to the Choctaw Nation of Oklahoma. The Choctaw Nation of Oklahoma contacted FERC via letter on December 19, 2019, indicating that they have reviewed the requested documents and have concurred with a finding of no historic properties affected for both the Acadiana and the Louisiana Xpress Projects. However, the tribe requested that work be stopped, and its office contacted immediately in the event that Native American artifacts or human remains are encountered. FERC has not received any other responses from tribes.

6.3. Unanticipated Discoveries Plan

Both KMLP and Columbia Gulf developed project-specific plans for the unanticipated discovery of cultural resources and/or human remains. The plans outline the procedure to follow, in accordance with state and federal laws, if unanticipated cultural resources or human remains are discovered during construction of the projects. The plans were submitted to FERC and the Louisiana SHPO; both agencies requested minor revisions to the plans. KMLP and Columbia Gulf provided copies of their respective revised plans with the requested changes to FERC and the Louisiana SHPO. We find both plans to be acceptable.

6.4. Compliance with the National Historic Preservation Act

FERC has completed its compliance requirements with Section 106 of the NHPA for the Acadiana Project. As stated above, due to project changes to expand the footprints of both the Red Mountain and Shelburn CS, Section 106 compliance for the Louisiana Xpress Project is incomplete. To ensure that FERC's responsibilities under the NHPA and its implementing regulations are met for the Louisiana Xpress Project, **we recommend that:**

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

    a. Columbia Gulf files with the Secretary of the Commission (Secretary):

        (1) Comments on the supplemental Phase I cultural resources report from the Louisiana SHPO; and

(2) Documentation that the supplemental cultural resources report was submitted to interested tribes.

b. FERC staff reviews and the Director of the Office of Energy Projects (OEP) approves that section 106 compliance requirements have been met for the Louisiana Xpress project and notifies Columbia Gulf in writing that 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."

7. SOCIOECONOMICS

The proposed Acadiana Project includes work at CS 760 in Acadia Parish; the CGT Meter Station in Evangeline Parish; the Manco Yard and Eunice Yard in St. Landry Parish; and the Cole Pit Yard in Jefferson Davis Parish, Louisiana. The proposed additional compression and piping modifications would be within and adjacent to existing KMLP natural gas facilities. The proposed Louisiana Xpress Project facilities include three new compressor stations in Louisiana; the Shelburn CS in East Carroll Parish, the Red Mountain CS in Catahoula Parish, and the Chicot CS in Evangeline Parish, as well as modifications at one existing facility, the Alexandria CS in Rapides Parish.

Socioeconomic impacts resulting from the construction and operation of the proposed projects would be related to the number of construction workers that would work in the project area and their impact on population, public services, and employment during construction. Other potential effects include an increase in local traffic, decreased available housing, and increased tax revenue. During scoping, we also received comments regarding the projects impacts on property values.

7.1. POPULATION AND EMPLOYMENT

Table 17 provides demographic information, including the population, per capita income, labor force, and unemployment rate for the State of Louisiana and parishes, within which any socioeconomics effects for the Acadiana and Louisiana Xpress Projects would be expected to occur.

Table 17
Project Area Socioeconomic Conditions

Area	2017 Population Estimate	Population Density (per square mile)	Per Capita Income	2017 Civilian Labor Force (1,000)	2017 Unemployment Rate (percent)	Major Employment Sectors
Louisiana	4,684,333	104.9	$26,205	2,031,238	7.2	E, A, R
Acadia Parish[1]	62.590	94.3	$21,591	27,417	8.9	E, A, R
St. Landry Parish[1]	83,497	90.3	$19,205	32,347	55	E, C, R
Jefferson Davis Parish[1]	31,477	48.5	$23,068	13,465	9.1	E, A, R
Evangeline Parish[1,2]	33.708	51.3	$18,655	13,159	11.9	E, A, R
East Carroll Parish[2]	7,759	18.4	$14,694	2,076	11.1	R, E, W
Catahoula Parish[2]	10,407	14.7	$20,717	3,449	7.0	R, E, O
Rapides Parish[2]	131,613	99.9	$23,486	56,356	5.6	R, E, O

Source: U.S. Department of Commerce, Bureau of the Census, 2013-2017 American Community Survey 5-Year Estimates
1-Acadiana Project
2-Louisiana Express Project
A = Agriculture, forestry, fishing and hunting, and mining
C = Construction
E = Education services, and health care and social assistance
O= Other Services
R = Retail trade
W= Wholesale trade

Acadiana Project

Impacts on the local population would primarily result from the short-term influx of temporary employees during construction. KMLP estimates that the maximum workforce of 150 to 180 people would be required for CS 760 (including Pine Prairie Meter Station); and 30 to 40 people would be required for the CGT Meter Station. KMLP anticipates that most of the workforce would come from outside the parish. Increases in temporary population levels would occur as workers with specialized skills move to the area. KMLP anticipates hiring one to two additional permanent position employees for CS 760. The CGT Meter Station would continue to operate as an

unmanned facility; therefore, no permanent population impacts are anticipated from this facility.

Louisiana Xpress Project

Columbia Gulf anticipates an estimated peak construction workforce of 240 to 325 people for the project. Columbia Gulf would attempt to hire locally and regionally (anticipating between 50 to 75 percent of the project workforce), but may need to hire workers with the specialized skills and experience from outside of the region. The project is expected to create three permanent jobs for each new compressor station, which should have a positive impact on the economic and employment factors in each parish.

Given the population of the parishes, the size of the civilian labor force, and the relatively short duration of construction of the projects, we conclude that the project would have a temporary and negligible impact on unemployment rates in the project area and a negligible impact on the population of the local municipalities.

7.2. HOUSING

Acadiana Project

Construction of the Acadiana Project would require a maximum workforce of about 180 workers during peak construction. KMLP estimates that about 15 to 25 percent of the construction workforce would be drawn from the project area. The U.S. Census Bureau estimates that there were 3,428 vacant housing units available for rent in Acadia Parish; 1,278 in Evangeline Parish; 2,278 in Jefferson Davis Parish; and 5,991 in St. Landry Parish (U.S. Census Bureau 2017). In addition, 10 hotels and motels, and 6 campsites are within these parishes.

Louisiana Xpress Project

Construction of the Louisiana Xpress Project would require a maximum workforce of about 325 workers. Columbia Gulf estimates that about 50 to 75 percent of the construction workforce would be drawn from the project area. The U.S. Census Bureau estimates that there were 248 vacant housing units available for rent in East Carroll Parish; 1,278 in Evangeline Parish, 700 in Catahoula Parish, and 3,097 in St. Landry Parish (U.S. Census Bureau 2017). In addition, there are 32 hotels and motels, and more than 82 spaces in extended stay parks/campgrounds.

Based on the number of available rental units, hotels/motels, recreation vehicle parks, and campgrounds in the area for both projects, we conclude that, even if all workers were non-local, the presence of the construction crews could cause a minor, temporary impact on the availability of hotels/motels and rental units in the direct vicinity of these projects during construction and no discernable impact during operations. Therefore, we conclude the projects would have a negligible/not significant impact on housing in the project area.

7.3. ECONOMY AND TAX REVENUE

The Acadiana Project and the Louisiana Xpress Project would contribute to the local and regional economy directly and indirectly through purchases of goods and materials, and from taxes collected on purchases, payroll, and property. When in service, the Acadiana Project is estimated to bring in $893,000 in property taxes to Louisiana in Acadia and Evangeline Parish; and the Louisiana Xpress Project is estimated to bring $9,151,013 in property taxes to Louisiana over the four separate parishes. This investment in the local economy would have a positive impact on the localities in Louisiana. Property taxes are used by localities to fund public safety, education, transportation initiatives, and other community projects which benefit the local population. In addition to property tax revenue, the temporary and permanent workforce associated with the projects would spend money locally on consumer items and living expenses, which would generate sales tax revenue. This additional investment beyond property taxes would also represent negligible positive investment into the local economy.

7.4. PUBLIC SERVICES

Acadiana Project

KMLP identified the existing inventory of service providers in the project area, which includes 9 hospitals, 42 fire and rescue departments, and 17 police departments. Although the need for medical, fire, and police services may increase slightly during construction activities, adequate public services exist in the project area to accommodate a civil, criminal, and emergency event.

Given the brief construction period, approximately 12 to 18 months, it is unlikely that families would accompany non-local workers to the project area. There are 87 schools in the project area. We find this inventory of public service providers, schools, and other infrastructure sufficient to accommodate the influx of construction workers and their families during the construction period and that the project would not have a significant impact on public services.

Louisiana Xpress Project

Columbia Gulf identified the existing inventory of service providers in the project area, which includes 7 hospitals, 41 fire and rescue departments, and 21 police departments. Although the need for medical, fire, and police services may increase slightly during construction activities, we conclude adequate public services exist in the project area to accommodate a civil, criminal, and emergency event.

Given the brief construction period, about 14 months, it is unlikely that families would accompany non-local workers to the project area. There are 58 schools in the project areas. We find this inventory of public service providers, schools and other

infrastructure sufficient to accommodate the influx of construction workers and their families during the construction period and that the project would not have a significant impact on public services.

7.5. TRANSPORTATION

Acadiana Project

KMLP would utilize existing roadways to access the project during construction and operation. The existing road networks would experience short-term, temporary impacts during construction as a result of equipment and materials delivery and construction workers commuting to the project. An increased number of vehicles on nearby roadways at each of the project locations would be encountered during morning and evening peak times, corresponding to normal workday hours. However, the existing roadway networks near the project provide adequate alternate access; therefore, short-term, temporary impacts on traffic and transportation routes during construction are expected to be minimal. In addition, KMLP would implement traffic control measures, including signs and traffic control devices, as necessary, and would coordinate these measures with the appropriate state or local agency. Carpooling during construction would be encouraged by KMLP. KMLP proposes hiring only two personnel for modified operations at CS 760; these operational positions would have a negligible long-term impact on traffic and transportation routes.

Louisiana Xpress

Columbia Gulf would utilize road transportation corridors in the project area during construction and operation of the proposed facilities. Before the commencement of construction, Columbia Gulf would work with local transportation officials to minimize the effect of the project's construction on local roadways. Columbia Gulf contractors would be made aware of road limitations, including weight limits and restrictions and would comply with the state's department of transportation standards for road usage. Columbia Gulf would also work with local department of transportation offices to obtain necessary permits that may be required for construction entrances and maintenance of traffic. Additionally, to mitigate short-term construction impacts, Columbia Gulf would coordinate with the Louisiana Department of Transportation and Development and the parish governments to mitigate potential temporary traffic impacts associated with construction.

Because of the limited size and duration of construction at each location, KMLP's and Columbia Gulf's proposed traffic management strategies, and adherence to applicable permits, we conclude impacts on transportation would be temporary, and not significant.

7.6. ENVIRONMENTAL JUSTICE

Environmental justice considers disproportionately high and adverse impacts on minority or low-income populations in the surrounding community resulting from the programs, policies, or activities of federal agencies. Items considered in the evaluation of environmental justice include human health or environmental hazards, the natural physical environment, and associated social, economic, and cultural factors.

According to the Council on Environmental Quality (CEQ) environmental justice guidance under NEPA (CEQ 1997) and US EPA's *Promising Practices for EJ Methodologies in NEPA Reviews* (USEPA 2016), minorities are those groups that include American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Minority populations are defined where either; (a) the minority population of the affected area exceeds 50 percent or, (b) the minority population of the affected area is meaningfully greater (10 percent greater) than the minority population percentage in the general population or other appropriate unit of geographic analysis. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. In this EA, low-income populations are identified where the percent low income population of the affected block group is equal to or greater than that of the parish where the affected block group is located. Table 18 provides a summary of the minority or low-income percentage of county populations within the project areas.

Table 18
Project Area Demographics

Area	White Alone Not Hispanic (percent)	African American (percent)	Native American and Alaskan Native (percent)	Asian (percent)	Native Hawaiian and Pacific Islander (percent)	Other Race (percent)	Two or More Races (percent)	Hispanic or Latino Origin (percent)	Total Minority (percent)	Below Poverty Level (percent)
State of Louisiana	59.0	32	0.5	1.7	0	0.2	1.6	5.0	41	19.6
Acadiana Project										
					CS 760					
Acadia Parish	77.5	17.6	0.1	0.1	0	0.2	2.1	2.4	20.4	21.5
Census Tract 9603, Block Group 1	98.9	1.1	0	0	0	0	0	0	1.1	17.3
Louisiana Xpress Project										
					Shelburn CS					
East Carroll Parish	29.3	68.4	0.3	0.5	<0.1	0.0	1.4	2.5	70.7	46.7
Census Tract 1, Block Group 1	40.1	59.9	0.0	0.0	0.0	0.0	0.0	0.0	**59.9**	**47.3**
Census Tract 1, Block Group 2	86.1	12.0	0.0	0.0	0.0	0.0	1.9	0.0	13.9	9.3
					Red Mountain CS					
Catahoula Parish	67.4	30.9	0.4	0.1	<0.1	0.0	1.1	1.9	32.6	27.8
Census Tract 1, Block Group 3	99.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	18.2
					Chicot CS					
Evangeline Parish	66.6	28.3	0.4	0.5	<0.1	0.0	1.3	4.0	33.4	23.9
Census Tract 9501, Block Group 1	70.4	19.5	0.0	0.0	0.0	0.0	10.1	0.0	29.6	0.0

Avoyelles Parish	61.1	32.0	0.9	1.4	<0.1	0.0	1.9	3.2	38.9	19.9
Census Tract 306, Block Group 4	68.8	31.2	0.0	0.0	0.0	0.0	0.0	0.0	31.2	0.0
Alexandria CS										
Rapides Parish	63.7	32.0	0.9	1.6	<0.1	0.0	1.8	3.2	36.3	19.9
Census Tract 101, Block Group 1	100	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	9.0
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates										

Acadiana Project

As shown in table 18, none of the block groups within a 1-mile radius of CS 760 have a minority population that exceeds the 50 percent minority threshold or is meaningfully greater (10 percent higher) than the reference community; therefore, no "minority population" as defined by CEQ exists within the project area. As shown in table 18, none of the block groups within a 1-mile radius of CS 760 have a lower percentage of people below the poverty level than the state and Acadia Parish (U.S. Census, 2015). Because no minority or low-income populations exist in the Acadiana Project area, no disproportionately high and adverse impacts on low income populations would occur.

Louisiana Xpress Project

As shown in table 18, only one block group (East Carroll Parish, Census Tract 1, Block Group 1) within a 1-mile radius of the proposed compressor stations (Shelburn CS, only) has a minority population that is more than 50 percent or a meaningfully greater percent of the population. A low-income population was identified in the same block group.

As discussed throughout this EA, potentially adverse environmental effects associated with the Louisiana Xpress Project would be minimized or mitigated, as applicable. Although minority and low-income populations exist within a block group within a 1-mile radius of the Shelburn CS, the nearest residential structures are at least 2,400 feet from the proposed compressor station. Area residents may be affected by traffic delays during construction of Shelburn CS. However, with Columbia Gulf's commitment to implementing mitigation measures to alleviate any potential road congestion, we conclude these impacts would be minor and short-term.

Potential pollution emissions from the Shelburn CS, when considered with background concentrations, would be below the National Ambient Air Quality Standards (NAAQS), which are designated to protect public health. Therefore, the Shelburn CS would not have significant adverse air quality impacts on the minority and low-income populations in the project area. Air quality impacts are discussed in more detail in section B.8.1.

Temporary construction impacts on residences in proximity to construction work areas could include noise. As discussed in section B.8.2, noise levels resulting from construction would vary over time and would depend upon the number and type of equipment operating, the level of operation, and the distance between sources and receptors. Alternatively, operational noise associated with the Shelburn CS would be persistent, but limited to the vicinity of the facilities, and Columbia Gulf would be required to meet sound level requirements, which is discussed in detail in section

B.8.2. With Columbia Gulf's proposed mitigation measures and our recommendations in section B.8.2, the project would not result in significant noise impacts on local residents and the surrounding communities.

As described in section B.5.2, the Shelburn CS would be constructed on agricultural land; therefore, there would be no vegetative buffer and the Shelburn CS would be visible to nearby residents 2,400 feet away. To minimize impacts, we are recommending that Columbia Gulf provide a visual screening plan for review and written approval by the Director of OEP to minimize visual impacts from the Shelburn and Chicot CSs. Nighttime lighting could also contribute to visual impacts. Columbia Gulf has committed to designing outdoor lighting to ensure that minimal stray light would leave the site. In addition, dark-sky compliant lighting would be installed to reduce light pollution and trespass when illuminated. With Columbia Gulf's proposed mitigation measures and our recommendation in section B.5.2, we conclude the project would not result in significant visual impacts on local residents and the surrounding communities.

Although there would be adverse impacts associated with the project, Columbia Gulf would implement a series of measures to minimize potential impacts on communities, including environmental justice communities, near project facilities and impacts are not characterized as high and adverse. Although there is one block group with minority and low-income populations within 1-mile of the Shelburn CS, based on our environmental analysis, the Louisiana Xpress Project would not cause a disproportionately high and adverse environmental or socioeconomic impacts on this population.

8. AIR QUALITY AND NOISE

8.1. AIR QUALITY

Air quality would be affected by construction and operation of the Louisiana Xpress Project as well as the Acadiana Project. For both projects, although air emissions would be generated by equipment during construction of the facilities, most air emissions would result from the operation of the compressor stations.

Acadiana Project

The emissions associated with KMLP's project would be generated from the following facilities:

- installation of three 31,900 hp gas-fired turbine driven compressor units at KMLP's existing CS 760; and installation of miscellaneous auxiliary facilities, including gas cooling, two compressor buildings, two master control buildings, a

switchgear building, emergency generation, filter separators, fuel gas skids, fuel gas heaters, and the re-wheeling of the two existing compressor units within CS 760; and

- piping modifications and new control valves at the existing Columbia Gulf CGT Meter Station. No significant new operational emissions are expected from this segment of the project. Construction emissions would also be minimal.

Louisiana Xpress Project

The emissions associated with Columbia Gulf's Louisiana Xpress Project would be generated from three new compressor stations in Louisiana: the Shelburn CS, the Red Mountain CS, and the Chicot CS, as well as modifications at one existing facility, the Alexandria CS. Columbia Gulf proposes to install the following equipment:

- Shelburn CS: two new Solar Turbines Titan 130E natural gas driven compressors (23,470 hp each); one new Waukesha emergency generator (1,113 hp); one new fuel gas heater (2.02 million British thermal units per hour [MMBtu/hr]); 33 new space heaters (2.11 MMBtu/hr combined); one new 2,056-gallon pipeline liquids storage tank; and one new 1,260 gallon wastewater storage tank.
- Red Mountain CS: two new Solar Turbines Titan 130E natural gas driven compressors (23,470 hp each); one new Waukesha emergency generator (1,113 hp); one new fuel gas heater (2.02 MMBtu/hr); 33 new space heaters (2.11 MMBtu/hr combined); one new 2,056-gallon pipeline liquids storage tank; and one new 1,260 gallon wastewater storage tank.
- Chicot CS: two Solar Turbine Titan 130 (23,470 hp) natural gas driven compressors, filter/separators, gas cooling bays, and 48-inch-diameter suction and 42-inch-diameter discharge piping, and related appurtenances.
- Existing Alexandria CS: four approximately 16-foot by 47-foot gas cooler bays with additional piping, valves, electrical wiring, and switchgear. No changes to the horsepower are proposed at the Alexandria CS.

8.1.1. Existing Environment

The climate in the projects areas is significantly humid throughout most of the year, with relatively short, mild winters and long warm summers. The Gulf of Mexico has a moderating effect on the climate. Rainfall is abundant and fairly well-distributed throughout the year, with December through May being the wettest months of the year. Average winter temperatures range from the mid-50s to upper 60s degrees Fahrenheit (ºF), and average summer temperatures range from the upper 80s to the low 90s. Table 19 shows the regional climate for the projects areas.

Table 19 Summary of 2018 Climatological Data from Selected NWS Stations						
	Temperature (°F)		Wind Speed (mph)		Annual Rainfall (in)	Distance (miles) and Direction to Facility
	Avg Max	Avg Min	Avg	Max		
Acadiana Project						
CS 760	79.4	61.0	5.8	35	55.3	37 NW
CGT Meter Station	78.4	57.3	6.2	33	67.0	24 S
Louisiana Xpress Project						
Shelburn CS	75.9	53.5	5.7	61	54.7	37 SSE
Red Mountain CS	77.8	54.1	3.8	47	57.5	40 SW
Chicot CS	77.5	55.6	3.0	46	62.0	37 NW
Alexandria CS	77.8	54.1	3.8	47	57.5	5 WSW

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes NAAQS to protect human health and welfare.[7] NAAQS have been developed for seven "criteria air pollutants," including nitrogen dioxide (NO_2), carbon monoxide (CO), ozone, sulfur dioxide (SO_2), particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA, 2018a). Although ozone is a criteria air pollutant, it is not emitted into the atmosphere from an emissions source; rather, it develops as a result of a chemical reaction between nitrogen oxides (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Therefore, NOx and VOCs are referred to as ozone precursors and are regulated to control the potential for ozone formation. Additional pollutants, such as VOCs and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further below.

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

The EPA, state, and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS), or maintenance (area was formerly nonattainment and is currently in attainment).

KMLP's CS 760 is in Acadia Parish near Eunice, Louisiana. Based on the existing air quality data for Acadia Parish, the area is designated as attainment or unclassifiable with regard to all NAAQS. There are no nonattainment designations for the area.

Catahoula and East Carroll Parishes in Louisiana, where Columbia Gulf proposes its Red Mountain and Shelburn CSs, respectively, are considered to be in attainment or unclassified for all criteria pollutants. Evangeline Parish is classified as partially nonattainment for SO_2. However, the proposed Chicot CS project site is in an area of Evangeline Parish that is classified as attainment. The existing Alexandria CS is in Rapides Parish, which is considered to be in attainment or unclassified for all criteria pollutants.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. 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 CAA. The primary GHGs that would be emitted by the projects during equipment construction and operation and fugitive methane leaks from the pipeline and aboveground facilities are carbon dioxide (CO_2), methane, and nitrous oxide.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO_2e). The CO_2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO_2. CO_2 has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.[8]

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

8.1.2. Regulatory Requirements

The provisions of the CAA that may be applicable to the projects are discussed below. The estimated potential operational emissions for the projects are shown in table 22.

8.1.3. Prevention of Significant Deterioration and Nonattainment New Source Review

Proposed new or modified air pollutant emission sources must undergo a New Source Review (NSR) prior to construction or operation. Through the NSR permitting process, state and federal regulatory agencies review and approve project emissions increases or changes, emissions controls, and various other details to ensure air quality does not deteriorate as a result of new or modified existing emission sources. The two basic groups of NSR are major source NSR and minor source NSR. Major source NSR has two components: Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review. PSD, Nonattainment New Source Review, and minor source NSR are dependent on the size of the proposed project, the projected emissions, and if the project is proposed in an attainment area or nonattainment/maintenance area. PSD regulations define a major source as any source type belonging to a list of 28 specifically listed source categories that have a potential to emit 100 tons per year (tpy) or more of any regulated pollutant or 250 tpy for sources not among the listed source categories (such as natural gas compressor stations). These are referred to as the PSD major source thresholds.

None of the proposed facilities qualify as a major stationary source under the PSD program. As such, PSD review does not apply and an associated PSD permit is not required.

8.1.4. Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The major source threshold for an air emission source is 100 tpy for criteria pollutants, 10 tpy for any single HAP, and 25 tpy for total HAPs.

CS 760 is a major source with respect to the Title V (40 CFR 70), Major Source Operating Permit program as administered by the LDEQ pursuant to LAC 33:III.507, Part 70 Operating Permit Program. The facility is a major source because potential emissions of CO and NO_x exceed the applicable major source thresholds. CS 760 was issued an initial Title V permit (Permit No. 0040-00225-V0) on June 25, 2015, and subsequent Title V air permit modification (Permit No. 0040-00225-V1) on April 13, 2017.

Emissions of CO would exceed the 100 TPY criteria pollutant threshold at the proposed Shelburn CS, the proposed Red Mountain CS, and the proposed Chicot CS. These three greenfield compressor stations would be required to obtain a federally-enforceable Title V permit from the LDEQ prior to operation. State-specific requirements for Title V operating permits are listed in Title 33 of the Louisiana Administrative Code, Part III.

No air permitting is required for the Alexandria CS because there is no change in the operation of the combustion equipment. There are no emissions, horsepower, or design rating changes for the turbines or generator at this facility.

8.1.5. New Source Performance Standards

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

Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

NSPS Subpart JJJJ provides requirements for stationary spark ignition of internal combustion engines that are constructed, modified, or reconstructed after June 12, 2006. Emergency Generator No. 2 at CS 760 is being revised from a 2,133 hp engine to a 2,175 hp engine for this project. The emergency generator engine would be subject to the requirements of this rule per 40 CFR 60.4233(e) and would comply with the following emission standards for emergency natural gas-fired engines greater than or equal to 130 hp. KMLP must comply with the applicable emission standards by purchasing a certified engine, or if a non-certified engine is purchased, by conducting an initial performance test and subsequent performance tests at the frequencies provided in 40 CFR 60.4243(b)(2)(ii).

Subpart JJJJ also applies to the new emergency generators being installed at each new compressor station in the Louisiana Xpress Project. One emergency generator would be installed at each new greenfield compressor station. Per manufacturer data, the new emergency generators would comply with respective emission limits for NO_X, CO, and VOC. Columbia Gulf would also maintain compliance with requirements for performance testing, work practices, monitoring, recordkeeping, and reporting.

Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

The EPA has promulgated a NSPS for stationary combustion turbines in 40 CFR 60 Subpart KKKK. New combustion turbines would be subject to the requirements of

Subpart KKKK per 40 CFR 60.4305(a). Subpart KKKK applies to the new combustion turbines being installed at each greenfield compressor station. The new turbines would comply with NO_X emission rates and fuel sulfur levels for new turbines firing natural gas with a heat input rating between 50 and 850 MMBtu/hr. There are also requirements for initial and annual performance tests meeting the requirements of 40 CFR 60.4400 to demonstrate compliance with the NO_X limit.

8.1.6. General Conformity

The lead federal agency must conduct a conformity analysis if a federal action would result in the generation of emissions that would exceed the conformity threshold levels of the pollutant(s) for which a county is designated nonattainment or maintenance. Estimated emissions for the projects are not subject to review under the general conformity thresholds because the projects are in an area classified as attainment/unclassifiable for all criteria pollutants.

8.1.7. State Air Quality Regulations

KMLP submitted a permit modification application to the LDEQ for its Title V Permit No. 0040-00225-V1 for the modifications at CS 760. Columbia Gulf must obtain a Title V operating permit for the Shelburn, Red Mountain, and Chicot CSs from the LDEQ prior to operation. State-specific requirements for Title V operating permits are listed in Title 33 of the Louisiana Administrative Code, Part III.

8.1.8. Construction Emissions Impacts and Mitigation

Construction of the projects would result in temporary increases in emissions of some pollutants due to the use of construction equipment powered by diesel or gasoline engines. Construction activities would also emit particulate matter (PM_{10}, and $PM_{2.5}$), in the form of fugitive dust. Fugitive dust would result from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. The amount of dust generated would be a function of construction activities, soil type, moisture content, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. Emissions would typically be greater during dry periods and in areas of fine-textured soils subject to surface activity.

KMLP stated in its application for the Acadiana Project that it would utilize water trucks to water down the right-of-way and construction work areas as needed.

Columbia Gulf developed a *Fugitive Dust Control Plan* for the Louisiana Xpress Project. The *Fugitive D Control Plan* specifies dust control techniques to be implemented as needed during construction, including the use of water sprays (or suitable biodegradable or water-soluble chemicals) to control dust from heavy construction and earth-moving activities.

A summary of the estimated construction emissions for the proposed projects are presented in tables 20 and 21, respectively.

Table 20
Estimated Emissions from Project Construction Activities at CS 760

Construction Activity	Emissions (tpy)						
	CO	NO_x	VOC	SO_2	PM_{10}	$PM_{2.5}$	CO_2e
Site Preparation and Below Ground							
Unpaved Haul Roads (dust kick-up)	--	--	--	--	0.01	0.001	--
Bulldozing, Grading, Compacting (dust kick-up)	--	--	--	--	0.05	0.01	--
Heavy Equipment (combustion)	2.58	3.81	0.56	0.01	0.16	0.15	617.70
On-road Vehicles (combustion)	0.24	0.03	0.03	0.001	0.01	0.003	57.81
Painting	--	--	0.26	--	--	--	--
Welding	--	--	--	--	0.03	0.02	--
PHASE I TOTALS	**2.82**	**3.84**	**0.85**	**0.011**	**0.26**	**0.184**	**675.51**
Above Ground							
Unpaved Haul Roads (dust kick-up)	--	--	--	--	0.02	0.002	--
Bulldozing, Grading, Compacting (dust kick-up)	--	--	--	--	2.15	0.26	--
Heavy Equipment (combustion)	2.38	2.56	0.42	0.01	0.12	0.12	470.72
On-road Vehicles (combustion)	0.32	0.04	0.04	0.001	0.01	0.005	77.07
Painting	--	--	0.44	--	--	--	--
Welding	--	--	--	--	0.10	0.08	--
PHASE II TOTALS	**2.70**	**2.60**	**0.90**	**0.011**	**2.40**	**0.467**	**547.79**
TOTAL EMISSIONS	**5.52**	**6.44**	**1.75**	**0.022**	**2.66**	**0.651**	**1,223.30**

Table 21 Total Construction-Related Emissions for the Louisiana Xpress Project (TPY)								
Construction Activity	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**VOC**	**HAP**	**CO_2e**
2020 Emissions								
Diesel non-road equipment	3.6	6.2	0.5	0.5	0.0	0.7	0.1	2,266.9
Diesel and gas on-road equipment	17.3	6.2	0.2	0.2	0.0	1.0	0.2	2,244.3
Construction activity fugitive dust	N/A	N/A	3.0	0.4	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	1.8	0.2	N/A	N/A	N/A	N/A
Subtotal	**20.9**	**12.4**	**5.5**	**1.3**	**0.0**	**1.7**	**0.3**	**4,511.2**
2021 Emissions								
Diesel non-road equipment	10.8	8.6	1.4	1.4	0.0	2.2	0.3	6,800.8
Diesel and gas on-road equipment	52.0	8.7	0.7	0.7	0.1	3.1	0.6	6,733.0
Construction activity fugitive dust	N/A	N/A	9.1	1.3	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	5.5	0.6	N/A	N/A	N/A	N/A
Subtotal	**62.8**	**37.3**	**16.7**	**4.0**	**0.1**	**5.3**	**0.9**	**13,533.8**
2022 Emissions								
Diesel non-road equipment	**0.9**	**1.5**	**0.1**	**0.1**	**0.0**	**0.2**	**0.0**	**566.7**
Diesel and gas on-road equipment	**4.3**	**1.6**	**0.1**	**0.1**	**0.0**	**0.3**	**0.1**	**561.1**
Construction activity fugitive dust	N/A	N/A	**0.8**	**0.1**	N/A	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	**0.5**	**0.0**	N/A	N/A	N/A	N/A
Subtotal	**5.2**	**3.1**	**1.5**	**0.3**	**0.0**	**0.5**	**0.1**	**1,127.8**
TOTAL Construction Emissions	**89.0**	**52.8**	**23.7**	**5.6**	**0.1**	**7.5**	**1.4**	**19.173.0**

N/A not applicable

Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the projects areas. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. Once construction activities in the area are completed, fugitive dust and construction equipment emissions would subside and the projects related impact on air quality would terminate. Given the implementation of the mitigation measures described by Columbia Gulf and KMLP, and the intermittent and temporary nature of construction emissions, we conclude that the emissions from construction-related activities for the projects are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard or significantly affect local or regional air quality.

8.1.9. Operational Emissions

Potential operational emissions would primarily be from the additional turbines at CS 760, three new compressor stations, and new heaters and emergency generators. The total emissions from each compressor station are presented in tables 22 through 25.

Table 22
Estimated Annual Emission Rates for CS 760

Equipment	Annual Emission Rates (tpy)							
	CO	NO_x	VOC	SO_2	PM_{10}	$PM_{2.5}$	Total HAP	CO_2e
Newly Proposed Sources								
Solar Titan 250 Natural Gas	56.33	33.13	1.94	3.13	13.83	13.83	0.95	107,907
Solar Titan 250 Natural Gas	56.33	33.13	1.94	3.13	13.83	13.83	0.95	107,907
Solar Titan 250 Natural Gas	56.33	33.13	1.94	3.13	13.83	13.83	0.95	107,907
Emergency Engine No. 2	0.96	0.48	0.24	0.001	0.01	0.01	0.17	96.36
Fuel Gas Heater No. 2	1.28	0.50	0.03	0.003	0.04	0.04	0.0004	602.70
Fuel Gas Heater No. 3	1.28	0.50	0.03	0.003	0.04	0.04	0.0004	602.70
Fuel Gas Heater No. 4	1.28	0.50	0.03	0.003	0.04	0.04	0.0004	602.70
Revised Emission Rates for Currently Permitted Sources								
Emergency Engine No. 1	0.81	0.40	0.20	0.001	0.01	0.01	0.07	78.45
Fuel Gas Heater No. 1	1.28	0.50	0.03	0.003	0.04	0.04	0.0004	602.70
Fixed Roof Tank No. 1	--	--	0.001	--	--	--	0.0001	--
Fixed Roof Tank No. 2	--	--	0.001	--	--	--	--	--
Fixed Roof Tank No. 3	--	--	0.001	--	--	--	--	--
Fixed Roof Tank No. 4	--	--	0.32	--	--	--	0.02	--
Fixed Roof Tank No. 5	--	--	0.32	--	--	--	0.02	--
Truck Loading	--	--	1.06	--	--	--	0.06	--
Emission Rates for Currently Permitted Sources with No Changes Proposed								
Solar Mars 100 Natural Gas	32.76	18.23	1.18	1.90	8.40	8.40	0.58	65,871
Solar Mars 100 Natural Gas	32.76	18.23	1.18	1.90	8.40	8.40	0.58	65,871
Fugitive Emissions	--	--	8.44	--	--	--	0.38	--
Haul Roads	--	--	--	--	0.16	0.02	--	--
CS 760 Post-Project Totals	**241.40**	**138.73**	**18.563**	**13.204**	**58.63**	**58.49**	**4.7317**	**458,048.61**

Table 23
Louisiana Xpress Project
Shelburn CS Emission Calculation Results (in tons per year)

Emission Unit	NO_X	CO	VOC	$PM_{10}/PM_{2.5}$	SO_2	CO_2e	Total HAPs
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Waukesha Emergency Generator	1.23	2.45	0.61	2.1E-2	1.5E-3	251	0.20
Fuel Gas Heater	0.91	0.76	0.05	0.07	6.6E-3	1,087	1.7E-2
Space Heaters	0.91	0.76	0.05	0.07	6.6E-3	1,081	0.02
Pipeline Liquids Tank	N/A	N/A	0.06	N/A	N/A	N/A	N/A
Wastewater Tank	N/A	N/A	0.03	N/A	N/A	N/A	N/A
Equipment Leaks	N/A	N/A	0.18	N/A	N/A	252	N/A
Venting	N/A	N/A	0.50	N/A	N/A	682	N/A
Blowdowns	N/A	N/A	23.23	N/A	N/A	32,011	N/A
TOTAL PTE	**87.27**	**242.77**	**37.77**	**10.26**	**1.11**	**214,536**	**1.82**
Title V Threshold	**100**	**100**	**100**	**100**	**100**	**N/A**	**25**
PSD Major Source Threshold [a]	**250**	**250**	**250**	**250**	**250**	**100,000**	**N/A**

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Even though the compressor station is above the PSD threshold for CO2e, PSD is not triggered because none of the other pollutants exceed the PSD threshold.

Table 24
Louisiana Xpress Project
Red Mountain CS Emission Calculation Results

Emission Unit	NO_X	CO	VOC	$PM_{10}/PM_{2.5}$	SO_2	CO_2e	Total HAPs
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Waukesha Emergency Generator	1.23	2.45	0.61	2.1E-2	1.5E-3	251	0.20
Fuel Gas Heater	0.87	0.73	0.05	0.07	6.3E-3	1,043	1.6E-2
Space Heaters	0.91	0.76	0.05	0.07	6.6E-3	1,081	0.02
Pipeline Liquids Tank	N/A	N/A	0.06	N/A	N/A	N/A	N/A
Wastewater Tank	N/A	N/A	0.03	N/A	N/A	N/A	N/A
Equipment Leaks	N/A	N/A	0.08	N/A	N/A	265	N/A
Venting	N/A	N/A	0.21	N/A	N/A	718	N/A
Blowdowns	N/A	N/A	9.95	N/A	N/A	33,517	N/A
TOTAL PTE	**87.23**	**242.8**	**23.67**	**10.26**	**1.11**	**214,601**	**1.81**
Title V Threshold	**100**	**100**	**100**	**100**	**100**	**N/A**	**25**
PSD Major Source Threshold [a]	**250**	**250**	**250**	**250**	**250**	**100,000**	**N/A**

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*Even though the compressor station is above the PSD threshold for CO2e, PSD is not triggered because none of the other pollutants exceed the PSD threshold.

Table 25
Louisiana Xpress Project
Chicot CS Emission Calculation Results

Emission Unit	NO_X	CO	VOC	$PM_{10}/PM_{2.5}$	SO_2	CO_2e	Total HAPs
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Solar Titan 130E Turbine	42.11	119.4	6.53	5.05	0.55	89,586	0.79
Waukesha Emergency Generator	1.23	2.45	0.61	2.1E-2	1.5E-3	251	0.20
Fuel Gas Heater	0.87	0.73	0.05	0.07	6.3E-3	1,036	1.6E-2
Space Heaters	0.91	0.76	0.05	0.07	6.6E-3	1,081	0.02
Pipeline Liquids Tank	N/A	N/A	0.06	N/A	N/A	N/A	N/A
Wastewater Tank	N/A	N/A	0.03	N/A	N/A	N/A	N/A
Equipment Leaks	N/A	N/A	0.07	N/A	N/A	267	N/A
Venting	N/A	N/A	0.20	N/A	N/A	723	N/A
Blowdowns	N/A	N/A	9.41	N/A	N/A	34,693	N/A
TOTAL PTE	**87.23**	**242.8**	**23.46**	**10.25**	**1.11**	**216,957**	**1.81**
Title V Threshold	**100**	**100**	**100**	**100**	**100**	**N/A**	**25**
PSD Major Source Threshold *	**250**	**250**	**250**	**250**	**250**	**100,000**	**N/A**

*Even though the compressor station is above the PSD threshold for CO2e, PSD is not triggered because none of the other pollutants exceed the PSD threshold.

8.1.10. Operational Impacts: Air Dispersion Modeling

Air emissions from the projects would comply with applicable federal and state air quality regulations. Air dispersion modeling was performed for CS 760, as well as the proposed Shelburn, Red Mountain, and Chicot CSs using version 18081 of AERMOD, the most advanced sequential Gaussian plume model sanctioned by the EPA. Modeling was not conducted for the Alexandria CS because there is no change in the operation of the combustion equipment. The air dispersion modeling results are summarized in the tables below. As shown, all total concentrations would be below the NAAQS and we conclude that there will be no significant local or regional air quality impacts.

Table 26 CS 760 Modeling Results					
Pollutant	**Results – Maximum Modeled Concentration for Project (µg/m³)**	**Background Concentration (µg/m³)**	**Project + Background (µg/m³)**	**NAAQS (µg/m³)**	**% of NAAQS**
CO 1-hour (primary)	718.16	3,475.48	4193.64	40,000	10.48
CO 8-hour (primary)	454.44	1,900	2354.44	10,000	23.54
NO_2 annual (primary and secondary)	1.34	12.42	13.76	100	13.76
NO_2 1-hour (primary)	56.46	73.01	129.47	188	68.87
PM_{10} 24-hour (primary and secondary)	2.80	72.67	75.47	150	50.32
$PM_{2.5}$ annual (primary)	0.13	8.04	8.17	12	68.10
$PM_{2.5}$ 24-hour (primary and secondary)	2.75	19.47	22.22	35	63.48
SO_2 annual	0.02	5.58	5.60	80	7.00
SO_2 1-hour (primary)	0.74	78.77	79.51	196.5	40.46
SO_2 3-hour (secondary)	0.49	59.47	59.96	1,310	4.58
SO_2 24-hour	0.15	N/A	N/A	365	N/A

Table 27 Louisiana Xpress Project Shelburn CS AERMOD Results and NAAQS Compliance Summary						
Pollutant	**Averaging Period**	**Project Impact (µg/m³)**	**Background (µg/m³)**	**Total (µg/m³)**	**NAAQS (µg/m³)**	**Percent of NAAQS**
NO_2	1-hour	20.3	64.7	85.0	188	45.2%
	Annual	0.72	10.7	11.5	100	11.5%
CO	1-hour	30.6	3283.2	3313.8	40,000	8.3%
	8-hour	23.3	1459.2	1482.4	10,000	14.8%
PM_{10}	24-hour	1.26	58.2	59.5	150	39.6%
$PM_{2.5}$	24-hour	0.51	18.4	18.9	35	54.0%
	Annual	0.07	8.0	8.07	12	67.2%
SO_2	1-hour	27.8	26.7	54.5	196	27.8%
	3-hour	29.1	35.5	64.6	1300	5.0%
	24-hour	12.4	10.7	23.1	365	4.4%

Table 28 Louisiana Xpress Project Red Mountain CS AERMOD Results and NAAQS Compliance Summary						
Pollutant	**Averaging Period**	**Project Impact ($\mu g/m^3$)**	**Background ($\mu g/m^3$)**	**Total ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**	**Percent of NAAQS**
NO_2	1-hour	15.1	64.7	79.7	188	42.4%
	Annual	0.95	10.7	11.7	100	11.7%
CO	1-hour	26.6	3283.2	3309.8	40,000	8.3%
	8-hour	17.6	1459.2	1476.8	10,000	14.8%
PM_{10}	24-hour	0.74	64.6	65.3	150	43.6%
$PM_{2.5}$	24-hour	0.31	18.4	18.7	35	53.5%
	Annual	0.09	8.0	8.09	12	67.4%
SO_2	1-hour	22.7	26.7	49.4	196	25.2%
	3-hour	24.6	35.5	60.1	1300	4.6%
	24-hour	10.4	10.7	21.2	365	5.8%

Table 29 Louisiana Xpress Project Chicot CS AERMOD Results and NAAQS Compliance Summary						
Pollutant	**Averaging Period**	**Project Impact ($\mu g/m^3$)**	**Background ($\mu g/m^3$)**	**Total ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**	**Percent of NAAQS**
NO_2	1-hour	22.1	64.7	86.8	188	46.2%
	Annual	1.20	10.7	11.9	100	11.9%
CO	1-hour	35.2	3,283.2	3,318.4	40,000	8.3%
	8-hour	19.7	1,459.2	1,478.9	10,000	14.8%
PM_{10}	24-hour	1.13	64.6	65.7	150	43.8%
$PM_{2.5}$	24-hour	0.77	16.0	16.77	35	47.9%
	Annual	0.11	7.62	7.73	12	64.4%
SO_2	1-hour	27.6	26.7	54.3	196	27.7%
	3-hour	28.7	35.5	64.2	1,300	4.9%
	24-hour	13.2	10.7	23.9	365	6.6%

8.2. NOISE IMPACTS

Construction and operation of the proposed projects may affect local noise levels. The ambient sound level of a region is defined by the total noise generated within the specific environment and usually comprises sounds emanating from natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and through the week/year. This variation is caused in part by changing biological movements (e.g., insects), weather conditions, and the effect of seasonal vegetation cover.

Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the

same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn}, late night to early morning (10:00 pm to 7:00 am) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq}.

8.2.1. Federal Noise Regulations

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an L_{dn} of 55 decibels on the A-weighted scale (dBA) protects the public from indoor and outdoor activity interference. FERC staff has adopted this criterion and use it to evaluate the potential noise impacts from the proposed projects at NSAs, such as residences, schools, or hospitals. Due to the 10 dBA nighttime penalty added prior to calculation of the L_{dn}, for a facility to meet the L_{dn} 55 dBA limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA L_{eq} at any NSA. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half as loud.

8.2.2. Construction Noise

Noise could affect the surrounding area during construction of the proposed project components. Noise associated with construction activities is intermittent and occurs mostly during daylight hours and would have no significant impacts on nearby NSAs.

The construction activities would be performed with standard heavy equipment, such as track-excavator(s), backhoe(s), bulldozer(s), dump truck(s), cement truck(s), etc. The most prevalent sound source during construction of the expanded compressor station, meter station, and coolers is anticipated to be the internal combustion engines used to power construction equipment. The sound level impact at NSAs from construction activities is dependent on the type of construction equipment used, the duration of use for each piece of construction equipment, the amount of construction equipment used simultaneously, and the distance between the construction equipment and the NSAs.

Table 30 shows the estimated noise during construction of the Acadiana Project. KMLP noted in its application that due to the uncertainty of the equipment that might be operating during night construction, they would develop a nighttime construction noise management plan if nighttime construction is required. This plan would outline the specific equipment that would operate at night, the location of the equipment, and would predict the sound levels from the expected nighttime equipment. It would also include specific noise mitigation, such as noise barriers, quieter equipment, or partial equipment enclosures to ensure that increase in sound level at the NSAs do not exceed 10 dB over ambient.

Table 31 shows the estimated noise during construction of the Louisiana Xpress Project. Because the noise level at the nearest NSA is projected to increase more than 10 dB over ambient, **we recommend that:**

- **Prior to any nighttime construction, Columbia Gulf should file with the Secretary, for review and written approval by the Director of OEP, a nighttime construction noise management plan that includes specific noise mitigation to ensure that the increase in sound level at the nearest NSAs do not exceed 10 dB over ambient.**

Construction would be temporary and short-term in nature. Based on this and our recommendation, we do not expect the temporary increase in noise to result in a significant impact.

Table 30
Acadiana Project Predicted Temporary Sound Levels Due to Construction, 24-Hour Activity (L_{dn})

NSA	Direction to NSA	Distance from NSA to Compressor Building (feet)	Existing Ambient Sound Level (dBA)	Predicted Sound Level – 24-Hour Construction, dBA	Construction Plus Ambient, dBA	Temporary Increase in Sound Level, dB
CS 760						
1	SE	1,560	60.0	64.1	65.5	5.5
2	WNW	1,370	66.7	60.8	67.7	1.0
3	WSW	1,490	64.0	61.0	65.8	1.8
4	NE	3,330	63.8	53.8	64.2	0.4
5	NW	2,370	66.7	54.1	66.9	0.2
CGT Meter Station						
1	2,330	S	42.7	49.2	50.1	7.4

Table 31
Louisiana Xpress Project
Summary of Peak Construction Noise at the Nearest NSA

Facility	Direction to nearest NSA	Distance from NSA to Compressor Building (feet)	Calculated Ambient L_{dn} (dBA)	Estimated L_{dn} of Peak Construction Noise (dBA)	Temporary Increase in Sound Level, dB
Shelburn CS	N	2,400	40.3	41	0.7
Red Mountain CS	SE	800	43.9	56	12.1
Chicot CS	NE	975	50.2	59	8.8
Alexandria CS	S-SW	875	47.9	55	7.1

8.2.3. Operational Noise

A noise analysis for each compressor station site for the projects was conducted to measure existing sound levels, predict sound levels from the proposed sources, predict total sound levels, and determine noise increases. Noise levels of each facility's equipment are based on equipment specifications.

The estimated sound levels are presented in tables 32-37 below.

Table 32
Predicted Sound Levels Due to Full CS 760 Operations

NSA	Distance to NSA (feet)	Direction	Measured Existing Noise Level (L_{dn} dBA)	Estimated Contribution of Existing Station Equipment (L_{dn} dBA)	Estimated Contribution of Proposed Station Equipment (L_{dn} dBA)	Combined, Existing and Proposed Station Equipment (L_{dn} dBA)	Combined, All Sources Including Ambient (L_{dn} dBA)	Increase Above Existing Condition (ΔdB)
1	1,560	SE	60.0	46.3	50.9	52.0	60.6	0.6
2	1,370	WNW	66.7	44.6	47.3	49.1	66.8	0.1
3	1,490	WSW	64.0	45.4	47.8	49.8	64.2	0.2
4	3,330	NE	63.8	35.2	38.9	40.4	63.8	0.0
5	2,370	NW	66.7	39.6	41.0	43.3	66.7	0.0

Table 33
Predicted Sound Levels Due to CGT Meter Station Operations

NSA	Distance to NSA (feet)	Direction	Measured Existing Noise Level (L_{dn} dBA)	Estimated Contribution of Proposed Station Equipment (L_{eq} dBA / L_{dn} dBA)		Combined, All Sources Including Ambient (L_{dn} dBA)	Increase Above Existing Condition (ΔdB)
1	2,330	S	42.7	45.3	51.7	52.2	9.5

Table 34
Louisiana Xpress Project
Summary of Acoustical Analysis of Noise-Sensitive Areas near Shelburn CS

NSAs	Distance and Direction (feet)	Measured L_d (dBA)	Measured L_n (dBA)	Calculated Ambient L_{dn} [a] (dBA)	Estimated L_{dn} at Full Load (dBA)	Station L_{dn} + Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dBA)
NSA #1 (House)	2,400 N	40.3	33.6	41.8	38.7	43.6	1.8
NSA #2 (House)	3,800 S	40.8	35.1	42.9	38.0	44.1	1.2

[a] Via Measured L_d and L_n.

Table 35
Louisiana Xpress Project
Summary of Acoustical Analysis of Noise-Sensitive Areas near Red Mountain CS

NSAs	Distance and Direction (feet)	Measured L_d (dBA)	Measured L_n (dBA)	Calculated Ambient L_{dn} [a] (dBA)	Estimated L_{dn} at Full Load (dBA)	Station L_{dn} + Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dBA)
NSA #1 (House)	2,800 NE	30.9	36.3	42.2	36.4	43.2	1.0
NSA #2 (Church)	800 SE	31.1	38.0	43.9	49.2	50.3	6.5

[a] Via Measured L_d and L_n.

Table 36
Louisiana Xpress Project
Summary of Acoustical Analysis of Noise-Sensitive Areas near Chicot CS

NSAs	Distance and Direction (feet)	Measured L_d (dBA)	Measured L_n (dBA)	Calculated Ambient L_{dn} [a] (dBA)	Estimated L_{dn} at Full Load (dBA)	Station L_{dn} + Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dBA)
NSA #1 (House)	975 NE	43.6	43.8	50.2	47.7	52.2	2.0
NSA #2 (House)	1,600 N-NE	41.2	41.8	48.1	43.1	49.3	1.2
NSA #3 (House)	1,050 SE	40.7	37.3	44.4	46.7	48.7	4.3

[a] Via Measured L_d and L_n.

Table 37
Louisiana Xpress Project
Summary of Acoustical Analysis of Noise-Sensitive Areas near Alexandria CS

NSAs	Distance and Direction (feet)	L_{dn} of Existing Station at Full Load [a] (dBA)	L_{dn} of Proposed Gas Cooler Addition (dBA)	Total L_{dn} of Existing Station + Gas Cooler Addition at Full Load (dBA)	Potential Noise Increase (dBA)
NSA #1 (House)	1,325 NW	53.1	43.5	53.6	0.5
NSA #2 (House)	1,000 W-NW	51.8	46.7	53.0	1.2
NSA #3 (House)	1,075 W-SW	51.0	45.9	52.2	1.2
NSA #4 (House)	875 S-SW	47.9	48.2	51.0	3.1
NSA #5 (House)	1,750 N	49.6	40.2	50.1	0.5

[a] From H&K RN 3653. Alexandria CS, Pre-construction sound survey and Noise Impact Analysis (associated with the HP Replacement Project). November 30, 2017.

To ensure that the actual noise levels resulting from operation of the addition of the three compressor units at KMLP's existing CS 760 would not be significant, **we recommend that:**

- **KMLP should file a noise survey with the Secretary no later than 60 days after placing the three additional compressor units at the existing CS 760 into service. If a full power load condition noise survey is not possible, KMLP should file an interim survey at the maximum possible power load within 60 days of placing the additional three compressor units in service and file the full load survey within 6 months. If the noise attributable to the operation of all the units at the modified compressor station at full or interim power load conditions exceeds an Ldn of 55 dBA at any nearby NSAs, KMLP should:**

  a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;
  b. install additional noise controls to meet that level within 1 year of the in-service date; and
  c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

To ensure that the actual noise levels resulting from operation of the piping modifications at the existing CGT Meter Station would not be significant, **we recommend that:**

- **KMLP should file a noise survey with the Secretary no later than 60 days after placing the modifications at the CGT Meter Station into service. If the noise attributable to the operation of the meter station exceeds an Ldn of 55 dBA at any nearby NSA, KMLP should:**

    a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;
    b. install additional noise controls to meet that level within 1 year of the in-service date; and
    c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

In order to address public concerns and to ensure that the actual noise levels resulting from operation of the Alexandria, Shelburn, Red Mountain, and Chicot CSs would not be significant, **we recommend that:**

- **Columbia Gulf should file a noise survey with the Secretary no later than 60 days after placing the modified Alexandria CS and the new Shelburn, Red Mountain, and Chicot CSs into service. If a full power load condition noise survey is not possible, Columbia Gulf should file an interim survey at the maximum possible power load within 60 days of placing the compressor stations into service and file the full power load survey within 6 months. If the noise from all the equipment operated at full power load or interim power load conditions exceeds an Ldn of 55 dBA at any nearby NSA, Columbia Gulf should:**

    a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;
    b. install additional noise controls to meet that level within 1 year of the in-service date; and
    c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

As shown in each table above, the predicted L_{dn} sound levels from operation of the facilities are below 55 dBA at all of the NSAs. With our recommendations ensuring that these compressor stations would be below 55 dBA, we conclude there would not be any significant operational noise impacts from the proposed projects.

9. RELIABILITY AND SAFETY

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

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of 1,000 ^{o}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.

9.1. SAFETY STANDARDS

The DOT is mandated to prescribe minimum safety standards to protect against risks posed by natural gas facilities under Title 49 of the U.S. Code, 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. The Pipeline and Hazardous Materials Safety Administration'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.

9.2. STATION DESIGN

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

Part 192 of 49 CFR establishes safety guidelines for the design and construction of compressor stations in addition to pipeline safety standards. Part 192.163 requires the location of each main compressor building of a compressor station to be on a property under the control of the operator. The station must also be far enough away from

adjacent property, not under control of the operator, to minimize the possibility of fire spreading to the compressor building from structures on adjacent properties. Part 192.163 also requires each building on a compressor station site be made of specific building materials and to have at least two separate and unobstructed exits. The station must be in an enclosed fenced area and must have at least two gates to provide a safe exit during an emergency.

9.3. EMERGENCIES

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

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

The DOT requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline or facility emergency, and to coordinate mutual assistance. KMLP and Columbia Gulf must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas emergency and report it to appropriate public officials. KMLP and Columbia Gulf would provide the appropriate training to local emergency service personnel before the projects are placed in service.

Construction and operation for both projects would represent a minimum increase in risk to the public; however, we are confident that with continued compliance with DOT safety standards, operation, and maintenance requirements, the projects would be constructed and operated safely.

10. CUMULATIVE IMPACTS

In accordance with NEPA and with FERC policy, we evaluated the potential for cumulative effects of both projects. Cumulative impacts represent the incremental effects

of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time.

This cumulative effects analysis generally follows a method set forth in relevant CEQ and EPA guidance and focuses on potential impacts from the proposed projects on resource areas or issues where the incremental contribution would be potentially significant when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affect a resource potentially affected by the projects;
- cause this impact within all, or part of, the projects' geographic scope; and
- cause this impact within all, or part of, the time span for the potential impact from the projects.

10.1. PROJECTS IDENTIFIED WITHIN THE GEOGRAPHIC SCOPE

Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed actions, within all or part of the either project areas affected by the proposed actions (i.e., geographic scope), and within all or part of the time span of the impacts. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 38.

Table 38
Geographic Scope of Cumulative Impacts

Resource	Geographic Scope
Soils and Geology	Construction Workspaces
Groundwater, Wetlands, Vegetation, Wildlife	Hydrologic Unit Code (HUC) 12 Watershed
Surface Water Resources	HUC 12 Watershed. For direct in-water work (e.g. dredging) include potential overlapping impacts from sedimentation, turbidity, and water quality
Cultural Resources	Overlapping impacts within the Area of Potential Effects
Land Use	1 mile radius
Visual	For aboveground facilities, distance that the tallest feature at the planned facility would be visible from neighboring communities. For pipelines, 0.25 mile and existing visual access points (e.g. road crossings)
Noise – Operations	Other facilities that would impact any NSA within 1 mile of a noise emitting permanent aboveground facility

Noise – Construction	0.25 mile from pipeline or aboveground facilities.
Air Quality – Operations	50 kilometers (about 31.1 miles)
Air Quality – Construction	0.25 mile from pipeline or aboveground facilities
Socioeconomics	Affected counties and municipalities

The EA analyzed the impacts from the Acadiana Project on geology and soils; groundwater, surface water, and wetland resources; vegetation and wildlife; cultural resources; land use and visual resources; and air quality and noise. As described in section B of this EA, the Acadiana Project-related construction and operational impacts would not impact socioeconomics. The EA also analyzed the impacts from the Louisiana Xpress Project on geology and soils; groundwater, surface water and wetland resources; fisheries, vegetation and wildlife; cultural resources; land use and visual resources; socioeconomics, and air quality and noise.

Impacts on vegetation, wildlife, and special status species could extend outside of the workspaces to plant seed dispersion areas or individual home ranges for species with potential to occur in the project area but would generally be contained to a relatively small area. We believe the watershed scale is most appropriate to evaluate impacts as it provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecology characteristics in the Acadiana Project area and the Louisiana Xpress Project area. Therefore, we evaluated projects within the HUC-12 watersheds crossed by the both projects.

We identified past, present, and reasonably foreseeable future projects within the resource-specific geographic scopes. In this analysis, we consider the impacts of past projects as part of the affected environment (environmental baseline) which was described and evaluated in the preceding analysis. However, present effects of past actions that are relevant and useful are also considered. KMLP and Columbia Gulf obtained information about present and future planned developments by consulting federal, state, and local agencies and municipality websites, reports, and direct communications; permit applications with various agencies; and online database searches.

Temporary impacts on air quality during construction, including fugitive dust, would be largely limited to areas within 0.25 mile of the projects areas. We evaluated current and proposed sources that overlap in time and location with construction activities.

Impacts from construction noise could potentially contribute to cumulative impact on NSAs within 0.25 mile of projects areas. Therefore, we evaluated current and

proposed sources within 0.25 mile of the existing CS 760, Alexandria CS, as well as the proposed Chicot, Shelburn, and Red Mountain CSs.

10.2. POTENTIAL CUMULATIVE IMPACTS OF THE PROPOSED ACTION

The tables in appendix B lists the past, present, and reasonably foreseeable projects we identified within the geographic scope for each resource, and we considered this cumulative impact in our analysis for the Acadiana and Louisiana Xpress Projects.

Some of KMLP's Acadiana Project and Columbia Gulf's Louisiana Xpress Project are in the same vicinity (share the same parish) and would be constructed in a similar timeframe. However, the environmental impacts of these projects have already been documented, addressed, and analyzed in this EA; therefore, we are not addressing them further in this section.

10.2.1 Acadiana Project

Within the project area, there are planned industrial railroad and natural gas pipeline infrastructure projects. As discussed in section A.9, CLECO would permit, construct, and operate approximately 400 feet of overhead 34.5 kilovolt power line, originating at an existing power pole and transformer outside the existing CS 760, and install 200 feet of new powerline underground. Other projects include the Rail Logix Project, which would construct an industrial park accommodating about 800 rail cars and occur about 30 miles west of the Coal Pit Yard. Three other FERC jurisdictional projects could occur during the Acadiana Project's timeframe, including the Louisiana Connector Project, the Driftwood LNG Project, and the Sabine Pass Expansion Project. Port Arthur Pipeline, LLC's Louisiana Connector Project consists of 131 miles of pipeline with associated facilities that would occur 2-5 miles from the Acadiana Project; the Driftwood LNG Project consists of 96 miles of pipeline adjacent to Acadiana Project facilities in Acadia and Evangeline Parishes; and the Sabine Pass Expansion Project would modify multiple existing facilities within the CS 760 facility.

These projects would temporarily and permanently affect soils, vegetation, land use, air quality, and noise during construction, and potentially indirectly impact local wildlife during construction. As described in section B of this EA, the Acadiana Project-related construction and operational impacts would not impact geological hazards, wetlands, cultural resources, or environmental justice. As such, cumulative impacts on these resources were not considered in the cumulative impact analysis for the Acadiana Project. Cumulative impacts from these past, present, and reasonably foreseeable activities and projects (shown in table B.1 in appendix B) are addressed below.

Soils

Concurrent or consecutive construction schedules from the three FERC jurisdictional projects or Rail Logix could prolong the duration that soils would be disturbed and thus susceptible to erosion and invasive species establishment. All projects would be expected to adhere to similar erosion and sedimentation control plans and procedures to minimize erosion impacts. Therefore, cumulative impacts on soils would not be significant.

Groundwater, Vegetation, and Wildlife

Cumulative impacts on groundwater, vegetation, and wildlife resources (primarily due to increased turbidity or contamination due to spills), could extend outside of the project workspaces, but would likely be contained to a relatively small area (the Hydrologic Unit Code 12 sub-watersheds). KMLP would implement measures outlined in section B.3.1 to ensure groundwater resources are not adversely affected. Similarly, the other projects within the geographic scope would implement best management practices to limit impacts on groundwater. Because the proposed project is not anticipated to affect groundwater quality or supply, we conclude it would not contribute to cumulative impacts on groundwater resources.

Additionally, while the existing projects (e.g., EnLink Energy Companies; Texas Gas Transmission, LLC; ANR Pipeline Company; Transcontinental Pipeline Company; and Tennessee Pipeline Gas Company, LLC) have the potential to impact these resources, the project would not contribute significantly to cumulative impacts on vegetation and wildlife resources within the geographic scope of the project. Specifically, the projects within the same HUC-12 watershed (Driftwood LNG and Sabine Pass Expansion projects) must implement stormwater runoff controls, SPCC Plans, and other mitigation measures required by the state and federal permits. Therefore, the project when considered cumulatively with past, present, and reasonably foreseeable projects, would not contribute to significant cumulative impacts on water resources, vegetation, or wildlife within the geographic scope of the Acadiana Project.

Historic land use, construction, and development practices have permanently impacted native vegetation communities in the projects areas and could have accounted for introduction of exotic, nuisance, and/or non-native vegetation. As discussed in section 4.2 of this EA, about 3.1 acres would be permanently converted to industrial land including CS 760, the CGT Meter Station, and permanent access roads. There is no unique, sensitive, or protected vegetation in the vicinity of the project area.

Increased development and loss of habitat within the geographic scope from construction and operation of the Driftwood LNG and Sabine Pass Expansion Projects would be similar to the impacts described above for this project (i.e., cause wildlife to

either adapt to new conditions or relocate to undisturbed suitable habitat), but on a larger scale. Displacement of wildlife could result in additional stress and increased competition in available habitats. In addition, direct mortality of less mobile species may occur as a result of development activities. Overlapping construction schedules would result in greater area and duration of vegetation and wildlife disturbance. However, due to many of the impacts being temporary and the abundance of similar habitats within the geographic scope, cumulative impacts on vegetation/wildlife habitat as a result of the proposed projects and projects listed in table B.1 in appendix B are not anticipated to be significant. Where construction schedules overlap, increased noise, lighting, and human activity could also disturb wildlife in the area. Wildlife may temporarily displace to nearby suitable habitat, but are anticipated to return to those areas temporarily impacted following the completion of construction activities. However, abundant habitat would remain available within the geographic scope; therefore, cumulative impacts on wildlife as a result of increased noise, light, and human activity are anticipated to be local and minor, as only 3.1 acres would be permanently converted; thereby limiting the permanent cumulative impacts added as a result of this project.

Land Use

The Acadiana Project would result in land use impacts from conversion of 3.1 acres of open and agricultural land for expansion of the existing CS 760, CGT meter station, and associated permanent access roads. The Driftwood LNG pipeline may be constructed concurrently, and within the same geographic scope as the Acadiana Project. The Driftwood pipeline may impact open and agricultural land during construction; however, these impacts would be temporary and would not permanently convert these land uses.

Due to the abundance of land use types similar to those impacted by the Driftwood LNG pipeline and the proposed Acadiana Project within the geographic scope and the negligible amount of land use conversion resulting from operation of these projects, we conclude cumulative impacts on land use would be insignificant.

Visual Resources

No projects were identified within the geographic scope for visual resources. Therefore, there would be no cumulative impacts on visual resources.

Socioeconomics

The Acadiana Project would have a total workforce upper limit estimated between 150 to 180 people during peak construction and 2 people during operations. Due to the relatively small workforce required during operations, the project would have a negligible impact on socioeconomics during operations. As such, cumulative impacts associated with facility operations are not discussed further.

The Louisiana Connector, the Rail Logix, Driftwood LNG, and Sabine Pass Expansion Projects may be constructed concurrently, and within the same geographic scope as the project. Construction of the Louisiana Connector Project would require a peak construction workforce of 750 workers. The Driftwood LNG Project, located north, west, and adjacent to the Acadiana Project would require a peak workforce of approximately 6,430 construction workers. Construction of the Sabine Pass Expansion Project would require a peak construction workforce of 170 workers. Information was not available for the Rail Logix Project. The U.S. Census Bureau estimates that there were 3,428 vacant housing units available for rent in Acadia Parish; 1,278 in Evangeline Parish; 2,278 in Jefferson Davis Parish; and 5,991 in St. Landry Parish (U.S. Census Bureau 2017). In addition, 10 hotels and motels, and 6 campsites are within these parishes. Further, due to an anticipated influx of temporary workers in the region in the next few years, a number of temporary housing developments specifically for workers, totaling approximately 18,100 units, have recently been permitted in Calcasieu Parish, which is in driving distance to the project area. Therefore, sufficient temporary housing should be available for all of the projects.

Increased development within the parishes has the potential to generate additional short- and long-term employment opportunities, thereby having a net positive impact. However, the Acadiana Project would contribute negligibly to overall beneficial cumulative impacts on employment.

Impacts on public services are largely a function of population. As previously mentioned, the Acadiana Project would add 150 to 180 temporary workers at peak construction and only 2 permanent employees during operations at CS 760. Project-related impacts on local government public services are expected to be negligible. Collectively, the projects described in table B.1 in appendix B would have cumulative impacts on public services in the project area through the addition of temporary and permanent employees, as described above. However, these communities have the local public services to accommodate these projects.

Acadiana Project-related impacts on traffic and transportation would be temporary and short-term, lasting only for the duration of construction activities. Cumulative traffic impacts could occur if several large-scale projects are constructed concurrently and use the same local roadway network to access their respective sites. The existing roadway networks in the vicinity of the Acadiana Project sites provides adequate alternate access and impacts on traffic and transportation routes are expected to be minimal. Projects in table 39 are planned for construction at the same time as the proposed project and would contribute to overall cumulative impacts on traffic and transportation in the area. According to Driftwood LNG, peak construction of the Driftwood LNG Pipeline is anticipated to occur in 2021, after construction of the proposed project, and a range of mitigation measures aimed at reducing impacts on traffic in key impacted areas would be developed to minimize overall cumulative impacts on traffic. Based on the temporary

duration of construction, impacts on traffic and transportation are not anticipated to be significant.

Air Quality

Construction of the proposed project would result in short-term construction impacts and long-term operational impacts on air quality in the vicinity of the Acadiana Project, as discussed in section B.8.1. Construction of current and reasonably foreseeable future projects and activities within the geographic scope that may impact air quality are discussed below. Construction of the Louisiana Connector Project, Rail Logix, Driftwood LNG Pipeline, are within the geographic scope of construction and have the potential to occur at the same time as the proposed Acadiana Project; therefore, these projects, and the proposed project, may result in cumulative impacts on air quality during construction of the proposed project. Construction of these projects would involve the use of heavy equipment that would generate emissions of air pollutants and fugitive dust. Construction equipment emissions would result in short-term emissions that would be highly localized, temporary, and intermittent. In order to mitigate fugitive dust emissions, KMLP would implement mitigation measures, such as watering access roads and construction areas. The Louisiana Connector Project and Driftwood LNG Pipeline would also implement these mitigation measures. Furthermore, because watering access roads and construction areas is a common construction best management practice, the Rail Logix project may also implement similar dust control measures to minimize fugitive dust generation. Based on the mitigation measures proposed by KMLP, and the temporary and localized impacts of construction, the proposed projects would not result in significant cumulative impacts on air quality during construction.

Table 39 also presents a list of all proposed new emissions sources within the geographic scope (i.e., 50 km) of the proposed Acadiana Project, namely the Louisiana Connector Project, Rail Logix, and Driftwood LNG Pipeline. All of these proposed projects would comply with federal and state air quality regulations such that air quality impacts are not anticipated to overlap due to the emissions generated as a result of the proposed project. Therefore, we conclude the proposed project would not result in significant cumulative impacts on air quality during operation.

Noise

Construction of the project would result in short-term and temporary construction impacts on existing noise levels in the project area. Construction of the project may occur concurrently with construction of the Louisiana Connector Project, Rail Logix, Driftwood LNG Pipeline, and may contribute cumulatively to impacts on noise levels. However, based on the short-term and temporary nature of construction-related activities, impacts from the project are not expected to significantly contribute to cumulative impacts on noise levels during construction.

Although operation of the Acadiana Project would result in impacts on existing noise levels in the vicinity of the project, these impacts are not anticipated to result in perceptible noise level increases. Therefore, operation of the project would contribute negligibly to cumulative impacts on noise levels.

10.2.2 Louisiana Xpress Project

Table B.2 in appendix B lists the past, present, and reasonably foreseeable projects identified within the geographic scope for each resource and considered in this cumulative impact analysis for the Louisiana Xpress Project.

Within the Louisiana Xpress Project area, there are three planned non-jurisdictional electrical infrastructure (power lines) projects. These power lines would be collocated with each proposed compressor station (Shelburn, Red Mountain, and Chicot) to bring power to the new proposed facilities. There would also be 19 FERC jurisdictional projects currently in operation and three planned FERC jurisdictional projects discussed above (over 17 miles from Louisiana Xpress Project activities). There would also be two residential development projects (Lakeshore Family Homes Project and Greenway Park subdivision Acquisition Project) with similar construction schedules as the Louisiana Xpress Project. As discussed, the project would temporarily affect soils, groundwater, vegetation, wildlife, cultural resources, socioeconomics, land use, air quality and noise during construction, and potentially indirectly impact local wildlife during construction. As described in section B of this EA, the Louisiana Xpress Project-related construction and operational impacts would not impact environmental justice or historical properties, and as such cumulative impacts on these resources were not considered in the cumulative impact analysis for the Louisiana Xpress Project. Cumulative impacts from past, present, and reasonably foreseeable activities and projects shown in appendix B on these individual resources are addressed below.

Groundwater, Vegetation, Wetlands, and Wildlife

Cumulative impacts on groundwater, vegetation, and wildlife resources (primarily due to increased turbidity or contamination due to spills), could extend outside of the project workspaces, but would likely be contained to a relatively small area (the HUC 12 sub-watersheds). Columbia Gulf would implement measures outlined in section B.3.1 to ensure groundwater resources are not adversely affected. Similarly, the other projects within the geographic scope would implement best management practices to limit impacts on groundwater. Because the proposed project is not anticipated to affect groundwater quality or supply, we conclude it would not contribute to cumulative impacts on groundwater resources.

Historic land use, construction, and development practices have permanently impacted native vegetation communities in the Louisiana Xpress Project area and could have accounted for introduction of exotic, nuisance, and/or non-native vegetation. As

discussed in section B.4.1 of this EA, about 35.8 acres would be permanently converted to industrial land including the Chicot, Shelburn, and Red Mountain CSs and permanent access roads. Furthermore, the project would impact 0.2 acre of cypress swamp for construction, and 0.1 acre for operation. The new powerlines would be installed along existing road rights-of-way and across powerline easements, supplying power to the proposed compressor stations. BMPs would be implemented during construction and operate in accordance with all federal, state, and local requirements. Construction of the Lakeshore Family Homes development has the potential to contribute sediment load to surface water resources if proper erosion controls are not construction and maintained during construction; however, it is assumed that the project will follow all applicable regulatory guidelines. Columbia Gulf would implement erosion and sediment controls from its ECS, which would be installed, inspected, and maintained to reduce sediment leaving the Louisiana Xpress Project workspace.

Increased development and loss of habitat within the geographic scope from construction of the powerline projects, and the proposed Louisiana Xpress Project would cause wildlife to either adapt to new conditions (in the case of generalist species) or relocate to undisturbed suitable habitat. Displacement of wildlife could result in additional stress and increased competition in available habitats. In addition, direct mortality of less mobile species may occur as a result of development activities.

Overlapping construction schedules from the three power line projects as well as three planned FERC-jurisdictional project and the Lakeshore Family Homes development within the same HUC-12 geographic scope that would result in greater area and duration of vegetation disturbance. However, due to the abundance of similar habitats within the geographic scope, cumulative impacts on vegetation/wildlife habitat as a result of the proposed project and projects listed in table B.2 in appendix B are anticipated to be minor.

Where construction schedules overlap, increased noise, lighting, and human activity could also disturb wildlife in the area. Wildlife may temporarily displace to nearby suitable habitat but are anticipated to return to those areas temporarily impacted following the completion of construction activities. Only temporary impacts are anticipated on these resources for the powerlines as vegetation would be allowed to re-establish with the exception of the power poles. Some permanent loss of trees may also occur. However, abundant habitat would remain available within the geographic scope; therefore, cumulative impacts on wildlife as a result of increased noise, light, and human activity are anticipated to be of short duration, local, and minor.

Louisiana Xpress Project construction could impact local wildlife, including special status species such as the RCW, NLEB, and interior least tern. The construction of the three powerline projects could likewise impact local wildlife, including the RCW, NLEB and interior least tern. However, because the proposed project is not likely to

adversely affect the RCW, NLEB, and interior least tern, and any other projects would be required to consult with the USFWS for their potential impacts on ESA listed species, we conclude that cumulative impacts on the RCW, NLEB, and interior least tern would not be significant.

Additionally, while the projects have the potential to impact these resources, the project would not contribute significantly to cumulative impacts on vegetation and wildlife resources within the geographic scope of the project. All projects would be required to implement stormwater runoff controls, SPCC Plans, and other mitigation measures required by the state and federal permits. Therefore, the project when considered cumulatively with past, present, and reasonably foreseeable projects, would not contribute to significant cumulative impacts on water resources, vegetation, or wildlife within the geographic scope of the Louisiana Xpress Project.

Land Use

The project would result in land use impacts resulting from conversion of agricultural and forested land, and wetland to developed/industrial land for operation of the new proposed compressor stations (Shelburn, Red Mountain, and Chicot). The only projects identified within the geographic scope for cumulative impacts on land use are the non-jurisdictional power lines associated with each new compressor station.

The project's land use impacts in combination with those of the non-jurisdictional power lines would contribute to a cumulative impact on land use.

However, due to the abundance of land use types similar to those impacted by the proposed project within the geographic scope, we conclude cumulative impacts on land use are not anticipated to be significant.

Visual Resources

The geographic scope for assessing cumulative impacts on visual resources affected by construction and operation of the project includes areas within 0.5 mile of the aboveground facilities, as this is the range that the proposed facilities are likely to be seen. Construction and operation of the three proposed compressor stations would impact visual resources near these facilities. The only projects identified within the geographic scope for cumulative impacts on visual resources are the non-jurisdictional power lines associated with each new compressor station. Construction at the existing Alexandria CS would result in negligible visual impacts, and therefore, would not contribute to cumulative visual impacts.

The closest residences to the compressor stations are 2,400 feet from the Shelburn CS, 2,800 feet from the Red Mountain CS, and 975 feet from the Chicot CS. In addition, the Old Catahoula Baptist Church and Cemetery are approximately 800 feet south of the

Red Mountain Compressor Station. Construction and operation of the compressor stations and the associated non-jurisdictional power lines would have a cumulative visual impact on these residences and the church.

During construction, the presence of construction equipment and personnel at the compressor station sites would contribute to a cumulative visual impact on nearby residents. These impacts would be short-term and not significant.

The Shelburn and Chicot CSs would be constructed on agricultural land; therefore, these facilities and the power lines would be visible to nearby residents. Columbia Gulf would install privacy slats in the stations' chain link fences to minimize visual impacts. As described in section B.5.2, installation of vegetative screening is not proposed as it may decrease the land available for agriculture; however, we have recommended Columbia Gulf file a vegetative screening plan for these compressor stations.

The Red Mountain CS would be constructed in a forested area, which would provide a vegetative screening to provide a visual buffer between the station and the church and cemetery. In addition, Columbia Gulf would maintain a tree buffer along Catahoula Church Road to minimize visual impacts at the proposed Red Mountain CS, which would provide vegetative screening to conceal the site.

Given the collocation of the non-jurisdictional facilities with the proposed facilities, Columbia Gulf's proposed measures to minimize visual impacts of the proposed compressor stations, and our recommendation for a visual screening plan for the Shelburn and Chicot CSs, we conclude that the proposed project and non-jurisdictional power lines would not have a significant cumulative impact on visual resources.

Socioeconomics

The Louisiana Xpress Project would have a total workforce upper limit estimated between 240 to 325 people during peak construction and 2 people during operations. Due to the relatively small workforce required during operations, the project would have a negligible impact on socioeconomics during operations. As such, cumulative impacts associated with facility operations are not discussed further.

The Entergy Electric Company Project, the Entergy/Concordia Electric Company Project, the Tri County Electric Company Project, the Delta Express Project, Driftwood LNG Project, and the Lakeshore Family Homes Project may be constructed concurrently, and within the same geographic scope as the Louisiana Xpress Project. Due to the short construction timeframe and routine nature of installation of powerlines, it is anticipated that non-local workforce would be minimal for these projects. Therefore, only two projects (Driftwood LNG Project and Acadiana Expansion Project) are anticipated to

utilize transient, specialized workers that may require temporary housing in the affected communities.

As previously described, the Driftwood LNG Project would require a peak workforce of approximately 6,430 construction workers. Construction of the Acadiana Expansion Project would require a peak workforce of 40 workers during construction. The U.S. Census Bureau estimates that there were 248 vacant housing units available for rent in East Carroll Parish; 1,278 in Evangeline Parish, 700 in Catahoula Parish, and 3,097 in St. Landry Parish (U.S. Census Bureau 2017). In addition, there are 32 hotels and motels, more than 82 spaces in extended stay parks/campgrounds. In addition, due to an anticipated influx of temporary workers in the region in the next few years, a number of temporary housing developments specifically for workers, totaling approximately 18,100 units, have recently been permitted in Calcasieu Parish, which is in driving distance to the project area. Therefore, sufficient temporary housing should be available. Together, these projects previously described (and listed in table B.2 in appendix B) would have a cumulative impact on population and housing in the area. The project would have a minor contribution (only 38 housing units needed) to these overall cumulative impacts on population and housing.

Increased development within the parishes has the potential to generate additional short- and long-term employment opportunities, thereby having a net positive impact. The Louisiana Xpress Project would contribute negligibly to overall beneficial cumulative impacts on employment.

Impacts on public services are largely a function of population. As previously mentioned, the project would add 240 to 325 temporary workers at peak construction and only 9 permanent employees during operations the three compressor stations. Project-related impacts on local government public services are expected to be negligible. Collectively, the projects described in table B.2 in appendix B would have cumulative impacts on public services in the project area through the addition of temporary and permanent employees, as described above. However, these communities have the local public services to accommodate these projects.

Short-term construction impacts would be mitigated by non-peak traffic hour commuting requirements, as site construction usually takes advantage of daylight hours (however, some nighttime construction may be required). It is unlikely there would be short-term cumulative impacts on traffic and roads in urban areas due to use of private access roads with connection to major state and U.S. highways. Short-term impacts in rural areas may result with increased construction traffic and heavy equipment. Rural roads are generally not designed to handle large traffic volumes, and short-term compounding cumulative impacts may occur on the rural road network.

Despite the rural location of several of these compressor stations, many of them have direct access to a major collector road, or higher functionally classified road. In

addition, the project anticipates nine new jobs would be created as part of the project. There are two projects planned for construction at the same time as the proposed project and would contribute to overall cumulative impacts on traffic and transportation in the area. Peak construction of the Driftwood LNG Project is anticipated to occur in 2021, after construction of the proposed project, and a range of mitigation measures aimed at reducing impacts to traffic in key impacted areas would be developed by Driftwood LNG to minimize overall cumulative impacts on traffic. Based on the temporary duration of construction, impacts on traffic and transportation are not anticipated to be significant. Given the small numbers of permanent employees expected across the Study Area, the Louisiana Xpress Project would contribute negligibly to overall cumulative impacts on traffic.

Air Quality

Construction of the proposed project would result in short-term construction impacts and long-term operational impacts on air quality in the vicinity of the Louisiana Xpress Project, as discussed in section B.8.1. Construction of the Entergy Electric Company powerline, the Concordia Electric Company powerline, and the Tri County Electric powerline are within the geographic scope of construction and have the potential to occur at the same time as the proposed Louisiana Xpress Project; therefore, these projects, and the proposed project, may result in cumulative impacts on air quality during construction of the proposed project. Construction of these projects would involve the use of heavy equipment that would generate emissions of air pollutants and fugitive dust. Construction equipment emissions would result in short-term emissions that would be highly localized, temporary, and intermittent. In order to mitigate fugitive dust emissions, Columbia Gulf would implement mitigation measures, such as watering access roads and construction areas. Furthermore, because watering access roads and construction areas is a common construction best management practice, the powerline projects may also implement similar dust control measures to minimize fugitive dust generation. Based on the mitigation measures proposed by Columbia Gulf, and the temporary and localized impacts of construction, the proposed projects would not result in significant cumulative impacts on air quality during construction.

There are no proposed new major emissions sources within the geographic scope (i.e., 50 km) of the proposed Louisiana Xpress Project. Therefore, we conclude the proposed project would not result in significant cumulative impacts on air quality during operation.

Noise

Construction of the project would result in short-term and temporary construction impacts on existing noise levels in the project area. Construction of the project may occur concurrently with construction of the Entergy Electric Company powerline, the Concordia Electric Company powerline, and the Tri County Electric powerline.

Therefore, the proposed project may contribute cumulatively to impacts on noise levels. However, based on the short-term and temporary nature of construction-related activities, impacts from the project are not expected to significantly contribute to cumulative impacts on noise levels during construction.

There are no reasonably foreseeable projects within the vicinity of the Louisiana Xpress Project that would result in cumulative impacts on noise levels. Therefore, operation of the project would not contribute to cumulative impacts.

C. ALTERNATIVES

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

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

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, geographic information system data, aerial imagery) and assume the same general workspace requirements.

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

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

would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

1. NO-ACTION ALTERNATIVE

Under the No-Action Alternative, KMLP and Columbia Gulf would not construct their proposed projects. If the proposed facilities were not constructed, the adverse impacts identified in section B of this EA would be avoided and the beneficial impacts of implementing the projects would not occur, including the purpose of the projects.

A Commission decision to deny the proposed action would avoid the environmental impacts addressed in this EA; however, other natural gas companies may be required to modify or construct new facilities to meet the demand for additional natural gas transportation service. This action would likely result in similar or greater environmental impacts than the proposed projects; therefore, we have dismissed this alternative as a reasonable alternative to meet the Acadiana and Louisiana Xpress Project objectives.

2. SYSTEM ALTERNATIVES

Acadiana Project

The proposed Acadiana Project includes modifications at an existing compressor station (CS 760) and CGT Meter Station. The purpose of the project is to increase the north-south natural gas delivery capacity on its pipeline system by approximately 894,000 Dth/d per day and allow KMLP to provide consistent and reliable natural gas storage service to satisfy the needs of its customers. As no other systems could meet the purpose and need of the project, we did not evaluate additional system alternatives.

Louisiana Xpress Project

The proposed project includes the construction and operation of three greenfield compressor stations, and modifications at an existing compressor station (Alexandria CS). The purpose of the project is to provide open access firm transportation from a primary receipt point at Columbia Gulf's Mainline Pool to a primary delivery point at an interconnection with KMLP in Evangeline Parish, Louisiana.

System alternatives are alternatives to the proposed action that would make use of Columbia Gulf's (or other companies') existing, modified, or proposed pipeline systems to meet the states objectives of the proposed project. System alternatives must provide the same capacity (i.e., 850,000 Dth/d) to the project shipper as the proposed project. Existing facilities would not be capable of delivering 850,000 Dth/d per day without new pipeline, compression, or looping in some combination. These facilities include Texas Eastern Transmission, LP; Tennessee Gas Pipeline Company; ANR Pipeline Company;

Texas Gas Transmission; and Trunkline Gas Company. Additional system alternatives evaluated were loop only, and loop and compression.

Loop Only

The looping alternative would increase the number of landowners impacted due to the length of required pipeline and would have a greater potential to impact sensitive environmental resources. When compared to the loop-intensive alternative, the proposed project, which involves increasing compression capability on Columbia Gulf's existing lines, avoids and minimizes adverse impacts on landowners and the environment to a greater extent.

Columbia Gulf also conducted hydraulic modeling to identify a compression-intensive alternative that would add additional horsepower at two existing compressor stations and require some looping to meet the Project objective of transporting 850,000 Dth/d of project flow.

Columbia Gulf's analysis found that this combination could work, but would require a total of approximately 145 miles of new pipeline loop segments, 38,950 additional horsepower, and would require approximately 1,770 acres of temporary land disturbance and 885 acres of permanent operational impact.

This alternative is technically feasible and would meet the project objectives. However, we conclude it would not provide a significant environmental advantage, and we have not considered it further.

3. SITE ALTERNATIVES

Acadiana Project

The proposed modifications at the CS 760 and CGT Meter Station would occur within the existing facility boundaries. Both sites are existing, have been previously disturbed, and no new aboveground facility sites are proposed. Furthermore, no comments from the public or agencies have been received that raised issues with this proposal and we did not fine any environmental concerns that justified further evaluation of any site alternatives. Therefore, we conclude that the proposed project, as modified by our recommendations, is the preferred alternative to meet the project objectives.

Louisiana Xpress Project

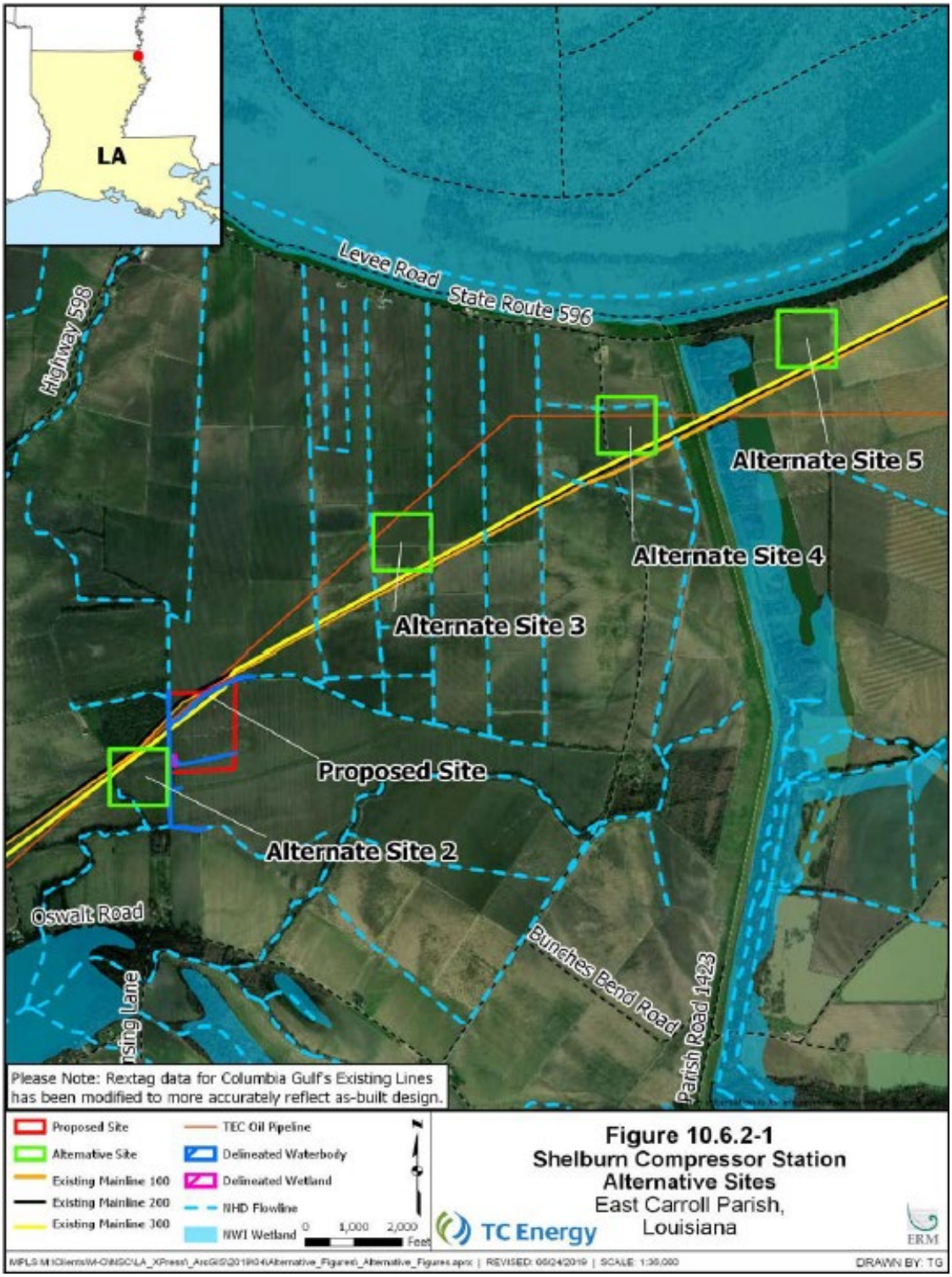
Shelburn CS

Four alternative sites were evaluated for the Shelburn CS site, however, Columbia Gulf removed alternative sites 3, 4, and 5 due to lack of landowner interest. We reviewed

one alternative site for the Shelburn CS. This alternative is on relatively level agricultural farmland bordered to the east, south, and west by forested perennial and intermittent streams. It is just west of the proposed location across stream SSHB4P, with Highland Road (Highway 598) to the west and Oswalt Road to the south. The closest NSA is approximately 610 feet northwest. The property is bisected by the Mainlines 100, 200, and 300, as well as a foreign oil pipeline. Because of the tight spacing of the four pipelines and the streams which surround the southern portion of the site, sufficient workspace to complete construction of the compressor station is not available at this location. Figure 3 depicts the proposed site and alternative sites considered for the Shelburn CS.

Columbia Gulf has secured an option agreement for the proposed Shelburn CS site and has sufficient workspace for construction of the compressor station, foreign pipeline crossing, and mainline valves. In addition, the alternative location would be 1,790 feet closer to an NSA. Alternative Site 2 does not offer any significant environmental advantages over the proposed site and constructability may not be feasible; therefore, is not considered further.

Figure 3. Alternative Sites for the Shelburn CS



Red Mountain CS

We evaluated three alternative sites for the Red Mountain CS. Two additional sites were not evaluated as the landowners for these sites were not willing to sell the property and the proposed facility location does not have any significant impacts necessitating impacts on unwilling landowners.

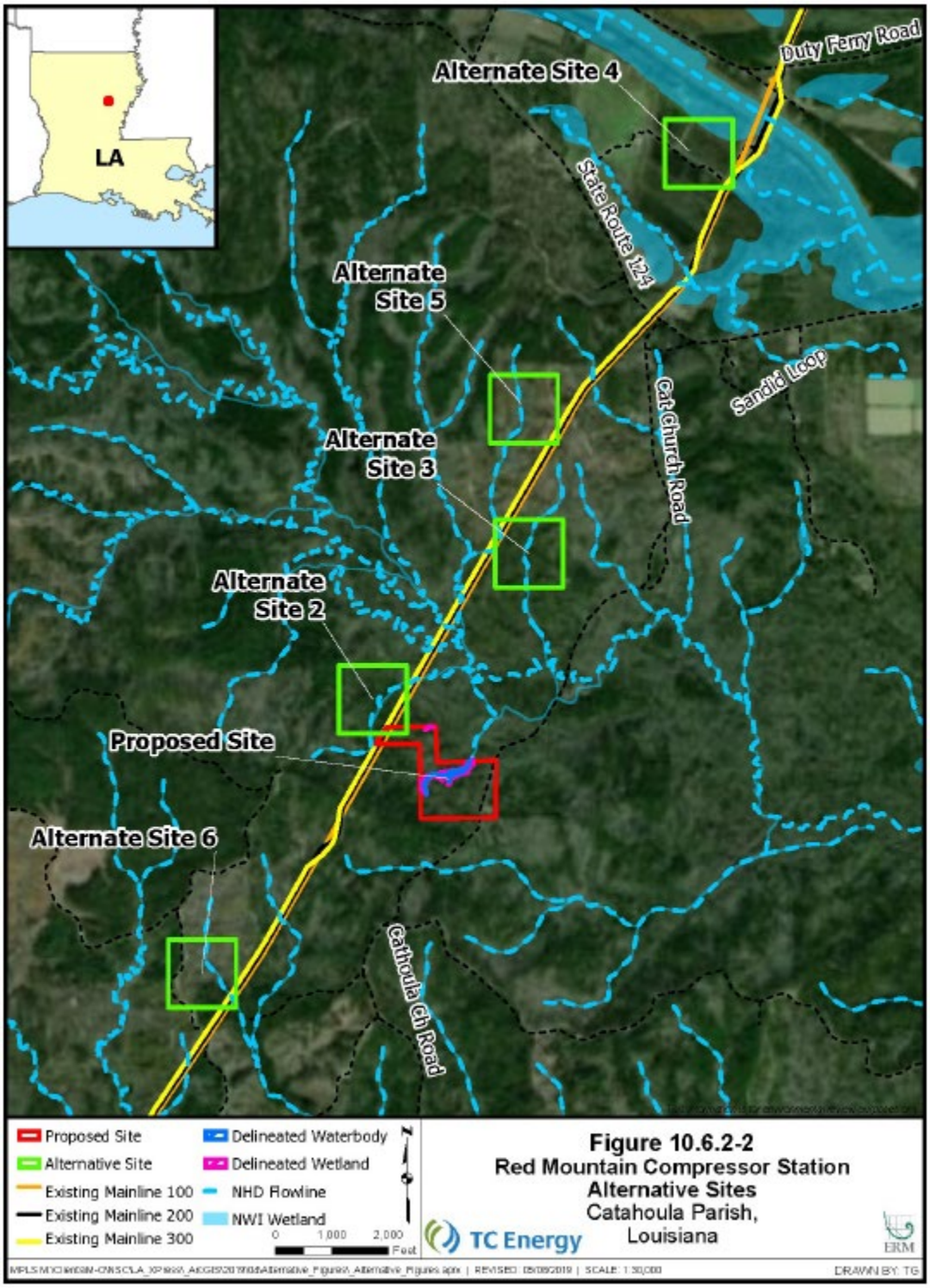
Alternative Site 2 was initially the preferred location by Columbia Gulf for the compressor station due to its close proximity to its existing lines. The landowner (the same landowner as the proposed site) also found this location acceptable, due to it being in a property corner that would not bisect the tract. However, during civil surveys, it was determined that the steep slopes and mountainous terrain at this location would require extensive cut and fill, create major construction challenges, and impose a greater safety threat to construction personnel.

Alternative Site 3 is the same landowner as the proposed location and is in close proximity to Columbia Gulf's existing lines. However, data retrieved from the National Hydrology Dataset determined that this site location contained significantly more waterbodies (four additional streams) that would be permanently impacted by construction of the facility. This location is also within a mapped FEMA 100-year floodplain.

Alternative Site 4 floods by as much as 12 feet due to its proximity to the Ouachita River. FEMA maps for this area confirm that this area is within a 100-year floodplain with base flood elevations of 66 feet (about 10 feet above grade). The site is also in close proximity to several residences and NSAs. Figure 4 depicts the proposed site and alternative sites considered for the Red Mountain CS.

The proposed Red Mountain CS was secured with option agreements from a willing landowner and meets constructability requirements. We did not receive any comments requesting an alternative location and we did not identify any significant environmental issues with the proposed site. Therefore, because Alternatives 2, 3, and 4 do not offer any significant environmental advantages over the proposed site, we did not consider them further.

Figure 4. Alternative Sites for the Red Mountain CS



Chicot CS

We evaluated three alternative sites for the Chicot CS. Two additional sites were not evaluated as the landowners for these sites were not willing to sell the property and the proposed facility location does not have any significant impacts necessitating impacts on unwilling landowners.

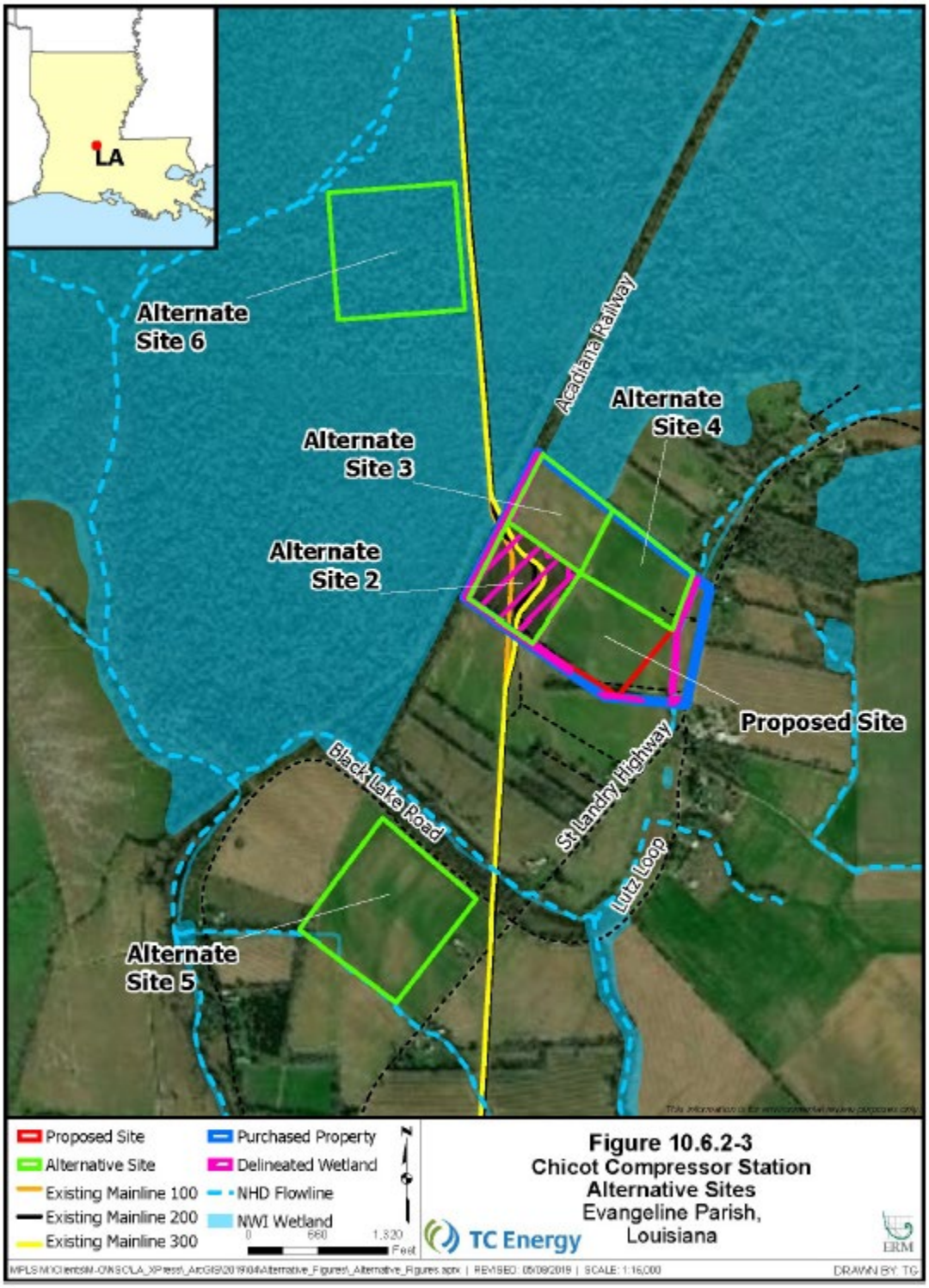
Columbia Gulf presently owns Alternative Site 2, as it is the historic location of the Bunkee Compressor Station that has since been decommissioned and removed in 1968. This property is about 15 acres in size and is intersected by Columbia Gulf's existing lines and existing aboveground appurtenances. However, sufficient workspace is not available to construct the new facility and additional land purchase would be required. In addition, a majority of wetland WCHA2E would need to be permanently filled.

Alternative Site 3 was initially Columbia Gulf's preferred site due to close proximity to its existing lines and it being adjacent to land already owned by Columbia Gulf. However, this site is within a mapped FEMA 100-year floodplain.

Alternative Site 4 was not preferred by the landowner, was in closer proximity to existing NSAs, and would require construction of longer access roads and longer suction/discharge piping. Figure 5 depicts the proposed site and alternative sites considered for the Chicot CS.

The proposed Chicot CS was secured with option agreements and meets constructability requirements. No landowner concerns were identified and we did not identify any significant environmental issues with the proposed site. Therefore, we conclude Alternatives 2, 3, and 4 do not offer any significant environmental advantages over the proposed site and did not consider them further.

Figure 5. Alternative Sites for the Chicot CS



D. STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Based upon the analysis in this EA, we have determined that if KMLP and Columbia Gulf construct and operate the proposed facilities in accordance with the respective application, supplements, and staff's recommended mitigation measures below, approval of the projects would not constitute a major federal action significantly affecting the quality of the human environment.

We recommend that the Commission Order contain a finding of no significant impact and that the following mitigation measures be included as conditions to any Certificate the Commission may issue:

1. KMLP and Columbia Gulf shall follow the construction procedures and mitigation measures described in their respective applications and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. KMLP and Columbia Gulf must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;

    b. justify each modification relative to site-specific conditions;

    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

    d. receive approval in writing from the Director of OEP **before using that modification.**

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

    a. the modification of conditions of the Order;

    b. stop-work authority; and

    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation.

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

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

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

6. KMLP and Columbia Gulf 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 **before construction in or near that area**.

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

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

a. implementation of cultural resources mitigation measures;

b. implementation of endangered, threatened, or special concern species mitigation measures;

c. recommendations by state regulatory authorities; and

d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

7. **Within 60 days of the acceptance of the authorization and before construction begins**, KMLP and Columbia Gulf shall each file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. KMLP and Columbia Gulf must file revisions to the plan as schedules change. The plan shall identify:

a. how KMLP and Columbia Gulf 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 KMLP and Columbia Gulf will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;

e. the location and dates of the environmental compliance training and instructions KMLP and Columbia Gulf would give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);

f. the company personnel (if known) and specific portion of KMLP and Columbia Gulf organization having responsibility for compliance;

g. the procedures (including use of contract penalties) KMLP and Columbia Gulf would follow if noncompliance occurs; and

h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for the:

i. completion of all required surveys and reports;

ii. environmental compliance training of onsite personnel;

iii. start of construction; and

iv. start and completion of restoration.

8. KMLP and Columbia Gulf shall each employ at least one EI. The EI(s) shall be:

a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

d. for the Louisiana Xpress Project, a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports.

9. Beginning with the filing of its Implementation Plan, KMLP and Columbia Gulf shall file updated status reports with the Secretary on a **monthly** basis until all construction and restoration activities are complete. On request, these status reports shall also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on KMLP and Columbia Gulf's efforts to obtain the necessary federal authorizations;

b. the construction status of the project, work planned for the following reporting period, and any schedule changes for work in environmentally sensitive areas;

c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

d. a description of the corrective actions implemented in response to all instances of noncompliance;

e. the effectiveness of all corrective actions implemented;

f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and

g. copies of any correspondence received by KMLP and Columbia Gulf from other federal, state, or local permitting agencies concerning instances of noncompliance, and KMLP and Columbia Gulf's response.

10. KMLP and Columbia Gulf must receive written authorization from the Director of OEP **before commencing construction of any project facilities**. To obtain such authorization, KMLP and Columbia Gulf must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

11. KMLP and Columbia Gulf must receive written authorization from the Director of OEP **before placing the projects 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.

12. **Within 30 days of placing the authorized facilities in service**, KMLP and Columbia Gulf 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 KMLP and Columbia Gulf has complied with or will comply with. This statement shall also identify any areas affected by the projects where compliance measures were not

properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

13. **Prior to construction**, Columbia Gulf shall provide a visual screening plan for review and written approval by the Director of OEP to minimize visual impacts at the Shelburn and Chicot Compressor Stations. At a minimum, each plan shall include privacy slats in the chain link fence and vegetative plantings to provide a visual buffer.

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

    a. Columbia Gulf files with the Secretary:

        i. Comments on the supplemental Phase I cultural resources report from the Louisiana SHPO; and
        ii. Documentation that the supplemental cultural resources report was submitted to interested tribes.

    b. FERC Staff reviews and the Director of OEP approves that section 106 compliance requirements have been met for the Louisiana Xpress Project and notifies Columbia Gulf in writing that 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**."

15. **Prior to any nighttime construction**, Columbia Gulf shall file with the Secretary, for review and written approval by the Director of OEP, a nighttime construction noise management plan that includes specific noise mitigation to ensure that the increase in sound level at the nearest NSAs do not exceed 10 dB over ambient.

16. KMLP and shall file a noise survey with the Secretary **no later than 60 days** after placing the three additional compressor units at the existing CS 760 into service. If a full power load condition noise survey is not possible, KMLP shall file an interim survey at the maximum possible power load **within 60 days** of placing the additional three compressor units in service and file the full load survey **within 6 months**. If the noise attributable to the operation of all the units at the modified compressor station at full or interim power load conditions exceeds an Ldn of 55 dBA at any nearby NSA, KMLP shall:

a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;

b. install additional noise controls to meet that level **within 1 year** of the in-service date; and

c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

17. KMLP shall file a noise survey with the Secretary **no later than 60 days** after placing the modifications at the CGT Meter Station into service. If the noise attributable to the operation of the meter station exceeds an Ldn of 55 dBA at any nearby NSA, KMLP shall:

a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;

b. install additional noise controls to meet that level **within 1 year** of the in-service date; and

c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

18. Columbia Gulf shall file a noise survey with the Secretary **no later than 60 days** after placing the modified Alexandria CS and the new Shelburn, Red Mountain, and Chicot CSs into service. If a full power load condition noise survey is not possible, Columbia Gulf shall file an interim survey at the maximum possible power load **within 60 days** of placing the compressor stations into service and file the full power load survey **within 6 months**. If the noise from all the equipment operated at full power load or interim power load conditions exceeds an Ldn of 55 dBA at any nearby NSA, Columbia Gulf shall:

a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;

b. install additional noise controls to meet that level **within 1 year** of the in-service date; and

c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

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APPENDIX A

Table A.1

Birds of Conservation Concern for the Acadiana Project

Scientific Name	Name	Notes[a]
Puffinus lherminieri	Audubon's shearwater	Nb
Oceanodroma castro	Band-rumped storm-petrel	Nb
Botaurus lentiginosus	American bittern	
Ixobrychus exilis	Least bittern	
Egretta rufescens	Reddish Egret	
Elanoides forficatus	Swallow-tailed Kite	
Haliaeetus leucocephalus	Bald eagle	B
Geranoaetus albicaudatus	White-tailed hawk	
Falco peregrinus	Peregrine falcon	B, Nb
Coturnicops noveboracensis	Yellow rail	Nb
Laterallus jamaicensis	Black rail	
Charadrius nivosus	Snowy plover	C
Charadrius wilsonia	Wilson's plover	
Charadrius montanus	Mountain plover	Nb
Haematopus palliatus	American oystercatcher	
Tringa solitari	Solitary sandpiper	Nb
Tringa flavipes	Lesser yellowlegs	Nb
Bartramia longicauda	Upland sandpiper	Nb
Numenius phaeopus	Whimbrel	Nb
Numenius americanus	Long-billed curlew	
Limosa haemastica	Hudsonian godwit	Nb
Limosa fedoa	Marbled godwit	Nb
Calidris canutus	Red knot (roselaari spp.)	Nb
Calidris canutus	Red knot (rufa ssp.)	A, Nb
Tryngites subruficollis	Buff-breasted sandpiper	Nb
Limnodromus griseus	Short-billed dowitcher	Nb
Sternula antillarum	Least tern	C
Gelochelidon nilotic	Gull-billed tern	
Thalasseus sandvicensis	Sandwich tern	

Rynchops niger	Black skimmer	
Asio flammeus	Short-eared owl	Nb
Lanius ludovicianus	Loggerhead shrike	
Cistothorus platensi	Sedge wren	Nb
Anthus spragueii	Sprague's pipit	Nb
Protonotaria citrea	Prothonotary warbler	
Limnothlypis swainsonii	Swainson's warbler	
Peucaea botterii	Botteri's sparrow	
Ammodramus savannarum	Grasshopper sparrow	
Ammodramus henslowii	Henslow's sparrow	Nb
Ammodramus leconteii	Le Conte's sparrow	Nb
Ammodramus nelsoni	Nelson's sharp-tailed sparrow	Nb
Ammodramus maritimus	Seaside sparrow	C
Passerina ciris	Painted bunting	
Spiza americana	Dickcissel	

[a] (a) Endangered Species Act (ESA) candidate; (b) ESA delisted, (c) non-listed subspecies or population of threatened or endangered species, (Nb) non-breeding in this Bird Conservation Region

Table A.2
Birds of Conservation Concern for the Louisiana Xpress Project

Common Name	Parish[1]
American golden-plover	E, R, C
American kestrel	E, R, C
Bachman's sparrow	R
Cerulean warbler	R, L
Dunlin	E, R
Eastern whip-poor-will	R
Henslow's sparrow	R
Kentucky warbler	E, R, C, L
King rail	E, R
Le Conte's sparrow	R
Least tern *Sterna*	R
Lesser yellowlegs	E, R, C, L
Magnificent frigatebird	R
Prairie warbler	E, R, C
Prothonotary warbler	E, R, C, L
Red-headed woodpecker	E, R, C, L
Ruddy turnstone	E
Rusty blackbird	E, R, C, L
Semipalmated sandpiper	E, R, C
Sprague's pipit	R
Swallow-tailed kite	E, R
Whimbrel	E, R
Willet	R
Wood thrush	E, R, C, L

[1] E: Evangeline, R: Rapides, C: Catahoula, L: East Carroll

APPENDIX B

Table B. 1
Projects with the Potential for Cumulative Impacts when Combined with the Acadiana Project

Project Name	Sponsor/Project Description	Estimated Construction Timeframe	Project Size (acres)	Closest Distance from Project	Resources Potentially Affected within the proposed Project's Geographic Scope
Louisiana Connector Project	Port Arthur Pipeline, LLC/construction and operation of 131 miles of gas pipeline and associated facilities	FEIS issued January 2019/Construction Ongoing	Project in pre-filing. Project size unavailable	2-5 miles north of project facilities in Jefferson Davis, Acadia, and St. Landry Parishes	Socioeconomics; Noise; Air Quality
Rail Logix	Rail Logix Ameriport, LLC/industrial park to accommodate 800 rail cars with over 250 rail car spots of interchange track	Construction Ongoing	IU	30 miles west of the Cole Pit Yard	Socioeconomics; Noise; Air Quality
CLECO Powerline Project	CLECO	IU	IU	Outside CS 760	Water Quality; Wildlife and Vegetation; Socioeconomics; Soils; Land Use; Air Quality; Noise
Driftwood LNG Pipeline	Driftwood LNG Pipeline, LLC/construction and operation of 96 miles of natural gas pipeline	FEIS issued January 2019/Construction Ongoing	150	North, west, and adjacent to the project in Acadia and Evangeline Parishes	Water Quality; Wildlife and Vegetation; Socioeconomics; Soils; Land Use; Air Quality; Noise
Sabine Pass Expansion Project	KMLP/construction and operation of CS 760 and modifications to existing facilities	Complete	69	Within project boundary in Acadia Parish	Air Quality; Noise

EnLink Energy	EnLink Energy Companies/Construction at its existing facility for its Eunice fractionator	Existing facility	IU	0.5 mile west of CS 760	Air Quality; Noise (included as part of existing conditions)
Grand Chenier Xpress Project	ANR Pipeline Company/Construction at its existing facility for natural gas transmission	Existing Facility	71	0.6 mile north of CS 760	Air Quality; Noise (included as part of existing conditions)
Gulf Trace Expansion Project	Transcontinental Gas Pipeline Company/	In service	76	Nearest significant air emissions source is 20 kilometers northeast of CS 760	Air Quality
Southwest Louisiana Supply Project	Tennessee Gas Pipeline Company, L.L.C.	In service	76	Nearest significant air emissions source is 30 kilometers northeast of CS 760	Air Quality
Texas Gas Eunice Compressor Station	Texas Gas Transmission, LLC/construction at its existing Eunice Compressor Station	Existing facility	IU	0.6 mile north of CS 760	Air Quality; Noise (included as part of existing conditions)

IU – information unavailable
FEIS – final environmental impact statement
LNG – liquified natural gas

Table B. 2
Projects with the Potential for Cumulative Impacts when Combined with the Louisiana Xpress Project

Parish/County	Company/Project	Construction/ Operation Status	Description	Resources Affected	Distance and Direction
NON-JURISDICTIONAL PROJECT RELATED ACTIONS					
East Carroll	Entergy Electric Company	Concurrent with Louisiana Xpress Project	Approximately 6,200 feet of new power line extension and upgrades to bring power to the Shelburn Compressor Station.	Surface Water, Wetlands, Vegetation, Socioeconomics, Soils and Surficial Geology, Land Use, Visual, Noise (construction), Air Quality (construction)	Intersecting with Shelburn Compressor Station workspace
Catahoula	Entergy or Concordia Electric Company	Concurrent with Louisiana Xpress Project	Approximately 10,500 feet of new power line extension and upgrades to bring power to the Red Mountain Compressor Station.	Surface Water, Wetlands, Vegetation, Socioeconomics, Soils and Surficial Geology, Land Use, Visual, Noise (construction), Air Quality (construction)	Intersecting with Red Mountain Compressor Station workspace
Evangeline	Tri County Electric Company	Concurrent with Louisiana Xpress Project	Approximately 380 feet of new power lines to bring power to the Chicot Compressor Station	Surface Water, Wetlands, Vegetation, Socioeconomics, Soils and Surficial Geology, Land Use, Visual, Noise (construction), Air Quality (construction)	Intersecting with Chicot Compressor Station workspace
OIL AND NATURAL GAS TRANSPORT, PROCESSING AND STORAGE					
East Carroll	Kinder Morgan – Transylvania Compressor Station [a]	Operational	Operational gas compressor station located on the Tennessee Gas Pipeline system.	Socioeconomics, Air Quality (operations)	Approximately 13 miles south of Shelburn Compressor Station
Sharkey	Kinder Morgan – Onward Compressor Station [a]	Operational	Operational gas compressor station located on the Southern Gas Pipeline system.	Air Quality (operations)	Approximately 18 miles southeast of Shelburn Compressor Station
West Carroll	Energy Transfer – Epps Compressor Station [b]	Operational	Operational gas compressor station located on the Trunkline Gas Company system.	Air Quality (operations)	Approximately 28 miles southwest of Shelburn Compressor Station
Franklin	Kinder Morgan – Winnsboro Compressor Station [a]	Operational	Operational gas compressor station located on the Tennessee Gas Pipeline system.	Air Quality (operations)	Approximately 9 miles northeast of Red Mountain Compressor Station
La Salle	Boardwalk Pipeline Partners – Olla Compressor Station [c]	Operational	Operational gas compressor station located on the Gulf South system.	Air Quality (operations)	Approximately 20 miles west of Red Mountain Compressor Station

APPENDIX B.2 (continued)

Projects with the Potential for Cumulative Impacts when Combined with the Louisiana Xpress Project

Parish/County	Company/Project or Facility	Construction/ Operation Status	Description	Resources Affected	Distance and Direction
Caldwell	Boardwalk Pipeline Partners – Columbia Compressor Station [c]	Operational	Operational gas compressor station located on the Texas Gas Transmission system.	Air Quality (operations)	Approximately 22 miles northwest of Red Mountain Compressor Station
La Salle	TransCanada – Jenna Compressor Station [e]	Operational	Operational gas compressor station located on the ANR Pipeline system.	Air Quality (operations)	Approximately 7 miles north of Alexandria Compressor Station
Rapides	Boardwalk Pipeline Partners – Pineville Compressor Station [c]	Operational	Operational gas compressor station located on the Texas Gas Transmission system.	Air Quality (operations)	Approximately 12 miles southwest of Alexandria Compressor Station
Rapides	Kinder Morgan – Alexandria Compressor Station [a]	Operational	Operational gas compressor station located on the Tennessee Gas Pipeline system.	Air Quality (operations)	Approximately 18 miles southwest of Alexandria Compressor Station.
Rapides	Enlink Midstream, LLC – Trunklinke Boyce Compressor Station [f]	Operational	Operational gas compressor station located on the Louisiana Intrastate Gas system.	Air Quality (operations)	Approximately 25 miles southwest of Alexandria Compressor Station.
Avoyelles	Boardwalk Pipeline Partners – Marksville Compressor Station [c]	Operational	Operational gas compressor station located on the Gulf South system.	Air Quality (operations)	Approximately 19 miles southwest of Alexandria Compressor Station
Rapides	Enlink Midstream, LLC – LeCompte ANR Compressor Station [f]	Operational	Operational gas compressor station located on the Louisiana Intrastate Gas system.	Air Quality (operations)	Approximately 19 miles northwest of Chicot Compressor Station.
Evangeline	Enlink Midstream, LLC – St. Landry Compressor Station [f]	Operational	Operational gas compressor station located on the Louisiana Intrastate Gas system.	Air Quality (operations)	Approximately 2 miles southwest of Chicot Compressor Station.
Evangeline	Cleco – Coughlin Power Station [g]	Operational	Operational 775-megawatt plant fueled by natural gas.	Air Quality (operations)	Approximately 2 miles southwest of Chicot Compressor Station.

APPENDIX B.2 (continued)

Projects with the Potential for Cumulative Impacts when Combined with the Louisiana Xpress Project

Parish/County	Company/Project or Facility	Construction / Operation Status	Description	Resources Affected	Distance and Direction
St. Landry	Williams Companies – Washington Storage Compressor Station [h]	Operational	Operational gas compressor station on the Transco system.	Air Quality (operations)	Approximately 19 miles southeast of Chicot Compressor Station.
St. Landry	Enbridge, Inc. – Opelousas Compressor Station [i]	Operational	Operational gas compressor station on the TETCO system.	Air Quality (operations)	Approximately 20 miles southeast of Chicot Compressor Station.
Evangeline	Enbridge, Inc. – Eunice Compressor Station [i]	Operational	Operational gas compressor station on the TETCO system.	Air Quality (operations)	Approximately 22 miles southwest of the Chicot Compressor Station.
Evangeline	Boardwalk Pipeline Partners – Mamou Field Compressor Station [c]	Operational	Operational gas compressor station located on the Texas Gas system.	Air Quality (operations)	Approximately 26 miles southwest of the Chicot Compressor Station.
Evangeline	Williams Companies – Eunice Compressor Station [h]	Operational	Operational gas compressor station on the Transco system.	Air Quality (operations)	Approximately 26 miles southwest of the Chicot Compressor Station.
St. Landry	Boardwalk Pipeline Partners – Opelousas Compressor Station [c]	Operational	Operational gas compressor station located on the Gulf South system.	Air Quality (operations)	Approximately 30 miles southeast of Chicot Compressor Station.
East Carroll	Lakeshore Family Homes [l]	Planned construction October 2019	Lakeshore Family Homes, LP is a 45-unit infill acquisition/redevelopment new construction project located in East Carroll Parish at 1311 and 1320 Sparrow Street, Lake Providence, Louisiana.	Groundwater, Surface Water, Wetlands, Vegetation and Wildlife, Socioeconomics	Approximately 6 miles south of the Shelburn Compressor Station.