



**Office of  
Energy Projects**

October 2020

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**Enable Gas Transmission, LLC  
Enable Gulf Run Transmission, LLC**

**Docket No. CP20-68-000  
Docket No. CP20-70-000**

# **Gulf Run Pipeline and Line CP Modifications Project**

## **Environmental Assessment**

**Cooperating Agency:**



**US Army Corps  
of Engineers®**

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 4  
Enable Gas Transmission, LLC  
Enable Gulf Run Transmission, LLC  
Docket Nos. CP20-68-000 and  
CP20-70-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Gulf Run Pipeline and Line CP Modifications Project (Project), proposed by Enable Gas Transmission, LLC (EGT) and Enable Gulf Run Transmission, LLC (Gulf Run) (collectively, "Enable") in the above-referenced dockets. Enable requests authorization to construct, operate, and maintain natural gas pipeline facilities in Texas and Louisiana. The Project would include modifications to existing facilities to allow bi-directional flow, a new natural gas pipeline, and ancillary facilities which would allow transport up to 1,650,000 dekatherms of natural gas per day.

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

The U.S. Army Corps of Engineers (USACE) — New Orleans, Fort Worth, Galveston, and Vicksburg Districts participated as a cooperating agency in the preparation of the EA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. Because the USACE must comply with the requirements of NEPA before issuing permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, it has elected to cooperate in this NEPA process and adopt the EA per Title 40 of the Code of Federal Regulations, Part 1506.3.

The Project would include the following facilities:

### *Gulf Run Pipeline*

- approximately 134 miles of 42-inch-diameter natural gas transmission pipeline in Red River, DeSoto, Sabine, Vernon, Beauregard, and Calcasieu Parishes, Louisiana;
- a new delivery meter station (Golden Pass Pipeline Meter Station) near the terminus of the Gulf Run Pipeline at milepost 134.0 in Calcasieu Parish, Louisiana; and
- ancillary facilities including mainline valves and pig launcher/receiver facilities at various locations.

### *Line CP Modifications*

- modifications at the existing Westdale Compressor Station in Red River Parish, Louisiana;
- modifications at the existing Vernon Compressor Station in Jackson Parish, Louisiana;
- modifications at the ANR Meter Station, Columbia Gulf Meter Station, and Midcontinent Express Pipeline Meter Station in Richland Parish, Louisiana;
- a new meter station (EGT Meter Station) in Richland Parish, Louisiana; and
- a new meter station (CP-3 Meter Station) in Panola County, Texas.

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 newspapers and libraries in the Project area. The EA is only available in electronic format. It may be viewed and downloaded from the FERC's website ([www.ferc.gov](http://www.ferc.gov)), on the natural gas environmental documents page (<https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents>). In addition, the EA may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (<https://elibrary.ferc.gov/eLibrary/search>), select "General Search" and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e., CP20-68 or CP20-70). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The EA is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of issues raised in this proceeding. Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of

potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this Project, it is important that we receive your comments in Washington, DC on or before 5:00 pm Eastern Time on **November 30, 2020**.

For your convenience, there are three methods you can use to file your comments to the Commission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or [FercOnlineSupport@ferc.gov](mailto: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](http://www.ferc.gov)) under the link to [FERC Online](#). This is an easy method for submitting brief, text-only comments on a project;
- (2) You can also file your comments electronically using the [eFiling](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [FERC Online](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or
- (3) You can file a paper copy of your comments by mailing them to the Commission. Be sure to reference the Project docket numbers (CP20-68-000 and CP20-70-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

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

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](http://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 <https://www.ferc.gov/ferc-online/overview> to register for eSubscription.

**TABLE OF CONTENTS**

Page

---

**A. PROPOSED ACTION ..... 1**

- 1. Introduction ..... 1
- 2. Purpose and Need ..... 2
- 3. Scope of Environmental Assessment ..... 2
- 4. Proposed Facilities ..... 5
- 5. Public Review and Comment ..... 6
- 6. Construction Procedures ..... 7
  - 6.1 General Construction Procedures for Pipeline Facilities ..... 8
  - 6.2 Special Pipeline Construction Procedures ..... 11
  - 6.3 Additional Temporary Workspaces, Pipe/Contractor Yards, and Access Roads ..... 16
  - 6.4 General Construction Techniques for Aboveground Facilities ..... 17
  - 6.5 Environmental Compliance, Inspection, and Monitoring ..... 18
  - 6.6 Restoration, Operations, and Safety Controls ..... 19
- 7. Land Requirements ..... 20
- 8. Construction Schedule ..... 22
- 9. Non-Jurisdictional Facilities ..... 23
- 10. Permits and Approvals ..... 24

**B. ENVIRONMENTAL ANALYSIS ..... 27**

- 1. Geology ..... 27
  - 1.1 Mineral Resources ..... 28
  - 1.2 Paleontological Resources ..... 29
  - 1.3 Geologic Hazards ..... 30
  - 1.4 Impacts and Mitigation ..... 32
- 2. Soils ..... 34
  - 2.1 Soil Characteristics ..... 34
  - 2.2 Impacts and Mitigation ..... 37
- 3. Water Resources ..... 39
  - 3.1 Groundwater Resources ..... 39
  - 3.2 Surface Water ..... 47
  - 3.3 Wetlands ..... 54
  - 3.4 Project Construction Water Use ..... 59
- 4. Fisheries and Aquatic Resources, Vegetation, Wildlife, and Special Status Species ..... 62
  - 4.1 Fisheries and Aquatic Resources ..... 62
  - 4.2 Vegetation ..... 65
  - 4.3 Wildlife ..... 73
  - 4.4 Special Status Species ..... 76
- 5. Land Use, Recreation, and Visual Resources ..... 88
  - 5.1 Land Use ..... 88

5.2	Existing Structures and Planned Development.....	93
5.3	Public Land, Recreation, Other Designated or Special Use Areas.....	96
5.4	Contaminated or Hazardous Waste Sites .....	99
5.5	Visual Resources .....	100
6.	Cultural Resources .....	102
6.1	Cultural Resources Investigations.....	102
6.2	Tribal Consultation.....	104
6.3	Unanticipated Discoveries Plan .....	106
6.4	Compliance with the National Historic Preservation Act.....	106
7.	Socioeconomics.....	106
7.1	Population and Employment.....	106
7.2	Economy and Tax Revenue .....	108
7.3	Housing .....	108
7.4	Public Services .....	109
7.5	Traffic and Transportation .....	110
7.6	Environmental Justice .....	111
8.	Air Quality and Noise.....	116
8.1	Air Quality.....	116
8.2	Permitting/Regulatory Requirements.....	117
8.3	Noise.....	128
9.	Reliability and Safety .....	137
9.1	Safety Standards .....	137
9.2	Project Design Requirements .....	138
9.3	Pipeline Safety.....	138
9.4	Emergencies .....	140
9.5	Pipeline Accident Data.....	141
9.6	Impact on Public Safety .....	144
10.	Cumulative Impacts.....	145
10.1	Potential Cumulative Impacts by Resource .....	149
10.2	Conclusions on Cumulative Impacts.....	160
<b>C.</b>	<b>ALTERNATIVES.....</b>	<b>161</b>
1.	No-Action Alternative .....	161
2.	System Alternatives.....	161
3.	Route Alternatives and Route Variations.....	162
4.	Aboveground Facility Site Alternatives .....	166
5.	Alternatives Conclusion .....	166
<b>D.</b>	<b>STAFF’S CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>167</b>
<b>E.</b>	<b>REFERENCES .....</b>	<b>172</b>
<b>F.</b>	<b>LIST OF PREPARERS .....</b>	<b>184</b>

**LIST OF TABLES**

Page

---

Table A-1	Proposed Horizontal Direction Drill Locations .....	14
Table A-2	Pipe/Contractor Yards for the Project .....	17
Table A-3	Summary – Land Requirements .....	23
Table A-4	Permit and Approvals .....	25
Table B-1	Active Wells Located Within 150 Feet of the Gulf Run Pipeline Construction Areas .....	29
Table B-2	Aquifers Underlying Project Components .....	40
Table B-3	Active Wells within 150 Feet of the Project .....	43
Table B-4	Waterbodies Crossed or Within the Workspace for the Project .....	47
Table B-5	Waterbodies Crossed by HDD .....	52
Table B-6	Summary of Wetland Impacts for the Project .....	55
Table B-7	USACE Required Mitigation Bank Credits .....	58
Table B-8	Construction Water Sources and Use for the Project .....	60
Table B-9	LDWF Aquatic Species of Concern .....	64
Table B-10	Vegetation Cover Types Crossed by the Project .....	66
Table B-11	Vegetation Communities Impacted by Construction and Operation of the Project .....	68
Table B-12	Rare Vegetation Communities that may Occur in the Gulf Run Pipeline Area .....	69
Table B-13	Migratory Birds of Conservation Concern Known to Nest in Bird Conservation Region 25 .....	78
Table B-14	Land Use Impacts in Acres .....	89
Table B-15	Structures Within 50 Feet of the Project Workspaces .....	94
Table B-16	Special Land Uses within One Mile of the Project .....	97
Table B-17	Registered Environmental Sites within 0.25 Mile of the Gulf Run Pipeline .....	99
Table B-18	Existing Socioeconomic Conditions in the Project Area .....	107
Table B-19	Race, Ethnicity, and Poverty Level Estimates (percent) .....	114
Table B-20	Estimated Construction Emissions – Gulf Run Pipeline and Golden Pass Pipeline LLC Meter Station (tons per year) .....	124
Table B-21	Estimated Construction Emissions – Line CP (tons per year) .....	126
Table B-22	Estimated Operational Emissions (tons per year) .....	127
Table B-23	Estimated HDD Noise Contributions at nearby NSAs .....	131
Table B-24	Compressor Station Construction Noise Impacts at Nearby NSAs .....	133
Table B-25	Meter Station Construction Noise Analysis Impacts at Nearby NSAs .....	134
Table B-26	Meter Stations – Estimated Operational Sound Levels and Impact at Nearest NSAs .....	135
Table B-27	Predicted Noise Impact of Westdale Compressor Station on Nearby NSAs .....	136

Table B-28	Natural Gas Transmission Pipeline Significant Incidents by Cause (1998–2017) .....	142
Table B-29	Outside Forces Incidents by Cause (1998–2017).....	143
Table B-30	Injuries and Fatalities – Natural Gas Transmission Pipelines.....	144
Table B-31	Nationwide Accidental Deaths.....	145
Table B-32	Resource-Specific Geographic Scope for Determining Cumulative Impacts of the Project.....	147
Table B-33	Past Actions, Present Actions, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Project.....	150
Table C-1	Comparison of Major Route Alternatives for the Pipeline .....	165

## **LIST OF FIGURES**

Page

Figure 1	Project Location Map .....	4
Figure 2	Typical Pipeline Construction Figure .....	10
Figure 3	Past, Present, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Gulf Run Pipeline .....	152
Figure 4	Past, Present, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Line CP Modifications .....	153
Figure 5	Gulf Run Pipeline and Line CP Modifications Project Major Route Alternatives .....	164

## **LIST OF APPENDICES**

Page

Appendix A	Typical Right-of-way Construction Diagrams.....	A-1
Appendix B	Oversized Tables .....	B-1

## TECHNICAL ABBREVIATIONS AND ACRONYMS

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AMSL	above mean sea level
AQCR	Air Quality Control Region
ATWS	additional temporary workspace
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
Commission	Federal Energy Regulatory Commission
CAA	Clean Air Act
CO	carbon monoxide
CO <sub>2</sub> e	carbon dioxide equivalent
CWA	Clean Water Act
dB	decibels
dBA	decibels on the A-weighted scale
Dth/d	dekatherms per day
EA	environmental assessment
EGT	Enable Gas Transmission, LLC
EI	environmental inspector
Enable	Enable Gas Transmission, LLC and Enable Gulf Run Transmission, LLC
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse gas
GIS	Geographic Information System
GOHSEP	State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness
Golden Pass	Golden Pass LNG Terminal LLC
GPPL	Golden Pass Pipeline, LLC
Gulf Run	Enable Gulf Run Transmission, LLC
GWP	global warming potential
HAP	hazardous air pollutant
HCA	high consequence areas
HDD	horizontal directional drill
HDD Contingency Plan	Horizontal Directional Drill Inadvertent Returns and Contingency Plan
hp	horsepower
IPaC	U.S. Fish and Wildlife Service's Information for Planning and Consultation

IVM	integrated vegetation management
LAC	Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
L <sub>dn</sub>	day-night sound level
L <sub>eq</sub>	equivalent sound level
LNG	liquefied natural gas
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
MEP	Midcontinent Express Pipeline
µg/m <sup>3</sup>	micrograms per cubic meter
MP	milepost
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NNSR	Nonattainment New Source Review
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NOI	FERC's <i>Notice of Intent to Prepare an Environmental Impact Statement for the Planned Gulf Run and Line CP Modifications Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Sessions</i>
NRCS	Natural Resources Conservation Service
NSA	noise sensitive area
NSPS	New Source Performance Standards
NWTF	National Wild Turkey Foundation
OEP	Office of Energy Projects
O <sub>3</sub>	ozone
Pb	lead
PEM	palustrine emergent
PFO	palustrine forested
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	FERC's <i>Upland Erosion Control, Revegetation and Maintenance Plan</i>
PM <sub>10</sub>	particulate matter with an aerodynamic diameter of 10 microns or less
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter of 2.5 microns or less
ppb	parts per billion
ppm	parts per million

Procedures	FERC's <i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Gulf Run Pipeline and Line CP Modifications Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SSA	sole source aquifer
TCEQ	Texas Commission on Environmental Quality
TPWD	Texas Parks and Wildlife Department
tpy	tons per year
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WMA	Wildlife Management Area
WRP	Wetland Reserve Program

## A. PROPOSED ACTION

### 1. Introduction

The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to assess the impacts of constructing and operating certain natural gas transmission pipeline and associated facilities proposed by Enable Gas Transmission, LLC (EGT) and Enable Gulf Run Transmission, LLC (Gulf Run) (collectively, “Enable”). Enable filed applications on February 28, 2020, in Docket Nos. CP20-68-000 and CP20-70-000 requesting a Certificate of Public Convenience and Necessity (Certificate) and authorization pursuant to Sections 7(b) and 7(c) of the Natural Gas Act (NGA) to construct, operate, and abandon by sale certain natural gas pipeline facilities in Texas and Louisiana. The proposed project is known as the Gulf Run Pipeline and Line CP Modifications Project (Project) and would include modifications to existing facilities to allow bi-directional flow, a new natural gas pipeline, and ancillary facilities, which would allow the transport of approximately 1,650,000 dekatherms of natural gas per day (Dth/d) from receipt points along the Line CP to an interconnection with Golden Pass Pipeline, LLC (GPPL) near Starks, Louisiana. See figure 1 for the Project Location Map.<sup>1</sup>

We<sup>2</sup> prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality’s (CEQ) regulations for implementing the NEPA (Title 40 Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508])<sup>3</sup>; and the Commission’s regulations at 18 CFR 380. The assessment of environmental impacts is an integral part of the Commission’s decision on whether to issue Enable a Certificate to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from the implementation of the proposed actions;
- identify, assess, and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts; and
- facilitate public involvement in the environmental review process.

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<sup>1</sup> Detailed maps and drawings of the Project were included in Enable’s appendix 1.A to Resource Report 1 in its February 28, 2020 application. Appendix 1.A can be viewed on the FERC website at <http://www.ferc.gov>. Using the “eLibrary” link, select “Advanced Search” from the eLibrary menu and enter 20200228-5231 in the “Numbers: Accession Number” field.

<sup>2</sup> “We,” “us,” and “our” refer to the environmental staff of the FERC’s Office of Energy Projects.

<sup>3</sup> On July 16, 2020, CEQ issued a final rule, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act ( Final Rule, 85 Fed. Reg. 43,304), which was effective as of September 14, 2020; however, the NEPA review of this project was in process at that time and was prepared pursuant to the 1978 regulations.

Enable has requested a Certificate in the first quarter 2021 in order to complete construction and place the new facilities into service by the end of 2022.

## **2. Purpose and Need**

Under Section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on economic issues, including need, and environmental impacts. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the Project is in the public interest. Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity.

Enable states that the purpose of the Project is to provide firm transportation of up to 1,650,000 Dth/d of natural gas from various receipt points along the existing Line CP Pipeline to an interconnect with Golden Pass Pipeline LLC near Starks, Louisiana. According to Enable, the Project is needed to meet additional demand for natural gas required to supply liquefied natural gas (LNG) export terminals along the Gulf Coast of Texas and Louisiana. Gulf Run participated in a competitive bidding process sponsored by the Project's cornerstone shipper, Golden Pass LNG Terminal LLC (Golden Pass), which has received Commission approval to construct an LNG export facility in Sabine Pass, Texas. Gulf Run was chosen as one of the successful bidders, and subsequently executed a Transportation Services Precedent Agreement with Golden Pass for 1,100,000 Dth/d of capacity and with a contract term of 20 years.<sup>4</sup>

## **3. Scope of Environmental Assessment**

The topics addressed in section B of this EA include geology; soils; groundwater, surface water, and wetlands; fisheries, vegetation, wildlife, and special status species; land use, recreation, and visual resources; cultural resources; socioeconomics and environmental justice; air quality and noise; reliability and safety; and cumulative impacts. Section C of this EA assesses the no-action alternative, system alternatives, route alternatives, and site alternatives. The EA describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, identifies measures proposed by Enable to reduce impacts, and presents our additional recommended mitigation measures, which are summarized in section D.

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<sup>4</sup> Gulf Run has not previously provided service in interstate commerce. Therefore, in this proceeding, Gulf Run requests an open-access blanket certificate under Part 284, Subpart G of the Commission's regulations. In addition, Gulf Run requests a blanket construction certificate under Part 157, Subpart F of the Commission's regulations.

As the lead federal agency for the NEPA review of these projects, FERC is required to comply with Section 7 of the Endangered Species Act (ESA), as amended, and Section 106 of the National Historic Preservation Act (NHPA). These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any authorizations required for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.11 of this EA.

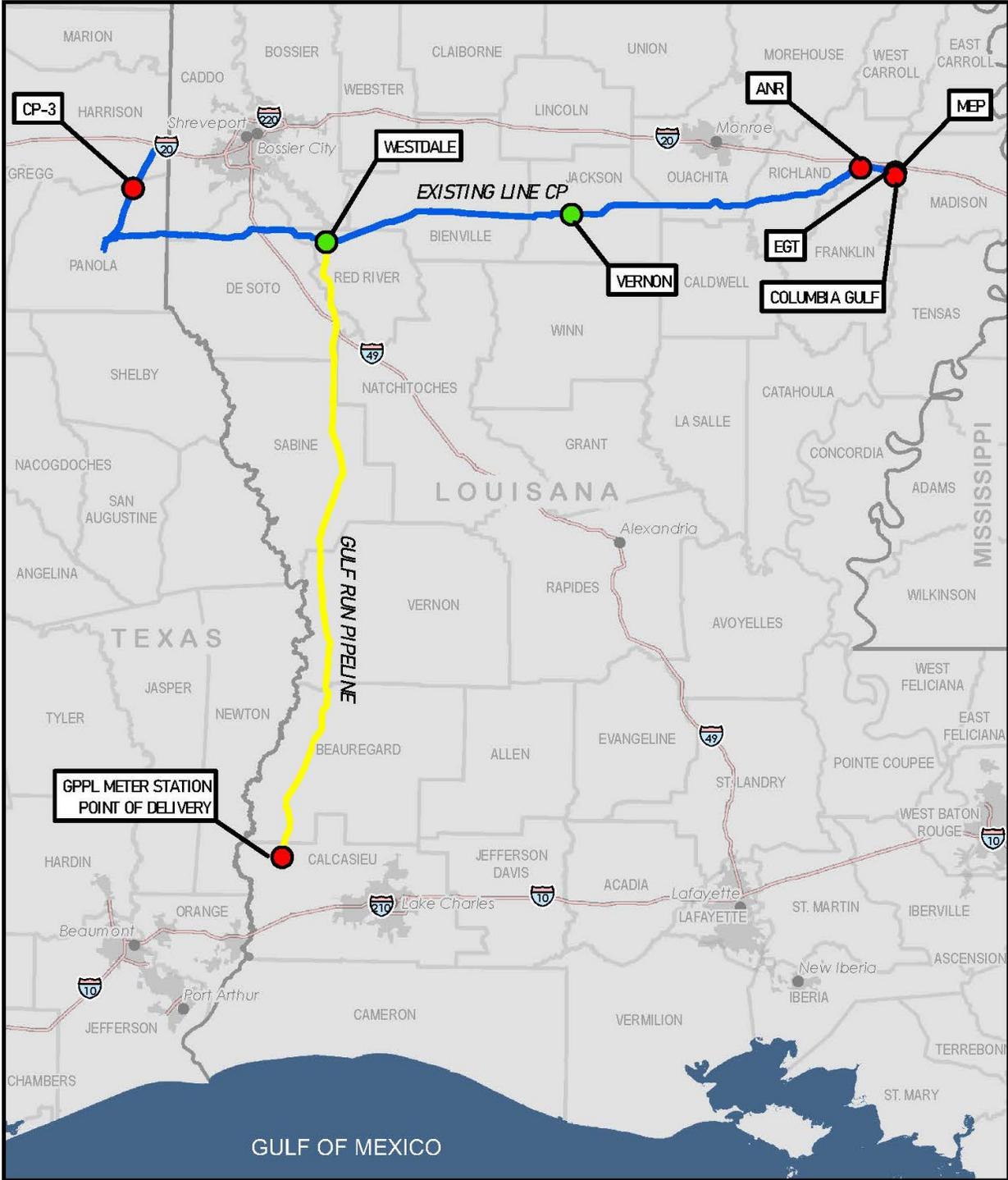
The U.S. Army Corps of Engineers (USACE) — New Orleans, Fort Worth, Galveston, and Vicksburg, Districts — is participating as a cooperating agency in this NEPA process. The USACE is a federal agency within the U.S. Department of Defense with jurisdictional authority pursuant to Section 404 of the Clean Water Act (CWA) (Title 33 of the United States Code Section 1344 [33 U.S.C. 1344]), which governs the discharge of dredged or fill material into waters of the United States (including wetlands), and Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), which regulates any work or structures that potentially affect the navigable capacity of a waterbody. Because the USACE must comply with the requirements of NEPA before issuing permits under these statutes, it has elected to cooperate in the FERC's NEPA process and adopt the EA per 40 CFR 1506.3 if, after an independent review of the document, it concludes that its comments and suggestions have been satisfied and its NEPA requirements have been met.

The primary decisions to be addressed by the USACE include:

- issuance of a Section 404 of the CWA permit for impacts on the waters of the United States associated with construction of the Project; and
- issuance of a Section 10 of the Rivers and Harbors Act permit for construction activities within navigable waters of the United States.

This EA contains information needed by the USACE to reach decisions on these issues. Through the coordination of this document, the USACE would obtain the views of the public and natural resource agencies prior to reaching decisions on the Project.

As an element of its review, the USACE must consider whether a proposed project avoids, minimizes, and compensates for impacts on existing aquatic resources, including wetlands, to strive to achieve a goal of no overall net loss of values and functions. Based on its participation as a cooperating agency and its consideration of the EA (including responses to public comments), the USACE would issue a Record of Decision to formally document its decision on the proposed action, including Section 404(b)(1) analysis and required environmental mitigation commitments. Although this document addresses environmental effects associated with the Project as they relate to Section 404, it does not serve as a public notice for any of the USACE's permits.




 Compressor Station
  Existing Line CP

 Meter Station
  Gulf Run Pipeline


 Note: For environmental review purposes only



**Figure 1:  
Project Location Map**

Date: 7/17/2020 Source: ESRI

#### **4. Proposed Facilities**

The Gulf Run Pipeline to be constructed by Gulf Run in association with the Project includes the following facilities, all in Louisiana:

- Gulf Run Pipeline – approximately 134 miles of new 42-inch-diameter natural gas transmission pipeline in Red River, DeSoto, Sabine, Vernon, Beauregard, and Calcasieu Parishes;
- Golden Pass Pipeline (GPPL) Meter Station – a new delivery meter station and one associated emergency generator near the terminus of the pipeline at milepost (MP) 134.0 in Calcasieu Parish; and
- ancillary facilities – mainline valves and pig launcher/receiver facilities at various locations.

The Line CP Modifications include modifications to various existing facilities. The Line CP Modifications include the following:

- Compressor Station Facilities:
  - Westdale Compressor Station – restage two existing compressor units (totaling 30,000 horsepower [hp]) and construct one emergency generator in Red River Parish, Louisiana; and
  - Vernon Compressor Station – restage three existing compressor units (totaling 35,604 hp) in Jackson Parish, Louisiana.
- Meter Station Facilities: with the exception of the CP-3 Meter Station, all meter station facilities are at or near the Line CP terminus near Delhi in Richland Parish, Louisiana.
  - ANR Meter Station – modify existing meter station to facilitate bi-directional flow;
  - Columbia Gulf Meter Station – modify existing meter station to facilitate bi-directional flow;
  - Midcontinent Express Pipeline (MEP) Meter Station – modify existing meter station to increase capacity, including installation of new meter and regulator runs;
  - EGT Meter Station – construct a new receipt meter between Line CP and existing EGT pipeline facilities; and
  - CP-3 Meter Station (Panola County, Texas) – construct a new receipt meter between the Line CP assets (Line ST-1) and existing EGT pipeline (Line CP-3) facilities.

EGT also requests authorization to abandon the Line CP assets by sale to Gulf Run upon the in-service date of the new Gulf Run Pipeline facilities. EGT's existing Line CP assets include approximately 172 miles of 42-inch-diameter pipeline; four mainline compressor stations, including the Panola, Westdale, Vernon, and Alto Compressor

Stations; various natural gas receipt and delivery lateral pipelines totaling approximately 30.3 miles in length and ranging from 16 to 42 inches in diameter; and 34 receipt and/or delivery meter stations. EGT and Gulf Run would enter into a lease agreement under which EGT would lease 445,000 Dth/d of capacity on the Line CP assets to continue service to EGT's existing Line CP shippers. Shippers on Line CP would continue to receive firm service pursuant to the terms of their existing service agreements and the EGT tariff.<sup>5</sup>

## 5. Public Review and Comment

On March 18, 2019, Enable filed a request with FERC to initiate the Commission's pre-filing process for its Project. At that time, Enable was in the preliminary design stage of the Project and no formal application had been filed with FERC. The purpose of the pre-filing process is to involve interested stakeholders early in the Project planning process and to identify and resolve issues prior to filing an application with FERC. On April 12, 2019, FERC granted Enable's request and assigned the planned Project a pre-filing docket number (PF19-3-000) to place information related to the Project into the public record.

In May 2019, during the pre-filing process, Enable held three informational open houses in Coushatta, Leesville, and DeQuincy, Louisiana. The purpose of the open houses was to provide affected landowners, elected and agency officials, and the general public with information about the Project and to give them an opportunity to ask questions and express their concerns. We participated in the open houses and provided information regarding the Commission's environmental review process to interested stakeholders.

On June 12, 2019, we issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Gulf Run and Line CP Modifications Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Sessions* (NOI). The NOI was mailed to about 1,112 entities, including federal, state, and local officials; Native American groups; agency representatives; potentially affected landowners and other interested individuals; and local libraries and newspapers. The NOI established a 30-day scoping period and requested comments on specific concerns about the Project or issues that should be considered during the preparation of the environmental document. On December 10, 2019, we issued a letter to notify landowners of a potential route modification and to provide these landowners with the opportunity to comment on the potential modification.

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<sup>5</sup> The request by EGT to abandon by sale to Gulf Run the Line CP assets and for Gulf Run to lease a portion of the capacity on the Line CP back to EGT is an administrative action and would not result in environmental impact. Therefore, EGT's request is not addressed in section B of this EA.

We conducted two public scoping sessions in the area of the Project to provide an opportunity for agencies and the general public to learn more about the Project and to participate in the environmental analysis by identifying issues to be addressed in the environmental document. Sessions were held on June 26 and June 27, 2019, in Natchitoches and Deridder, Louisiana. During these scoping sessions, three people provided verbal comments on the Project.

We received a total of 18 written comment letters from 10 stakeholders during the scoping period. Comments were received from the Osage Nation Historic Preservation Office; the Office of Louisiana State Senator Neil Riser; Louisiana Department of Wildlife and Fisheries (LDWF); Rice-Land Timber Company; and six individuals.

The Osage Nation Historic Preservation Office requested consulting party status. Louisiana State Senator Neil Riser expressed support for the Project. Rice-Land Timber Company outlined concerns regarding potential negative impacts on its timber operations from construction of the pipeline; impacts on public safety from Project use of existing roads; and impacts on a Habitat Conservation Plan to help stabilize the population of the red-cockaded woodpecker. The LDWF stated concerns about rare, threatened, and endangered species; natural and scenic rivers; impacts on Wildlife Management Areas (WMA); and increased turbidity to Vernon Lake and Anacoco Bayou from sediment runoff. The LDWF offered measures to minimize or avoid impacts on numerous species. Of the comments we received, seven were related to the planned Gillis Lateral and the planned Gulf Run Compressor Stations 1 and 2. These facilities were subsequently removed from the Project, as described below. All substantive comments received from stakeholders are addressed in this EA.

At the time of filing its application, Enable had determined that certain originally planned pipeline and compression facilities considered during the pre-filing review were no longer necessary for the Project. Upon review of Enable's proposed facilities in its filed application, FERC staff determined that an EA is the appropriate means to evaluate the Project's environmental impacts, rather than an environmental impact statement. Due to Enable's removal of certain originally planned facilities in the filed application, many of the comments received in response to the NOI are no longer relevant. All applicable and substantive comments are addressed in the EA.

## **6. Construction Procedures**

All facilities associated with the Project would be designed, constructed, tested, operated, and maintained in accordance with the U.S. Department of Transportation (USDOT) regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline* and 18 CFR 380.15 *Siting and Maintenance Requirements*, and other applicable federal regulations.

Enable would construct, restore, and maintain its Project in accordance with the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures)<sup>6</sup> for the Project with the exception of requested modifications to the Procedures as described in sections A.6.2.1, A.6.2.2, B.3.2.3, and B.3.3.1.

Enable would also implement the following construction and mitigation plans for the Project, which we have reviewed and find acceptable:

- Horizontal Directional Drill (HDD) Inadvertent Returns and Contingency Plan (HDD Contingency Plan);
- Spill Prevention, Control, and Countermeasure Plan (SPCC Plan);
- Cultural Resources Unanticipated Discoveries Plan;
- Plan for Recognizing and Reporting Unanticipated Paleontological Resources; and
- Fugitive Dust Control Plan.

## **6.1 General Construction Procedures for Pipeline Facilities**

Enable would complete construction of the Gulf Run Pipeline using sequential overland pipeline construction practices and procedures, as described below. Figure 2 depicts the typical sequence of cross-country pipeline construction. In the typical pipeline construction scenario, the construction spread (crew and equipment) would proceed along the pipeline right-of-way in one continuous operation. As the spread moves along, construction at any single point along the pipeline, from pipe stringing to backfilling and finish grading, would last approximately 6 to 10 weeks. Typical right-of-way construction diagrams, showing schematics and profiles for construction are provided in appendix A.

Enable would notify affected landowners prior to initiating preconstruction surveys. The crews would then survey the route and stake the proposed pipeline centerlines, foreign pipeline and utility crossings, and workspace limits, along with wetland boundaries and other environmentally sensitive areas. Once this process is completed, vegetation would be cut and cleared from the construction work area. Timber would be removed only where necessary for construction purposes. Timber and other vegetation debris would be burned or chipped and disposed of in accordance with applicable state and local regulations and would be conducted in such a manner as to minimize fire hazard and prevent heat damage to surrounding vegetation. Fences would be cut and braced along the right-of-way, and temporary wire gaps or gates would be

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<sup>6</sup> The FERC (or "our") Plan and Procedures are a set of construction and mitigation measures that were developed to minimize the potential environmental impacts of the construction of pipeline project in general. The Plan can be viewed on FERC's website at <http://www.ferc.gov/industries/gas/enviro/plan.pdf>. The Procedures can be viewed on FERC's website at <http://www.ferc.gov/industries/gas/enviro/procedures/pdf>

installed to control livestock and limit public access. Enable would then grade the construction workspace, where necessary, to create a reasonably level working surface to allow safe passage of equipment. In accordance with the FERC Plan, temporary erosion and sediment controls would be installed immediately after initial disturbance of the soils, where necessary, and would be maintained throughout construction to minimize erosion.

The trench for installation of the pipeline would be excavated by track-mounted backhoes or similar equipment. The trench would be excavated to a depth sufficient to provide the cover required by USDOT specifications. Typically, the trench would be deep enough to provide a minimum of 3 feet of cover over the pipeline. Where actively cultivated areas are present along the route at the time of construction, depth of cover would be increased, such that the top of the pipe is a minimum of 4 feet below existing grade. In agricultural and residential areas, subsoil would be stockpiled separately from topsoil. Generally, conserved topsoil and excavated soils would be stockpiled along one side of the right-of-way (the spoil side), allowing the other side (the working side) to be used for access, material transport, and pipe assembly.

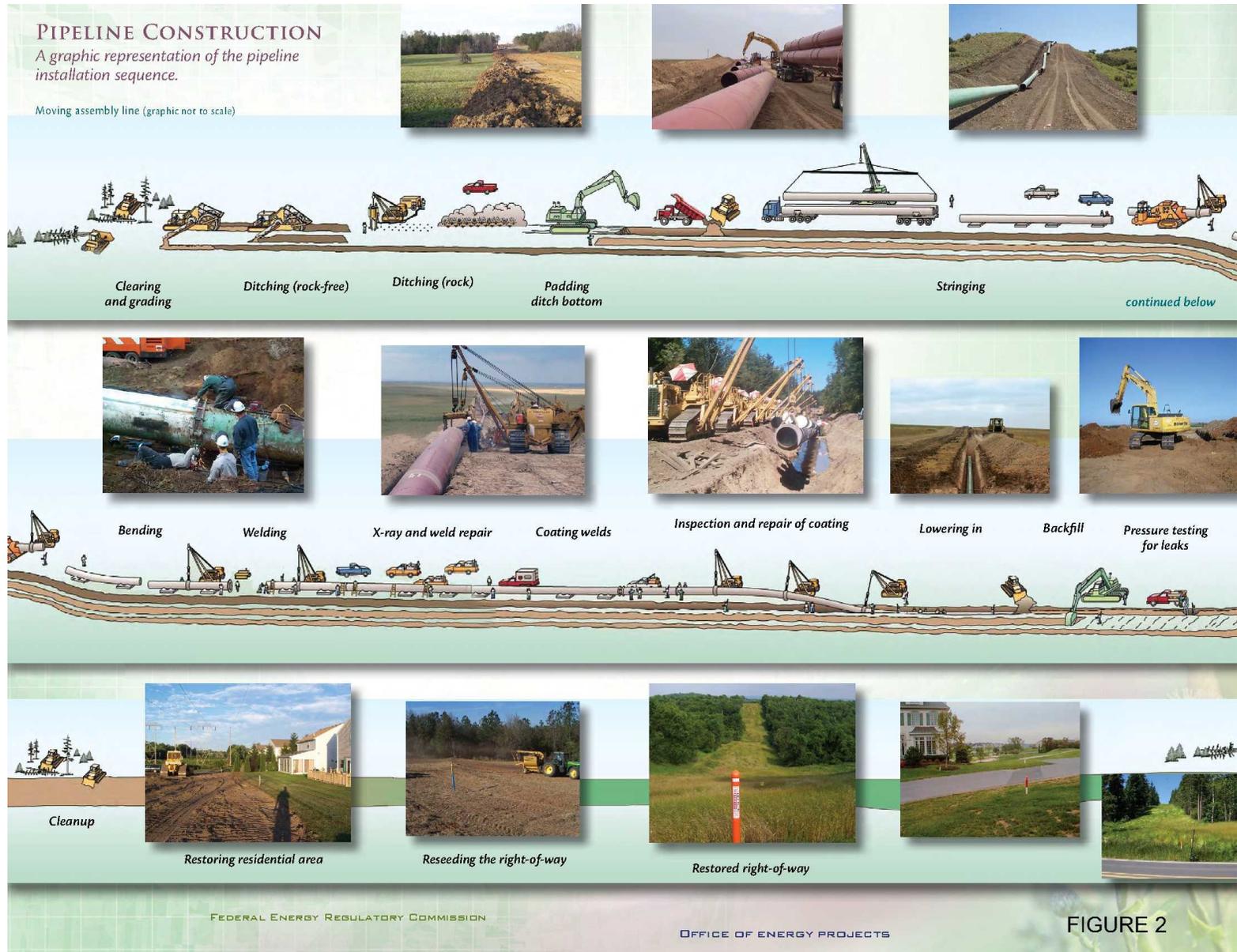
After trench excavation, pipe sections would be delivered to the right-of-way and placed on skids adjacent to the trench. Professional welders, qualified according to applicable industry standards and each company's requirements, would weld the pipe sections together, and certified inspectors would utilize visual and non-destructive methods to test the integrity of the welds according to industry protocol. Previously uncoated pipe ends would be field coated with an industry-approved anti-corrosion coating; inspectors would check the entire pipe for defects in the coating and make repairs as needed. The trench would then be cleaned of any debris, and side booms would be used to lower the pipeline into the trench.

After the pipe is positioned in the trench, crews would backfill the trench with the previously excavated material. Where topsoil is stored separately from subsoil, the crews would backfill the subsoil first and then replace the topsoil over the subsoil. Surplus construction material and debris would be removed and disposed of at appropriate disposal sites, and all work areas would be graded as closely as possible to preconstruction contours. Following backfill, a small crown of material may be left over the pipeline to account for any future soil settlement that might occur. Before being placed into service, the new pipeline would be hydrostatically tested to ensure it can operate safely at the design pressure. Hydrostatic testing would be conducted in accordance with applicable permits, and no chemicals would be added to the test water. Finally, crews would install permanent erosion controls within the right-of-way, if necessary, and initiate revegetation measures. Private and public property disturbed by the construction, such as fences, gates, driveways, and roads, would be restored to original or better condition. Pipeline markers and/or warning signs would be installed along the pipeline centerline at specified intervals to identify the location of the pipe.

# PIPELINE CONSTRUCTION

A graphic representation of the pipeline installation sequence.

Moving assembly line (graphic not to scale)



FEDERAL ENERGY REGULATORY COMMISSION

OFFICE OF ENERGY PROJECTS

FIGURE 2

Figure 2 Typical Pipeline Construction Figure

## **6.2 Special Pipeline Construction Procedures**

In addition to the standard pipeline construction methods described above, Enable would use special construction procedures due to site-specific conditions. These special pipeline construction procedures are described in the following subsections.

### **6.2.1 Wetlands**

Constructing the pipeline would require the crossing of 119 wetlands. A total of 107 wetlands would be crossed via the open-cut method; 11 wetlands would be crossed via HDD, a trenchless crossing method that avoids direct surface impact; and one wetland would be crossed using both HDD and open-cut methods. Additionally, 29 wetlands would be within the construction workspaces and another 11 wetlands would be crossed by existing access roads.

Open-cut wetland crossings would be accomplished in accordance with our Procedures, which are designed to minimize wetland impacts to the maximum extent practicable, to facilitate wetland restoration, and to be in accordance with other applicable federal permit requirements. In general, Enable would implement construction procedures similar to those used in upland areas to cross wetlands that are unsaturated at the time of construction, including segregating and replacing topsoil. In wetlands with saturated soil or standing water at the time of construction, Enable would use timber mats or other temporary surface material adjacent to the trench to provide a stable work area. Enable also may string and assemble the pipeline crossing segments in an adjacent upland workspace to minimize construction time within the wetland. Topsoil segregation would not be conducted in wetlands with saturated soil or standing water. Soil impacts and mitigation measures are further addressed in section B.2.

Enable would reduce its construction right-of-way width to 75 feet in wetlands and has requested a modification to our Procedures to allow it to set additional temporary workspace (ATWS) within 50 feet of certain wetland boundaries. The FERC Procedures require that ATWS be a minimum of 50 feet from the edge of a wetland or waterbody unless approval for a reduced setback is granted by FERC. Enable has identified nine areas where the 50-foot setback between the ATWS and a wetland cannot be maintained and provided justification for each workspace (see table 3 in appendix B). We have reviewed these justifications and determined that the proposed locations of ATWS within 50 feet of a wetland listed in appendix B are justified.

Figures depicting the proposed wetland crossing methods are included in Enable's application. Enable has also prepared construction alignment sheets that depict the delineated extent of wetlands that would be affected by construction and the workspace limits in proximity to each wetland crossing. Wetland crossings are further described in section B.3.3.

## **6.2.2 Waterbodies**

Waterbody crossings would be constructed in accordance with the FERC Procedures and other applicable federal permit requirements. Enable plans to install the Gulf Run Pipeline across 265 waterbodies that are less than 100 feet in width via the open-cut method, described below. Enable would cross the remaining 14 waterbodies that are less than 100 feet in width, as well as 3 waterbodies greater than 100 feet in width, via HDD. Enable also proposes to cross one waterbody, Crooked Bayou, using a combination of dry-ditch crossing methods described below. An additional 34 waterbodies would be within the Project workspaces, and 94 waterbodies would be crossed by the Project access roads.

In addition, Enable would implement waterbody crossing procedures and mitigation measures that are based on our Procedures but has requested a modification to allow ATWS within 50 feet of certain waterbodies. As described above, the FERC Procedures require that ATWS be a minimum of 50 feet from the edge of a wetland or waterbody unless approval for a reduced setback is granted by FERC. Enable has identified 16 areas where the 50-foot setback between the ATWS and a waterbody cannot be maintained and provided justification for each workspace (see table 3 in appendix B). We have reviewed these justifications and determined that the proposed locations of ATWS within 50 feet of a waterbody listed in appendix B are justified.

## **6.2.3 Open-Cut Crossing Method**

The open-cut crossing method involves the excavation of an open trench across a waterbody channel, the installation of a prefabricated segment of pipeline in the trench, and the backfilling of the trench with native material. Project equipment would operate from the banks of the waterbody to the maximum extent practicable. The trench would be excavated immediately prior to pipe installation to limit construction within waterbodies less than 10 feet wide (minor waterbodies) to 24 hours and 48 hours for waterbody crossings between 10 and 100 feet wide (intermediate waterbodies). The trench would be excavated to sufficient depth to allow at least 60 inches of cover over the pipeline after installation. Enable would utilize concrete weights, as necessary, to reduce pipe buoyancy. Stream flows would be maintained at the waterbody crossings in accordance with the FERC Procedures. Once the trench is backfilled, the banks would be stabilized.

## **6.2.4 Dry-Ditch Crossing Method**

Enable would use a combination of dry-ditch crossing methods (flume and dam-and-pump) for one waterbody (Crooked Bayou at MP 6.3). A flume pipe would be placed in the waterbody to convey stream flows during trenching, and pumps would be

used to convey water flow during pipe installation. Enable developed a site-specific crossing plan for this crossing, which we have reviewed and find acceptable.<sup>7</sup>

The flume crossing method involves temporarily directing the stream flow through one or more flume pipes that are placed over the area to be excavated. This method allows for trenching activities to occur under relatively dry conditions beneath the flume pipes, avoiding disruption to water flow. The dam-and-pump crossing method involves installing temporary dams upstream and downstream of a waterbody crossing. Enable proposes to create the dams with water-filled polyethylene barriers. Following installation of the dams, appropriately sized pumps are used to dewater the excavation area and to transport the stream flow around the construction work area. Intake screens are installed at the pump inlets to minimize entrainment of aquatic organisms, and energy dissipating devices are installed at the pump discharge point to minimize erosion and stream bed scour. Trench excavation and pipeline installation then take place in the dewatered portion of the waterbody channel. Following completion of pipeline installation, backfill of the trench, and restoration of stream banks, the temporary dams are removed, and flow through the construction work area is restored.

### **6.2.5 Horizontal Directional Drill**

Enable proposes to use the eight HDDs to cross a total of 17 waterbodies and 12 wetlands. The HDD method utilizes specialized drilling equipment and work crews to install pipeline segments beneath the ground surface, typically to avoid sensitive environmental resources or in constricted construction areas. The design and feasibility of an HDD is determined by a number of factors, including the length, depth, and curvature (i.e., profile) of the proposed drill; surrounding topography; pipeline diameter; availability and orientation of land on which to assemble the HDD pipeline segment; land use constraints; and geotechnical suitability of the subsurface environment. Enable has prepared site-specific plans for each HDD crossing that identify the planned workspaces, entry and exit points, and profiles of the drill path.<sup>8</sup> Table A-1 includes a description of the HDDs proposed for the Project.

HDD installation typically is carried out in three stages: (1) directional drilling of a small-diameter pilot hole; (2) enlarging the pilot hole (reaming) to a sufficient diameter to accommodate the pipeline; and (3) pulling the prefabricated pipeline, or pull string, into the enlarged bore hole. Drilling fluid, consisting of bentonite clay and water, is circulated through the bore during pilot hole drilling and the reaming process, then

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<sup>7</sup> Enable's site-specific crossing plan for Crooked Bayou was included in appendix 2.C to Resource Report 2 in its February 28, 2020 application. Appendix 2.C can be viewed on the FERC website at <http://www.ferc.gov, using Accession Number 20200228-5231>.

<sup>8</sup> Site specific HDD crossing plans were included in Enable's appendix 1.A to Resource Report 1 in its February 28, 2020 application. Appendix 1.A can be viewed on the FERC website at <http://www.ferc.gov, using Accession Number 20200228-5231>.

collected at the surface, processed to remove spoils, and reused. Excess spoils and drilling fluid would be disposed of at an approved location in accordance with regulatory requirements, agreements, and permit conditions. Enable would not use any potentially toxic drilling fluid additives.

<b>Table A-1</b>			
<b>Proposed Horizontal Direction Drill Locations</b>			
<b>Drill Number and Location</b>	<b>Milepost</b>		<b>Length (feet)</b>
	<b>Entry</b>	<b>Exit</b>	
<b>Pipeline</b>			
HDD No. 1 Grand Bayou	8.2	7.8	2,175
HDD No. 2 Bayou Pierre	12.8	13.2	2,275
HDD No. 3 Dolet Bayou	17.3	16.9	1,800
HDD No. 4 Dolet Bayou/Interstate 49	17.8	18.2	1,800
HDD No 5 Bayou Toro	61.6	62.1	2,675
HDD No. 6 Sandy Creek/Highway 111	72.6	73.0	2,000
HDD No. 7 Bayou Anacoco	96.0	96.5	2,725
HDD No. 8 Green Island Marsh Wetland	132.4	132.9	2,550

Activities between the HDD entry and exit points would be limited to hand clearing a path, not to exceed 5 feet in width, in thickly vegetated areas to allow foot traffic by construction personnel along the HDD alignment. Construction personnel would walk the alignment periodically during HDD operations to monitor for signs of an inadvertent release, as described below, as well as when laying the HDD electric-grid guidewires which would be used to guide the HDD bit along the route.

If an HDD crossing is unsuccessful, Enable would hold a risk mitigation workshop, as described in Enable’s HDD Contingency Plan. Enable would use the risk mitigation workshop to determine whether a second HDD crossing with contingency measures (such as the designation of a new drill path, adjusting the borehole depth, and/or offsetting the drill alignment) could be attempted or if an alternative crossing method such as trenching would be required.

Drilling fluid can be inadvertently released outside of the drill path and migrate to the land surface or within the resource being crossed, resulting in pooling on the ground surface or turbidity and sedimentation in waterbodies and wetlands. In order to minimize the potential for adverse impacts from inadvertent releases, Enable has developed its HDD Contingency Plan to monitor for, respond to, and clean up inadvertent releases during drilling. We have reviewed the HDD Contingency Plan and find it acceptable.

### **6.2.6 Agricultural Areas**

In actively cultivated or rotated croplands and pastures, Enable would strip topsoil up to 12 inches in depth, keep it segregated from subsoil, and replace it on the ground surface during restoration to preserve soil productivity. Enable would work with landowners prior to construction to identify and locate any existing drain tile or irrigation systems, and to repair or replace any systems damaged by construction trenching or heavy equipment operation.

### **6.2.7 Road and Railroad Crossings**

Using the HDD or conventional bore crossing method, Enable would cross major paved highways and railroads where traffic cannot be interrupted. Smaller roads with low traffic volume would be crossed by the open-cut method and then restored to preconstruction condition. The pipeline would conform to USDOT standards, typically buried to a depth of at least 5 feet below the road surface and would be designed to withstand anticipated external loading. The bore crossing method involves use of an auger drill to install the pipeline below the ground surface. The bore crossing method allows the roadway to remain in service while the installation process takes place. As a result, there is little or no disruption to traffic at roadway crossings that are crossed by this method. With the open-cut crossing method, the trench is excavated, and the pipe installed using the standard cross-country construction methods described above. Temporary closure of the road to traffic and establishment of detours may be required. If no reasonable detour is feasible, at least one lane of the road being crossed would be kept open to traffic except for the limited periods required for installing the Gulf Run Pipeline.

### **6.2.8 Residential Areas**

The Gulf Run Pipeline would not cross any residential yards, residential subdivisions, or planned new residential developments, and no occupied residences are located within 25 feet of the pipeline construction right-of-way or ATWS. However, the pipeline construction right-of-way would cross within 50 feet of six residences, and the access roads would cross within 50 feet of nine residences. Construction near residential areas would be conducted to ensure that construction activities minimize any adverse impacts on residences and that cleanup is quick and thorough. Where there are residences near the construction workspace, Enable would reduce the Gulf Run Pipeline offset or construction workspace areas, as practicable, to minimize inconvenience to property owners. If construction requires the removal of private property features, such as gates or fences, the landowner or tenant would be notified prior to the action. Following completion of major construction, the property would be restored as requested by the landowner, insofar as the landowner's requirements are compatible with Enable's standards regarding right-of-way restoration and maintenance. Property restoration would be in accordance with any agreements between Enable and the landowner.

### **6.2.9 Blasting**

Enable does not anticipate that blasting would be needed for the Project. In the unlikely event that blasting is necessary to excavate the trench, Enable would conduct it in accordance with pertinent regulations and would submit a blasting plan for our review and approval prior to initiation of any blasting. At a minimum, any blasting would be conducted during daylight hours and would not begin until occupants of nearby buildings, stores, residences, or places of business have been notified.

### **6.2.10 Rugged Terrain**

In areas of side-slopes and rolling terrain, Enable may employ specialized “two-tone” construction techniques to establish safe working conditions. Two-toning involves grading or terracing slopes to create level working areas, typically by cutting the uphill side of the construction right-of-way and using the cut material to level out the downhill side. Upon completion of construction, the excavated material would be put back and contours restored to the approximate preconstruction profile.

### **6.2.11 Utility Crossings**

Enable would participate in the Texas and Louisiana One-Call system prior to construction to identify utilities that may be crossed by the Gulf Run Pipeline. Enable would then mark any identified utilities to prevent accidental damage during construction. Enable would adhere to foreign operator requirements and use appropriate construction methods to protect crossing utilities. Enable would cross foreign utilities co-located with major roads via HDD or bore as described in section A.6.2.7 of this EA. Typical right-of-way construction diagrams for construction with co-located utilities are provided in appendix A.

## **6.3 Additional Temporary Workspaces, Pipe/Contractor Yards, and Access Roads**

Enable would use ATWS along the pipeline rights-of-way for various road, railroad, wetland, and waterbody crossings; and utility and pipeline crossovers. In general, ATWS would be cleared and graded for use during construction in accordance with the FERC Plan and Procedures.

Enable would also use eight pipe/contractor yards for equipment, pipe, and material storage, as well as temporary field offices and pipe preparation/field assembly areas during construction of the Project (see table A-2). The pipe/contractor yards would require only minor modifications to the existing land use. To support equipment laydown and vehicle traffic, a portion of the yards may be graveled, and a temporary security fence may be installed. Use of these areas would be temporary. Following construction,

the graveled area would be restored to preconstruction use or as negotiated with the landowner.

Enable would modify 235 private roads for access during construction and/or operation of the Project and would permanently maintain 10 roads for access to the pipeline rights-of-way and new aboveground facilities during operation of the Project. Modification and construction of access roads would involve trimming or removal of vegetation, grading, and placement of gravel surfacing. Roads only used for construction would be restored to previous conditions or in accordance with landowner agreements. The environmental impacts associated with the use of ATWS, contractor/pipe yards, access roads, and the measures the companies would implement to minimize impacts, are discussed in appropriate sections of this EA.

<b>Table A-2</b>			
<b>Pipe/Contractor Yards for the Project</b>			
<b>Pipe/Contractor Yard</b>	<b>Construction Impact (acres)</b>	<b>Purpose</b>	<b>Distance (miles)/ Direction from Construction Work Area</b>
Yard 1	26.2	Pipe/Material/Contractor Yard	0.3/West
Yard 2	6.7	Pipe Offloading	13.7/West
Yard 3	12.8	Contractor Yard	3.7/East
Yard 4	18.3	Contractor/Material Yard	10.0/East
Yard 5	27.6	Pipe/Material Yard	0.6/East
Yard 6	37.9	Pipe/Material Yard	12.6/East
Yard 7	3.5	Contractor Yard	12.6/East
Delhi Yard	0.8	Contractor Yard	0.28/East

#### **6.4 General Construction Techniques for Aboveground Facilities**

Construction and modifications of aboveground facilities would typically include clearing, grading, compacting the site where necessary, pouring concrete foundations, and erecting/installing aboveground equipment, buildings, and piping. Limited direct ground disturbance (e.g., grading and excavation) would be needed to complete the facility modifications. All work associated with modifications of existing aboveground facilities would occur within the fence lines and/or previously disturbed areas of the existing permanent facilities, with the exception of the CP-3 Meter Station, which would require additional land for both construction and operation. No incremental area would be required for operations at the existing facilities. Erosion and sediment controls would be installed prior to the start of facility construction to minimize the potential for erosion and the potential for impacts on off-site wetlands and waterbodies.

## 6.5 Environmental Compliance, Inspection, and Monitoring

To ensure that construction of the Project would comply with mitigation measures identified in Enable's application, the Commission's requirements for the Project, and the requirements of other federal and state permitting agencies, Enable would include, whenever possible, implementation details in their construction drawings and specifications. Enable's contractors would receive copies of specifications and a construction drawing package containing, among other things, pipeline and equipment drawings designated as being approved for construction, as well as environmental permits, certificates, and/or clearances.

Enable would conduct training for field construction personnel and construction contractor's personnel prior to and during construction of the Project. This training would focus on implementation of the FERC Plan and Procedures and would include instructions on the implementation of the SPCC Plan and other mitigation measures, as appropriate. The training would cover the Project's environmental documents, Project-specific conditions contained in the Commission Order, and other applicable federal, state, and local permits and approvals.

For purposes of quality assurance and compliance with mitigation measures, other applicable regulatory requirements, and Enable's specifications, Enable would be represented by at least one environmental inspector (EI) per construction spread during construction. The EIs would have authority to stop activities that violate the measures set forth in the Project's documents and authorizations and would have the authority to order corrective action. The EI's duties would be consistent with those contained in section II.B (Responsibilities of the Environmental Inspector) of the FERC Plan. FERC would also conduct routine inspections during construction to determine compliance with any conditions attached to an order and to inspect the construction conditions of the Project's facilities.

After construction, Enable would conduct follow-up inspections of all disturbed upland areas to determine the success of restoration and would monitor the success of wetland revegetation annually for the first three years (or as required by permit) after construction, or longer, until wetland revegetation is successful. At a minimum, inspections would occur after the first and second growing seasons in upland areas to ensure the restoration of all areas affected by the Project. We would also continue to conduct oversight inspection and monitoring following construction. If it is determined that any of the proposed monitoring timeframes are not adequate to assess the success of restoration, Enable would be required to extend its post-construction monitoring programs.

## 6.6 Restoration, Operations, and Safety Controls

Restoration of the Project's workspaces, including pipeline rights-of-way and aboveground facilities, would occur in accordance with our Plan and Procedures. Enable would also enroll eligible portions of the Project in the National Wild Turkey Foundation (NWTf) Energy for Wildlife Partnership program. As part of this program and following construction, Enable would reseed the portions of the Project rights-of-way eligible for the program using a seed mix that incorporates native plants (see EA section B.4.2.3 for additional discussion). To ensure that disturbed workspaces are stabilized in accordance with the Plan and Procedures, Enable would supplement native seed mixes, which may be slow to establish, with rapidly establishing annual species. Enable would implement its integrated vegetation management (IVM) program during the restoration and ongoing maintenance of the Project workspaces and rights-of-way, which the Energy for Wildlife Partnership program has endorsed for its lands. Enable would use its IVM program to promote desirable, stable, low-growing plant communities that would be resistant to tall growing tree species along the Project rights-of-way.

Operational activities on the Gulf Run Pipeline would be limited to maintenance of the right-of-way and inspection, repair, and cleaning of the pipeline. Periodic aerial and ground inspections by pipeline personnel would assist in identification of the following conditions: soil erosion that may expose the pipe, surface visual clues that may indicate a leak in the line, conditions of the vegetation cover and erosion control measures, unauthorized encroachment on the right-of-way, excavation activities in the vicinity of the right-of-way, and other conditions that could present a safety hazard or require preventative maintenance or repairs. The pipeline cathodic protection systems also would be monitored and inspected by pipeline personnel periodically to ensure proper and adequate corrosion protection. Appropriate corrective action to conditions observed during inspection would be taken as necessary. In addition, the Gulf Run Pipeline mainline valves would be equipped with remote operation capability.

To maintain accessibility of the right-of-way and to accommodate pipeline integrity surveys, vegetation on the new permanent rights-of-way would be maintained in accordance with our Plan and Procedures and Enable's IVM program. As part of the IVM program, Enable would control vegetation near wetlands and waterbodies using mechanical means (e.g., mowing or hand cutting) or through the application of some herbicides. Maintenance by mowing or hand cutting of the full width of the right-of-way would not occur more frequently than once every three years in accordance with our Plan. If mowing or other mechanical maintenance would be required over the full width of the right-of-way at a frequency other than that is described in our Plan, Enable would submit a variance request that includes a justification for how the modified maintenance regime would provide a greater or equal environmental benefit consistent with the Plan.

Enable has identified that it intends to use U.S. Environmental Protection Agency (EPA)-approved herbicides or pesticides within 100 feet of waterbodies and wetlands as part of its IVM program. However, sections V.D.2 and VI.D.2 of our Procedures requires land management or state agency approval for the use of herbicides or pesticides within 100 feet of waterbodies or wetland areas. Enable states that LDWF approval was obtained for the Clear Creek Wildlife Management Area given that the conservation easement Enable executed with the LDWF is enrolled in the NWTF Energy for Wildlife program, which incorporates IVM. However, this does not provide Project-wide approval. We include a recommendation below, in section B.2.3, which states that if Enable intends to use herbicides within 100 feet of a waterbody or wetland area during operational maintenance of the right-of-way, Enable should file a statement from the LDWF that use of herbicides within 100 feet of waterbodies or wetland areas is acceptable for all Project areas. LDWF has jurisdiction over the aquatic resources that may be impacted by the use of herbicides. Therefore, with the implementation of our recommendation, we have concluded that Enable's proposed use of IVM, including the use of certain herbicides within 100 feet of wetlands and waterbodies, is acceptable and in accordance with sections V.D.2 and VI.D.2 of the Procedures. Enable must also comply with our siting regulations at 18 CFR 380.15 which require landowner approval for chemical control of vegetation.

The pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any third-party excavation in the area of the pipeline. Enable would participate in the One Call and related pre-excavation notification organizations in Texas and Louisiana.

## **7. Land Requirements**

The Project land requirements, including both temporary and permanent impacts, would be approximately 2,525 acres. Of this total, approximately 791 acres would be permanently affected by the operation of the Project for the life of the facilities. Temporary impacts would occur on those areas that would be disturbed by construction activities and restored to preconstruction conditions. These include temporary construction right-of-way, temporary access roads, ATWS, and contractor yards.

The permanent pipeline right-of-way width would be 50 feet. Enable proposes to use a 100-foot-wide (75 feet in wetlands) temporary construction right-of-way for pipeline installation. To further reduce impacts, Enable proposes to co-locate (installing a segment pipe adjacent or parallel to an existing pipeline) approximately 63 miles or 47 percent of the Gulf Run Pipeline with existing pipeline and powerline rights-of-way. Of these areas of co-location, approximately 50 miles (38 percent) of the Gulf Run Pipeline

will overlap with existing rights-of-way. Typical right-of-way construction diagrams for construction with co-located utilities are provided in appendix A.

As part of the Gulf Run Pipeline, Enable would construct a new meter station and seven mainline-valve facilities. Mainline valves would be within the pipeline permanent right-of-way. The GPPL Meter Station would occupy 2.4 acres outside of the permanent right-of-way, and the pig receiver would occupy 1.4 acres outside of the permanent right-of-way.

As part of the Line CP Modifications, Enable would modify two existing compressor stations and three existing meter stations and would also construct two new meter stations. Modifications to the Westdale Compressor Station and Vernon Compressor Station would temporarily impact 22.4 acres outside of the existing station operational footprints; however, there would be no increase in operation footprint following construction. Modifications to existing meter stations and construction of the new meter stations would temporarily impact 10.2 acres and result in 0.1 acre of permanent impacts.

A detailed list of the proposed access roads and their associated land requirements is provided in table 1 in appendix B. Where practicable, Enable intends to use existing right-of-way and public and private roads for access to the construction right-of-way. In addition to public roads, the Gulf Run Pipeline would utilize 235 access roads, totaling approximately 185.5 miles, to provide access to the pipeline rights-of-way and aboveground facilities during construction. Of these, 225 roads are temporary access roads that would be used to obtain access to the construction right-of-way, and 10 additional roads would be permanently maintained to provide access to aboveground facilities. Six of the proposed permanent access roads would be developed within the permanent pipeline easement and therefore would not contribute to incremental operational land requirements beyond that already accounted for by the permanently maintained pipeline right-of-way. There are four permanent access roads proposed outside of the permanent right-of-way for the Gulf Run Pipeline for access to mainline valve #1, the pig receiver at MP 97.1, the GPPL Meter Station, and the Westdale Compressor Station; however, the permanent access road to the Westdale Compressor Station is an existing road, which would not require improvements.

If additional ATWS is required due to site-specific conditions during construction, Enable may request ATWS not already identified on an as-needed basis from FERC as part of the variance process. Enable would be required to file information on each of those areas for review and written approval by the appropriate agencies, prior to use. A summary of the land requirements for the Project is presented in table A-3.

## **8. Construction Schedule**

Enable proposes to begin construction of the Project as soon as feasible in 2021, subject to the receipt of necessary permits and approvals, and it is anticipated that the proposed facilities would be placed in service before the end of 2022. Construction of the Gulf Run Pipeline would last approximately 11 months, and construction of the GPPL Meter Station would last about 4 months. Construction of the Line CP Modifications would take about six months at the Westdale Compressor Station, four months at the Vernon Compressor Station, four months at the Delhi Area Meter Stations, and two months at the CP-3 Meter Station.

Construction work would generally be scheduled to take advantage of daylight hours, and the typical work week would consist of six, 10-hour workdays (i.e., Monday through Saturday), excluding federal holidays. However, HDDs may operate on a 24-hour schedule, depending on the complexity of the drill (e.g., drill length and soil type along the drill path). Construction of the Gulf Run Pipeline would require two construction spreads with a peak temporary workforce of approximately 900 workers in total. Construction at the compressor stations would require a peak temporary workforce of 50 to 75 workers. Construction of each meter station would require a peak temporary workforce of 20 to 50 workers. Specific numbers of workers onsite at any particular time would depend on the construction activities underway. Non-local workers typically would compose about 85 percent of the construction workforce; local workers would be employed for construction when available and are anticipated to constitute about 15 percent of the required workforce. Enable would hire five new employees for operation of the Gulf Run Pipeline.

<b>Table A-3</b>		
<b>Summary – Land Requirements</b>		
<b>Facility</b>	<b>Land Affected Temporarily During Construction (acres) <u>a/</u></b>	<b>Land Affected Permanently During Operation (acres) <u>b/</u></b>
<b>Gulf Run Pipeline</b>		
Pipeline	1,570.8	780.9
ATWS	334.2	0.0
Access Roads	449.8	5.9
Pipe/Contractor Yards	133.2	0.0
GPPL Meter Station	2.4	2.4
Mainline Valve	0.0	0.0
Pig Receiver	1.4	1.4
<b>Gulf Run Pipeline Total</b>	<b>2,491.8</b>	<b>790.6</b>
<b>Line CP Modifications</b>		
Westdale Compressor Station	13.1	0.0
Vernon Compressor Station	9.3	0.0
Delhi Yard	0.8	0.0
Meter Stations	10.2	0.1
<b>Line CP Modifications Total</b>	<b>33.4</b>	<b>0.1</b>
<b>Project Total</b>	<b>2,525.2</b>	<b>790.7</b>
<p>a Construction acreages reflect a nominal 100-foot-wide construction right-of-way, except at wetland and waterbody crossings, where the right-of-way width would be 75 feet, and in areas encompassed by HDD crossings, which would not require clearing of a construction right-of-way between the HDD entrances and exits. Construction acreages include both temporary and permanent (operational) workspaces.</p> <p>b Operation acreages reflect a nominal 50-foot-wide permanent easement. This includes permanent easement that would be retained in areas encompassed by HDD crossings; however, these areas would not require routine maintenance.</p>		

## 9. Non-Jurisdictional Facilities

Under Section 7 of the NGA, the Commission is required to consider, as part of its decision to approve facilities under Commission jurisdiction, all factors bearing on the public convenience and necessity. The primary jurisdictional facilities for the Project are the combined 134 miles of new pipeline and the related aboveground facilities (i.e., GPPL Meter Station, Line CP modifications, and ancillary facilities including mainline valves and pig launcher/receiver facilities).

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These “non-jurisdictional” facilities may be integral to the need for the proposed facilities, or they may be merely associated as minor

components of the jurisdictional facilities that would be constructed and operated as a result of authorization of the proposed facilities.

Enable identified the need for electric power at the new CP-3 Meter Station proposed in conjunction with the Line CP Modifications. The meter station site is near Panola County Road 336, which has an existing electric distribution line adjacent to the road. Electric power would be provided to the meter station via a service drop from the distribution line pole nearest to the property (electric service line drop) and would not require impacts not already accounted for in the impacts described for the CP-3 Meter Station.

## **10. Permits and Approvals**

Table A-4 lists the major federal, state, and local permits, approvals, and consultations associated with the construction and operation of the Project, and provides the current status of each. Enable would be responsible for obtaining and abiding by all permits and approvals required for construction and operation of the Project regardless of whether they appear in the table or not.

**Table A-4**  
**Permit and Approvals**

Agency	Permit/Approval/Consultation	Status
<b>Federal</b>		
FERC	Certificate of Public Convenience and Necessity under Section 7(c) of the NGA; Abandonment Authorization under Section 7(b) of the NGA	Section 7 application filed on February 28, 2020
USACE, New Orleans District	Standard (Individual) Permit, CWA Section 404 and Rivers and Harbors Act Section 10 Permit (Bayou Pierre)	Permit application submitted on June 4, 2020
USACE, Fort Worth District	CWA, Section 404	Individual Permit application submitted to the New Orleans District (lead District) on June 4, 2020
USACE, Galveston District	CWA, Section 404	Individual Permit application submitted to the New Orleans District (lead District) on June 4, 2020
USACE, Vicksburg District	CWA, Section 404	Individual Permit application submitted to the New Orleans District (lead District) on June 4, 2020
USFWS	Consultations under Section 7 of the ESA, the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Fish and Wildlife Coordination Act	Consultation completed April 2020
NRCS	Consultations regarding Prime Farmland; Hydric Soil; Soil Erosion and Sedimentation; Seed Mixture; and Noxious Weeds	Consultation completed in June 2019
<b>Louisiana</b>		
LDEQ, Water Permits Division	CWA, Section 401 Water Quality Certification	Permit issued September 9, 2020
	Hydrostatic Test Water Discharge Permit – National Pollutant Discharge Elimination System, CWA, Section 402	To be submitted prior to discharge
LDEQ, Air Permits Division	Minor Source Air Permit Modification	Submitted February 2020
LDNR	Hydrostatic Test Water Withdrawal Authorization	To be submitted prior to withdrawal
LDWF	Letter of Authorization for Construction Within Clear Creek Wildlife Management Area	To be submitted
	Servitude Agreement for Crossing of USDA Easement within Sabine Parish	Servitude agreement executed December 2019

**Table A-4**

**Permit and Approvals**

<b>Agency</b>	<b>Permit/Approval/Consultation</b>	<b>Status</b>
LDWF, Natural Heritage Program	Consultation on Protected Species	Consultation completed in June 2020
Louisiana Office of State Lands	Easement for Crossing of Dried Lake Bed within DeSoto Parish	Easement executed February 2020
Louisiana SHPO	Consultation under Section 106 of the NHPA	Consultation completed June 2020
<b>Texas</b>		
TPWD	Consultation on Protected Species	Consultation completed February 2020
Texas SHPO	Consultation under Section 106 of the NHPA	Consultation completed February 2020
TCEQ	Permit by Rule	To be submitted
Railroad Commission of Texas	Hydrostatic Test Water Discharge Permit	To be submitted prior to discharge

LDEQ = Louisiana Department of Environmental Quality  
 LDNR = Louisiana Department of Natural Resources  
 NRCS = National Resource Conservation Service  
 SHPO = State Historic Preservation Office  
 TCEQ = Texas Commission on Environmental Quality  
 TPWD = Texas Parks and Wildlife Department  
 USDA = U.S. Department of Agriculture  
 USFWS = U.S. Fish and Wildlife Service

## **B. ENVIRONMENTAL ANALYSIS**

The following sections discuss the potential direct and indirect impact of the Project on environmental resources. The environmental consequences of constructing and operating the Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impacts could continue between two and five years following construction. Impacts were considered long-term if the resource would require more than five years to recover, but would eventually recover to preconstruction conditions. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project. An impact may be considered significant if it would result in a substantial adverse change in the physical environment. When determining the significance of an impact, we consider the duration of the impact as well as the geographic, biological, and/or social context in which the effects would occur, and the intensity (e.g., severity) of the impact.

### **1. Geology**

The Project is within the West Gulf Coastal Plain section of the Coastal Plain physiographic province. In general, rocks decrease in age from northwest to southeast in Louisiana. The Project largely crosses through sedimentary rocks ranging from unconsolidated to poorly consolidated clastic rocks, of Mesozoic to Cenozoic Era (U.S. Geological Survey [USGS], 1998; 2019a). The Line CP Modifications are limited to an area underlain by sedimentary geologic units deposited during Pleistocene and recent time, with the exception of the CP-3 Meter Station, which includes a sedimentary geologic unit deposited during the late Paleocene to Eocene (Paleobiology, 2019).

The Project crosses four soil units with bedrock within 5 feet of the surface in Sabine and Vernon Parishes with a cumulative crossing length of 3.4 miles (Natural Resources Conservation Service [NRCS], 2020a). Bedrock in these areas consists of mostly paralithic rock (USGS, 2019c) that is expected to be soft enough for mechanical excavation. Therefore, blasting is not anticipated to be necessary for construction of the Gulf Run Pipeline.

The Project area topography is generally flat with alluvial deposits in the northern end changing to hilly in Sabine Parish and then gradually sloping down and transitioning into terraces formed by various depositional sequences in the southern end (State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness [GOHSEP], 2014). Elevation within the Gulf Run Pipeline area ranges from 38 feet above mean sea level (AMSL) in the southern end to a high of 465 feet AMSL in Sabine Parish, with an approximate 139 feet AMSL in the northern end. Elevation of the Line

CP Modifications changes from a high of approximately 340 feet AMSL on the western end near the CP-3 Meter Station to approximately 282 feet AMSL at the Vernon Compressor Station, where it slopes to approximately 70 feet AMSL for the eastern Delhi Area meter station facilities located in the Mississippi alluvial basin.

## **1.1 Mineral Resources**

The non-fuel mineral production in Louisiana consists predominantly of industrial minerals, including common clays, construction and industrial sand and gravel, crushed stone, gypsum, lime, natural gemstones, and salt (USGS, 2018). The fuel resources include oil and gas wells in the Haynesville Shale, a sedimentary rock more than 10,000 feet below the Earth's surface. The Gulf Run Pipeline would cross the Haynesville Shale in northwest parishes. Wells that access the Haynesville Shale near the Project are discussed below.

One non-fuel mineral resource site is located within 0.25 mile of the Project, a recently developed sand mine on property traversed by the Gulf Run Pipeline from MP 4.4 to 5.5 in Red River Parish. Enable has identified and adopted a route variation to realign the pipeline right-of-way across this property. The revised pipeline route is not anticipated to affect operation of the sand mine.

None of the Project facilities are within 0.25 mile of known salt domes and, thus, are not anticipated to impact current or future salt mining operations (GOHSEP, 2014; Stephenson Disaster Management Institute, 2015). In addition, there are no major mineral deposits or critical minerals as classified by the USGS (2019a) within 0.25 mile of the Gulf Run Pipeline.

A total of 844 oil and gas wells are in Beauregard, Calcasieu, DeSoto, Red River, Sabine and Vernon parishes. Of those, 118 oil and gas wells are active and within 0.25 mile of the Gulf Run Pipeline, while four oil and gas wells are within 0.25 mile of the Line CP Modifications (see table B-1 below; Louisiana Department of Natural Resources [LDNR], 2019; Texas Rail Road Commission, 2020). There are 11 active wells within 150 feet of the Gulf Run Pipeline construction areas in DeSoto Parish and one active well within 150 feet of the Gulf Run Pipeline construction areas in Red River Parish. No active wells are within 150 feet of the Line CP Modifications (table B-1). No active oil and gas wells are within proposed Project construction workspaces; however, two wells are adjacent to the proposed workspace (table B-1).

In the event an additional oil or gas well is identified within the Project workspaces prior to or during construction, mitigation measures for avoiding impacts on the well would be implemented, workspaces would be adjusted, and FERC would be made aware of any needed workspace modifications.

<b>Table B-1</b>					
<b>Active Wells Located Within 150 Feet of the Gulf Run Pipeline Construction Areas</b>					
<b>Facility Name</b>	<b>Parish</b>	<b>Pipeline Milepost</b>	<b>Well Status</b>	<b>Distance from Workspace (feet)</b>	<b>Direction from Workspace</b>
Perry Point, Inc.	DeSoto	17.5	Active - Producing Oil	76	south
Fite Oil and Gas, Inc.	DeSoto	18.0	Active - Producing Gas	149	north
Fite Oil and Gas, Inc.	DeSoto	20.3	Active - Producing Gas	52	north
Grogan Field Production, L.L.C.	DeSoto	22.3	Active - Producing Oil	6	east
Grogan Field Production, L.L.C.	DeSoto	23.1	Active - Producing Oil	84	west
Grogan Field Production, L.L.C.	DeSoto	23.2	Active - Producing Oil	31	west
BMR Oil & Gas, Inc.	DeSoto	23.3	Active - Producing Oil	0	south
Grogan Field Production, L.L.C.	DeSoto	23.4	Active - Producing Oil	0	south
BMR Oil & Gas, Inc.	DeSoto	23.5	Active - Producing Oil	73	west
Grogan Field Production, L.L.C.	DeSoto	24.1	Active - Producing Oil	112	west
Grogan Field Production, L.L.C.	DeSoto	24.3	Active - Producing Oil	25	west
BPX Operating Company	Red River	5.6	Active - Producing Gas	71	east
Source: LDNR, 2019					

## **1.2 Paleontological Resources**

Paleontological resources are the fossilized remains, traces, or imprints of organisms that have been preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. Fossils have been documented in all but one of the 16 geologic units mapped in the Project area. However, in general, there are no sensitive paleontological resource areas known in the vicinity of the Gulf Run Pipeline and Line CP Modifications. As such, the overall potential of encountering geological units with important paleontological resources is low. In the event that new fossils are encountered during construction of the Project, Enable would

follow the procedures outlined in its Plan for Recognizing and Reporting Unanticipated Paleontological Resources.

### **1.3 Geologic Hazards**

Geologic hazards are naturally occurring physical conditions that may result in damage to land and property or injury to people. Within the Project area, these could potentially include seismic activity, surficial faults, soil liquefaction, landslides, karst terrain, and ground subsidence.

#### **1.3.1 Seismicity, Surficial Faults, and Soil Liquefaction**

Seismic hazards include ground shaking due to earthquakes, surface faulting, and soil liquefaction, a phenomenon in which saturated, unconsolidated, granular material loses cohesive strength due to strong, prolonged shaking. Portions of the Project area may exhibit soil and shallow groundwater conditions that are necessary for liquefaction to occur. However, as discussed below, due to the low potential for strong and prolonged ground shaking in the region, the potential for soil liquefaction to occur is also low. Furthermore, there have been no modern occurrences of soil liquefaction due to earthquake shaking documented in the Project area (NRCS, 2020a).

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

The USGS uses the historical occurrence of earthquakes and geologic setting to predict the future earthquake hazard in a region. Ground shaking caused by earthquakes is often expressed as a percentage of the acceleration due to gravity. The USGS predicts that Gulf Run Pipeline is within an area that has a 2 percent probability for an earthquake to occur in the next 50 years, with at least 4 to 6 percent of the force of gravity. The northern end of the Gulf Run Pipeline is within an area mapped as having a 10 percent probability for an earthquake to occur in the next 50 years, with at least 2 to 3 percent of the force of gravity; and the southern end is mapped as 1 to 2 percent of the force of gravity.

The Line CP Modifications are mapped as having a 2 percent probability for an earthquake to occur in the next 50 years, with at least 4 to 6 percent of the force of gravity in Red River Parish, Jackson Parish, and Panola County; and 6 to 10 percent of the force of gravity in Richland Parish (USGS, 2014). The Line CP Modifications are further mapped as having a 10 percent probability for an earthquake to occur in the next 50 years, with at least 2 to 3 percent of the force of gravity. Damage due to an earthquake begins at a level of ground shaking of approximately 10 percent of the force of gravity and, thus, all components of the Project are at low risk of earthquake related damages.

### **1.3.2 Landslides**

Landslides are the mass movement of rock, debris, or earth down a slope, which can be initiated by natural processes or human activity. Landslide hazards are typically assessed based on susceptibility and incidence. The degree of landslide susceptibility is based on the geologic and physiographic conditions in an area, including presence of soils that shrink or swell, with changes in moisture content, and are located in areas with steep relief. Although soils with high shrink-swell potential are present in some areas of the Project, the Project is not characterized by steep slopes (average slope of 0.7 percent along the Gulf Run Pipeline route with a maximum slope of 4.5 percent). Additionally, with the exception of the CP-3 Meter Station, all Line CP Modifications facilities would be constructed within the previously disturbed property of existing facilities. To accommodate the CP-3 Meter Station, Enable would expand the fence line at an existing pig receiver facility. None of these facilities contain steep slopes and none are susceptible to landslides.

Stanley and Kirschbaum's 2017 global map of landslide susceptibility indicates that the Project area is considered to have slight landslide potential and that no mass wasting events have been recorded in the region (Kirschbaum et al., 2009; Kirschbaum, Stanley, and Zhou, 2015; Cooperative Open Online Landslide Repository, 2019). Furthermore, there is no discussion of landslide/slope stability hazards in Louisiana in the Governor's Office of Homeland Security and Emergency Preparedness, State of Louisiana Hazard Mitigation Plan. Based on the largely flat topography and gradual slopes throughout the region, significant destabilizing factors would be required to cause slope instability. Consequently, the risk of damages from landslide hazards for the Project are considered low.

### **1.3.3 Subsidence and Karst Terrain**

The USGS map of karst and potential karst areas in the United States was used to assess the potential karst hazards within the Project area (Weary and Doctor, 2014). The Project is not located within an area mapped as karst, or potential karst, by the USGS, and is outside of the few parishes/counties in the region known to contain buried karst

ground (Weary and Doctor, 2014; GOHSEP, 2014). Moreover, the occurrence of sinkholes in the few known karstic areas within the Project area has been negligible (GOHSEP, 2014). Additionally, salt domes are known to occur across the state of Louisiana and are vulnerable to sinkhole formation (Beckman and Williamson, 1990; GOHSEP, 2014). However, there are no salt domes within 2 miles of the Gulf Run Pipeline and, thus, the risk of sinkhole collapse to the pipeline and associated facilities is considered low.

The Line CP Modifications and a majority of the Gulf Run Pipeline are in areas that have a medium to low risk of sinkhole formation; portions of the Gulf Run Pipeline closest to Calcasieu Parish are most at-risk to sinkhole formation. However, due to the infrequency of sinkhole collapse and the distance of the route to the nearest known salt domes, the overall probability of sinkhole formation is considered low.

### **1.3.4 Flooding**

The Project areas in Louisiana and Texas are historically susceptible to flooding and flood hazards. Flooding (as well as shallow groundwater) can cause buoyancy in pipelines. Flooding can also induce migration of streams and cause scour that can undermine or expose a pipeline. The portion of the Gulf Run Pipeline in Beauregard Parish and Calcasieu Parish would be subject to high and medium flood risk, respectively (GOHSEP, 2019). All other parishes would be subject to low flooding risk. With the exception of one mainline valve (number 3), which would be in the 100-year floodplain, the Gulf Run Pipeline would be located outside of the 500-year floodplain and would be subject to minimal flood hazard (Federal Emergency Management Agency [FEMA], 2020). The Line CP modifications in Louisiana would be constructed at existing facilities that have not previously been affected by flood events. The CP-3 Meter Station site in Panola County, Texas is located in an area unmapped for floodplains; however, the nearest waterbody with flooding concerns is approximately 0.36 mile from the station.

## **1.4 Impacts and Mitigation**

Based on the analysis presented above, we conclude that Project activities would not be adversely impacted by local topographic or geological conditions. In particular, construction of the Gulf Run Pipeline would avoid impacting the existing oil and gas wells as no wells are located within proposed construction workspaces. However, table B-1 indicates there are two wells located on the edge of the proposed workspace. Enable is in consultation with these well owners to determine what modifications to its workspace would be necessary to avoid affecting the wells. Any adjustments to the proposed workspace would be filed by Enable as soon as they are available, and before the start of construction.

Additionally, as described above, based on the strength and hardness of rocks known to occur throughout the area, blasting is not anticipated. Enable would attempt to use mechanical methods, such as ripping or conventional excavation to remove the bedrock where possible. In the event that blasting is necessary to excavate the trench, Enable has committed to submit a Project-specific Blasting Plan for our review and approval prior to initiating any blasting.

Likewise, the above analysis indicates that geologic hazards (seismicity, surficial faulting, soil liquefaction, landslides, karst development, ground subsidence, and flooding) would not adversely impact the Project. In particular, due to the low probability and low incidence/susceptibility of significant magnitude earthquakes within the Project area, the Project is not expected to be affected by seismic activity. In addition, since the Project is not in an area associated with major faults, it is not anticipated that the Project would be affected by fault movements or seismic shaking. The Project would be designed and constructed in accordance with applicable USDOT Office of Pipeline Safety regulations regarding pipe wall thickness and strength, 49 CFR Part 192. The Project facilities would be constructed to standards that would allow them to withstand probable seismic events within the seismic risk zones crossed by the Project, as described above, including applicable standards and design requirements in additional federal and state regulations.

Even though the probability of slope instability and construction on slopes for this Project is low, construction would include best management practices (BMP) to address slope instability in accordance with FERC's Plan and Procedures. Such BMPs may include, but would not be limited to: installation of permanent trench breakers; installation of temporary and/or permanent slope breakers diagonally across Project workspaces on slopes to control erosion; use of temporary trench plugs; and periodic inspections of the construction right-of-way during construction, such as following significant storm events to ensure proper function of BMPs and develop BMP modifications, as required.

Enable would also cross all waterbodies greater than 100 feet wide, where flooding hazards could be greatest, via HDD at a depth of at least 60 feet, except for Crooked Bayou, which Enable would cross using a combination of dry-ditch crossing methods. Through implementation of the FERC Plan and Procedures and the use of necessary equipment to handle increases in waterbody flow during construction, we conclude any hazards from flooding during construction or operation of the Project have been adequately minimized.

Construction and operation of the Project would result in less than significant impacts on geologic resources, and any potential geologic hazards encountered during construction would be adequately minimized with implementation of measures contained

in Enable's HDD Contingency Plan and Unanticipated Discovery of Paleontological Resources Plans.

## **2. Soils**

Soil type and characteristic data were obtained from the NRCS Soil Survey Geographic Database, which houses soil data and information produced by the National Cooperative Soil Survey (NRCS, 2020a). We evaluated the soil types and characteristics of the soils that would be crossed by the Project to identify potential impacts from Project construction and restoration. Soil characteristics present in the Project workspaces include highly erodible soils, hydric soils, soils with poor revegetation potential, and prime farmland. Additionally, we evaluated the potential for soil contamination.

Approximately 2,491.8 acres would be affected by construction of the Gulf Run Pipeline while 33.4 acres would be affected by the Line CP Modifications. The Gulf Run Pipeline workspaces would include approximately 891 acres of highly water erodible soils; 355 acres of highly wind erodible soils; 426 acres of hydric soils; and 214 acres of soils with poor revegetation potential. The Line CP Modifications workspaces would include approximately 11 acres of highly water erodible soils; 9 acres of highly wind erodible soils; 10 acres of hydric soils; and 9 acres of soils with poor revegetation potential.

A detailed description of the soils characteristics found in the Project area are described below.

### **2.1 Soil Characteristics**

#### **2.1.1 Highly Erodible Soils**

Soil erosion from the effects of water or wind could result in relocation and loss of disturbed soils; however, the gentle topography found in the Project workspaces would lessen these effects. To further reduce impact potential, temporary erosion and sediment controls would be installed after initial disturbance, in accordance with the FERC Plan and Procedures. These would include temporary slope breakers, silt fences, and hay/straw bales to divert water to well-vegetated areas. Soil stabilization would be improved using sediment barriers, mulch, temporary seeding, and tackifiers (i.e., materials designed to adhere seeding mixes to the soil) where necessary. Permanent erosion controls, such as terraces, interceptor diversion devices, rock riprap, and vegetation cover, may be installed within the right-of-way, as needed during the restoration phase, in accordance with the FERC Plan and Procedures to minimize long-term erosion and sedimentation.

The Project EI(s) would be responsible for inspecting erosion and sedimentation control measures for effectiveness and ordering supplemental corrective action, as needed. Inspections would be conducted following initial disturbance, following storm events, and routinely throughout Project construction.

### **2.1.2 Hydric Soils**

A hydric soil is one that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS, 2020b). Hydric soils are an indication that an area is occupied by wetlands. Therefore, impacts on hydric soils are often associated with impacts on wetlands. Such impacts could include damage from soil disturbance (e.g., trench excavation, pipe installation, and trench backfill); alteration of hydrology; and loss of vegetation. Most impacts would be short-term, concluding following wetland restoration. Upon transition of wetlands back to preconstruction conditions, hydric soils would continue to develop. Enable would minimize the extent and duration of Project-related disturbance to wetland resources, and associated hydric soils, before, during, and after construction. Impacts on hydric soils would be mitigated by implementation of appropriate measures outlined in the FERC Procedures.

### **2.1.3 Soils with Poor Revegetation Potential**

Most soil units in the Project area have good revegetation potential. Soils with poor revegetation potential include those with a surface texture of sandy loam or coarser that are moderately well to excessively drained; soils with an average slope greater than or equal to 9 percent; and/or soils with high potential seedling mortality. Disturbance of soils with poor revegetation potential may result in loss of soil quality and spreading of soil pests, noxious weeds, and invasive or non-native plant species. Use of appropriate seed mixes and proper soil management would reduce the potential for soil pests and the spread of noxious weeds and invasive plants. Seed specifications that stabilize soils and naturally improve upland and grassland habitat would be followed, including guidance from the NRCS and the NWTf as described further in section B.4.2.

During restoration, disturbed areas would be mulched with straw and/or hay and would be anchored or tackified after application. Where slopes are no steeper than 3:1 (horizontal:vertical), straw or hay may be crimped into the soil. In addition, biodegradable jute matting, fiber netting, natural wood excelsior, or similar materials may be used to anchor and stabilize the surface of the soil during the critical period of vegetation establishment. Matting or netting materials would be applied to sensitive areas such as steep slopes, banks of waterbodies, swales, and other areas of concentrated water flow. Matting or netting materials would also be applied where vegetation establishes at inadequate rates or densities to assist soil stabilization.

The Project workspaces would generally be seeded within six working days of final grading (weather and soil conditions permitting), and slopes steeper than 3:1 would be seeded immediately after final grading (weather and soil conditions permitting). Temporary erosion controls such as mulching, or seeding of annual species, or dormant seeding would be used along the right-of-way when construction is completed outside of recommended seeding dates. In wetlands, the right-of-way would be seeded with a temporary annual seed mix to stabilize the area until indigenous wetland species are re-established.

#### **2.1.4 Soil Contamination**

Spills or leaks of equipment fuels, lubricants, and coolants could also impact soils. Strict adherence to the FERC Plan and Procedures and appropriate implementation of the Project-specific SPCC Plan would minimize impacts on soils.

A search of available federal and state records conducted by Environmental Data Resources, Inc., identified four registered environmental sites within 0.25 mile of the proposed Gulf Run Pipeline. See section B.5.4 for additional information on each site. None of the registered sites were indicated to be sources of soil contamination; therefore, no impact from contaminated soil is anticipated. Should potential contamination be identified during construction, priority would be placed on protecting the safety of Project personnel and the public; followed by containing the discovered contamination and protecting the environment.

Spills or leakage of fuels, lubricants, and coolants from equipment could impact soils. Regardless of the contamination source (i.e., Project-related spill or contamination unrelated to the Project), upon discovery of contamination, the contractor's Spill Coordinator and the EI would be immediately notified. The Spill Coordinator and the EI would be responsible for determining further actions. Procedures that may be required to address Project-related spills are outlined in the Project-specific SPCC Plan filed by Enable, as well as the FERC Plan and Procedures. Measures outlined in the Project-specific SPCC Plan include, but are not limited to:

- spill prevention and response training for construction personnel;
- inspection of construction equipment for leaks;
- secondary containment of fuels, oils, and hazardous materials;
- refueling restrictions;
- immediate response procedures;
- wetland and waterbody response procedures;
- disposal of wastes generated during equipment maintenance; and
- excavation of soils contaminated by spillage.

The SPCC Plan has been reviewed and deemed adequate to address the storage and transfer of fuels and hazardous materials, as well as the response to be taken in the event of a spill.

### **2.1.5 Prime Farmland**

Prime farmland is defined by the U.S. Department of Agriculture (USDA) as soil with the “best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses” (7 CFR 657.5(a)). Farmland of statewide importance is land that is “nearly prime farmland and that economically [produces] high yields of crops when treated and managed according to acceptable farming methods” (7 CFR 657.5(c)).

Sixty soil map units designated as prime farmland and one soil map unit designated as farmlands of statewide importance were identified along the Gulf Run Pipeline route that would be temporarily impacted by Project construction. This equates to a total of approximately 1,462 acres. As part of the Gulf Run Pipeline, approximately 2.7 acres of prime farmland soil within the proposed fence line of the new GPPL Meter Station; the pig receiver at MP 97.1; and the mainline valves would be precluded from future crop production; however, these areas are not currently used for agricultural purposes. Additionally, 33 acres of prime farmland soil would be affected by the Line CP Modifications. However, the Line CP Modification workspaces would occur on commercial/industrial lands that are not currently used for agricultural purposes.

## **2.2 Impacts and Mitigation**

While soils with the characteristics described above would be particularly susceptible to Project impacts, their distribution within the Project area is limited. However, all soils disturbed by the Project would be impacted to an extent. Construction activities such as clearing, grading, trench excavation, backfilling, and movement of heavy machinery would temporarily impact soils along the right-of-way, in temporary work areas, and on access roads. Clearing and grading would remove protective vegetation cover, increasing potential for soil erosion from wind and water. Trench excavation would expose subsoils, leading to increased erosion. Seasonal severe weather that affects the Gulf Coast region would increase erosion of exposed soils. Greater soil erosion would result in greater sedimentation in downgradient waterbodies. Heavy machinery operation and movement along the right-of-way would compact soil, damage soil structure, reduce porosity, reduce percolation rates, and increase soil runoff potential. Reduction in quality of prime farmland and farmland of statewide importance could occur on the right-of-way as a result of intermixing of topsoil and subsoil during topsoil salvage and segregation and during trench excavation.

Impacts would be mitigated by implementing special construction procedures in agricultural land in accordance with the FERC Plan. Enable would restore disturbed areas to their original condition to the extent practicable. Topsoil segregation would be conducted in cultivated or rotated croplands, hayfields, or managed pastures, and in other areas at the request of resource agencies or landowners. Enable would strip and segregate the topsoil from either the full work area or from only the ditch and spoil storage areas in accordance with requests of landowners. Existing surface drainage flow patterns would be maintained in agricultural fields by providing breaks in topsoil and subsoil stockpiles. Depth of cover would be increased in actively cultivated areas, such that the top of the pipe is a minimum of 4 feet below existing grade. During cleanup and restoration, disturbed areas would be finish-graded and restored as closely as possible to preconstruction contours, and topsoil and subsoil in agricultural areas would be tested for compaction, and severely compacted areas would be repaired. While use of drain tiles is uncommon in the Project area, and no impacts on drain tiles are anticipated, if drain tiles or irrigation systems are damaged as a result of construction, they would be repaired or replaced in coordination with the affected landowner.

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

Revegetation of agricultural areas would be considered successful when crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Problems with topsoil replacement, soil-profile compaction, rocks, and drainage and irrigation systems resulting from construction in active agricultural areas would continue to be monitored and corrected until restoration is successful. Resumption of agricultural operations following Project construction would aid in the restoration of soil structure and productivity that could take several years to achieve success, depending on site-specific conditions and land use practices.

Potential for settling or slumping of soils used to backfill the trench would exist along the Gulf Run Pipeline following installation. Backfilling would be to approximate grade; however, in anticipation of settling of freshly placed backfill, a crown of topsoil may be placed above the trench. Imported topsoil would be used to fill areas where settling of backfill occurs after segregated topsoil has been used; however, Enable would not be permitted to use topsoil from the Gulf Run Pipeline right-of-way or adjacent agricultural land.

Wind and water erosion impacts and hydric soil impacts would be mitigated through temporary erosion and sedimentation control measures such as using timber mats in saturated areas or by postponing work until soils have dried and through the implementation of permanent measures in accordance with our Plan and Procedures. By following practices described in our Plan and Procedures, using plant species and seeding rates provided by the NRCS, and following guidance provided by the NWTF, we do not anticipate significant issues with soil compaction or successful revegetation. Adherence to the SPCC Plan and our Plan and Procedures would adequately minimize impacts on soils from inadvertent releases or spills during construction of Project facilities.

Given the characteristics of Project area soils and the impact minimization and mitigation measures that would be implemented through adherence to the Plan and Procedures, we conclude that impacts on soils would be less than significant.

### **3. Water Resources**

The water resources that may occur within the Project area include groundwater, surface water, and wetlands. Each resource area is discussed in detail below.

#### **3.1 Groundwater Resources**

The northern portion of the Gulf Run Pipeline and portions of the Line CP Modifications in Louisiana are within the Surficial Aquifer and Mississippi Embayment Aquifer Systems, while the southern portion of the Gulf Run Pipeline is within the Coastal Lowlands Aquifer System (Stuart, Knochenmus, and McGee, 1994; USGS, 1998, 2003). The Line CP Modifications' CP-3 Meter Station is within the Texas Coastal Uplands Aquifer System (in Texas [USGS, 1996]). Various water-yielding aquifers and confining zones have been mapped within these aquifer systems.

Well depths and water yield potential vary between aquifer systems. The Gulf Run Pipeline crosses eight water-yielding aquifers, including the Red River alluvial, Carrizo-Wilcox, Sparta, Cockfield, Catahoula, Jasper, Evangeline, and Chicot (Stuart, Knochenmus, and McGee, 1994). The Line CP Modifications cross over four water-yielding aquifers, including the Red River alluvial, Carrizo-Wilcox, Cockfield, and Mississippi River alluvial (Stuart, Knochenmus, and McGee, 1994; George, Mace, and Petrossian, 2011). Table B-2 provides a description of each water-yielding aquifer in the Project area, including typical sediment types, thicknesses, and water yield.

Table B-2

Aquifers Underlying Project Components

Aquifer Name	Project Component(s) Occurring Within Aquifer	Water Level <u>a/</u> (feet from ground surface)	Thickness (feet)	Well Depths (feet)	Yields (gpm)	Sediments	Sole Source Aquifer (Yes/No)	Description
<b>Surficial Aquifer System</b>								
Red River Alluvial	Pipeline, Westdale Compressor Station	30	50-200	100-250	500-2,800	Clay, silt, and fine sand grading to coarse sand and gravel at bottom	No	Largest source of freshwater in the Red River Valley in Louisiana.
Mississippi River Alluvial	ANR Meter Station, Columbia Gulf Meter Station, MEP Meter Station, EGT Meter Station	<30	50-500	100-350	500-4,000; up to 7,000 in large capacity wells	Fine grained sand grading to coarse sand and gravel at bottom	No	Single largest source of fresh groundwater in northeastern Louisiana.
<b>Mississippi Embayment and Texas Coastal Uplands Aquifer Systems <u>b/</u></b>								
Carrizo-Wilcox <u>c/</u>	Pipeline, CP-3 Meter Station	0-200; Avg. 50-100	50-850	100-650; Avg. 230	30-150; up to 400 in large capacity wells	Fine to medium sand, silt, clay, and lignite	No	Low-yielding due to sand units tend to be thin and fine grained.
Sparta	Pipeline	15-320; Avg. 50-250	50-700	200-900	100-1,800	Very fine to medium sand, clay	No	Large quantities of water are pumped for drinking-water and industrial purposes.
Cockfield	Pipeline, Vernon Compressor Station	<30	50-600	200-2,000	50-500; up to 700 in large capacity wells	Very fine to fine sand	No	Water withdrawn is used by municipalities and water districts in the northeastern parishes of the State.
<b>Coastal Lowlands Aquifer System</b>								
Catahoula	Pipeline	20-100	50-450	100-1,800	50-400	Fine to medium sand, intermittent sandstone	No	Limited use as a source of freshwater and is essentially divided into three freshwater areas by saltwater.

**Table B-2**

**Aquifers Underlying Project Components**

<b>Aquifer Name</b>	<b>Project Component(s) Occurring Within Aquifer</b>	<b>Water Level <sup>a</sup> (feet from ground surface)</b>	<b>Thickness (feet)</b>	<b>Well Depths (feet)</b>	<b>Yields (gpm)</b>	<b>Sediments</b>	<b>Sole Source Aquifer (Yes/No)</b>	<b>Description</b>
Jasper	Pipeline	<60	50-2,400	50-3,500; Avg. 580	40-800; up to 3,000 in large capacity wells	Fine to medium sand separated by clay from over- and under-lying aquifers	No	Deepest fresh ground water in southwestern Louisiana.
Evangeline	Pipeline	<60	50-1,900	100-2,400; Avg. <300	100-1,000; up to 3,000 in large capacity wells	Generally fine to medium sand separated by clay	No	Excellent source of water for public supply and industry in southwestern Louisiana
Chicot	Pipeline	0-100; Avg. 25-75	10-1,050	20-1,100; Avg. 290	500-2,500; up to 4,000 in large capacity wells	Coarse sand and gravel	Yes	Principal aquifer system of southwestern Louisiana accounting for more than 45 percent of the total groundwater withdrawal.

Sources: Stuart, Knochenmus, and McGee, 1994; George, Mace, and Petrossian, 2011

- a Water level is the general depth the aquifer is known to occur below land surface.
- b The Mississippi Embayment and Texas Coastal Aquifer Systems are considered stratigraphically equivalent, differing only in nomenclature across state boundaries (USGS, 1996).
- c The Carrizo-Wilcox aquifer spans both the Mississippi Embayment and Texas Coastal Uplands Aquifer Systems.

Avg. = Average  
gpm = gallons per minute

### **3.1.1 Sole Source Aquifers**

A sole source aquifer (SSA) is defined by the EPA as an aquifer that supplies greater than 50 percent of the drinking water for an area, and there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer should it become contaminated (EPA, 2020a). The Chicot aquifer underlying the southern portion of the Gulf Run Pipeline route from MP 67.9 to 134.0 (EPA, 2020b) is the only SSA identified in the Gulf Run Pipeline area. No SSAs were identified within the Line CP Modifications Project area.

### **3.1.2 Public and Private Wells and Springs**

Enable documented the locations of eight active private water wells within 150 feet of the Project workspaces through landowner discussions, and subsequently field verified the well locations. Enable identified an additional 22 water wells using the LDNR water well registry but has not confirmed the well locations via survey. Six of the total active wells would be within Project construction workspaces or construction yards. Prior to construction, Enable has committed to coordinate with all landowners to verify the location and status of water wells within 150 feet of the construction right-of-way and ATWS. These wells are summarized in table B-3. Based on review of National Hydrography Dataset, no active or inactive springs would be within 150 feet of any Project component (USGS, 2020).

The Louisiana Department of Environmental Quality (LDEQ) established the Source Water Assessment Program, Louisiana Wellhead Protection Program, and Drinking Water Protection Program to delineate source water protection areas around public water supplies (inclusive of both groundwater and surface water supplies) to protect drinking water supplies from contamination (LDEQ, 2011). The LDEQ defines a source water protection area as “the zone through which contaminants, if present, are likely to migrate and reach a drinking water well or surface water intake” (LDEQ, 2011). For groundwater resources, drinking water protection area includes the surface and subsurface areas surrounding public water supply wells (LDEQ, 2011). While no public water supply wells are within the Project workspaces, the Gulf Run Pipeline crosses through seven public drinking water protection areas in Beauregard, DeSoto, and Sabine Parishes for a total crossing length of approximately 8.9 miles. The Line CP Modification sites in Louisiana are not within source water protection areas.

<b>Table B-3</b>			
<b>Active Wells within 150 Feet of the Project</b>			
<b>Milepost/Location</b>	<b>Water Use Type</b>	<b>Approximate Distance/Direction from Centerline</b>	<b>Approximate Distance (feet) and Direction from Workspace</b>
<b>Gulf Run Pipeline Construction Right-of-Way and Additional Temporary Workspaces</b>			
2.0 <u>a/</u>	Domestic	163 feet East of Centerline	126 East of Construction Work Area
4.2 <u>a/</u>	Commercial	2,248 feet West of Centerline	Within Construction Storage Yard
4.2 <u>a/</u>	Commercial	2,059 feet West of Centerline	Within Construction Storage Yard
5.6 <u>a/</u>	Commercial	173 feet East of Centerline	108 East of Construction Work Area
9.3 <u>a/</u>	Commercial	95 feet East of Centerline	67 East of Construction Work Area
19.1 <u>a/</u>	Domestic	65 feet West of Centerline	19 West of Construction Work Area
24.2 <u>a/</u>	Domestic	115feet East of Centerline	53 East of ATWS Work Area
25.7 <u>a/</u>	Domestic	87 feet East of Centerline	22 East of construction Work Area
26.5 <u>b/</u>	Domestic	218 feet East of Centerline	143 East of Construction Work Area
43.1 <u>a/</u>	Domestic	110 feet East of Centerline	30 North of ATWS Work Area
51.9 <u>b/</u>	Irrigation	92 feet East of Centerline	Within ATWS
58.1 <u>b/</u>	Domestic	165 feet East of Centerline	130 East of Construction Work Area
71.8 <u>a/</u>	Domestic	39 feet East of Centerline	5 East of Construction Work Area
72.4 <u>a/</u>	Domestic	197 feet West of Centerline	134 West of Construction Work Area
73.0 <u>b/</u>	Domestic	222 feet West of Centerline	119 West of Construction Work Area
73.0 <u>a/</u>	Domestic	61 feet West of Centerline	Within Construction Work Area
114.4 <u>a/</u>	Domestic	64,625 feet East of Centerline	Within Construction Storage Yard

<b>Table B-3</b>			
<b>Active Wells within 150 Feet of the Project</b>			
<b>Milepost/Location</b>	<b>Water Use Type</b>	<b>Approximate Distance/Direction from Centerline</b>	<b>Approximate Distance (feet) and Direction from Workspace</b>
<b>Access Roads</b>			
PAR-002 <u>a/</u>	Domestic	1,217 feet West of Centerline	122 North of Permanent Access Road
TAR-031 <u>a/</u>	Domestic	1,352 feet West of Centerline	1 East of Temporary Access Road
TAR-052 <u>a/</u>	Domestic	820 feet West of Centerline	67 North of Temporary Access Road
TAR-052 <u>a/</u>	Domestic	647 feet West of Centerline	127 South of Temporary Access Road
TAR-069 <u>a/</u>	Domestic	574 feet West of Centerline	138 North of Temporary Access Road
TAR-071 <u>b/</u>	Domestic	229 feet Southeast of Centerline	79 East of Temporary Access Road
TAR-075 <u>b/</u>	Domestic	287 feet Southeast of Centerline	43 South of Temporary Access Road
TAR-075 <u>b/</u>	Domestic	231 feet Southeast of Centerline	79 South of Temporary Access Road
TAR-122 <u>a/</u>	Domestic	305 feet East of Centerline	114 South of Temporary Access Road
TAR-128 <u>a/</u>	Domestic	3,352 feet West of Centerline	145 East of Temporary Access Road
TAR-145 <u>a/</u>	Domestic	11,280 feet East of Centerline	34 East of Temporary Access Road
TAR-240 <u>a/</u>	Domestic	626 feet West of Centerline	133 West of Temporary Access Road
<b>Line CP Modifications</b>			
Westdale Compressor Station <u>b/</u>	Industrial	NA	Within Facility Fence Line
<p>a Well data obtained from LDNR Water Well registry database. Location information may not be accurate and would be field verified prior to construction.</p> <p>b Well information was obtained from landowner conversations and confirmed in the field by civil survey.</p> <p>NA = Not applicable</p>			

The Texas Commission on Environmental Quality (TCEQ) delineates and designates Priority Groundwater Management Areas where groundwater resources are experiencing, or are expected to experience, critical groundwater problems such as shortages or contamination. There are no Priority Groundwater Management Areas within one mile of the CP-3 Meter Station site (TCEQ, 2018). Additionally, there are no public water supply wells within 1 mile of the CP-3 Meter Station.

### **3.1.3 Groundwater Contamination**

According to the LDNR, Office of Conservation's Ground Water Resources Management Program, there are currently no critical areas of groundwater concern in the state of Louisiana (LDNR, 2020). Panola County is outside of Priority Groundwater Management Areas (TCEQ, 2018).

As discussed above in section B.2.1, four registered environmental sites were identified within 0.25 mile of the Gulf Run Pipeline. One of these sites, a plugged injection well for produced saltwater, was identified within the proposed workspace and is no longer active. Except for the construction of the CP-3 Meter Station, the Line CP Modifications would occur within the footprint of existing facilities where no records of contamination are present.

### **3.1.4 Impacts and Mitigation**

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

Enable would install orange safety fence around any wells within the construction workspaces prior to initiation of construction activities. Enable would conduct pre- and post-construction monitoring for well yield and water quality for any public or private wells within 150 feet of the construction workspaces, with landowner permission. If the Project does affect private or public well quality or yield, Enable would provide alternative water sources or offer compensation to the well owner. If the Project adversely affects a groundwater supply, Enable would work with the landowner to resolve the damaged supply through compensation, repair, or replacement.

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

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

Impacts on groundwater from HDD operations are expected to be minimal; however, as described in section A.6.2.5, drilling fluid may be inadvertently released during HDD crossings. An inadvertent release of drilling fluid could affect groundwater if drilling fluid escapes the borehole and migrates into the underlying aquifer. In the event of an inadvertent release of drilling fluid, Enable would implement its HDD Contingency Plan which includes procedures for monitoring, detecting, isolating, stopping, and cleaning up inadvertent releases. We have reviewed the HDD Contingency Plan and conclude that impacts on groundwater resources due to an inadvertent release of drilling fluid would be minimized to the extent practicable.

As discussed above, four registered environmental sites were identified within 0.25 mile of the Gulf Run Pipeline route. According to the Environmental Data Resources, Inc., report, no violations, spills, leaks, or records of concern have been documented at these sites. Therefore, no impact from contaminated groundwater is anticipated. An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up properly. Spill-related impacts would be minimized by implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedure, ensuring equipment is in good operating condition and regularly inspecting equipment.

The Project's impacts on groundwater resources would be temporary and minor due to the limited vertical extent of excavations and other ground disturbances and the relatively short duration of construction. Additionally, Enable's commitment to implement the BMPs in the FERC Plan and Procedures, HDD Contingency Plan, and the Project-specific SPCC Plan, would mitigate potential impacts on groundwater resources. We therefore conclude that impacts on groundwater would be temporary and less than significant.

### 3.2 Surface Water

The proposed route for the Gulf Run Pipeline is within the Red, Sabine, and the Calcasieu River basins. The facilities associated with the Line CP Modifications are within the Ouachita and Red River Basins in Louisiana and the Sabine River Basin in Texas.

The Gulf Run Pipeline would impact 316 surface water features including streams, rivers, and ponds, with access roads crossing an additional 94 features (see table B-4 below). Additionally, one ephemeral waterbody is within the Line CP Modifications (Westdale Compressor Station) workspace. Two hundred sixty-five of the waterbodies that are either defined as minor (less than 10 feet wide at the water's edge) or intermediate (greater than 10 feet wide but less than 100 feet wide) would be crossed via the open-cut method. One major waterbody, Crooked Bayou, would be crossed using a combination of dry-ditch crossing methods. Three major, seven intermediate, and seven minor waterbodies would be crossed by HDD. All surface water features that would be impacted by the Project are in Louisiana. No surface water features would be affected by the portion of the Project in Texas.

<b>Table B-4</b>									
<b>Waterbodies Crossed or Within the Workspace for the Project</b>									
<b>Facility</b>	<b>Waterbody Type</b>				<b>FERC Classification</b>				<b>Total</b>
	<b>Perennial</b>	<b>Intermittent</b>	<b>Ephemeral</b>	<b>Ponds</b>	<b>Major</b>	<b>Intermediate</b>	<b>Minor</b>	<b>Ponds</b>	
<b>Gulf Run Pipeline</b>									
Waterbodies Crossed by Pipeline	69	62	150	2	4	58	219	2	283
Waterbodies within Workspaces	0	1	20	9	0	0	21	9	30
<b>Line CP Modifications</b>									
Westdale Compressor Station	0	0	1	0	0	0	1	0	1
<b>Ancillary Facilities</b>									
Access Roads	12	36	46	0	0	9	85	0	94
Pipe/ Contractor Yards	0	0	2	1	0	0	2	1	3
<b>Total</b>	<b>81</b>	<b>99</b>	<b>219</b>	<b>12</b>	<b>4</b>	<b>67</b>	<b>328</b>	<b>12</b>	<b>411</b>

### 3.2.1 Sensitive Surface Waters

Enable used online water resource databases and consultation with state agencies to identify sensitive surface waters in the vicinity of the Project. Watercourses within the vicinity were evaluated under Louisiana's water quality standards to determine if they are classified as sensitive surface waters. No state designated outstanding natural resource waters, designated wild and scenic rivers, or waterbodies less than 3 miles upstream of potable water intake structures would be crossed by the Project (LDEQ, 2020; TCEQ, 2020). Additionally, no federally designated National Wild and Scenic Rivers Act waters would be crossed by the Project (National Park Service, 2020). Some waterbodies either crossed by or within the Project workspaces that could contain sensitive aquatic species; these are discussed further in section B.4.1. No waters containing designated critical habitat or Essential Fish Habitat would be crossed by or within the Project workspaces.

The CWA requires states to assess the status of waterbodies under Section 305 (b) and identify those that are polluted as defined in CWA Section 303(d). Section 303(d) authorizes the EPA to assist states, territories, and authorized tribes in listing impaired waters and developing pollutant total maximum daily loads of for these waterbodies. On November 20, 2019, the 2018 Louisiana Water Quality Integrated Report describing all waterbodies on the State's 303(d) and 305(b) lists was approved by the EPA (LDEQ, 2020). Two 303(d)/305(b)-designated impaired waterbodies, including Bayou Toro and Bear Head Creek, would be crossed by the Gulf Run Pipeline (EPA, 2020c). Bayou Toro is included on the Louisiana 305(b) list because of impairment related to dissolved oxygen and fecal coliform while Bear Head Creek is listed on the 303(d) and 305(b) lists because of impairment related to dissolved oxygen, fecal coliform, lead, and low pH. Bayou Toro would be crossed via HDD at approximate MP 61.8 while Bear Head Creek would be crossed via the open-cut method at approximate MP 125.3. No designated impaired waterbodies were identified within 500 feet of the Line CP Modifications.

The LDEQ Source Water Protection Program designates the susceptibility of public water supplies to contamination (LDEQ, 2020). According to the LDEQ, no source or surface water protection areas are within the Project area and there are no surface potable water supply intakes within 3 miles downstream of any Project waterbody crossing. Consultation with the TCEQ verified that no public water supply surface water intakes are within 1 mile of the Line CP Modifications (TCEQ, 2020a).

### 3.2.2 Floodplains and Flood Zones

Floodplain management on the federal level is under the jurisdiction of FEMA's National Flood Insurance Program. States and/or local entities may enact legislation that further restricts activities within the floodplain, primarily through zoning or building code restrictions. According to FEMA's Flood Insurance Rate Mapping, all aboveground pipeline facilities associated with the Gulf Run Pipeline would be in areas designated as Zone X, or outside of the 500-year floodplain, with the exception of the new pig launcher at Enable's existing Line CP pipeline, which is on the boundary between the 100-year floodplain and the 500-year floodplain; and mainline valve #3, which is within the 100-year floodplain. Both facilities would not significantly impact floodplain functions (i.e., storage or conveyance of flood waters, groundwater recharge, or ability for the floodplain to provide for wildlife habitat). Enable consulted with Red River and Richland Parishes and both jurisdictions determined that no floodplain permit is required for such aboveground activities located within the floodplain.<sup>9</sup>

The Gulf Run Pipeline would cross the 100-year floodplain in several locations (FEMA, 2020a). We do not anticipate construction of the pipeline would have significant impacts on the floodplain as the pipeline would be belowground, and would not impact floodplain functions.

The Line CP Modifications would be constructed at pre-existing facilities. According to FEMA mapping, the Vernon Compressor Station is outside of the 500-year floodplain. All other aboveground facilities are protected by levees, with the exception of the Westdale Compressor Station and the ANR Meter Station, which are near the boundary of Zone A (areas with a 1 percent annual chance of flooding) and Zone C (areas of minimal flood hazard) and could therefore be susceptible to large-magnitude floods (FEMA, 2020a). Enable consulted with Red River and Richland Parishes and both jurisdictions determined that no floodplain permit is required for activities at existing aboveground facilities located in the floodplain.

### 3.2.3 Impacts and Mitigation

Construction activities associated with the Project that have the potential to impact surface water include waterbody crossings, hydrostatic test water discharges, vegetation clearing and grading on stream banks, and spills or leaks of hazardous liquids. The Gulf Run Pipeline would be installed across waterbodies using either the open-cut method, dry-ditch method, or by HDD.

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<sup>9</sup> Enable's communications with these parishes was included as appendix 1D to Resource Report 1 in its February 28, 2020 application. Appendix 1D can be viewed on the FERC website at <http://www.ferc.gov, using Accession Number 20200228-5231>.

The open-cut method employs the construction procedures that were described in section A.6.2.2, above. Equipment would operate from the banks of the waterbody to the maximum extent practicable to excavate a trench. As required by the FERC Procedures, flow would be maintained at all times. Open-cut waterbody crossings would result in a temporary increase in turbidity and may result in downstream sedimentation. Alteration of waterbody banks and removal of riparian corridor vegetation, if not stabilized and revegetated properly, can result in soil erosion and waterbody bank sloughing. Removal of riparian vegetation and increased turbidity can reduce suitability of habitat for aquatic species. Potential effects on fisheries resources from the Project and proposed mitigation are discussed further in section B.4.1.

Enable would complete open-cut waterbody crossings within 24 to 48 hours, as feasible, to minimize impacts (per the FERC Procedures). Enable would also minimize impacts associated with increased runoff and erosion through the use of temporary and permanent sediment controls such as silt fences and slope breakers to redirect surface runoff to vegetated areas along the construction right-of-way. Enable would utilize equipment bridges at waterbody crossings to maintain waterflow in the waterbody and limit the soil from entering the waterbodies.

Enable would also comply with the FERC Plan and Procedures to minimize effects from runoff and erosion by placing spoils at least 10 feet from top of bank and placing silt barriers between the spoil pile and waterway. If trench spoil cannot be placed in the construction right-of-way, it would be stored in the ATWS. Enable would adhere to the measures in the FERC Plan and Procedures to control erosion and avoid or minimize other impacts that could result from the use of ATWS. However, Enable has identified 16 ATWS areas where it claims to be unable to maintain a 50-foot setback. Enable requested a modification to our Procedures to allow use of these ATWS areas and provided site-specific justification for each workspace (see table 3 in appendix B). We have determined that Enable's proposed locations of ATWS within 50 feet of a waterbody are justified.

Enable would cross Crooked Bayou using a combination of the dry-ditch methods of flume and dam-and-pump. Temporary construction-related impacts as a result of this crossing would be limited primarily to short periods of increased turbidity during installation of the flume pipe, during the installation of the upstream and downstream dams, and when the dams are pulled and flow is re-established across the restored work area. Following installation of the pipeline at this crossing, the stream banks and riparian areas would be re-contoured and stabilized with approved seed mixes. As described in section A.6.2.4, Enable has provided a site-specific crossing plan for Crooked Bayou, which we have reviewed and find acceptable.

Enable would use 7 HDD's to cross 17 waterbodies, 3 of which are major waterbodies (table B-5). Although use of HDD crossing methods would help to avoid

direct impacts on water quality by avoiding disturbance of the waterbody beds and banks, there is a potential for drilling fluid to inadvertently be released if drilling fluids escape the drill borehole and make their way to the ground surface or stream bottom. Implementation of the measures found within Enable's HDD Contingency Plan would minimize any impacts if an inadvertent return occurs. The HDD Contingency Plan includes procedures for monitoring, detecting, isolating, stopping, and cleaning up inadvertent returns, as well as making necessary agency notifications. In the event of an inadvertent return, Enable would suspend or stop the HDD operations, notify the EI, and consult with the USACE and LDEQ whether containment, cleanup, and restoration is necessary. We have reviewed the HDD Contingency Plan and conclude that impacts on waterbodies due to an inadvertent return would be minimized to the extent practicable.

As described above, 94 waterbodies would be crossed by Enable's temporary use of existing access roads during Project construction. Enable would not require improvements to the access roads (such as the installation of new culverts, road widening, or increased size of road aprons) at these waterbodies. If necessary, Enable would install timber mats over culverted or saturated portions of access roads at waterbody crossing locations to distribute vehicle and equipment weight.

An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect surface water if not cleaned up properly. Spill-related impacts would be minimized by implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials; secondary containment of fuels, oils, and hazardous materials; storage of fuels and hazardous materials at least 100 feet from waterbodies and wetlands; instituting appropriate spill cleanup and notification procedures; ensuring equipment is in good operating condition; and regularly inspecting equipment. Based on these measures, we find the potential for a release of fuel or hazardous material into a waterbody would be minimized to the extent practicable, and impacts would be minor.

Once construction is complete, Enable would stabilize, restore, and revegetate the pipeline right-of-way and ATWS areas in accordance with FERC Plan and Procedures and all applicable state and federal permit conditions. Enable would restore waterbody contours to preconstruction conditions, and waterbody banks would be stabilized as soon as possible after construction activities have been completed to prevent sloughing. Enable would install permanent erosion control structures in accordance with FERC Plan and Procedures, and temporary erosion control measures would be maintained to minimize erosion potential. Following construction, Enable would inspect waterbody crossings to verify that erosion controls are functioning properly and that revegetation is progressing appropriately.

**Table B-5**  
**Waterbodies Crossed by HDD**

Approximate Milepost	Waterbody Name	Flow Regime	FERC Classification	Centerline Crossing Width (feet)	State Designated Use	Parish	HDD Crossing Number
<b>Gulf Run Pipeline</b>							
8.0	Grand Bayou	Perennial	Major	172	FWP, PCR	Red River	1
12.9	Bayou Pierre	Perennial	Major	302	FWP, PCR	DeSoto	2
17.1	Dolet Bayou	Perennial	Intermediate	30	FWP, PCR	DeSoto	3
17.1	Dolet Bayou	Perennial	Minor	2	FWP, PCR	DeSoto	
17.3	Dolet Bayou	Perennial	Intermediate	31	FWP, PCR	DeSoto	
18	Dolet Bayou	Perennial	Intermediate	12	FWP, PCR	DeSoto	4
61.7	UT to Bayou Toro	Ephemeral	Minor	2	FWP, PCR	Sabine	5
61.7	UT to Bayou Toro	Ephemeral	Minor	0	FWP, PCR	Sabine	
61.8	Bayou Toro	Perennial	Intermediate	79	FWP, PCR	Sabine	
61.8	UT to Bayou Toro	Ephemeral	Minor	0	FWP, PCR	Sabine	
62.0	Unnamed Pond	Pond	Pond	84	FWP, PCR	Sabine	
62.1	UT to Bayou Toro	Perennial	Minor	6	FWP, PCR	Sabine	
62.1	UT to Bayou Toro	Ephemeral	Minor	4	FWP, PCR	Sabine	
72.8	Sandy Creek	Perennial	Intermediate	40	PCR	Vernon	6
96.2	Bayou Anacoco	Perennial	Major	109	NA	Beauregard	7
96.3	UT to Bayou Anacoco	Intermittent	Intermediate	10	NA	Beauregard	
96.4	UT to Bayou Anacoco	Ephemeral	Minor	8	NA	Beauregard	

FWP = Fish and wildlife propagation  
PCR = Primary contact recreation  
UT = Unnamed tributary  
NA = Not Applicable

As discussed in Section A.6.6, Enable has indicated that as a part of its IVM program for operational maintenance of the right-of-way, Enable proposes to use EPA-approved herbicides that are labeled for use in aquatic environments within 100 feet of waterbodies and wetland areas. However, such use does not comply with sections V.D.2 and VI.D.2. of our Procedures given express approval has not been provided by LDWF. Enable has executed an easement with the LDWF for the crossing of an existing conservation easement under the management of the LDWF. Enable's easement for the Clear Creek Wildlife Management Area crossing acknowledges that the property would be enrolled in the Energy for Wildlife Partnership program, which incorporates IVM. However, LDWF's concurrence with IVM and application of herbicides on the subject property does not apply to all Project areas. To ensure adequate protection of aquatic resources and in compliance with our Procedures, **we recommend that:**

- **Prior to Enable's use of any herbicides within 100 feet of waterbodies or wetland areas along the Gulf Run Pipeline, Enable should file with the Secretary a statement from the LDWF that EPA-approved herbicides for use in aquatic environments is acceptable Project-wide.**

We have determined that since the LDWF has jurisdiction over the aquatic resources that may be impacted by the Project, the LDWF's approval of the use of herbicides within 100 feet of waterbodies and wetlands Project-wide would be in compliance with sections V.D.2 and VI.D.2 of our Procedures.

Enable would construct its facilities in accordance with FERC Procedures and the regulations and requirements of applicable permits including the USACE authorizations under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Enable submitted its application for these individual permits to the USACE on June 4, 2020. A certification that the Project would not violate the state's water quality standards would be required from the LDEQ, Office of Environmental Services before the USACE would issue a Section 404 permit. Therefore, Enable also submitted an application to the LDEQ, Office of Environmental Services for a Water Quality Certification in accordance with statutory authority contained in LRS 30:2074 A(3) and provisions of Section 401 of the CWA (P.L. 95-17). As per the EPA's June 1, 2020 Clean Water Act Section 401 Certification Rule, valid conditions attached to a state-issued section 401 water quality certification are enforceable by the federal permitting agency. Enable provided documentation of the receipt of the Section 401 Water Quality Certification (with no conditions attached) on October 5, 2020.<sup>10</sup>

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<sup>10</sup> The Section 401 Water Quality Certificate was included in Enable's Supplemental Filing on October 5, 2020. The Supplemental Filing can be viewed in the FERC e-Library at <http://www.ferc.gov>, using Accession Number 20201005-5133

With implementation of the mitigation measures identified for each of the proposed activities described above including Enable's use of HDD and dry-ditch crossing methods to avoid impacts on certain surface waters, implementation of FERC's recommendations described in this EA, FERC's Plan and Procedures, Enable's HDD Contingency Plan, and the Project-specific SPCC Plan, we conclude that impacts on surface waters would be short-term and minor.

### **3.3 Wetlands**

Enable performed wetland delineations in accordance with guidelines provided in both the *USACE Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) (Regional Supplement)* (Environmental Laboratory, 2010) from January to October 2019. No wetlands were identified for the Line CP Modifications; therefore, these facilities are not discussed further. Wetlands along the Gulf Run Pipeline were delineated as palustrine forested (PFO), palustrine scrub-shrub (PSS), and palustrine emergent (PEM) (Cowardin et al., 1979). PFO wetlands are dominated by hydrophytic tree species at least 20 feet tall. PSS wetlands includes areas dominated by woody vegetation less than 20 feet tall. PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. Table B-6 below summarizes the types and acreage of wetland impacts for the Gulf Run Pipeline. For detailed wetland information, see table 2 in appendix B, which presents the location, classification, crossing length, and area affected by construction and operation of the Project for each wetland.

#### **3.3.1 Impacts and Mitigation**

The construction of the Gulf Run Pipeline would result in wetland impacts, including temporary impacts on 8.37 acres of PEM and 1.40 acres of PSS wetlands, as well as long-term or permanent impacts on approximately 27.81 acres of PFO (including Bald Cypress/Tupelo) wetlands.

As discussed in section A.6.2, 107 wetlands would be crossed via open-cut installation, while an additional 29 wetlands would be within the construction workspaces. Enable proposes to minimize the extent and duration of Project-related disturbance to wetland resources before, during, and after construction. During its route selection process described in section C.3, Enable selected the proposed route for the Gulf Run Pipeline that would have the fewest impacts on wetlands. Enable would also minimize impacts on wetlands through the co-location of portions of the Gulf Run Pipeline with existing rights-of-way. As currently designed, approximately 50 miles (38 percent) of the Gulf Run Pipeline would overlap or abut existing rights-of-way. In accordance with the FERC Procedures, Enable would reduce its standard construction right-of-way width to 75 feet in wetlands; the corridor would be used to clear the

vegetation, dig the trench, install the pipeline, and restore surface contours. Construction procedures within unsaturated wetlands would be similar to those used in upland areas as described in section A.6. Temporary erosion control measures would be installed between upland construction areas and wetlands to prevent sedimentation of wetlands.

<b>Table B-6</b>			
<b>Summary of Wetland Impacts for the Project</b>			
<b>Wetland Classification</b>	<b>Number of Wetlands Impacted</b>	<b>Wetland Acreage Affected</b>	
		<b>Construction <u>a/</u></b>	<b>Operation <u>b/</u></b>
Emergent (PEM)	52	8.37	0.00
Forested (PFO)	81	27.70	11.49
Forested – Bald Cypress/Tupelo (PFO) <u>c/</u>	3	0.11	0.05
Scrub-Shrub (PSS)	12	1.40	0.19
<b>Total</b>	<b>148</b>	<b>37.58</b>	<b>11.73</b>
<p>a Construction impacts on wetlands along the proposed pipeline right-of-way include the reduced 75-foot-wide construction right-of-way. Wetlands crossed using an HDD would not require construction right-of-way between the HDD entrances and exists.</p> <p>b Operational impact on forested wetlands is calculated based on a 30-foot-wide right-of-way maintained in a scrub-shrub or emergent state. Operational impact on shrub-scrub wetlands is calculated based on a 10-foot-wide right-of-way maintained in an emergent state.</p> <p>c Forested – Bald Cypress/Tupelo wetland impacts are considered permanent impacts by the USACE for purposes of mitigation, owing to the long-term growth needed for habitat recovery.</p>			

Enable would use special construction techniques in saturated wetlands, including use of low ground pressure equipment and timber construction mats and/or timber riprap to minimize soil rutting. Enable would also install trench plugs at the base of upland slopes adjacent to wetlands to prevent trench erosion and at the downslope edge of wetlands to prevent accidental wetland drainage. These measures would minimize temporary changes to wetland hydrology that may result from excavation of the pipeline trench during the conventional open-cut construction, installation of the pipe, and backfill of the trench.

In accordance with the FERC Procedures, Enable would maintain the following setbacks from surface water and wetland resources throughout construction and operation (unless where otherwise authorized as noted below):

- ATWS would be set back a minimum of 50 feet; and
- hazardous materials storage, concrete coating, equipment/vehicle parking, refueling, or pesticide use would be set back a minimum of 100 feet.

Enable would adhere to the measures in the FERC Plan and Procedures to control erosion and avoid or minimize other impacts that could result from the use of ATWS. Enable has identified nine specific ATWS areas near wetlands where they would be unable to maintain the minimum 50-foot setback required by the FERC Procedures. Enable requested a modification to our Procedures to allow use of these ATWS areas and has provided site-specific justification for each workspace (see table 3 in appendix B). We have determined that Enable's proposed locations of ATWS within 50 feet of a wetlands listed in appendix B are justified.

In addition to the wetlands described in table B-6 above that would be affected by Project construction rights-of-way, ATWS, and other workspaces, 11 wetlands would be crossed by existing temporary access roads during construction. Enable would not require improvements to the access roads (such as grading, expansion, or fill placement) at wetland crossing locations. If necessary, Enable would install timber mats over saturated portions of access roads at wetland crossing locations to distribute vehicle and equipment weight and minimize rutting.

Following construction, all timber mats and/or timber riprap would be removed, and the contours would be returned as close to pre-existing condition as possible. Permanent erosion controls, including terraces, interceptor diversion devices, rock riprap, and vegetation cover, may be utilized on adjacent upland areas to minimize long-term sedimentation of the wetlands. Permanent erosion controls, which may alter hydrology, would not be installed within wetland boundaries. Energy dissipation devices may be installed at the down-slope end of surface water diversion devices to prevent sediment from leaving the right-of-way and entering wetlands.

Enable would revegetate wetlands in accordance with the FERC Procedures and would monitor the success of wetland revegetation annually for the first three years after construction or until wetland revegetation is considered successful. Following revegetation, wetlands would eventually transition back into a community similar to that of the preconstruction state. In PEM wetlands, the herbaceous vegetation would regenerate quickly (typically within one to three years). Because these areas are naturally open and herbaceous, there would be little to no permanent impacts on emergent wetlands. Impacts on PSS and PFO wetlands would last longer than those on PEM wetlands. Woody vegetation may take several years to regenerate to its original density. PFO wetlands within the temporary construction workspace would not return to preconstruction conditions for an extended length of time, typically 10 years or more to reach mature habitat. For bald cypress and tupelo forests, length of time to maturity and comparable habitat is often 20 years or greater, as bald cypress typically grows 24 to 36 inches annually and tupelo grows 12 to 24 inches annually; the USACE considers this to be a permanent wetland impact.

In accordance with the FERC Procedures and as part of Enable's IVM program, vegetation across the right-of-way during operation would be restricted to the establishment of select cover types in vicinity of the pipeline. Annual mowing and maintenance of a 10-foot-wide herbaceous strip centered over the pipeline is necessary to provide line of sight inspections. Within 15 feet of either side of the pipeline centerline, vegetation maintenance within PFO wetlands would require selective removal of trees and saplings to limit roots that could compromise the integrity of the pipe coating. This maintenance would result in further long-term, permanent impacts by converting the previously 30-foot-wide PFO wetland area to PEM and PSS wetland areas, respectively.

Enable would avoid impacts on 11 wetlands, as well as a portion of another, by utilizing HDD (see table 2 in appendix B). Enable's HDD Contingency Plan outlines specific procedures and methods for addressing an inadvertent release of drilling fluid. This plan includes procedures for monitoring, detection, isolating, stopping and cleanup of inadvertent releases, as well as making necessary agency notifications. In the event of an inadvertent return, Enable would suspend or stop the HDD operations, notify the EI, and consult with the USACE and LDEQ whether containment, cleanup, and restoration is necessary. We have reviewed the plan and find it acceptable. We therefore expect any impacts from an inadvertent return to be short term and minor.

Permanent wetland impacts associated with Project operations would be a conversion to PEM wetlands of 0.19 acre of PSS, 0.05 acres of Bald Cypress/Tupelo PFO, and 11.49 acres of PFO as a result of vegetation maintenance of the permanent right-of-way. Permanent conversion of PFO and PSS wetlands to PEM wetlands in the permanent right-of-way would result in loss of the incremental portion of functional value associated with loss of tree cover, but these wetlands would retain other wetland values such as water retention, water filtration, and aquatic habitat. Permanent conversion of wetlands includes the following cover-type conversions:

- PEM wetlands would be restored and allowed to revegetate to preconstruction conditions over the entire permanent easement. There would be no long-term impacts on PEM wetlands.
- PSS wetlands would undergo operational effects from conversion of cover type within the 10-foot-wide strip centered above the pipeline that would be effectively maintained as emergent wetland.
- PFO wetlands would be impacted during operation if trees with root systems that could impact the integrity of the pipeline coating are within 15 feet of each side of the pipeline centerline.

As part of its Section 404 application to the USACE, Enable would purchase mitigation credits from a USACE approved mitigation bank or banks servicing the affected watersheds of the Project. The Project’s operational vegetation conversion impacts on PFO and PSS wetlands would be mitigated by purchasing credits from the approved mitigation bank. Enable has entered into a wetlands mitigation agreement with the service provider for the Crooked Bayou Mitigation Bank, Phillips Creek Mitigation Bank, and the South Fork Coastal Mitigation Bank to reserve and purchase a sufficient number of mitigation credits to offset the estimated mitigation requirements for the Gulf Run Pipeline. Enable is proposing a 1.5:1 ratio mitigation for PSS/PFO wetlands in the Lower Sabine watershed and a 1:1 ratio for PSS/PFO wetlands elsewhere. The number and type of credits at each approved mitigation bank are pending USACE review and acceptance. Proposed mitigation credits are disclosed in table B-7.

<b>Table B-7</b>				
<b>USACE Required Mitigation Bank Credits</b>				
<b>USACE District</b>	<b>Mitigation Bank</b>	<b>Watershed</b>	<b>Wetland Type</b>	<b>Mitigation Credits</b>
Vicksburg	Crooked Bayou	Bayou Pierre	PSS	0.600
			PFO	103.300
Fort Worth	Phillips Creek	Toledo Bend	PSS	0.152
			PFO	2.177
Galveston		Lower Sabine	PSS	0.212
			PFO	0.673
New Orleans	South Fork Coastal	West Fork Calcasieu	PSS	0.162
			PFO	12.683
New Orleans	South Fork Coastal	West Fork Calcasieu	PSS	0.590
			PFO	45.000

We conclude that Enable’s adherence to measures in the FERC Plan and Procedures; the use of HDD to avoid certain wetland impacts; and compliance with described measures to further reduce impacts would adequately address wetlands that are only temporarily affected by Project construction, such that impacts on temporally affected wetlands would be short-term and minor. Where impacts would be long term and/or permanent, mitigation in the form of credits purchased at approved mitigation banks would compensate for lost values such that permanent impacts on wetlands would be reduced to less than significant levels.

## **3.4 Project Construction Water Use**

### **3.4.1 Hydrostatic Testing**

In compliance with USDOT regulations at 49 CFR 192, Enable would conduct hydrostatic testing on the Project facilities prior to placement in service. Enable is planning to withdraw water from surface waters or from municipal supply for hydrostatic testing (see table B-8). Enable has indicated that all hydrostatic testing would be conducted in accordance with applicable permits and that no chemicals or biocides would be required. Upon completion of hydrostatic testing activities, Enable would sample the water prior to discharge in accordance with permit requirements to assure suitability for discharge. If treatment of hydrostatic test water is found to be required, FERC and the LDEQ, Water Permits Division would be notified, and approval of agreed upon treatment procedures (such as circulating test water through a trailer mounted carbon filtration system) would be implemented prior to discharge. Once the water is found suitable, Enable would discharge the water in accordance with applicable permits into upland areas along the edges of the construction right-of-way using energy dissipation devices to minimize erosion and sedimentation so as not to affect any surface waters. Enable would also hydrostatically test each pipeline segment to be installed by HDD prior to installation. Upon completion of the HDD segment hydrostatic test, Enable would sample the water and discharge it in an adjacent upland area along the edges of the construction right-of-way using an energy dissipation device, or pump it to the next HDD segment to be hydrostatically tested. In the event that discharge is not a suitable option, Enable has committed to collect hydrostatic test waters and haul offsite for treatment, recycling, or disposal, as needed.

### **3.4.2 Dust Suppression**

Enable would withdraw water from surface waters and municipal supply for purposes of dust suppression (see table B-8). To minimize impacts from construction related dust, Enable has developed a Fugitive Dust Control Plan, further discussed in section B.8.2.<sup>11</sup>

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<sup>11</sup> Enable's Fugitive Dust Control Plan was included in Resource Report 9, appendix 9E in its February 28, 2020 application. Resource Report 9 can be viewed on the FERC website at <http://www.ferc.gov>, using Accession Number 20200228-5231.

<b>Table B-8</b>					
<b>Construction Water Sources and Use for the Project</b>					
<b>Water Source</b>		<b>Water Use</b>	<b>Estimated Water Requirements (gallons)</b>	<b>Mainline Hydrostatic Test Discharge Location (milepost) a/</b>	<b>Estimated Mainline Hydrostatic Test Discharge Volume (gallons) b/</b>
<b>Name</b>	<b>Milepost</b>				
<b>Gulf Run Pipeline</b>					
Grand Bayou	8.0 8.1	<ul style="list-style-type: none"> <li>HDD No. 1 operation and hydrostatic test</li> </ul>	1,447,664	-	-
Calhoun Pond	Access Road TAR-014	<ul style="list-style-type: none"> <li>Dust control</li> <li>Pre-tests for nine horizontal bores.</li> </ul>	3,200,000	-	-
Bayou Pierre	12.9	<ul style="list-style-type: none"> <li>Dust control</li> <li>HDD No. 2 operation and hydrostatic test</li> <li>Mainline hydrostatic test of pipeline spread #1</li> </ul>	12,807,715	35.1	2,206,643
				35.9	185,000
				50.9	621,624
				65.1	5,157,217
Dolet Bayou	17.1 17.3 17.5 18.8	<ul style="list-style-type: none"> <li>HDD Nos. 3 and 4 operations and hydrostatic tests</li> </ul>	2,395,768	-	-
Bayou Toro	61.8	<ul style="list-style-type: none"> <li>HDD No. 5 operation</li> </ul>	1,600,076	-	-
Vernon Lake	State Hwy 11	<ul style="list-style-type: none"> <li>Dust control</li> <li>Pre-tests for six horizontal bores</li> <li>Hydrostatic test of HDD No. 5</li> <li>HDD No. 6 operation</li> </ul>	7,828,592	-	-
Bayou Anacoco	96.2	<ul style="list-style-type: none"> <li>HDD No. 7 operation and hydrostatic test</li> <li>Mainline hydrostatic test of pipeline spread 2</li> </ul>	14,631,507	65.1	5,814,710
				116.4	573,764
				134.0	6,426,405
Irrigation Well	Yard 6	<ul style="list-style-type: none"> <li>Dust control</li> <li>Pre-test for five horizontal bores</li> <li>HDD No. 8 operation and hydrostatic test</li> </ul>	8,014,794	-	-
<b>Gulf Run Pipeline Total</b>					<b>51,926,116</b>

Table B-8 Construction Water Sources and Use for the Project					
Water Source		Water Use	Estimated Water Requirements (gallons)	Mainline Hydrostatic Test Discharge Location (milepost) a/	Estimated Mainline Hydrostatic Test Discharge Volume (gallons) b/
Name	Milepost				
<b>Line CP Modifications</b>					
Municipal	NA	<ul style="list-style-type: none"> <li>Hydrostatic test</li> <li>Dust control</li> </ul>	342,000	-	262,000
<p>a For locations listed as “-“ the HDD hydrostatic test water discharge would occur in a vegetated upland area adjacent to the test site, or the hydrostatic test waters may be pumped to the next HDD segment for testing.</p> <p>b Discharge volume for HDD string hydrostatic tests would be proportionate to the volume needed for the HDD hydrostatic test volume. The portion of water usage for hydrostatic testing of HDDs or horizontal bores that is mixed with drilling fluid would be hauled offsite for disposal and not discharged onsite. Water used for dust suppression would be distributed along the right-of-way, where necessary.</p>					

**3.4.3 HDD**

Enable would require additional water from surface waters or from groundwater supply during the HDD operations for drilling fluid makeup and testing the pipeline pull-back string. Drilling fluid is also needed during HDD operations to lubricate and cool drilling tools, as well as remove drilled material, support the borehole, and lubricate the carrier pipe at pullback. This mixture consists predominantly of water and naturally occurring clay called bentonite. A drilling fluid engineer would adjust the consistency of the drilling fluid to minimize circulation loss and to minimize annular pressure. Non-petroleum additives may be used to further adjust the properties of the drilling fluid. The drilling fluid ratio would range between 3 percent and 10 percent bentonite and between 97 percent and 90 percent water, depending on the specifics of the particular drill. Water used to hydrostatically test HDD pipeline segments is discussed under section B.3.4.1 above.

**3.4.4 Impacts**

Enable proposes to obtain the volume of water required for hydrostatic testing the pipeline and other facilities, dust control, and HDD operations from surface waters and municipal sources as identified in table B-8. Water uptake and discharge would be conducted in accordance with the FERC Procedures. As a result, we do not anticipate significant impacts on surface waters resulting from the withdrawal or discharge of water use by the Project.

## **4. Fisheries and Aquatic Resources, Vegetation, Wildlife, and Special Status Species**

### **4.1 Fisheries and Aquatic Resources**

Game and non-game fish species and other aquatic resources in Louisiana are regulated and protected by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), and the LDWF, in accordance with the U.S. Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911), the Magnuson-Stevens Fisheries Conservation and Management Act, as amended through 1996, the ESA (16 U.S.C. §§ 1531-1543. Public Law 93 205), and the U.S. Fish and Wildlife Coordination Act of 1958 (16 U.S.C. §§ 661 et seq.).

No perennial waterbodies exist within or in proximity to the Line CP Modifications, therefore no impacts on fisheries or other aquatic resources would occur from construction and operation of the Line CP Modifications. All fishery and other aquatic resources discussed hereafter are associated with the Gulf Run Pipeline, which would cross the Red River, Sabine River, and Calcasieu River Basins.

#### **4.1.1 Fisheries and Aquatic Resources**

Four hundred eleven waterbodies would be crossed by or lie adjacent to the Project features (see table B-4). However, of these crossings, 94 are existing roads that Enable would use for access during construction and do not require improvements; therefore, these crossings would not impact waterbodies during operation. The name, location, crossing distance, flow regime (i.e., perennial, intermittent, ephemeral), and designated use classification of each waterbody in the Project area are included in Enable's April 30, 2020 environmental information request responses.<sup>12</sup> The Louisiana designated use classifications for waterbodies are set forth in the Louisiana Administrative Code (LAC) Title 33, Part IX. Water Quality, Chapter 11. Surface Water Quality Standards. Typically, waterbodies with a flow regime of intermittent or ephemeral lack the flow and volume of water to support stable year-round fish populations.

The Project would cross or be adjacent to 54 perennial waterbodies designated as suitable for fish and wildlife propagation. These waterbodies support fresh warmwater fisheries. Representative fish species that could be found in the waterbodies crossed by the Project include the largemouth bass, spotted bass, bluegill, channel catfish, creek chubsucker, redear sunfish, white crappie, and black bullhead. In addition, freshwater

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<sup>12</sup> Table 2.B-1: Waterbodies Associated with the Project table was included in Enable's April 30, 2020 environmental information request responses. The responses to Enable's environmental information request can be viewed on the FERC website at <http://www.ferc.gov>, using [Accession Number](#) 20200430-5388.

mussels and crawfish species could be found within the waterbodies crossed by the Project.

#### **4.1.2 Aquatic Resources of Special Concern**

The Gulf Run Pipeline would not cross and is not in proximity to any stocked lakes, outstanding natural resource waters (i.e., natural and scenic rivers and designated waters of ecological significance), or Nationwide Rivers Inventory-listed streams (National Park Service, 2020; LDEQ, 2017). No waters designated as Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act are present in or near the Project area. Therefore, we conclude that the Project would have no effect on Essential Fish Habitat.

The LDWF provided a list of aquatic species of concern that may occur in the Project area or have habitat that may be impacted by the Project. A summary of the aquatic species of concern is provided in table B-9.

#### **4.1.3 Impacts and Mitigation**

Construction activities associated with the Project that have the potential to effect fishery and other aquatic resources include impacts on surface waters from waterbody crossings, which could introduce pollutants and increase turbidity and sedimentation; lead to the impingement or entrainment of fish from the use of water pumps, including appropriation of hydrostatic test water; and vegetation clearing in riparian areas, habitat removal, and stream bank alteration.

Minor and intermediate waterbodies would be crossed via the open-cut method, as described under section A.6.2.3. Major waterbodies, with the exception of Crooked Bayou, would be crossed using HDD. The use of HDD would avoid most impacts on surface waters, fisheries, and other aquatic resources. Crooked Bayou would be crossed by a combination of the dry-ditch crossing methods of flume and dam-and-pump that would greatly reduce impacts on this surface water as opposed to an open-cut crossing undertaken in a flowing stream which result in increased turbidity and sedimentation. No perennial waterbodies would be impacted by the construction of aboveground facilities associated with the Gulf Run Pipeline; therefore, the installation of these facilities would not impact fishery or other aquatic resources in perennial waterbodies.

Construction impacts on fishery and aquatic resources could result from increased sediment loading and turbidity within and downstream of construction activities, and as a result of an inadvertent return of drilling fluids during HDD crossings. Increased sediment loading and turbidity could result in the temporary disturbance of spawning areas, disturbances to fish, or reduced egg survival from increased sedimentation. In an email dated July 11, 2019, the LDWF recommended that during construction Enable

minimize sediment runoff into waterbodies, limit turbidity in waterbodies, and minimize disturbances and changes in substrate composition due to erosion and sedimentation to reduce impacts on the aquatic species of concern that may be located within the Project workspaces. To reduce sedimentation and turbidity, Enable would implement our Procedures during construction, which includes measures such as the installation, monitoring, and maintenance of sediment barriers and the placement of all spoil piles in the construction right-of-way at least 10 feet away from the water's edge or in ATWS areas. Except in 16 instances that we have found warranted (see section A.6.2.2 as well as table 3 in appendix B), ATWS areas would be at least 50 feet away from waterbodies. Enable would also conduct any in-water work in accordance with the Procedures, which restrict instream construction for warmwater fisheries June 1 through November 30 to limit potential effects on fish spawning.

<b>Table B-9</b>	
<b>LDWF Aquatic Species of Concern</b>	
<b>Common Name</b>	<b>Scientific Name</b>
<b>Fish</b>	
Paddlefish	<i>Polyodon spathula</i>
American eel	<i>Anguilla rostrata</i>
Shoal chub	<i>Macrhybopsis hyostoma</i>
Ironcolor shiner	<i>Notropis chalybaeus</i>
Suckermouth minnow	<i>Phenacobius mirabilis</i>
Chub shiner	<i>Notropis potteri</i>
Bluehead shiner	<i>Pteronotropis hubbsi</i>
Blue sucker	<i>Cycleptus elongatus</i>
Western sand darter	<i>Ammocrypta clara</i>
Redspot darter	<i>Etheostoma artesia</i>
Gumbo darter	<i>Etheostoma thompsoni</i>
Bigscale logperch	<i>Percina macrolepida</i>
<b>Mollusks</b>	
Louisiana pigtoe	<i>Pleurobema riddellii</i>
Texas heelsplitter	<i>Potamilus amphichaenus</i>
<b>Crustaceans</b>	
Calcasieu painted crawfish	<i>Orconectes blacki</i>
Sabine fencing crawfish	<i>Faxonella beyeri</i>
Ouachita fencing crawfish	<i>Faxonella creaseri</i>
<b>Amphibians</b>	
Eastern tiger salamander	<i>Ambystoma tigrinum</i>
Source: Butler, 2019	

An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect surface waters and as a result fishery and aquatic resources. Spill-related impacts would be minimized through the implementation of the measures included in the Project-specific SPCC plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedures, and inspecting equipment regularly to ensure it is in good operating condition.

Water for hydrostatic testing, dust control, and HDD operations may be sourced from surface water resources as shown in table B-8. Enable would comply with mitigation outlined in our Plan and Procedures and in EA section B.3.2, including screening intake hoses to reduce the potential for the entrainment of fish and to reduce impacts from water discharge.

During construction, in-stream and stream bank cover and riparian areas would be temporarily altered at stream crossings. The removal of in-stream and stream bank cover and riparian areas could result in the temporary displacement of fish and other aquatic species. Following construction, Enable would restore the stream beds and banks in accordance with our Procedures. Therefore, we expect streambeds and banks to quickly revert to preconstruction conditions. During operations, Enable would allow a 25-foot-wide riparian strip adjacent to each stream bank to regrow, except for a 10-foot-wide corridor centered over the pipeline, in accordance with the FERC Procedures. Outside of riparian areas, vegetation control in the vicinity of waterbodies would be conducted using mechanical means as part of Enable's IVM program. With the implementation of our recommendation in section B.3.2.3, Enable could also selectively apply some herbicides for use in aquatic environments as described in section A.6.6. In accordance with the IVM program, Enable would promote revegetation with desirable, stable, low-growing plant communities, which would resist invasion by tall-growing tree species, using appropriate control methods.

Enable would minimize potential impacts on fishery and aquatic resources by implementing the Plan and Procedures and through the use of HDD and dry-crossing waterbody crossing methods at major waterbody crossings. Therefore, we conclude that impacts on aquatic resources from the Project would be sufficiently minimized and temporary.

## **4.2 Vegetation**

The Gulf Run Pipeline and Line CP Modification Project facilities are within Level I Ecoregion 8, Eastern Temperate Forests (EPA, 2019). Vegetation cover types within the Project area were classified using the National Land Cover Database (2016) and verified during Enable's field surveys. Major vegetation cover types crossed by the Project include open land, upland forest, pine plantation, non-forested wetland, forested

wetland, and agricultural land. Except for the CP-3 Meter Station, which would affect a small portion of open and forested land, construction and operation of the Line CP Modifications would take place on commercial/industrial lands and would not impact vegetation. Vegetation cover types that would be impacted by the Project are described below in table B-10.

<b>Table B-10</b>			
<b>Vegetation Cover Types Crossed by the Project</b>			
<b>Vegetation Cover Type</b>	<b>Project Facilities</b>	<b>General Description</b>	<b>Dominant Species</b>
Open Land	Gulf Run Pipeline, Line CP Modifications	Non-forested vegetated areas such as pasture, grasslands, successional old fields, shrublands, and maintained utility rights-of-way.	Prairie three-awn; Ozark milkvetch; yellow bluestem; Cherokee sedge; long-leaf wood-oats.
Upland Forest	Gulf Run Pipeline, Line CP Modifications	Woody plant communities dominated by trees greater than 3 inches in diameter at breast height and greater than 20 feet in height.	Red maple; silver maple; sugar maple; American hornbeam; mockernut hickory.
Pine Plantation	Gulf Run Pipeline	Wooded lands being managed for forest products.	Loblolly pine; slash pine
Non-Forested Wetland	Gulf Run Pipeline	PSS and PEM wetlands.  PSS wetlands are dominated by woody vegetation less than 20 feet (6 meters) tall and may include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions.  PEM wetlands are dominated by herbaceous species.	PSS: Chinese tallowtree; red maple; groundsel tree; common buttonbush; green ash.  PEM: alligator weed; bushy bluestem; broom sedge; giant cane; narrow-leaf carpet grass.
Forested Wetland	Gulf Run Pipeline	PFO wetlands are dominated by woody vegetation at least 20 feet (6 meters) tall.	Chinese tallowtree; red maple; American hornbeam; sugarberry; little-leaf titi; bald cypress; black tupelo; water tupelo.
Agricultural Land	Gulf Run Pipeline	Cultivated or rotated cropland, orchards, vineyards, or hayfields. Agricultural lands within the Project workspaces consist primarily of hayfields.	NA
Source: Cowardin et al., 1979			

Table B-11 summarizes the temporary construction and permanent operational impacts of the Project on vegetation communities. Wetland impacts are discussed in section B.3.3, Wetlands.

#### **4.2.1 Louisiana Rare Plants and Vegetation Communities**

The LDWF identified 18 rare plant species that could occur along the Gulf Run Pipeline right-of-way (see table 4 in appendix B). With the exception of the CP-3 Meter Station workspace which includes a small area of upland forest, the Line CP Modification workspaces are dominated by gravel and maintained grasses. As a result, the Line CP Modifications lack the necessary habitat to support any of the rare plant species. No rare plants were identified as occurring in or near the Project workspaces in Texas.

Enable personnel conducted a field reconnaissance of the Gulf Run Pipeline area between January and October 2019. The area surveyed consisted of a 300-foot-wide corridor centered on the pipeline and the boundaries for the associated pipe/contractor yards and Line CP Modifications. Surveys for access roads were conducted within a 50-foot-wide corridor centered on the road. The field reconnaissance consisted of pedestrian visual surveys to evaluate the absence or presence of suitable habitat and documentation of listed species, if encountered. Enable did not conduct tailored presence/absence surveys specific for individual species. Based on each species habitat requirements and results of Enable's field surveys, the Gulf Run Pipeline area contains suitable habitat for 10 of the 18 rare plant species identified by the LDWF. Enable personnel did not observe any of the rare plant species within the survey boundary during field surveys. Additionally, on December 13, 2019, the LDWF confirmed that none of the species were documented within the Project workspaces.

According to the LDWF, seven rare vegetation communities are within 0.5 mile of the Gulf Run Pipeline right-of-way (table B-12). According to the LDWF, a flatwoods ponds vegetation community is approximately 80 feet north of temporary access road TAR-146. Because the access road would not be improved during construction, this flatwoods ponds vegetation community would not be impacted by construction or operation of the Project. No other rare vegetation communities are known to occur in the Gulf Run Pipeline construction work areas. Enable did not identify any rare vegetation communities within the survey area during field surveys. As described above, with the exception of the CP-3 Meter Station, construction and operation of the Line CP Modifications would occur on commercial/industrial lands and would not impact rare vegetation communities.

Table B-11

Vegetation Communities Impacted by Construction and Operation of the Project

Facilities	Open Land (acres)		Upland Forest (acres)		Pine Plantation (acres)		Non-Forested Wetland <sup>a/</sup> (acres)		Forested Wetland (acres)		Agricultural Land (acres)	
	Const	Op <sup>b/</sup>	Const	Op	Const	Op	Const	Op	Const	Op	Const	Op <sup>b/</sup>
<b>Gulf Run Pipeline</b>												
Pipeline	211.5	90.8	361.5	148.2	993.8	424.6	9.8	0.2	27.8	11.5	289.0	101.5
Access Roads	64.9	0.8	21.7	0.8	337.5	0.6	0.0	0.0	0.0	0.0	16.2	2.1
Aboveground Facilities	0.0	0.0	0.0	0.0	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Pipe/ Contactor Yard	47.4	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.3	0.0
<b>Pipeline Total</b>	<b>323.8</b>	<b>91.6</b>	<b>387.0</b>	<b>149.0</b>	<b>1,335.1</b>	<b>429.0</b>	<b>9.8</b>	<b>0.2</b>	<b>27.8</b>	<b>11.5</b>	<b>378.5</b>	<b>103.6</b>
<b>Line CP Modifications <sup>c/</sup></b>												
Aboveground Facilities	0.3	0.1	<0.1	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Project Total <sup>d/</sup></b>	<b>324.1</b>	<b>91.7</b>	<b>387.0</b>	<b>149.0</b>	<b>1,335.1</b>	<b>429.0</b>	<b>9.8</b>	<b>0.2</b>	<b>27.8</b>	<b>11.5</b>	<b>378.5</b>	<b>103.6</b>

Source: National Land Cover Database, 2016

- a Non-forested wetlands include PEM and PSS.
- b Acreages for Open Land and Agricultural Land represent the area encumbered by the permanent easement; however, these lands would revert to their previous use, resulting in no permanent change in vegetation.
- c Land use classification for all existing Line CP facilities is commercial/industrial and was not considered a vegetation community, as such is not included in this table.
- d Construction acreages include both temporary and permanent (operational) workspaces.

Const = Construction

Op = Operation

**Table B-12**

**Rare Vegetation Communities that may Occur in the Gulf Run Pipeline Area**

Type	State Element Rank <u>a/</u>	Description	Potential for Occurrence Within the Gulf Run Pipeline Area
Western Acidic Longleaf Pine Savanna	S1S2	Floristically rich, herb-dominated wetlands that are sparsely stocked with longleaf pine, which historically dominated the Gulf Coastal Plain flatwood regions of southeast and southwest Louisiana.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.
Small Stream Forest	S2	Relatively narrow wetland forests occurring along small rivers and large creeks in central, western, southeastern, and northern Louisiana. They are seasonally flooded for brief periods. Soils are typically classified as silt-loams. The natural community is similar in species composition to hardwood slope forests (beech-magnolia forests). These forested wetlands are critical components of the landscape filtering surface and subsurface flows, improving water quality, and storing sediment and nutrients.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.
Flatwoods Ponds	S2	Occur in swales and depressions, and are often linear in shape, although circular and elliptical ponds can occur. Flatwoods ponds may range from just a few inches deep relative to the surrounding landscape to about 5 feet deep in larger ponds. Because these ponds are seasonally flooded, they provide almost predator-free breeding habitat for amphibians.	The LDWF confirmed one known occurrence approximately 80 feet north of temporary access road TAR-146. Enable personnel confirmed the presence of this pond adjacent to temporary access road TAR-146 during field surveys. However, this road would not be improved for construction use.
Western Hillside Seepage Bogs	S1	Generally, persistently wet from seepage and are variable in size. most often less than 1 acre and rarely exceeding 10 acres. Western hillside seepage bogs are underlain by an impervious clay or sandstone layer that causes groundwater to constantly seep to the soil surface. The herbaceous groundcover is dense, continuous, and floristically rich. It is dominated by sedges, grasses and grass-like plants, and many kinds of unusual forbs, including yellow trumpet pitcher plants and a variety of orchid species. Many species are restricted to this habitat and the closely allied longleaf pine flatwoods savanna, which is also a fire-dependent habitat.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.

**Table B-12**

**Rare Vegetation Communities that may Occur in the Gulf Run Pipeline Area**

Type	State Element Rank <u>a/</u>	Description	Potential for Occurrence Within the Gulf Run Pipeline Area
Shortleaf Pine/Oak-Hickory Forest	S1	Occurs on dry hills where the soils are acidic silt loams or sandy loams underlain by clay and silty clays. Fire is important to this community, which was historically the most prevalent natural community for the Upper West Gulf Coastal Plain.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.
Mixed Hardwood-Loblolly Forest	S3	Is evenly distributed in a variety of ecological settings statewide on broad ridgetops and gentle side slopes in terrace uplands; on middle and lower slopes between uplands and stream bottoms; and at the heads of drainages along small, intermittent streams. Soils associated with this community are acidic sandy loams, silt loams, and silty clays.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.  Loblolly pine forests that are present and crossed by the Project are actively managed by timber companies as pine plantation and do not contain mixed hardwoods.
Forested Seep	S3	Typically occurs in association with mixed pine-hardwood forests, on hillsides, and on the base of slopes. These forested seeps are continually moist due to constant seepage forced to the surface by an underlying impervious layer (clay pan or sandstone). Soils are deep, very poorly drained, very strongly acidic loamy fine sand, fine sandy loam or silt loam, with relatively high organic matter content.	Known to occur within 0.5 mile of the Gulf Run Pipeline area but would not intersect with the Project footprint; this habitat type was not observed during field surveys.

Sources: Rummer, 2004; Michon, 2019; LDWF, 2019e, 2019f, 2019g, 2019h; Lorenz, 2019

**a State Element Rank:**

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation.

S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation.

S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations).

### 4.2.2 Noxious Weeds

Noxious or invasive plant communities can outcompete and displace native plant species, thereby negatively altering the appearance, composition, and habitat value of affected areas. Chinese tallowtree (*Triadica sebifera*) is the only noxious plant species listed in the NRCS's PLANTS database for Louisiana (USDA, 2020). This species was observed to have a scattered presence throughout the Gulf Run Pipeline route during Enable's field surveys. This species was not identified along the portion of the Line CP Modifications in Louisiana.

A number of noxious weeds are listed in the NRCS PLANTS database for Texas (USDA, 2020a). Enable did not identify any noxious weeds during field surveys for the portion of the Project in Texas.

### 4.2.3 Impacts and Mitigation

Impacts on vegetation are classified based on the duration and significance of impacts. Temporary impacts occur during construction with vegetation returning to preconstruction conditions almost immediately after construction, short-term impacts are those that require up to three years to return to preconstruction conditions, and long-term impacts require more than three years to revegetate. Permanent impacts are those that modify vegetation to the extent that they would not return to preconstruction conditions during the life of a project.

Construction of the Project facilities would require the removal of vegetation. The Gulf Run Pipeline and Line CP Modifications would affect approximately 2,462 acres of vegetation during construction; approximately 785 acres would be permanently impacted in the operational footprint of the Project. Table B-11 summarizes the temporary construction and permanent operational impacts of the Project to vegetation communities; wetland impacts are discussed in section B.3.3, Wetlands. As described above, with the exception of the CP-3 Meter Station, which would affect a small portion of open and forested land, construction and operation of the Line CP Modifications would occur on commercial/industrial lands and would not impact vegetation.

Prior to construction, the Gulf Run Pipeline right-of-way and workspaces would be cleared of vegetation to the extent necessary to allow for safe working conditions. In accordance with NRCS recommendations to limit the spread and introduction of noxious and invasive species, Enable would use typical precautionary measures such as decontaminating construction equipment prior to use and ensuring that equipment used for clearing and construction arrive at the site clean. Cleared timber and vegetation would be burned or chipped and removed in accordance with the requirements in our Plan (sections III.E and V.A.6), local restrictions, applicable permits, and landowner agreements. See the discussion in section B.8.2.10 regarding the state and local burning

requirements. Potential effects would be minimized by the implementation of the measures outlined in our Plan and Procedures, including the installation of erosion control measures following initial disturbance of the soil and post-construction restoration and revegetation of ATWS.

Impacts on forest vegetation from construction of the Project would be long term. Outside of the permanent maintained right-of-way, trees would be allowed to regrow; however, regrowth of trees to preconstruction condition would take 20 years or greater for many species. For non-forested vegetation types, including agricultural land, open land, and non-forested wetlands, impacts associated with construction of the Gulf Run Pipeline would generally be temporary or short term. Agricultural land generally returns to crop production the season following construction. Herbaceous areas would return to their vegetation cover within one to three years, and scrub-shrub areas would return to their vegetation cover within three to five years post-construction. In general, impacts on vegetation would be minimized through the co-location of approximately 63 miles (47 percent) of the Gulf Run Pipeline with existing rights-of-way. Potential effects would be minimized by the implementation of the measures outlined in our Plan and Procedures, including the installation of erosion control measures following initial disturbance of the soil and post-construction restoration and revegetation of ATWS.

Enable has committed to enroll eligible portions of the Project in the NWTF Foundation Energy for Wildlife Partnership program. As part of this program, following construction Enable would reseed the eligible portions of the Project rights-of-way using a seed mix that incorporates native plants. Enable has consulted with NRCS regarding preliminary native seed mixes and would finalize a native seed mix in coordination with NRCS and the NWTF prior to construction. Additionally, Enable would obtain seed mixes for site restoration from reputable suppliers to minimize the chances of introducing noxious or invasive species. To ensure that disturbed workspaces are stabilized in accordance with the Plan and Procedures, Enable would supplement native seed mixes, which may be slow to establish, with rapidly establishing annual species. If the seeding plan or vegetation maintenance regime required by this planting/restoration plan deviates from our Plan, Enable would request a variance to the Plan and provide a justification why the modified seeding/planting regime would provide a greater environmental benefit.

Enable would reseed disturbed areas outside of the portions of the Project rights-of-way enrolled in the Energy for Wildlife Partnership program using seed mixes in accordance with the measures described in our Plan and Procedures. Vegetation control would be conducted using mechanical means, or through selective application of EPA- and LDWF-approved herbicides and implementing our recommendation in section B.3.2.3. Enable would implement its IVM program, which promotes revegetation with desirable, stable, low-growing plant communities that resist invasion by tall-growing tree species, using appropriate control methods.

During operation, vegetation maintenance of the permanent Gulf Run Pipeline right-of-way would be necessary to allow for visibility and access for pipeline monitoring and maintenance activities and would be accomplished through the use of the IVM program. In upland areas, Enable would maintain the 50-foot-wide permanent right-of-way. In wetland areas only 30 feet of the 50-foot-wide permanent corridor would be maintained. Approximately 590 acres of upland forest, pine plantation, and forested wetlands in the permanent right-of-way would be converted and maintained in a herbaceous state through the operational life of the Project. The permanent loss of these forested areas would result in fragmentation and permanent loss of habitat and changes in vegetation.

If IVM is successful, mowing would occur during operation but perhaps less frequently than on traditionally managed rights-of-way. Where mowing for maintenance is necessary, it would be conducted no more frequently than once every three years across the entire width of the right-of-way in upland areas; however, a 10-foot-wide corridor centered on the pipeline could be mowed at a frequency necessary to allow for periodic pipeline surveys. In wetlands, as discussed in section B.3.3, vegetation maintenance on the operational right-of-way would be limited to a 10-foot-wide herbaceous corridor centered over the pipeline and the cutting and selective removal of trees within 15 feet of the pipeline with roots that may compromise the pipeline integrity. If mowing or other mechanical maintenance (e.g., hand cutting of vegetation) would be required over the full width of the right-of-way at a frequency other than that which is described in our Plan, Enable would submit a variance request that includes a justification for how the modified maintenance regime would provide a greater or equal environmental benefit consistent with our Plan.

Following construction, Enable would monitor revegetation success within all disturbed work areas. Revegetation would be considered successful if the density and cover of non-nuisance vegetation were similar in density and cover to adjacent undisturbed land. Enable would follow the BMPs developed in consultation with the NRCS to control the spread of noxious weeds and invasive plant species.

Based on the types and amounts of vegetation affected by the Project and Enable's proposed avoidance, minimization, and mitigation measures to limit Project impacts, we conclude that impacts on vegetation from the Project would be minor and less than significant.

### **4.3 Wildlife**

The Project would cross four general upland and wetland wildlife habitat types: open and agricultural lands, upland forest, pine plantation, and wetland/aquatic habitat. Each of these cover types provide nesting, cover, and foraging habitat for a variety of

wildlife species. Upland habitats include both forested and open land communities. Wetland habitats are comprised of PFO, PSS, and PEM freshwater wetland communities.

Open lands include non-forested upland areas, such as shrubland, open fields, agricultural lands, pastures, and previously disturbed areas. Depending on the cover type and degree of vegetation development, open lands provides foraging, cover, and nesting habitat for a variety of wildlife species. Agricultural lands and pastures provide foraging and limited cover habitat, while open fields and shrublands provide more diverse habitat with fewer disruptions to local wildlife. Wildlife species common to this habitat type include eastern cottontail, white-tailed deer, coyote, multiple mice species, eastern mole, garter snake, southern black racer, and skinks. Migratory birds that could be found in the Project workspaces are discussed in section B.4.4.1.

Forested upland habitat in the Project area includes various successional stages and species compositions that provide foraging, cover, and nesting habitat for a variety of wildlife species. Large mature trees with cavities and exfoliating bark provide nesting and roosting habitat for birds and bats. Nuts and seeds from representative tree species such as oaks, hickories, and pines as well as berries from shrubs and vines provide key food sources for birds and mammals. Ground cover including fallen logs, brush piles, and detritus provide cover for small ground dwelling species such as small mammals, reptiles, and amphibians. Wildlife species common to this habitat type include mice, gray squirrel, white-tailed deer, bats, and eastern hog-nosed snake. Migratory birds that could be found in the Project workspaces are discussed in section B.4.4.1.

Three different types of wetland habitats occur in the Project area: PFO, PSS, and PEM wetlands. These wetland types are described in detail in section B.3.3. The wildlife species found in the wetlands that would be crossed by the Project vary depending on the dominant vegetation and structural composition in each wetland. Wildlife species commonly found in wetland habitats include mammals such as white-tailed deer, swamp rabbit, raccoon, muskrat, beaver; wading birds such as great egret and great blue heron; waterfowl including wood duck, mallard, and Canada goose; a variety of frog and salamander species; and reptile species such as water moccasin, and common snapping turtle.

Little to no wildlife habitat occurs in the locations of the Line CP Modifications due to the previous disturbance of the property, which is dominated by gravel-covered lots and/or grassy areas maintained through frequent mowing.

### **4.3.1 Managed Wildlife Habitats**

No National Wildlife Refuges would be crossed by the Project. The USFWS is considering designating critical habitat for the Louisiana pine snake near the Gulf Run Pipeline. See section B.4.4 below for further discussion of the Louisiana pine snake and its potential designated critical habitat. No other managed wildlife habitats, including state WMAs, would be crossed or otherwise impacted by the Line CP Modifications.

According to the LDWF, the Gulf Run Pipeline would cross the Clear Creek WMA in Vernon Parish from MP 81.6 to MP 94.5 and again from MP 95.0 to MP 95.8. Clear Creek WMA is a 52,000-acre area that is owned by Hancock Timber and managed as a loblolly/slash pine plantation on a 30-year rotation (LDWF, 2020). Enable is currently consulting with Hancock Timber and the LDWF to coordinate the financial, environmental, and recreational logistics of the Gulf Run Pipeline construction and operation within the Clear Creek WMA, including the use of access roads. Prior to construction, Enable would obtain an easement from Hancock Timber. Enable would also request a letter of authorization from the LDWF for construction within the Clear Creek WMA. The letter of authorization would include any conditions on construction agreed to by the landowner. Enable states that any letter of authorization received would be filed with the FERC upon receipt.

The LDWF also recommended that Enable avoid bottomland hardwood wetlands and provide the LDWF with additional information regarding Project impacts within the Clear Creek WMA. Enable has noted that total avoidance of bottomland hardwood wetlands would not be a reasonable expectation for a long, linear facility such as the proposed crossing of the WMA. The pipeline has been routed and construction workspaces designed to avoid and/or minimize impacts on forested wetlands, including bottomland hardwood wetlands (e.g., through co-location of the Project facilities as described in section 3.3.1). The Pipeline would cross 11 forested wetlands within the WMA, 10 of which are considered bottomland hardwood. Enable has committed to include information on these wetland crossings in its request for a letter of authorization from the LDWF, and further coordination regarding construction in these wetlands would occur in association with the LDWF review process.

One additional managed wildlife habitat, the Red River National Wildlife Refuge, Bayou Pierre Unit, is within 1 mile of the Gulf Run Pipeline but would not be crossed by the pipeline.

### **4.3.2 General Impacts and Mitigation**

Construction and operation of the Gulf Run Pipeline and Line CP Modifications would result in various short- and long-term impacts on wildlife. Impacts would vary depending on the specific habitat requirements of the species in the area and the

vegetation land cover crossed by the Gulf Run Pipeline right-of-way. Potential short-term impacts on wildlife include the displacement of individuals from construction areas and adjacent habitats and the direct mortality of small, less mobile mammals, reptiles, and amphibians that are unable to leave the construction area. Long-term impacts would include permanent conversion of forested or scrub-shrub habitats to cleared and maintained right-of-way, and periodic disturbance of wildlife during operation and maintenance. Altered habitat and periodic disturbance could also increase wildlife mortality, injury, and stress.

Construction of the Project would impact upland forest, open lands, pine plantation, wetlands, and agricultural lands. Fragmentation of forested areas results in changes in vegetation (e.g., shrubs inhabiting the forest edge), which could limit the movement of species between adjacent forest blocks, increase predation, and decrease reproductive success for some species (Jones, McCann, and McConville, 2000). Enable has co-located about 47 percent of the Project with its existing right-of-way to minimize habitat fragmentation. The term “edge effect” is commonly used in conjunction with the boundary between natural habitats, especially forests, and disturbed or developed land such as pipeline corridors. Where land adjacent to a forest has been cleared, creating an open/forest boundary, sunlight and wind penetrate to a greater extent, resulting in tree destabilization from increased wind shear, drying out of the interior of the forest near the edge, encouraging growth of opportunistic species at the edge, and changing air temperature, soil moisture, and light intensity (Jones, McCann, and McConville, 2000).

The temporary disturbance of local habitat is not expected to have population-level impacts on wildlife because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the Project area, much of which would return to preconstruction conditions. Construction at aboveground facilities would have limited impacts on wildlife because the new facilities would be constructed within previously disturbed areas. Because of the presence of similar habitats adjacent to and in the vicinity of construction activities, the implementation of IVM, and the implementation of impact avoidance and minimization measures such as co-location with existing rights-of-way, minimization of impacts on bottomland hardwood wetlands, and construction of aboveground facilities in previously disturbed areas, we conclude that construction and operation of the Gulf Run Pipeline and Line CP Modifications would not have population-level impacts or significantly measurable negative impacts on wildlife.

#### **4.4 Special Status Species**

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Federally protected species include those protected under the ESA or which are considered as candidates for listing by the USFWS, species protected by the Migratory Bird Treaty Act (MBTA), and species

protected by the Bald and Golden Eagle Protection Act (BGEPA). State protected species include those that are state listed as threatened or endangered.

#### **4.4.1 Migratory Birds**

Migratory birds are federally protected under the MBTA. The MBTA (16 U.S.C. 703-712) as amended, implements protection of many migratory game and non-game birds with exceptions for the control of species that cause damage to agricultural or other interests. Additionally, Executive Order 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 impacts on migratory birds through enhanced collaboration with the USFWS. Executive Order 13186 requires that Birds of Conservation Concern and federally listed species be given priority when considering the effects on migratory birds.

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 (FERC, 2011). This voluntary Memorandum of Understanding does not waive legal requirements under the MBTA, BGEPA, ESA, NGA, Federal Power Act, or any other statutes and does not authorize the take of migratory birds.

Bird Conservation Region 25 – West Gulf Coastal Plain/Ouachitas, would be crossed by the Project. Table B-13 identifies the migratory Birds of Conservation Concern known to occur in Bird Conservation Region 25 and describes the preferred nesting habitat presence in areas affected by the Gulf Run Pipeline. With the exception of the CP-3 Meter Station, which would affect a small portion of open and forested land, construction and operation of the Line CP Modifications would occur on commercial/industrial lands and would not provide suitable nesting habitat for the migratory bird species described in table B-13.

According to the LDWF, one known occurrence of a waterbird nesting colony is 1.5 miles east of the Gulf Run Pipeline area; however, no impacts from the Project would occur to this area. No additional waterbird nesting colonies were observed during Enable's field surveys. The Project would not cross any Audubon Important Bird Areas.

<b>Table B-13</b>			
<b>Migratory Birds of Conservation Concern Known to Nest in Bird Conservation Region 25</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Nesting Habitat</b>	<b>Nesting Habitat Present Within the Gulf Run Pipeline Area</b>
Least bittern	<i>Ixobrychus exilis</i>	Freshwater and brackish marshes having freshwater aquatic or semi-aquatic vegetation interspersed with woody vegetation and open water.	Potential
Little blue heron	<i>Egretta caerulea</i>	Riparian habitats, swamps, ponds, lakes, and human-made impoundments and islands.	Potential
Swallow-tailed kite	<i>Elanoides forficatus</i>	Diverse vegetation communities with tall, accessible trees adjacent to open areas, such as slash pine wetlands, edges of pine forest, cypress swamps, wet prairies, freshwater and brackish marshes, hardwood hammocks, and mangrove forests.	Potential
Bald eagle	<i>Haliaeetus leucocephalus</i>	Forested areas adjacent to large bodies of water; nests in trees.	Potential
American kestrel	<i>Falco sparverius (paulus ssp.)</i>	Semi-open habitats, including meadows, grasslands, early old field successional communities, open parkland, agricultural fields, and both urban and suburban areas. Breeds across northern United States in tree cavities.	Not Likely
Chuck-will's-widow	<i>Antrostomus carolinensis</i>	Deciduous, pine, oak-hickory, and mixed forests, oak groves, forest edges, and riparian areas.	Potential
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	Deciduous woodland and open areas with scattered trees.	Potential
Loggerhead shrike	<i>Lanius ludovicianus</i>	Open fields with scattered trees, open woodlands, and scrub. Breeds in Midwest.	Not Likely
Brown-headed nuthatch	<i>Sitta pusilla</i>	Southeastern pine forests and residential areas with large pines.	Potential
Bewick's wren	<i>Thryomanes bewickii</i>	Open woodland, shrub land, farms, and suburbs. Breeds in Midwest.	Not Likely
Wood thrush	<i>Hylocichla mustelina</i>	Deciduous or deciduous-coniferous forest, especially near water.	Potential
Prairie warbler	<i>Setophaga discolor</i>	Dry brushy clearings, forest margins, and pine barrens. Breeds in northwestern Louisiana.	Potential
Cerulean warbler	<i>Setophaga cerulea</i>	Mature deciduous forests. Breeds in Upper Mississippi River Valley.	Not Likely
Prothonotary warbler	<i>Protonotaria citrea</i>	Bottomland hardwood forests and forested wetlands.	Potential
Worm-eating warbler	<i>Helmitheros vermivorum</i>	Ravines and hillsides in thick deciduous woods	Potential

<b>Table B-13</b>			
<b>Migratory Birds of Conservation Concern Known to Nest in Bird Conservation Region 25</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Nesting Habitat</b>	<b>Nesting Habitat Present Within the Gulf Run Pipeline Area</b>
Swainson's warbler	<i>Limnothlypis swainsonii</i>	Canebrakes, swamps, and thickets in moist lowland forests and woodlands.	Potential
Louisiana waterthrush	<i>Parkesia motacilla</i>	Humid forests with running water.	Potential
Kentucky warbler	<i>Geothlypis formosa</i>	Woodlands with dense damp undergrowth.	Potential
Bachman's sparrow	<i>Peucaea aestivalis</i>	Pine woodlands or open habitats with a dense ground layer of grasses and forbs and an open understory with few dense shrubs. Breeds north of the Project area in Louisiana, Arkansas, Mississippi, Alabama, and Georgia.	Not Likely
Painted bunting	<i>Passerina ciris</i>	Partly open habitats with scattered brush and trees, riparian thickets and brush, and weedy and shrubby areas.	Potential
Orchard oriole	<i>Icterus spurius</i>	Diverse habitats with preference for open park-like woodlands along riparian borders; road rights-of-way.	Potential
Sources: USFWS, 2008; Ehrlich, Dobson, and Wheye, 1988; Cornell Lab of Ornithology, 2019			

**General Impacts and Mitigation.** The primary concern for impacts on migratory birds is mortality of eggs and/or young, since immature birds could not avoid active construction. Tree clearing and ground disturbing activities could cause disturbance during critical breeding and nesting periods, potentially resulting in the loss of nests, eggs, or young. In addition, forest fragmentation could increase predation and competition, and reduce nesting and mating habitat for migratory and ground-nesting birds (Jones, McCann, and McConville, 2000).

Although multiple bird species occur in the Project area, no migratory birds that are also federally listed threatened or endangered are known to occur in the area. Enable would conduct tree clearing between October 1 and March 31 to avoid the peak migratory bird nesting season in Louisiana (between April 1 and August 31), as practicable. If Enable is unable to conduct tree clearing outside of the nesting season, Enable has committed to consult with the USFWS regarding measures that may be required to protect nesting migratory birds. During operations, and per our Plan, Enable would not conduct vegetation maintenance of the right-of-way more frequently than once every three years. Additionally, Enable would prohibit all vegetation maintenance activities between April 15 and August 1 to minimize disturbance of ground nests as required by our Plan.

Based on the characteristics and habitat requirements of migratory birds known to occur in the Project area, the amount of similar habitat adjacent to and in the vicinity of the Project, Enable's implementation of the measures in FERC's Plan and Procedures and use of timing restrictions for clearing of vegetation, as well as Enable's commitment to consult with the USFWS if adherence to timing restrictions cannot be met, we conclude that construction and operation of the Gulf Run Pipeline and Line CP Modifications would not have a significant impact on migratory bird populations.

#### **4.4.2 Bald Eagles**

The bald eagle (*Haliaeetus leucocephalus*) is protected under the BGEPA (16 U.S.C. §§ 668–668c). The BGEPA prohibits the take of bald eagles, including their parts, nests, or eggs. The BGEPA defines take as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

Bald eagles are opportunistic predators that feed primarily on fish within large, perennial bodies of water. Nests are typically constructed in large, tall trees (i.e., 40 to 120 feet) within 1 mile of rivers, reservoirs, or open water (Campbell, 2003; NatureServe, 2019c). Bald eagles are known to occur in the Project region, and the Gulf Run Pipeline contains forested areas in proximity to waterbodies, which could be suitable habitat for foraging, nesting, roosting, or travelling by the species. The Project area was surveyed for eagles and nests during pedestrian natural resource surveys, which are described in section B.4.2 and no individual bald eagles or nests were observed. According to the USFWS and LDWF, there are no known occurrences of bald eagles in proximity to the Gulf Run Pipeline.

With the exception of the CP-3 Meter Station, the Line CP Modifications sites do not contain any suitable forested habitat. Construction and operation of the CP-3 Meter Station would temporarily disturb less than 0.1 acre of pine forest. No suitable bald eagle foraging, roosting, or nesting habitat is present at the site and the nearest open waterbody is more than 1 mile away.

Enable would adhere to the recommendations included in the USFWS National Bald Eagle Management Guidelines if a bald eagle nest is identified near the Project area before or during construction. If a nest is identified, Enable would avoid clearing and construction activities within 660 feet of the nest during the breeding season and consult with the USFWS regarding potential impacts. Therefore, we conclude the Gulf Run Pipeline is unlikely to impact or cause a take of bald eagles.

#### **4.4.3 Federally Listed Species**

Section 7 of the ESA requires federal agencies to ensure that any actions authorized, funded, or carried out by the agency would 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. Additionally, the ESA prohibits the unpermitted “take” of listed species whereby “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct. As the lead federal agency authorizing the Project, FERC is required to consult with the USFWS and NMFS, if applicable, to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the Project, and to evaluate the proposed action’s potential effects on those species and/or critical habitats. No designated critical habitat or federally protected species under the jurisdiction of the NMFS occur in the Project area (NMFS, 2020).

Enable, acting as our non-federal representative for the purpose of complying with Section 7(a)(2) of the ESA, reviewed the USFWS Information for Planning and Consultation (IPaC) System and requested official species lists, which identified six federally listed species with the potential to occur near the Gulf Run Pipeline (red-cockaded woodpecker [*Picoides borealis*], northern long-eared bat [*Myotis septentrionalis*], West Indian manatee [*Trichechus manatus*], Louisiana pine snake [*Pituophis ruthveni*], earth fruit [*Geocarpon minimum*], and American chaffseed [*Schwalbea americana*]). Based on the species’ distribution and habitat requirements, we determined that suitable habitat for one of these species, the West Indian manatee, does not occur within the Gulf Run Pipeline area. Therefore, the Gulf Run Pipeline would have *no effect* on the West Indian manatee. Enable conducted habitat assessments during its field surveys (described in EA section B.4.2) to identify the potential presence of suitable habitat for the remaining five species. Of these five species, suitable habitat within the Gulf Run Pipeline area is only present for the northern long-eared bat. Therefore, we have determined that the Gulf Run Pipeline Project component *may affect* the northern long-eared bat and would have *no effect* on the red-cockaded woodpecker, Louisiana pine snake, earth fruit, and American chaffseed.

The official species lists generated by the IPaC System identified seven species with the potential to occur near the Line CP Modifications, including the red-cockaded woodpecker, interior least tern (*Sterna antillarum athalassos*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), northern long-eared bat, Louisiana pine snake, and earth fruit. The IPaC results noted that an effects analysis for three of these species (the least tern, piping plover, and red knot) would only be required for wind energy projects. The Line CP Modifications Project workspaces do not include adequate habitat to support the remaining four species (red-cockaded woodpecker, northern long-eared bat, Louisiana pine snake, and earth fruit). Therefore, we have determined that the Line CP Modifications portion of the Project would have *no effect* on any federally listed species.

Below, we include an expanded discussion of the applicable species mentioned above, with our rationale for our effects determinations.

No designated critical habitat for any federally listed species was identified within the Project area. However, the USFWS is considering a potential proposal to designate critical habitat for one species, the Louisiana pine snake, which could occur in the Project area and is discussed in further detail below.

**Red-cockaded Woodpecker.** The red-cockaded woodpecker is both federally and state listed as endangered. The red-cockaded woodpecker range includes open, old growth pine stands across the southeastern portion of the United States from eastern Texas to Virginia (USFWS, 2003a; Cornell Lab of Ornithology, 2019). The species is a habitat specialist, preferring mature pines or pine-dominated pine/hardwood stands of forest, woodland, or savannah with little to no midstory. Foraging habitat consists of pines over 30 years old with an open canopy, low densities of sapling pines, little to no midstory, few to no overstory hardwoods, and plentiful native bunchgrasses and forbs (USFWS, 2003a, 2016a). For nesting, the species exclusively excavates cavities into living pines, usually 60 to 70 years old and softened by red heart fungus, where they raise their young in cooperative breeding groups (USFWS, 2003a; Campbell, 2003; Cornell Lab of Ornithology, 2019).

Pine forests are common throughout the Gulf Run Pipeline area; however, during field surveys conducted by Enable, pine trees were found to either be too young/small to be suitable foraging or nesting habitat, or pine trees only comprised a subset of the tree stratum and do not make up 50 percent or more of the dominant trees. The pine forests in the Gulf Run Pipeline area are primarily maintained silviculture pine plantations, which are typically managed on a rotation of 15 to 25 years and therefore are not old enough to provide suitable foraging or nesting habitat for the red-cockaded woodpecker.

The IPaC System results indicated the potential occurrence of the red-cockaded woodpecker near one Line CP Modification facility, the Vernon Compressor Station in Jackson, Louisiana. The Vernon Compressor Station workspaces are limited to commercial/industrial lands and therefore do not contain any suitable foraging or nesting habitat.

Enable's original Gulf Run Pipeline route would have crossed a property in Beauregard Parish enrolled in the red-cockaded woodpecker Safe Harbor Program and which is subject to a Habitat Conservation Plan (HCP) intended to help stabilize a population of red-cockaded woodpecker. Enable adopted a route variation that would avoid construction of the Gulf Run Pipeline across the property subject to the HCP. Enable would require the use of two existing temporary access roads that traverse the HCP but would not clear trees or otherwise improve the roads. On August 20, 2019 the

LDWF stated that the use of the roads within the HCP would not affect the red-cockaded woodpecker if tree clearing or road widening is avoided. We agree.

Given the absence of suitable habitat identified during field surveys and Enable's adoption of a route variation to avoid potential impacts on the red-cockaded woodpecker, we conclude that the Project would have *no effect* on this species.

**Northern Long-eared Bat.** The northern long-eared bat is both federally and state listed as threatened and is found throughout northcentral and northeastern North America, including northern Louisiana (USFWS, 2016b). In the winter months, the species hibernates in caves or cave-like structures such as mines or railroad tunnels, known as hibernacula, although none have been documented using caves in Louisiana (USFWS, 2015a, 2016a, 2016b). In the summer months, suitable habitat includes a variety of wooded and forested habitats for roosting, foraging, and traveling such as underneath bark or in cavities or crevices of live or dead trees. The species is highly adaptable to different roosting habitats based on availability of trees to form suitable cavities or retain bark, as they are known to roost in a variety of tree species, living or dead trees, various ages of trees, and densities of tree cover. These bats are also known to forage in a variety of forest types, suggesting the species is adaptable to habitat types based on availability (USFWS, 2015a, 2016a, 2016b). The primary threat to the northern long-eared bat is white-nose syndrome, which is caused by the fungus *Pseudogymnoascus destructans* and results in behavioral changes in bats during the winter that cause them to become active more than usual and burn up fat reserves they need to survive the winter.

The species may occur near Project workspaces in Louisiana as the northern parishes crossed by the Project are within the northern long-eared bat range and because of the wide range of summer habitat suitability throughout the Project area in Louisiana (USFWS, 2015a, 2016b). Some forest habitat would be permanently removed as part of construction and operation of the Gulf Run Pipeline which could reduce potential summer roosting habitat for the species. However, construction activities would impact a relatively narrow corridor, which would not impede movement of the northern long-eared bat. Individual northern long-eared bats would be able to use adjacent habitats during all phases of construction and operations of the Gulf Run Pipeline.

Construction activities for Line CP Modifications within the range of the northern long-eared bat would be limited to the previously disturbed property of existing aboveground facility sites, which includes some areas with graveled and paved surfaces and does not include suitable winter or summer habitat for the northern long-eared bat. The CP-3 Meter Station is outside of the northern long-eared bat range. Therefore, we have determined that construction and operation of the Line CP Modifications would have *no effect* on the northern long-eared bat.

On January 14, 2016, the USFWS published the 4(d) Rule for the northern long-eared bat, which defines the “take” prohibitions and exceptions associated with the species. In areas affected by white nose syndrome (i.e., white nose syndrome zones), the 4(d) Rule does not prohibit an incidental take of a northern long-eared bat unless it results from tree removal activities that occur within a 0.25-mile radius of known hibernacula, or cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius from the known maternity tree during the pup season (June 1 through July 31) (USFWS, 2016b).

Enable initiated informal consultation with the USFWS via the IPaC determination key for federal actions for the northern long-eared bat 4(d) Rule to determine if the Project would result in a prohibited take of northern long-eared bats. This consultation was initiated on August 7, 2019, and supplemented on April 20, 2020, based on minor modifications to proposed Project workspaces and the addition of pipe/contractor yards. Although the Project could require the clearing and permanent conversion of trees during the pup season, the results of the determination key indicated that no known hibernacula are within 0.25 mile of the Project area and no known occupied maternity roosts are within 150 feet of the Project area. Based on the results of the IPaC determination key, the USFWS concurred on April 20, 2020 that the Project *may affect* the northern long-eared bat but incidental take of northern long-eared bat as a result of the Project would not be prohibited under the 4(d) Rule. We agree with this determination; therefore, consultation is complete for the northern long-eared bat.

**Louisiana Pine Snake.** The Louisiana pine snake is a large, non-venomous snake endemic to west central Louisiana and eastern Texas. The Louisiana pine snake is both federally and state listed as threatened and is considered one of the rarest snakes in the United States (USFWS, 2018). The species is extirpated from most of its historic range and is currently only recognized in seven extant populations in Texas and Louisiana, including Angelina, Jasper, and Newton Counties in Texas, and Bienville, Natchitoches, Sabine, Vernon, and Grant Parishes in Louisiana (Ranson, 2020).

Suitable habitat typically consists of sandy, well-drained soils in open-canopy longleaf pine forest with a sparse midstory and a well-developed herbaceous ground cover (USFWS, 2013b, 2016a, 2018). Abundant herbaceous ground cover, particularly forbs, is important for the Baird’s pocket gopher, which is the primary prey of the Louisiana pine snake; the Louisiana pine snake is frequently found in the underground burrow systems created by these gophers, which they use for shelter and hibernacula and to escape from fire.

Roads are considered a direct threat to the remaining Louisiana pine snake habitat and populations due to habitat fragmentation and vehicle-caused mortality; this in combination with habitat degradation between remaining populations reduces the potential success of dispersal among remnant populations. Recently it has been identified

that entanglement in filamentous mesh (particularly synthetic, non-biodegradable types) used as erosion control blankets on pipeline and road construction can cause mortality to individuals (Kapfer and Paloski, 2011; USFWS, 2016a).

Although the Gulf Run Pipeline is within the range of the Louisiana pine snake, the species is only known to occur in seven isolated sites, none of which are in the vicinity of the Gulf Run Pipeline (USFWS, 2013b, 2018). Additionally, during field surveys of the Gulf Run Pipeline proposed workspaces, Enable did not identify suitable habitat including longleaf pine forest with a sparse midstory and a well-developed herbaceous ground cover. Although the Louisiana pine snake is unlikely to occur in the Project area, Enable has committed to the following BMPs project-wide to reduce impacts on snakes, as recommended by LDWF in its July 20, 2019 letter to FERC.<sup>13</sup>

These practices include the use of:

- erosion control products consisting of loose layers of organic material and hydraulically applied erosion control products without plastic mesh;
- rolled erosion control products constructed using an unwoven and unbound weave of organic fiber matrix;
- erosion control products that consist of biodegradable components with open non-bonded mesh weave which include open weave textile with loosely woven “leno” or “gauze” weave;
- permanent turf reinforcement mats with very small mesh size (< 0.05 square centimeters);
- during preconstruction environmental training, Enable would instruct construction staff to avoid killing any snakes observed during construction; and
- construction staff would be trained on identification of Louisiana pine snakes and instructed to report any sightings to the EI(s) for subsequent reporting to the LDWF.

Given Enable’s commitment to implement measures to minimize the impacts on the Louisiana pine snake, and because the species is unlikely to occur in the Project area, we conclude that the Project would have *no effect* on this species.

The USFWS determined on May 15, 2020 that the designation of critical habitat for the Louisiana pine snake may be warranted and is evaluating the impacts associated with a critical habitat designation. In the event that critical habitat is designated for the species in the Project area, follow-up consultation with the USFWS would be required to ensure that the Project would not adversely modify or destroy that designated critical habitat.

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<sup>13</sup> This communication can be found on FERC’s eLibrary at accession number 20190711-5076.

**Earth Fruit.** The earth fruit is a federally threatened small, winter annual succulent known to occur in Louisiana, Texas, Arkansas, and Missouri (USFWS, 2015d, 2016c). As of 2016, there were 40 known populations within 19 counties/parishes, with at least 17 known viable, protected populations.

The earth fruit is associated with saline prairies and is generally found in openings within or adjacent to forested habitat. These prairies are commonly characterized by a low, extensive coverage of sedges, grasses, and forbs, with few to no trees or shrubs. The species is intolerant of competition and frequently occurs on “slick spots,” which are small areas within a saline prairie with sparser vegetation than the surrounding area. There are six known populations in Louisiana, three of which are in DeSoto Parish, within the Holly and Stonewall USGS quadrangles (USFWS, 2016a, 2016c); these quadrangles are outside of the Project area, with the Holly quadrangle 6.9 miles west and the Stonewall quadrangle 15.7 miles northwest of the Gulf Run Pipeline. The species is associated with the Bonn soil series in DeSoto Parish. No Project facilities cross the Bonn soil series nor contain suitable habitat of saline prairies with slick spots.

Earth fruit is known to occur in Anderson, Gregg, Harrison, Palo Pinto, Panola, and Parker Counties in Texas (Texas Parks and Wildlife Department [TPWD], 2019); however, the location of the CP-3 Meter Station does not contain suitable habitat of saline prairies with slick spots. On August 7, 2019, Enable consulted the IPaC Project Review Report Tool and determined that because the Project would not involve human disturbance or ground disturbance on saline prairies, the Project would not affect the earth fruit. We agree, and conclude that the Project would have *no effect* on this species.

**American Chaffseed.** The American chaffseed is a federally endangered tall perennial herb with unbranched, erect stems and purplish-yellow, tubular flowers up to 2 inches tall (USFWS, 2016a; LDWF, 2019i). American chaffseed inhabits pimple mounds in the longleaf pine flatwood savannahs, with well-drained sandy soils. The species occurs across the southeastern United States, including southwestern Louisiana. Flowering occurs from April to June in the south and from June to mid-July in the north. American chaffseed is known to be a parasite on the roots of other plants. During habitat surveys of the Gulf Run Pipeline proposed workspaces, Enable did not observe suitable habitat including longleaf pine flatwoods with pimple mounds (i.e., flattened, circular to oval, domelike, natural mounds) with sandy soils. On August 7, 2019, Enable consulted the IPaC Project Review Report Tool and determined that because the Project would not occur on or around pimple mounds within long-lead flatwoods, the Project would not affect the American chaffseed. We agree, and conclude that the Project would have *no effect* on this species.

#### 4.4.4 State Listed Species

Title 56 of the Louisiana Revised Statutes provides the state statuses of protected species in Louisiana. Louisiana assigns protection state protection status to species that are rare, threatened, endangered, as well as species impacted by commerce. Rules §65.175 and §65.176 of Title 31 of the Texas Administrative Code provide Texas' list of state listed threatened and endangered species. Enable consulted with LDWF and TPWD regarding state listed species and habitats; occurrence data for federally and state listed species were obtained from the LDWF Wildlife Diversity Program, Louisiana Natural Heritage Program, and Texas Natural Diversity Database.

The LDWF reviewed the activities associated with the Project and on October 4, 2019, provided notification to Enable regarding rare, threatened, or endangered species within 0.5 mile of the Project workspaces. Four state listed threatened and endangered species were identified as potentially occurring near the Gulf Run Pipeline workspaces, including the West Indian manatee, red-cockaded woodpecker, Louisiana pine snake, and northern long-eared bat. These species are also federally listed; therefore, the potential impacts on and minimization measures associated with these species are discussed above. Because the Gulf Run Pipeline would either have no effect or would not likely adversely affect any of the four federally listed species we have determined that the Gulf Run Pipeline would not affect state protected species in Louisiana. The LDWF also notified Enable that no records of rare, threatened, or endangered species or critical habitats are within 0.5 mile of the Line CP Modifications. We have therefore determined that the Line CP Modifications would not affect state protected species in Louisiana, and coordination with LDWF regarding state protected species is complete.

Seven additional state-ranked species (S1, S2, or S3) were identified in occurrence data obtained from the Louisiana Wildlife Diversity Program. These include the northern burmannia (*Burmannia biflora*), pepper and salt skipper (*Amblyscirtes hegon*), sand spikemoss (*Selaginella arenicola ssp. riddellii*), small-toothed caric sedge (*Carex microdonta*), Strecker's giant-skipper (*Megathymus streckeri*), yellow fringeless orchid (*Platanthera integra*), and red milkweed (*Asclepias rubra*). However, these species were not indicated as a concern by the LDWF in consultations regarding the Project, and the occurrences are all at least 0.2 mile from Project workspaces, therefore we find these species would not be impacted by construction or operation of the Project.

Enable reviewed the TPWD Texas Natural Diversity Database Geographic Information System (GIS) database to obtain occurrence data for state-listed wildlife species that are known to occur in or near the CP-3 Meter Station, the only Project facility in Texas. No state listed wildlife species were identified within 1 mile of the CP-3 Meter Station workspaces. The TPWD also reviewed the Project and determined on February 19, 2020, that the Project facilities in Texas would not result in a significant

adverse impact on rare, threatened, or endangered species, or other fish and wildlife resources in Texas. We agree.

## **5. Land Use, Recreation, and Visual Resources**

### **5.1 Land Use**

Land use classifications crossed and impacted by the Project were based on a combination of information gathered from the National Land Cover Database (2016) database, field surveys conducted to confirm wetland areas, and imagery analysis for pine plantations. Land uses in the Project workspaces include agricultural land, commercial/industrial, open land, upland forest, pine plantation, forested wetland, non-forested wetland, and open water.

The Project facilities required for construction and operation of the Project include the pipeline right-of-way, ATWS, aboveground facilities, pipe/contractor yards, and access roads. In total, approximately 2,525 acres of land would be disturbed during construction, and approximately 791 acres of land would be disturbed as a result of permanent operations. Temporary and permanent land use impacts are summarized in table B-14. Land temporarily impacted during construction but not required for permanent operations would be allowed to revert to preconstruction uses, with the exception of areas where the permanent right-of-way must remain cleared of certain types of vegetation (e.g., forested areas). Forested areas impacted by the permanent right-of-way would be converted to open land uses for right-of-way maintenance.

The Gulf Run Pipeline would be constructed with a nominal construction corridor width (temporary plus permanent right-of-way) of 100 feet in upland locations and 75 feet in wetland areas. These rights-of-way would provide a safe work environment and promote effective implementation of various natural gas pipeline construction methods and BMPs. The permanent right-of-way would be 50 feet wide. No additional pipeline right-of-way would be required for the Line CP Modifications.

The Project is not within the Louisiana coastal zone identified by the Louisiana Office of Coastal Management and established in Louisiana Revised Statutes Article 49, §214.24. A Coastal Zone Consistency Determination through the LDNR would therefore not be required.

**Table B-14**

**Land Use Impacts in Acres**

Facility	Agricultural Land		Commercial / Industrial		Open Land		Upland Forest		Pine Plantation		Forested Wetland		Non-Forested Wetland		Total	
	Const	Op	Const	Op	Const	Op	Const	Op	Const	Op	Const	Op	Const	Op	Const	Op
<b>Gulf Run Pipeline</b>																
Right-of-way	289.0	101.5	11.6	4.1	211.5	90.8	361.5	148.2	993.8	424.6	27.8	11.5	9.8	0.2	<b>1,905.0</b>	<b>780.9</b>
Aboveground Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	3.8	0.0	0.0	0.0	0.0	<b>3.8</b>	<b>3.8</b>
Pipe / Contractor Yard	73.3	0.0	8.7	0.0	47.4	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>133.2</b>	<b>0.0</b>
Access Roads	16.2	2.1	9.5	1.6	64.9	0.8	21.7	0.8	337.5	0.6	0.0	0.0	0.0	0.0	<b>449.8</b>	<b>5.9</b>
<b>Pipeline Subtotal a/</b>	<b>378.5</b>	<b>103.6</b>	<b>29.8</b>	<b>5.7</b>	<b>323.8</b>	<b>91.6</b>	<b>387.0</b>	<b>149.0</b>	<b>1,335.1</b>	<b>429.0</b>	<b>27.8</b>	<b>11.5</b>	<b>9.8</b>	<b>0.2</b>	<b>2,491.8</b>	<b>790.6</b>
<b>Line CP Modifications</b>																
Aboveground Facilities	0.0	0.0	32.3	0.0	0.3	0.1	<0.1	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	<b>32.6</b>	<b>0.1</b>
Pipe / Contractor Yard	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.8</b>	<b>0.0</b>
<b>Line CP Modifications Subtotal</b>	<b>0.0</b>	<b>0.0</b>	<b>33.1</b>	<b>0.0</b>	<b>0.3</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>33.4</b>	<b>0.1</b>
<b>Project Total</b>	<b>378.5</b>	<b>103.6</b>	<b>62.9</b>	<b>5.7</b>	<b>324.1</b>	<b>91.7</b>	<b>387.0</b>	<b>149.0</b>	<b>1,335.1</b>	<b>429.0</b>	<b>27.8</b>	<b>11.5</b>	<b>9.8</b>	<b>0.2</b>	<b>2,525.2</b>	<b>790.7</b>

a Approximately five acres of open waters (including perennial streams which would be open cut) would be impacted by the Gulf Run Pipeline during construction. These impacts are included within each land use type for the Project and are therefore not broken out as a separate land use category.

Const = construction

Op = operation

### **5.1.1 Agricultural Land**

Agricultural lands within the Project workspaces include active croplands, hay fields, and improved pastures. Approximately 379 acres of agricultural lands would be affected during construction of the Gulf Run Pipeline. Following construction, approximately 104 acres would be included as part of the operational right-of-way for the pipeline. No agricultural lands would be affected by construction or operation of the Line CP Modifications.

To minimize impacts on agricultural lands during construction, Enable would segregate topsoil in actively cultivated agricultural lands from either the full work area or from only the ditch and spoil storage areas, in accordance with landowner requests, and maintain natural flow patterns by providing breaks in topsoil and subsoil stockpiles. Following construction Enable would grade and restore agricultural lands as close as possible to preconstruction conditions. Enable would also test topsoil and subsoil in agricultural areas for compaction and repair any severely compacted areas. After construction Enable would allow agricultural lands in the permanent Gulf Run Pipeline right-of-way to revert to preconstruction conditions and continue to be farmed. Resumption of agricultural operations following Project construction and/or use of cover crops as a BMP would aid in the restoration of soil structure and productivity that could take several years to achieve success, depending on site-specific conditions and land use practices. By following Enable's construction and restoration procedures and applicable BMPs, we have determined that the Project would result in temporary and less than significant impacts on agricultural lands. Enable also states it will negotiate monetary compensation and/or damages with owners of agricultural lands crossed by the Project to offset agricultural production losses.

### **5.1.2 Commercial and Industrial Land**

The commercial and industrial lands that would be crossed by the Project include roads, railroads, utilities, and manufacturing/industrial plants. Approximately 30 acres of commercial and industrial land would be affected by construction of the Gulf Run Pipeline and 5.7 acres would be affected by pipeline operations. The Line CP Modifications would affect 33 acres of commercial and industrial land within the fence line of Enable's existing facilities during construction only.

Enable would cross 79 public roads, including 20 major roads (federal and state highways), and 4 railroads during construction of the Gulf Run Pipeline. The Project would also cross two Louisiana scenic byways as discussed further in section B.5.5 below. Enable would cross major roads and railroads using HDD or conventional bore to avoid impacts on traffic as described in section A.6.2. Lightly traveled roads and drives would be completed using open-cut methods as described in section A.6.2. Enable would minimize impacts on roads by installing detours as needed or implementing other

measures to ensure that traffic flow and access is maintained. Enable would also attempt to schedule road crossings outside of peak traffic times. Following construction, roadways would be restored to preconstruction conditions. In general, commercial and industrial land uses affected by construction and operation of the Project would return to preconstruction conditions and uses. Therefore, we have determined that the Project's impacts on commercial and industrial land would be temporary and less than significant.

### **5.1.3 Open Land**

Open lands that would be crossed by the Project include pastures, grasslands, and maintained utility rights-of-way. Approximately 324 acres of open land would be affected by the Gulf Run Pipeline during construction, while approximately 0.3 acre would be affected by the Line CP Modifications during construction. The duration of impacts on these lands would be limited to the period during construction. Although Enable would retain approximately 92 acres of open land as part of its operational right-of-way for the Project, following construction Enable would allow open lands to revert to preconstruction conditions except for three of the access roads, which would be permanently converted for operational Project access. Enable would minimize impacts on open lands through adherence to our Plan during and after construction. We have concluded that impacts on open lands would be short-term and less than significant.

### **5.1.4 Upland Forest**

Approximately 387 acres of upland forest would be affected by the Gulf Run Pipeline during construction, while less than 0.1 acre would be affected by the Line CP Modifications during construction. Following construction, Enable would permanently maintain 149 acres of upland forest in an herbaceous state as operational right-of-way for the Gulf Run Pipeline. Less than 0.1 acre of upland forest would be permanently maintained for the Line CP Modifications. Outside of the permanently maintained right-of-way, Enable would allow trees to regrow, though it could take between 20 and 40 years before upland forests have regenerated to preconstruction conditions. As such, impacts on upland forest would range from long-term to permanent. To reduce the amount of forest that would be impacted by construction and operation of the Project, Enable has co-located and overlapped the Gulf Run Pipeline right-of-way with existing utility and road rights-of-way for approximately 50 miles (38 percent) as described in section B.4.2.3. During and following construction, Enable would adhere to our Plan for revegetation. We have determined that Enable has minimized impacts to the extent practicable and that impacts on upland forests would be minor and less than significant.

### **5.1.5 Pine Plantation**

Pine plantation is the dominant land use that would be affected by the Project facilities. Approximately 1,335 acres of pine plantation would be impacted by the Gulf

Run Pipeline, access roads, and aboveground facility construction, of which approximately 429 acres would be permanently affected during operation. Permanent impacts on pine plantations would result from maintenance of the Gulf Run Pipeline right-of-way and at aboveground facility sites. Enable has committed to negotiate with affected landowners to compensate for the permanent loss of pine production acreage since tree species would not be allowed to reestablish within the operational right-of-way. Temporary workspaces would be allowed to be replanted as pine plantation and be harvested at the normal rate of every 15 to 25 years. No pine plantations would be affected by construction or operation of the Line CP Modifications. We have determined that impacts on pine plantations would be long-term to permanent; but not represent a significant impact.

### **5.1.6 Wetlands**

The Project would affect approximately 28 acres of forested wetland and approximately 10 acres of non-forested wetlands during of construction of the Gulf Run Pipeline. Following construction, non-forested wetlands would be allowed to regrow to preconstruction conditions in both construction and operational workspaces. Approximately 12 acres of forested wetlands would be converted and maintained in an herbaceous wetland state (i.e., maintained as PEM wetland) along the permanent right-of-way as described in section B.3.3. Outside of the permanently maintained right-of-way; Enable would allow forested wetlands to regrow; however, it could take 20 to 40 years (and up to 100 years for bald cypress/tupelo wetlands) before affected forested wetlands regenerate to preconstruction conditions. No wetlands would be affected by construction or operation of the Line CP Modifications.

Enable would minimize wetland impacts through implementation of the Procedures and through the use of HDD. As such impacts on wetlands would range from short-term to permanent; however, Enable has reduced impacts on wetlands to the extent practicable. Where impacts would be long term and/or permanent, mitigation required by the USACE in the form of credits purchased at approved mitigation banks would compensate for lost values (see discussion in section 3.3.1).

### **5.1.7 Open Water**

The open water land use classification includes waterbodies. Enable would cross 283 waterbodies with the Gulf Run Pipeline and one waterbody with the Line CP Modifications as described in section B.3.2. Waterbodies would be crossed using open-cut, dry-ditch, or HDD methods as described in EA section A.6.2. The use of dry-ditch and HDD crossing methods would minimize construction-related impacts on waterbodies. Enable would also minimize impacts on open waterbodies during construction through implementation of the Plan and Procedures as described in section B.3.2. Following construction, Enable would stabilize and restore waterbodies to

preconstruction contours in accordance with the Procedures. Therefore, we have determined that the impact on open waters would be temporary and minor.

## **5.2 Existing Structures and Planned Development**

The Project crosses rural areas of Louisiana and Texas. Structures near the pipeline are primarily scattered residences, barns, or other storage buildings. There are 6 residences and 14 other structures (including associated buildings, such as sheds or barns) within 50 feet of the pipeline construction workspaces. There are another 27 structures within 50 feet of access roads. No permanently occupied residences are within 25 feet of the construction workspaces. Table B-15 lists all structures within 50 feet of the Gulf Run Pipeline workspaces and access roads. No occupied residences or other structures were identified within 50 feet of the Line CP Modifications.

Construction of the Project would temporarily impact nearby residences. In general, as the distance to the construction work area increases, the impacts on residences decrease. Typically, in residential areas the greatest impacts associated with construction and operation of a pipeline are temporary disturbances during construction and the consequence of the permanent easement, which would prevent the construction of permanent structures within the permanent right-of-way. Temporary construction impacts on residential areas may include increases in noise and dust as a result of the construction equipment, presence of workers, trenching of roads and/or driveways, and traffic congestion. Removal of aboveground structures, such as fences and sheds, may be required, as well as ground disturbance of lawns and removal of trees, landscaped shrubs, or other types of vegetation.

Table B-15 identifies nine structures in the construction workspace that are abandoned and no longer in use. Enable proposes to demolish and/or remove each of these abandoned structures prior to construction in that area. Enable would coordinate with the applicable landowners as part of the easement acquisition process. In addition, Enable proposes to provide compensation for partial demolition and rebuilding of the gable ends of two chicken houses within the construction workspace.

**Table B-15**

**Structures Within 50 Feet of the Project Workspaces**

<b>Approximate Milepost</b>	<b>Type of Structure</b>	<b>Current Use</b>	<b>Distance from Edge of Construction Workspace (feet)</b>	<b>Distance from Pipeline (feet)</b>
<b>Gulf Run Pipeline</b>				
26.1	Residence	Abandoned	36	98
26.5	Residence	Occupied	40	105
27.7	Residence	Abandoned a/	0	120
29.0	Shed	Abandoned a/	0	25
35.0	Barn	Storage	40	179
35.1	Business	Closed	9	150
35.1	Shed	Abandoned a/	0	65
40.2	Barn	Abandoned	35	100
40.2	Barn	Abandoned	20	85
40.3	Barn	Abandoned a/	0	56
51.4	Shed	Storage	8	43
51.5	Chicken House	Abandoned a/	0	48
51.6	Chicken House	Abandoned a/	0	30
51.9	Residence	Abandoned a/	0	41
68.8	Shed	Abandoned a/	0	10
68.8	Shed	Abandoned a/	0	58
69.2	Shed	Storage	4	69
69.2	Barn	Storage	47	137
71.8	Residence	Abandoned	15	75
73.0	Residence	Occupied	42	142
<b>Access Road</b>				
TAR-014	Shed	Storage	10	NA
TAR-016	Barn	Storage	8	NA
TAR-016	Barn	Storage	14	NA
TAR-020	Shed	Storage	30	NA
TAR-022	Shed	Storage	10	NA
TAR-023	Connex Box	Storage	40	NA
TAR-031	Residence	Occupied	35	NA
TAR-042	Residence	Abandoned	44	NA
TAR-044	Shed	Abandoned	18	NA
TAR-052	Residence	Occupied	41	NA
TAR-052	Shed	Storage	13	NA

**Table B-15****Structures Within 50 Feet of the Project Workspaces**

<b>Approximate Milepost</b>	<b>Type of Structure</b>	<b>Current Use</b>	<b>Distance from Edge of Construction Workspace (feet)</b>	<b>Distance from Pipeline (feet)</b>
TAR-069	Barn	Storage	47	NA
TAR-069	Barn	Storage	12	NA
TAR-075	Shed	Storage	40	NA
TAR-075	Residence	Occupied	40	NA
TAR-075	Residence	Occupied	42	NA
TAR-113	Residence	Occupied	38	NA
TAR-113	Residence	Abandoned	50	NA
TAR-129	Residence	Occupied	27	NA
TAR-145	Residence	Occupied	37	NA
TAR-145	Shed	Storage	40	NA
TAR-141	Shed	Storage	37	NA
TAR-178	Residence	Hunting Camp	24	NA
TAR-178	Residence	Hunting Camp	11	NA
TAR-178	Residence	Hunting Camp	44	NA
TAR-178	Residence	Hunting Camp	48	NA
TAR-248	Residence	Hunting Camp	20	NA

a Indicates abandoned structures within the Gulf Run Pipeline construction workspace that are proposed for removal.

Enable would use special construction methods designed for working in residential areas. During the right-of-way acquisition process, Enable would negotiate with landowners regarding impacts on their properties. In addition, Enable would abide by residential construction and restoration procedures outlined in the Plan, implementing the following general measures to minimize construction-related impacts on occupied residences within 50 feet of the construction right-of-way:

- Avoid removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements.
- Fence the edge of the construction work area 100 feet on either side of the residence.
- Restore all lawn areas and landscaping immediately following cleanup operations, or as specified in landowner agreements. If seasonal or other weather conditions prevent compliance with these time frames, maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration.

Enable contacted local planning officials from the affected parishes (Red River, DeSoto, Sabine, Vernon, Beauregard, and Calcasieu) to identify planned residential or commercial developments within 0.25 mile of the Project. Enable received correspondence from the parish representatives that no commercial or residential developments were identified within 0.25 mile of the Project. Additionally, no planned residential or commercial areas were identified within 0.25 mile of the Line CP Modifications.

Given the measures Enable would use outlined above, we conclude impacts on residences from construction of the Project would generally be temporary and minor.

### **5.3 Public Land, Recreation, Other Designated or Special Use Areas**

The Project would be within 0.25 mile of several public land areas, recreation areas, or other designated or special use areas, and would intersect three of these areas. Table B-16 details public land, recreation, and other or special use areas that are either within 1 mile of or are intersected by the Project. The Line CP Modifications would not be within 1 mile of any special land uses.

<b>Table B-16</b>			
<b>Special Land Uses within One Mile of the Project</b>			
<b>Resource</b>	<b>Approximate Milepost</b>	<b>Distance from Nearest Workspace (miles)</b>	<b>Direction from Centerline</b>
<b>Gulf Run Pipeline</b>			
Red River National Wildlife Refuge	2.4	0.9	West
	5.1	<0.1	East
Wetland Reserve Program Easement	5.4	0.8	West
Office of State Lands, dried lakebed	21.3	0.0	Intersects
USDA Farmers Home Administration Conservation Easement Reservation	44.6	<0.1	West
	45.0 – 45.1	0.0	Intersects
	45.1	0.1	East
Clear Creek Wildlife Management Area	81.3 – 95.6	0.0	Intersects
RCW Safe Harbor Program Conservation Area	104.1 – 104.6 105.2-106.2	0.1	West
RCW = red-cockaded woodpecker			

The Red River National Wildlife Area Yates Tract is within 0.1 mile of the Gulf Run Pipeline at approximate MP 5.1. The Yates Tract is undeveloped and heavily forested, and no impacts from construction or operation of the Gulf Run Pipeline are anticipated on it or on any other areas of the Red River National Wildlife Refuge. We conclude that the construction and operation of the Project would not have an impact on the Red River National Wildlife Refuge.

The Wetland Reserve Program (WRP), now administered under the Agricultural Conservation Easement Program, provides landowners an opportunity to establish long-term conservation and wildlife practices and protection (USDA, n.d.). The Gulf Run Pipeline would be within 1 mile of one WRP at approximate MP 5.4. No WRPs would be crossed by the Project, and we conclude that no impacts are anticipated to any WRP lands.

The Gulf Run Pipeline would cross the Chemari Lake, a State of Louisiana-claimed dried lakebed, at approximate MP 21.3. Upon consultation with the Louisiana Office of State Lands, it was determined that a right-of-way agreement would be required to cross the lakebed. Enable has stated that it acquired the right-of-way via agreement with the Louisiana Office of State Lands in February 2020.

A parcel with a USDA Farmers Home Administration Conservation Easement Reservation, managed by the LDWF, would be traversed by the Gulf Run Pipeline at approximate MP 44.6. Enable's review of the conservation easement did not reveal specific restrictions against construction and operation of the Project or any other natural gas pipelines. Enable consulted with the LDWF in September of 2019, and the LDWF representatives indicated they would not oppose the Gulf Run Pipeline crossing the easement.<sup>14</sup> Enable has committed to implementing measures to minimize the impacts within the conservation easement, including reducing the construction right-of-way width and avoiding siting ATWS within the easement. Because of Enable's coordination with the LDWF and its commitment to minimize impacts on the conservation easement, we conclude impacts would be short term and less than significant.

The Clear Creek WMA is an approximately 52,000-acre site owned by Hancock Timber. The WMA is managed as a loblolly/pine plantation and is open to the public for hunting, trapping, camping, and birding (LDWF, n.d.). The Gulf Run Pipeline would cross the WMA for approximately 14.4 miles from approximate MP 81.3 to MP 95.6. Additionally, approximately 8.6 miles of temporary access roads would be within the WMA. Enable is consulting with the Hancock Timber owner as well as the LDWF on financial, environmental, and recreational impacts from the construction and operation of the pipeline and temporary access roads. Enable has committed that prior to construction, it would request a letter of authorization from the LDWF for construction within the WMA. In a conference call with Enable on July 20, 2020, the LDWF stated that its staff would coordinate with the managers of the Clear Creek WMA and advise Enable if a special use permit would be required, although LDWF staff noted that it does not anticipate a permit would be required for the crossing. Enable states that any letter of authorization received would be filed with the FERC upon receipt.

Impacts on the Clear Creek WMA from construction and operation of the Project are expected to be minimal, although recreational uses within the WMA could be interrupted for short periods during construction. The LDWF generally recommends that construction activities during firearms hunting season be avoided for the safety of the construction workers and the enjoyment of the property by hunters, to the extent practicable. The LDWF would review the proposed construction schedule contained in Enable's written request for a letter of authorization and determine the potential for any conflict with firearms hunting seasons. If any conflicts are identified, then those would be addressed in coordination with the landowner and Enable.

The red-cockaded woodpecker Safe Harbor Program Conservation Area is an area intended to help stabilize a population of the red-cockaded woodpecker, a federally listed

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<sup>14</sup> Enable's communications with LDWF was included as appendix 1D to Resource Report 1 in its February 28, 2020 application. Appendix 1D can be viewed on the FERC website at <http://www.ferc.gov, using Accession Number 20200228-5231>.

endangered species. The proposed route for the Gulf Run Pipeline was moved to be 0.1 mile east of the conservation area and would not directly impact it during construction or operation. However, two existing access roads that traverse the conservation area would be used for construction activities. Enable consulted with the LDWF which indicated no impacts on the red-cockaded woodpecker would occur as long as tree-clearing and road widening are avoided. Enable consulted with the landowner and has committed to these stipulations while using these access roads through the conservation area.

#### 5.4 Contaminated or Hazardous Waste Sites

Table B-17 presents the results of a search of environmental records to identify registered known and potential contamination sites within 0.25 mile of the Gulf Line Pipeline. The table lists four identified sites and their location in relation to the Gulf Run Pipeline. No analysis was conducted to identify registered known or potential contamination sites near the Line CP Modifications since the majority of the workspaces are previously disturbed.

The International Paper Co. saltwater disposal site, within an ATWS, is a dried, plugged, and inactive injection well. No violations, spills, leaks, or records of concern have been documented at this site or the other three within 0.25 mile of the Project. As such, we conclude that these sites do not pose a potential threat to introduce contaminants to groundwater during construction. If a hazardous waste site or otherwise contaminated soil is encountered, Enable would stop work, notify the appropriate agency, and proceed in accordance with agency requirements.

<b>Table B-17</b>				
<b>Registered Environmental Sites within 0.25 Mile of the Gulf Run Pipeline</b>				
<b>Facility (Registry ID)</b>	<b>Type of Site</b>	<b>Approximate Milepost</b>	<b>Distance from Centerline (feet)</b>	<b>Parish</b>
Byrds Body Works (LAD985229475; 1000848732)	Conditionally Exempt Small Quantity Generator	43.1	671	Sabine
International Paper Co Saltwater Disposal Site (S116601904)	Underground Injection Well – Dry and Plugged	47.4	Within Project Workspace	Sabine
Smith Shed (U000876966)	Underground Storage Tank	87.1	79	Vernon
Stamps Road Debris Site (166569)	Solid Waste – Vegetation Burning	99.8	935	Beauregard

Because public databases are not without error and it is not uncommon for trenching to expose previous spill locations, **we recommend that:**

- **Prior to construction, Enable should file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a plan for handling any unanticipated discovery of contaminated material.**

## 5.5 Visual Resources

Visual resources in the Project include nearby residences, a wildlife refuge, and state byways. The Project would be within 0.25 mile of nine occupied residences, less than 1 mile west of the Red River National Wildlife Refuge, and make three crossings of two Louisiana Scenic Byways.

Visual impacts are typically greatest where the pipeline would run parallel to or cross roads and may be visible to passing motorists. The duration of visual impacts would depend on the type of vegetation that is cleared or altered. Short-term visual impacts associated with the construction of the Project would include the removal of existing vegetation and the exposure of bare soils, as well as earthwork and grading scars associated with heavy equipment tracks, trenching, blasting (if required), rock formation alteration or removal, and machinery tools and storage. Long-term visual effects of Project operation could result from clearing a new right-of-way through forested areas, the removal of large individual trees that have intrinsic aesthetic value, or the removal or alteration of vegetation that may currently provide a visual barrier. The visual effect of vegetation clearing would be less in areas consisting of short grasses and scrub-shrub vegetation and in agricultural crop and pasture lands, where the re-establishment of vegetation following construction would be relatively fast, one or two growing seasons. Visual impacts would be greater in cleared forested areas, which could take 30 to 50 years to regenerate mature trees. In forested areas where the permanent right-of-way would be maintained, trees would not be allowed to grow back, creating visual breaks through the landscape where the maintained right-of-way crosses.

The Project would not be within 25 feet of any occupied residence. As described in section B.5.2, Enable would construct the Project according to the Plan, and would utilize special construction methods designed for working in residential areas to minimize impacts on aesthetics. As a result, visual impacts on residences would be short term and less than significant.

There is a potential for long-term and permanent impact on visual resources as a result of the construction and operation of aboveground facilities. The aboveground facilities proposed as part of the Gulf Run Pipeline include seven mainline valves, a pig receiver, and the GPPL meter station. The valves would be placed inside a fence within the permanent pipeline right-of-way. In general, the potential for visual impacts of the

mainline valves would be minimized through the co-location of approximately 47 percent of the Gulf Run Pipeline with existing rights-of-way. In addition, because over 87 percent of the Gulf Run Pipeline right-of-way would either be in wooded areas or agricultural fields these minor facilities would be easily shielded by vegetation.

The proposed pig receiver would occupy 1.4 acres outside of the permanent right-of-way; however, it would be within pine plantation property and out of sight from any viewers. The GPPL Meter Station would be constructed on industrial land adjacent to existing interstate pipeline infrastructure which would minimize any alteration of the existing viewshed.

The proposed Line CP Modifications would include changes to existing aboveground facilities; however, with the exception of the CP-3 Meter Station, all of these changes would occur on the existing facility properties. Enable states that no work would occur outside the fence lines of the existing facilities. Installation of the CP-3 Meter Station would require expansion of the fence line at an existing pig receiver facility to accommodate the proposed meter station. Although this expansion would remove about 0.1 acre of pine trees adjacent to the existing facility, the tree removal would not create a new line of sight from residences.

The area of the Red River National Wildlife Refuge is 0.1 mile west from where the pipeline would be constructed. It is densely vegetated with no structures or other features that routinely attract visitors. Visual impacts on visitors of the Red River National Wildlife Refuge are anticipated to be short-term and minor. Once construction is completed, no permanent visual impacts on the refuge are anticipated.

The Project would not cross or be near any Federal Highway Administration National Scenic Byways or Wild and Scenic Rivers. However, two Louisiana Scenic Byways would be crossed by the Gulf Run Pipeline. The Louisiana Colonial Trails would be crossed twice by the Gulf Run Pipeline at approximate MP 43.4 and approximate MP 81.3 via horizontal bore. The Gulf Run Pipeline would also cross the Myths and Legends Byway at approximate MP 98.3 via horizontal bore. The pipeline would also be 2.75 miles east of the Toledo Bend Forest Scenic Byway at MP 65.3; however, no impacts are anticipated on this scenic byway due to the distance.

The Louisiana Colonial Trails comprises several highways and roads across northern Louisiana, stretching from the Louisiana-Texas border to the Louisiana-Mississippi border. The region of Louisiana where these scenic byways cross include fortifications from Indian Tribes, Spain, France, and the early American frontier (Louisiana Scenic Byways, 2020). The Myths and Legends Byway travels through primarily flat areas originally settled by the Atakapa and Coushatta Indians. Scenic features and local activities to visit on the byway include pine forests, blackberry farms, and rodeos (Louisiana Scenic Byways, 2020).

Travelers along the two Louisiana Scenic Byways would experience visual impacts in areas where the pipeline would cross them. Construction activities in the area of the road crossings would be temporary and motorists would only experience the resulting visual impacts briefly as they pass the area of construction. Once the motorists have passed the construction right-of-way, no visual impacts would be anticipated.

This area of Louisiana has many utility and infrastructure rights-of-way cutting across the landscape, and travelers driving through the area are accustomed to driving by brief cuts in the landscape. Because Enable proposes to install the Gulf Run Pipeline under these roads using the horizontal bore method, visual impacts on motorists during operation are anticipated to be negligible.

## **6. Cultural Resources**

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

### **6.1 Cultural Resources Investigations**

Enable conducted cultural resources surveys for the Gulf Run Pipeline and CP-3 Meter Station, and a cultural resources background review and assessment for the Line CP Modifications. Enable provided the associated reports (a Phase I survey report, Addendum I Phase I survey report, Addendum II Phase I survey report, and Cultural Resources Analysis for the Louisiana portion of the Project; and a Phase I survey report for the Texas portion of the Project) to FERC, and the Louisiana State Historic Preservation Office (SHPO) and Texas SHPO, for their respective states. The surveys included both archaeological and architectural resources.

For archaeological resources, Enable surveyed a 300-foot-wide corridor centered on the pipeline centerline, along with a 100-foot-wide survey corridor along all construction access roads. Surveys also included areas associated with Project facilities that have since been removed from the proposal (i.e., Gulf Run Compressor Station Nos. 1 and 2 and associated construction areas [115.8 acres]). The surveyed area accounted for approximately 197 miles of pipeline and access roads. In addition, Enable conducted a cultural resources survey on 158.3 acres (100 percent) of seven proposed pipe/contractor yards associated with the pipeline, and at the CP-3 Meter Station site (1.2 acres) in Texas. A total of 5,576 acres was surveyed for the Gulf Run Pipeline. A re-route (Sand Mine Reroute) also was surveyed to account for approximately 5.9 miles. This survey included a 300-foot-wide corridor for the Gulf Run Pipeline, a 100-foot-wide

corridor for access roads, and 26.4 acres of workspace, for a total of 221 acres. For architectural resources, the area of analysis included the Project area and within 0.25 mile of all aboveground facility locations.

An additional survey was conducted in April 2020 to account for two route deviations, three access roads, and one of four temporary water withdrawal locations for the Gulf Run Pipeline. Survey was completed for 1.83 miles of the pipeline reroutes (within a 300-foot-wide corridor), 0.93 mile of access roads (within a 25-foot-wide corridor), and one 0.05-acre temporary water withdrawal location.

As a result of the archaeological surveys for the Gulf Run Pipeline and access roads, including the Sand Mine Reroute and the April 2020 survey, Enable identified or revisited 108 resources. Among the 108 resources were 39 isolated finds, 11 historic standing structures (domestic structures, with 1 including a commercial structure and 1 including a train depot), 2 sites with historic structures associated with archaeological sites, 1 historic cemetery, and 55 archaeological sites (27 historic sites, 19 prehistoric sites, and 9 with both historic and prehistoric components). Enable recommended that all of the isolated finds were not eligible for the NRHP. For the historic structures/standing structures, Enable recommended that none were eligible for the NRHP and that no avoidance was needed. Enable indicated it would avoid the recorded historic cemetery during pipeline construction through restrictions to the current road and maintaining the existing fence; this cemetery was noted as having an undetermined status for NRHP eligibility.

Of the 57 archaeological sites (inclusive of the 2 sites with historic structures and archaeological sites), Enable recommended that 44 were not eligible for the NRHP (either wholly or within the workspace) and that no further work or avoidance was needed. The remaining 13 archaeological sites would require additional work to determine their eligibility for the NRHP. Enable indicated these sites would be avoided (by reroutes, HDD, or restricting workspace) and clearly delineated as no-work zones (including fencing), and therefore, no impacts would occur. In some cases, matting would be used.

In a letter dated March 16, 2020, the Louisiana SHPO commented on the Phase I survey report, requesting revisions to be addressed in a revised report. The SHPO also concurred with the recommendations in the report with the exception of two sites (16DS513 and 16DS514), which had been recommended as not eligible for the NRHP. The SHPO requested that either these two sites be avoided or that additional investigations be conducted. Enable indicated that it would avoid these two sites.

In a letter dated March 17, 2020, the Louisiana SHPO commented on the Addendum I Phase I survey report. The SHPO had minor comments, to be addressed in a revised report, and concurred with the recommendations in the report but noted that two

sites (16RR330 and 16RR332) with undetermined eligibility should be clearly delineated as no-work zones. Enable indicated that it would avoid these two sites and delineate them as no-work zones and fence the workspaces in these areas.

Enable provided revised Phase I and Addendum Phase I survey reports addressing the SHPO's comments. In a letter dated May 22, 2020, the SHPO concurred with the recommendations in the report and accepted it as final. We concur also. On May 21, 2020, the SHPO indicated it had reviewed the report and accepted it as final. We agree.

In a letter dated June 29, 2020, the Louisiana SHPO commented on the Addendum II Phase I survey report. The SHPO concurred with recommendations in the report for the eligibility of documented sites, the assessment that no historic properties would be affected by the Project, and that avoidance measures proposed for one site (16BE126) were sufficient. We concur also.

Based on the Cultural Resources Analysis conducted by Enable for the Line CP Modifications, Enable recommended that no surveys were necessary; on October 14, 2019, the Louisiana SHPO indicated that no known historic properties would be affected. We agree.

As a result of the cultural resources survey at the CP-3 Meter Station, no cultural resources were identified. In a letter dated February 27, 2020, the Texas SHPO indicated that no historic properties are present or affected. We agree.

## 6.2 Tribal Consultation

Enable contacted Native American Tribes, providing a Project description, mapping, and the applicable survey report(s) or requested information. Enable also conducted follow-up emails and telephone calls. The following tribes were contacted: Alabama Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Osage Nation, Quapaw Nation, Chitimacha Tribe of Louisiana, Tunica-Biloxi Indian Tribe, Tonkawa Tribe of Indians of Oklahoma, Wichita and Affiliated Tribes (Wichita, Keechi, Waco, and Tawakonie) of Oklahoma, and Muscogee (Creek) Nation.

The following Tribes responded:

- **Alabama-Coushatta Tribe of Texas** - In an email dated December 27, 2018, the Alabama-Coushatta Tribe of Texas indicated it would like to be provided a copy of the archaeological assessment and would participate in consultation. In a letter dated March 10, 2020, the Tribe indicated that no known impacts would occur to cultural assets for the CP-3 Meter Station.

- **Alabama-Quassarte Tribal Town** - In a telephone conversation on December 21, 2018, the Alabama-Quassarte Tribal Town requested that updates be made to the point of contact.
- **Apache Tribe of Oklahoma** - In a January 7, 2019, telephone call, the Apache Tribe of Oklahoma provided an update for the point of contact.
- **Caddo Nation of Oklahoma** - In a December 21, 2018, telephone call, the Caddo Nation of Oklahoma updated the point of contact; on a January 10, 2019, call, they also requested a follow-up email.
- **Choctaw Nation of Oklahoma** - In emails dated December 27 and December 31, 2018, the Choctaw Nation Historic Preservation Department requested the cultural resources surveys for the Project, along with the GIS shapefiles of the Project route. On March 25, 2019, the Choctaw Nation requested that the line be surveyed and that the reports be sent to their Historic Preservation Department. The Choctaw Nation of Oklahoma expressed concern over human remains in a letter dated February 25, 2020. In an email dated July 1, 2020, the Choctaw Nation Historic Preservation Department concurred with the finding of no historic properties affected.
- **Jena Band of Choctaw Indians** – In an email dated October 31, 2018, the Jena Band of Choctaw Indians requested consultation on the Project. In an email dated January 2, 2019, the Jena Band of Choctaw Indians requested that a Phase I cultural resources survey be conducted, the state files be reviewed, and visual and natural resources impacts be considered. The Tribe further requested the coordinates of the area of potential effects to assess the potential need for Tribal monitors. In an email dated January 7, 2019, the Tribe further noted their request to consult.
- **Muscogee (Creek) Nation** – In correspondence dated March 12, 2020, the Muscogee (Creek) Nation indicated that the Project would be outside of its area of interest and deferred to other interested Tribes.
- **Osage Nation** – In a letter dated December 19, 2018, the Osage Nation requested consulting party status, that all areas be subject to a cultural resources survey, and that they receive a copy of all documentation. The Osage Nation also provided their archaeological survey standards.
- **Quapaw Nation** - The Quapaw Nation Tribal Historic Preservation Office indicated in a letter dated December 6, 2018, that it did not desire to comment on the Project. However, in a letter dated January 14, 2019, it requested that a copy of all SHPO correspondence be provided. In an email dated July 10, 2020, the Quapaw Nation concurred with the Louisiana SHPO finding of no effect for the Addendum II Phase I Survey Report.
- **Wichita and Affiliated Tribes (Wichita, Keechi, Waco, and Tawakonie) of Oklahoma** - In correspondence dated February 26, 2020, the Wichita and Affiliated Tribes of Oklahoma indicated that it did not have an interest in the Project.

We sent our NOI and follow-up letters to these same Tribes. In a letter dated April 14, 2020, the Osage Nation Historic Preservation Office responded and determined that the Project would most likely not adversely affect any sacred properties and/or properties of cultural significance to the Osage Nation. For direct effects, its finding was a determination of “No Properties” eligible or potentially eligible for the NRHP. The Osage Nation further concurred that FERC fulfilled NHPA compliance by consulting with the Osage Nation Historic Preservation Office. It requested that the Tribe be contacted upon the discovery of artifacts or human remains during construction. The Project Unanticipated Discoveries Plan provides for notification of Tribes in the event of a discovery. We have not received any other responses to our NOI or letters from the Tribes.

### **6.3 Unanticipated Discoveries Plan**

Enable provided a plan to address the unanticipated discovery of cultural resources and human remains during construction. We requested revisions to the plan. Enable provided a revised plan which we find acceptable.

### **6.4 Compliance with the National Historic Preservation Act**

Cultural resources surveys and consultation with the SHPOs are complete for the Project, and the FERC and SHPOs agree that no historic properties would be affected. Therefore, compliance with Section 106 of the NHPA has been completed for the Project.

## **7. Socioeconomics**

Construction of the Project would have temporary and localized effects on the socioeconomic conditions in the area of the Project due to the limited construction period and distribution of workforce. The Gulf Run Pipeline would require approximately 11 months to complete all construction activities. The Line CP Modifications would require approximately six months to complete. Operation of the Project would have negligible effects on the surrounding area. Beneficial effects would include the annual contribution of property taxes to the seven Louisiana parishes and Panola County, Texas.

### **7.1 Population and Employment**

Table B-18 summarizes selected demographic and socioeconomic conditions by parish or county for the Project. Construction of the Project would temporarily increase the population in the area of the Project. Enable anticipates an average workforce of about 640 workers (peak of 900 workers) for construction of the Gulf Run Pipeline. The Line CP Modifications would require an average workforce of 250 workers (peak of 330 workers). Enable estimates that 85 percent of its construction workforce would be non-local and would temporarily relocate to the Project area. Local workers would be

employed for construction when available and are anticipated to make up 15 percent of the required workforce for Project construction. For operations, Gulf Run would hire five employees in Louisiana to assist with day-to-day operations of the Project.

<b>Table B-18</b>					
<b>Existing Socioeconomic Conditions in the Project Area</b>					
<b>Parish/County</b>	<b>Population <u>a/</u></b>	<b>Per Capita Income (dollars) <u>b/</u></b>	<b>Civilian Labor Force <u>b/</u></b>	<b>Unemployment (%) <u>b/</u></b>	<b>Top Three Employment Sectors <u>b/</u></b>
<b>Gulf Run Pipeline</b>					
Red River	8,618	\$22,626	3,310	4.7%	E, R, M
DeSoto	27,216	\$24,796	11,907	10.3%	E, R, M
Sabine	24,088	\$22,637	9,031	10.3%	E, A, R
Vernon	51,007	\$23,763	18,825	9.0%	E, P, R
Beauregard	36,769	\$26,075	15,479	7.9%	E, R, C
Calcasieu	200,182	\$27,368	95,570	5.7%	E, AR, R
<b>Line CP Modifications</b>					
Red River	8,618	\$22,626	3,310	4.7%	E, R, M
Jackson	15,926	\$20,942	5,822	6.0%	E, M, R
Richland	20,474	\$20,128	8,192	4.7%	E, R, AR
Panola (Texas)	23,440	\$26,403	10,318	4.6%	E, A, R
<p>a Source: U.S. Census Bureau, 2018a            b Source: U.S. Census Bureau, 2018b</p> <p>A = Agriculture, Forestry, Fishing and Hunting, and Mining            AR = Arts, Entertainment, and Recreation, and Accommodation and Food Services            C = Construction            E = Educational Services, and Healthcare and Social Assistance            M = Manufacturing            P = Public Administration            R = Retail Trade</p>					

Impacts on the local population would primarily result from the short-term influx of temporary workers during construction of the Project. Because of the limited duration of construction, it is not anticipated that non-local workers would bring family members with them to the Project area. Effects on local populations and workforce in the area of the Project are anticipated to be temporary, given that the influx of non-local workers would represent a negligible increase in the population of the area of the Project. Additionally, the temporary increase in population would be distributed throughout the area of the Project and would have no significant effect on the population, the civilian labor workforce, or employment levels.

The five permanent employees that Enable would hire during operation of the facilities in Louisiana would be added to the 200 employees Enable currently employs to operate its facilities in Louisiana. This would be a small percentage of the more than 154,000 civilians within the workforce in the parishes/counties crossed by the Project. Due to the small number of permanent employees hired for operation of the Project in Louisiana, long-term impacts on employment are anticipated to be negligible.

## **7.2 Economy and Tax Revenue**

Enable estimates that payroll spending would be approximately \$51.3 million during construction of the Gulf Run Pipeline, and \$7.7 million for the Line CP Modifications. This translates into \$7.7 million and \$1.2 million for the local workforce (15 percent of the total), respectively. Based on this expected local payroll, Louisiana state income tax collections are estimated to be \$1.7 and \$0.2 million for the Gulf Run Pipeline and Line CP Modifications, respectively. During construction, it is estimated that each construction worker would spend an average of approximately \$875 locally on the purchase of material goods and services, including temporary housing, on a weekly basis. For the Gulf Run Pipeline, this would be approximately \$559,000 to the local economy each week and \$219,000 for the Line CP Modifications, based on the average estimated workforce. This increase in economic activity resulting from spending during construction would result in a minor temporary, positive economic effect in the area of the Project.

The five permanent jobs that Enable would add to operate the Project facilities in Louisiana would result in permanent indirect economic benefits to the local area as the workers spend their salaries; however, the magnitude of these permanent effects on the local economy and employment is anticipated to be negligible.

During operation, Enable estimates that the Gulf Run Pipeline would annually contribute \$7,303,700 in total property tax to the parishes crossed by the pipeline in Louisiana. Further, the Line CP Modifications would result in an incremental increase of an estimated \$1,886,800 over the current property taxes paid to the affected parishes in Louisiana and Panola County, Texas.

## **7.3 Housing**

Non-local construction workers would require temporary housing during the 11- or 6-month construction periods. Vacancy rates for the estimated 25,000 rental units in the parishes/counties in the Gulf Run Project area range from 2.3 percent in Red River Parish to 13.6 percent in Vernon Parish. Of the more than 6,500 rental units in the Line CP Modifications Project area, vacancy rates range from 1.5 percent in Panola County, Texas, to 6.6 percent in Richland Parish (U.S. Census Bureau, 2018c). However, construction workers on natural gas pipeline projects typically stay in temporary housing like rental

units and hotels/motels or recreational vehicle (RV) parks. A total of almost 550 hotels/motels with over 63,000 rooms and 15 RV parks are in and around the Project area (Yellowbook, 2020).

Considering that the Gulf Run Pipeline's construction activities would require an average of about 640 workers throughout the anticipated 11-month duration of construction and an average workforce of 250 workers over a 6-month construction period for the Line CP Modifications, the amount of temporary housing available in the Project area would easily meet the Project's demand. In addition, approximately 15 percent of the total construction workforce would be local hires with a low likelihood of temporary housing needs. Based on the availability of local rental properties, hotels/motels, campgrounds, and RV parks, the increased demand for short-term housing from non-local construction workers during construction would be temporary and less than significant. Only a minimal permanent workforce is required for operation of the Project; therefore, long-term effects on housing are not anticipated.

#### **7.4 Public Services**

A range of public services and facilities, including medical services, law enforcement, fire protection, and educational institutions, are available in the general area of the Project. Data provided by Enable indicate that there are 12 local fire departments, 26 police/sheriff departments, and 9 hospitals in the parishes crossed by the Gulf Run Pipeline (USA Fire and Rescue, 2019; USA Cops, 2019; American Hospital Directory, 2019). In area of the Line CP Modifications, there are 5 local fire departments, 11 police/sheriff departments, and 4 hospitals (USA Fire and Rescue, 2019; USA Cops, 2019; American Hospital Directory, 2019).

The non-local workforce would be relatively small compared to the current populations in the areas affected by the Project; therefore, no significant effects on the availability of public services are anticipated. Because of the relatively small number of workers required for the Project and the low likelihood that they may bring families with school-age children to the area for the construction period, the Project workforce is not anticipated to have an effect on local schools. Additionally, any temporary increase in population would be distributed throughout the general area of the Project and would not have a major impact on public services in any one location.

Temporary increased demand on local public services may occur, including the need for local law enforcement to direct traffic during construction and for local emergency services to respond to emergencies associated with Project construction. Fire departments may have to respond to Project-related fires or other emergencies, and medical services may be necessary for workforce personnel illnesses or injuries. Enable would work with local law enforcement, fire departments, and emergency medical services prior to construction to coordinate effective emergency response. In accordance

with USDOT regulations at 49 CFR 192, Gulf Run would establish a written emergency response plan to provide information to incident responders in the event of an emergency and minimize risk to personnel, to the community, and to the facilities.

## **7.5 Traffic and Transportation**

The local road and highway systems in the general area of the Project consist of interstate highways, U.S. highways, state highways, local roads, and private roads. Interstate 49 is primarily east of the Gulf Run Pipeline, intersecting it at approximate MP 17.9, and Interstate 20 is north of the Line CP Modifications.

Enable has stated its intent to use existing rights-of-way and public and private roads for access to the construction right-of-way. Enable intends to utilize 235 access roads, totaling 185.5 miles, to primarily provide access for construction activities of the Gulf Run Pipeline. Access to the Line CP Modifications is available via existing access roads, and no new access roads would be required.

Daily commuting of the construction workforce to the general area of the Project could temporarily affect local traffic. Enable anticipates a maximum of 150 trucks delivering equipment and materials to 2 construction spreads during the first 2 months of construction and a maximum of 150 trucks transporting equipment out during the final 2 months of construction. Equipment and materials would add a peak of approximately 300 trips per day, or 150 trips per day to each of the 2 construction spreads. Additionally, Enable estimates that a peak of 900 workers would commute to the Project site, adding 450 vehicles commuting to and from the site (assuming two workers per vehicle). Construction workers would be bussed to and from the right-of-way, utilizing 25 buses for 50 trips. Enable would also utilize an additional 130 operator vehicles or crew trucks for supervisors, tie-in crews, environmental and safety inspections, and welding crews, adding 260 trips per day (dispersed over two construction spreads). Enable anticipates that construction crews would work 6 days per week for approximately 11 months during the construction phase. Work would generally be scheduled to occur during daylight hours; therefore, workers would typically commute to the worksite during off-peak traffic hours (i.e., before 7:00 a.m. and after 7:00 p.m.).

Workers commuting to and from the Project worksites every day would result in short-term, temporary increase in traffic during construction. Traffic associated with the delivery of materials and equipment to the Project sites would also result in temporary increases in traffic and traffic congestion on the roads near the Project facilities for the duration of construction.

Construction activities would result in temporary and minor effects on local transportation infrastructure and traffic flow, including disruptions from increased transportation of construction equipment, materials, and workers; disruptions from

construction of pipeline facilities at or across existing roads; and damage to local roads caused by heavy machinery and materials. To maintain safe conditions, Enable would use flaggers and signs, and minimize the amount of heavy traffic during peak travel times. Additionally, Enable would acquire all necessary permits for construction-related impacts on roadways and would repair all roads to preconstruction conditions or better after construction activities have been completed. Arrival and departure times for workers traveling to and from the Project site would generally occur outside of peak traffic hours, minimizing increases in traffic congestion. Since operation of the Project would not require many new personnel, long-term impacts on transportation infrastructure and traffic are not anticipated.

## **7.6 Environmental Justice**

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA, 1998). FERC regulations (18 CFR 380.12(g)(1)) direct us to consider the impacts on human health or the environment of the local populations, including impacts that would be disproportionately high and adverse for minority and low-income populations.

The EPA and CEQ emphasize the importance of incorporating environmental justice reviews in analyses triggered by NEPA and other federal agency reviews. The CEQ developed the guidance document, “Environmental Justice: Guidance Under the National Environmental Policy Act” (1997), followed by the EPA’s “Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses” (1998), to help federal agencies identify environmental justice communities and address potential impacts. According to these guidance documents, the basic components of an environmental justice assessment include:

- a demographic assessment of the affected community to identify minority and/or low-income populations that may be present;
- an assessment of all potential impacts of the project to determine whether any would result in a significant adverse impact on the affected environment; and
- an integrated assessment to determine whether any high and adverse impacts would disproportionately affect minority and low-income groups present in the study area.

Population and income data published by the U.S. Census Bureau were analyzed at the census block group level and compared to the respective parish or county. According to the EPA’s Promising Practices for Environmental Justice Methodologies in NEPA Reviews (EPA, 2016) and other guidance documents for environmental justice analyses, a minority population is identified when the percentage of minorities in an

affected area either exceeds 50 percent or is meaningfully greater than in the general population of the larger surrounding area (CEQ, 1997; EPA, 1998). For our environmental justice evaluations, we consider an increase of 10 percentage points to be meaningfully greater. Minority groups may be African American, Native American and Alaskan Native, Asian, Native Hawaiian and Pacific Islander, Hispanic or Latino Origin, or any combination of these. Table B-19 provides the racial and ethnic percentages in the Project area, as well as the percentage of persons with incomes below the poverty line.

In accordance with CEQ and EPA guidance, low-income populations were identified with the annual statistical poverty levels from the Census Bureau (CEQ, 1997; EPA, 1998). A low-income population was identified if the poverty rate within the census block group was above 20 percent or if the poverty rate was 10 percentage points higher than the respective parish or county. Table B-19 provides the racial and ethnic percentages and the percentage of persons with incomes below the poverty line for census block groups crossed by the Gulf Run Pipeline or within 1.0 mile of the proposed GPPL Meter Station or Line CP Modifications.

As detailed in table B-19, 6 of the 20 census block groups crossed by the Gulf Run Pipeline route were identified as an environmental justice community as defined above. Four of these census block groups are identified as having both minority and low-income communities. These are: in Red River Parish Block Group 2, Census Tract 9601; DeSoto Parish Block Group 2, Census Tract 9503 and Block Group 1, Census Tract 9507; and Sabine Parish Block Group 2, Census Tract 5. There are two additional census block groups crossed by the Gulf Run Pipeline route that identify as low-income communities. Specifically, DeSoto Parish Block Group 3, Census Tract 1, and Beauregard Parish Block Group 2, Census Tract 9606.

There are also 6 census block groups identified as environmental justice communities that would be within 1.0 mile of one of the existing facilities that would undergo work associated with the Line CP Modifications. These include: one environmental justice community within 1.0 mile of the ANR Meter Station (Jackson Parish Block Group 3, Census Tract 9703); one within 1.0 mile of the CP-3 Meter Station (Franklin Parish Block Group 2, Census Tract 9501); three within 1.0 mile of the MEP, EGT, and Columbia Gulf meter stations (Richland Parish Block Group 3, Census Tract 9701; Block Group 1, Census Tract 9602; and Block Group 1, Census Tract 9501); and, one within 1.0 mile of the Westdale Compressor Station (Red River Parish Block Group 2, Census Tract 9601). The Vernon Compressor Station is not located within 1.0 mile of an environmental justice community.

Impacts on the natural and human environment from construction and operation of Project facilities are identified and discussed throughout this document. Factors that could affect environmental justice communities from the construction of the Gulf Run Pipeline and CP Line Modifications include air and noise impacts (section B.8) and

traffic (section B.7.5). Project construction activities would generally take place between 7:00 a.m. and 7:00 p.m., Monday through Saturday, over an 11-month period. As described in section A.6.2.8, only six residences, including four abandoned residences, are within 50 feet of the pipeline construction right-of-way, and no occupied residences or other structures were identified within 50 feet of the Line CP Modifications. Measures would be implemented to minimize adverse impacts near residential areas to less than significant levels. Additionally, these impacts would primarily occur in rural areas with low population density and would not be directed toward any particular segment of the population.

Operational impacts from the Gulf Run Pipeline that could affect environmental justice communities include loss of agricultural land (section B.5.1) and visual impacts (section B.5.5). After construction, Enable would allow agricultural lands in the permanent Gulf Run Pipeline right-of-way to revert to preconstruction conditions and continue to be farmed. Visual impacts would range from short-term to long-term with approximately 38 percent of the pipeline adjacent to existing rights-of-way. Agricultural and visual impacts would not be directed toward any particular segment of the population. There are no major aboveground facilities, such as compressor stations, proposed as part of the Gulf Run Pipeline. The GPPL Meter Station is associated with the Gulf Run Pipeline but it is not located within 1.0 mile of an environmental justice community; therefore, no adverse or disproportionate impacts would occur during operation of this facility.

The Line CP Modifications would consist of alterations to existing natural gas facilities that involve restaging compressors and modifying valves and piping at existing facilities. Because this proposed work would occur within the fence line at existing facilities, it would not be considered to have a disproportionate effect on environmental justice communities during operations.

Potentially adverse environmental effects on surrounding communities associated with the Project, including environmental justice communities, would be minimized and/or mitigated to less-than-significant levels, as discussed above. Based on the analyses in this EA, construction and operation of the Project would not result in significant impacts on any area population, socioeconomic condition, or other environmental resources. As a result, we conclude that the Project would not have disproportionately high or adverse environmental effects on minority or low-income communities.

**Table B-19**  
**Race, Ethnicity, and Poverty Level Estimates (percent)**

	White	African American	Native American and Alaskan Native	Asian	Native Hawaiian and Pacific Islander	Other, Including Person Reporting Two or More Races	Hispanic or Latino Origin a/	Total Minority b/	Percent Individuals Below Poverty b/
<b>Gulf Run Pipeline</b>									
Red River Parish	56.9	39.0	0.0	0.0	0.0	1.8	2.2	43.1	23.6
Block Group 2, Census Tract 9601	41.5	58.5	0.0	0.0	0.0	0.0	0.0	58.5	40.4
DeSoto Parish	58.4	35.7	1.1	0.2	0.1	1.7	2.9	41.6	24.9
Block Group 2, Census Tract 9503	43.0	52.3	0.3	0.0	0.0	3.5	0.9	57.0	37.0
Block Group 1, Census Tract 9507	47.5	52.5	0.0	0.0	0.0	0.0	0.0	52.5	27.9
Sabine Parish	67.9	16.3	6.8	0.4	0.0	4.7	3.9	32.1	19.5
Block Group 3, Census Tract 1	64.9	33.0	0.0	0.0	0.0	2.1	0.0	35.1	42.8
Block Group 1, Census Tract 4	96.2	0.0	0.0	0.0	0.0	0.0	3.8	3.8	14.9
Block Group 2, Census Tract 4	71.3	9.6	5.3	0.0	0.0	0.0	13.8	28.7	0.0
Block Group 4, Census Tract 4	77.4	14.7	6.9	1.1	0.0	0.0	0.0	22.6	1.6
Block Group 2, Census Tract 5	55.2	39.0	3.4	0.0	0.0	1.4	1.0	44.8	32.3
Block Group 1, Census Tract 6	83.0	13.2	0.0	0.0	0.0	3.3	0.4	17.0	7.8
Block Group 2, Census Tract 6	81.5	0.0	0.0	0.0	0.0	10.2	8.3	18.5	4.2
Block Group 3, Census Tract 6	77.4	13.0	6.7	0.8	0.0	0.6	1.5	22.6	12.3
Block Group 2, Census Tract 7	96.7	1.4	0.0	0.0	1.0	0.0	1.0	3.3	13.0
Vernon Parish	70.0	14.2	1.2	1.9	0.4	2.9	9.4	30.0	17.2
Block Group 4, Census Tract 9502	97.4	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.4
Block Group 2, Census Tract 9503	95.6	0.0	0.0	2.3	0.0	0.0	2.2	4.4	18.0
Block Group 3, Census Tract 9503	88.7	0.0	0.2	2.0	0.0	5.2	3.9	11.3	6.9
Beauregard Parish	80.1	12.4	0.7	0.3	0.0	2.8	3.7	19.9	17.2
Block Group 1, Census Tract 9602	80.6	1.9	0.8	0.7	0.0	8.9	7.2	19.4	15.2
Block Group 1, Census Tract 9606	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
Block Group 2, Census Tract 9606	70.7	18.4	3.4	0.0	0.0	7.2	0.4	29.3	20.9
Block Group 3, Census Tract 9606	86.2	1.5	6.7	0.0	0.0	2.0	3.7	13.8	6.4

**Table B-19**  
**Race, Ethnicity, and Poverty Level Estimates (percent)**

	White	African American	Native American and Alaskan Native	Asian	Native Hawaiian and Pacific Islander	Other, Including Person Reporting Two or More Races	Hispanic or Latino Origin a/	Total Minority b/	Percent Individuals Below Poverty b/
Calcasieu Parish	67.9	24.8	0.3	1.4	0.0	2.2	3.4	32.1	16.9
Block Group 1, Census Tract 36	92.1	6.9	0.5	0.0	0.0	0.0	0.5	7.9	15.1
<b>Line CP Modifications</b>									
Red River Parish	56.9	39.0	0.0	0.0	0.0	1.8	2.2	43.1	23.6
Block Group 2, Census Tract 9601	41.5	58.5	0.0	0.0	0.0	0.0	0.0	58.5	40.4
Jackson Parish	67.3	30.0	0.1	0.5	0.0	0.5	1.6	32.7	26.0
Block Group 1, Census Tract 9702	81.9	12.9	0.0	3.9	0.0	0.0	1.2	18.1	17.1
Block Group 2, Census Tract 9703	96.0	3.5	0.0	0.0	0.0	0.5	0.0	4.0	6.5
Richland Parish	60.5	35.4	0.0	0.7	0.0	1.2	2.1	39.5	28.9
Block Group 3, Census Tract 9701	56.4	34.9	0.0	0.0	0.0	0.9	7.8	43.6	27.6
Block Group 2, Census Tract 9702	58.2	41.8	0.0	0.0	0.0	0.0	0.0	41.8	19.7
Block Group 3, Census Tract 9703	92.4	6.8	0.0	0.0	0.0	0.7	0.0	7.6	28.5
Panola County, Texas	73.3	17.2	0.1	0.1	0.0	0.7	8.6	26.7	15.9
Block Group 2, Census Tract 9501	75.2	23.4	0.0	0.0	0.0	1.5	0.0	24.8	33.4
Madison Parish	33.9	63.6	0.1	0.0	0.0	0.3	2.1	66.1	37.8
Block Group 1, Census Tract 9602	45.6	47.5	0.0	0.0	0.0	1.1	5.8	54.4	18.8
Franklin Parish	65.1	33.0	0.0	0.1	0.0	1.2	0.5	34.9	28.3
Block Group 1, Census Tract 9501	63.2	35.3	0.0	0.0	0.0	1.5	0.0	36.8	35.9
<b>Louisiana</b>	<b>63.0</b>	<b>32.6</b>	<b>0.8</b>	<b>1.9</b>	<b>0.1</b>	<b>1.7</b>	<b>5.2</b>	<b>37.1</b>	<b>19.6</b>
<b>Texas</b>	<b>74.6</b>	<b>12.0</b>	<b>0.5</b>	<b>4.5</b>	<b>0.1</b>	<b>2.6</b>	<b>38.9</b>	<b>19.7</b>	<b>16.0</b>

Source: U.S. Census Bureau, 2018a, 2018b

- a The U.S. Census reports Race and Ethnicity (Hispanic) as separate categories. Individuals reported as one or more racial group may also identify as Hispanic. The population for White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, or Two or More Races is reported for Non-Hispanics only.
- b Identified Environmental Justice Communities are shaded grey.

## 8. Air Quality and Noise

### 8.1 Air Quality

Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated from the use of equipment, land disturbance, open burning of debris, and traffic from worker and delivery vehicles. Minor operational emissions would occur from the addition of one emergency use diesel engine electric generator to the Westdale Compressor Station, one emergency use diesel engine electric generator at the GPPL Meter Station, and fugitive methane emissions associated with the meter stations and Gulf Run Pipeline. No changes to compressor engines or turbines affecting operational emissions would be associated with the Project.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards<sup>15</sup> (NAAQS) for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>) ozone, particulate matter less than 10 microns (PM<sub>10</sub>), particulate matter less than 2.5 microns (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). These standards incorporate short-term (1-hour, 3-hour, 8-hour, and 24-hour) and long-term (3-month and annual) concentration levels to address acute and chronic exposures to the pollutants. The NAAQS primary standards are designed to protect human health and the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS secondary standards are designed to protect public welfare such as economic interests, visibility, vegetation, animal species, and other concerns not related to human health. The LDEQ and TCEQ have the authority to enforce these standards under the CAA for the proposed Project facilities.

Air quality control regions (AQCRs) are areas established by the EPA and local agencies for air quality planning purposes. State Implementation Plans describe how the NAAQS would be achieved and maintained in AQCRs. AQCRs are intra- and interstate regions such as large metropolitan areas or multiple-county rural areas. Each AQCR, or smaller portion within an AQCR (such as a county) is designated as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis based on compliance with the NAAQS. Areas designated as attainment comply with the NAAQS; areas designated nonattainment are not in compliance. Maintenance areas are areas previously designated as nonattainment but have since demonstrated compliance with the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas.

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<sup>15</sup> A full list of NAAQS is available at: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

The Project facilities in Louisiana would be constructed and operated in attainment areas. Part of Panola County, Texas, is designated nonattainment for the SO<sub>2</sub> NAAQS standard, while the remainder of the county is designated as in attainment.<sup>16</sup> The CP-3 Meter Station, part of the Line CP modifications, would be constructed in the attainment portion of Panola County.

## **8.2 Permitting/Regulatory Requirements**

### **8.2.1 New Source Review**

New Source Review consists of the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) preconstruction air permit programs. These programs are designed to protect air quality when air pollutant emissions are increased through either the construction of new major stationary sources or major modifications to existing stationary sources. The LDEQ and TCEQ administer the PSD and NNSR permitting programs in their respective states. Modifications at the Westdale Compressor Station in Louisiana, which is part of the Line CP Modifications, would be below the PSD thresholds and therefore not subject to PSD rules. No new emission sources associated with the Project are subject to NNSR.

### **8.2.2 Minor Source New Source Review**

Sources of air emissions that do not fall under PSD or NNSR permit programs are subject to state-level minor source permit requirements. The addition of the small emergency generator engine at the Westdale Compressor Station would require a minor modification to the facility's existing minor source operating permit. The new small emergency generator at the GPPL Meter Station is exempt from air permitting. No new stationary sources of air emissions are proposed in Texas as part of the Project, although general air quality rules apply.

### **8.2.3 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 applicable regulations implementing Title V are found in 40 CFR 70. LAC, Title 33, Part III Section 502 defines a facility as a major source if the potential to emit is greater than: 100 tons per year (tpy) for any single criteria pollutant; 10 tpy of any single hazardous air pollutant (HAP); or 25 tpy for total combined HAPs. Emissions sources that emit HAPs below the major source quantities are classified as area sources.

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<sup>16</sup> The portion of Panola County designated by the EPA as in nonattainment with the SO<sub>2</sub> NAAQS can be found at 40 CFR 81.344.

The Westdale Compressor Station is currently a minor source not subject to Title V permitting requirements and would remain a minor source upon completion of the Project. The Westdale Compressor Station would remain an area source of HAPs following completion of the Project because potential HAP emissions would not exceed the major source threshold of 10 tpy for any single HAP or 25 tpy for all HAPs combined.

#### **8.2.4 Emission Regulations**

**New Source Performance Standards.** The EPA promulgates New Source Performance Standards (NSPS) to establish emission limits and fuel, monitoring, notification, reporting, and recordkeeping requirements for stationary source types or categories. The NSPS for specific categories of stationary sources of air pollution are established in 40 CFR 60. The following subparts are applicable to the Project.

***Subpart A – General Provisions.*** Certain provisions of 40 CFR 60, Subpart A, apply to the owner or operator of any stationary source subject to an NSPS. The Westdale Compressor Station would be subject to this subpart since the proposed emergency generator engine is subject to NSPS Subpart JJJJ.

***Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.*** Subpart JJJJ applies to owners and operators of stationary spark ignition internal combustion engines constructed after June 12, 2006, where the stationary spark ignition internal combustion engine is less than 500 hp and is manufactured on or after July 1, 2008. The proposed emergency generator engine at the Westdale Compressor Station is subject to this standard and must meet the emission limits and monitoring/recordkeeping requirements in Subpart JJJJ. Compliance requirements for the engine would be defined in the modified minor source operating permit for the Westdale Compressor Station.

#### **8.2.5 National Emission Standards for Hazardous Air Pollutants**

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of national emission standards for hazardous air pollutants. These emission standards regulate HAP emissions from specific source types at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements. The following subparts are applicable to the emissions sources associated with the Project.

### **8.2.6 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

Stationary reciprocating internal combustion engines at area and major sources of HAPs that are new, existing, or reconstructed are subject to this subpart, depending on power rating and unit type. The new emergency generator proposed at the Westdale Compressor Station would have an engine rating large enough to be subject to Subpart ZZZZ as a new stationary reciprocating internal combustion engine. However, a new such engine at an area source must comply with this subpart by meeting the requirements for NSPS Subpart JJJJ. The proposed engine for the Project would comply with Subpart ZZZZ by complying with Subpart JJJJ.

### **8.2.7 State and County Regulations**

Under the provisions of the CAA, a state may have air quality requirements that are more stringent than those at the federal level. The state and local regulations listed below may be applicable to the Project.

**Louisiana.** The Project would be subject to state air quality requirements administered by the LDEQ per LAC, Title 33, Part III. Louisiana regulations applicable to the Project include obtaining an air construction permit for addition of the emergency generator engine at the Westdale Compressor Station.

Prior to releasing natural gas from pipelines and associated equipment resulting from metering, purging, and maintenance operations, Enable would be required to apply for and obtain authorization from the LDEQ (LAC Title 33 Section 309). The permit would be valid for a 60 day period within which release or flaring of natural gas is limited to no more than 10 operating days at a single location.

Modifications at the Vernon Compressor Station would not involve installation of new air emissions sources or changes to existing emissions sources; therefore, no air permit application is required.

A new, small emergency generator powered by a diesel engine would be installed at the GPPL Meter Station. The emergency generator would be operated less than 500 hours per year and would be the only stationary air pollutant emission point source at the GPPL Meter Station; therefore, per Louisiana air permitting regulations, the engine is exempt from air permitting.

All new and modified meter stations would produce minor fugitive emissions from equipment leaks as well as combustion emissions from intermittent operation of

emergency generators at the Westdale and GPPL Meter Stations; however, no air permit would be required for these facilities.

**Texas.** The CP-3 Meter Station would be at an existing pipeline pig receiver site in Panola County. Texas air quality regulations are found at Title 30 of the Texas Administrative Code (30 TAC). The CP-3 Meter Station would be required to obtain a permit by rule under 30 TAC 106 because it meets the emission limitations found in 30 TAC 106.4. The permit by rule for oil and gas facilities is found under 30 TAC 106.352. Separate permit by rule requirements apply to facilities located in the Barnett Shale region and facilities not in the Barnett Shale region. Panola county is not located in the Barnett Shale region. Therefore CP-3 would qualify for the permit by rule as an oil and gas handling facility not within the Barnett Shale region under 30 TAC 106.352 (l). General air quality requirements of 30 TAC would also apply.

### **8.2.8 General Conformity**

The EPA promulgated the General Conformity Rule to implement the conformity provision of Title I, Section 176(c)(1) of the CAA. Section 176(c)(1) requires that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve any activity not conforming to, an approved CAA implementation plan. The General Conformity Rule is codified in 40 CFR Part 51, Subpart W and Part 93, Subpart B, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. As noted earlier, with the exception of SO<sub>2</sub>, the Project facilities would be constructed and operated within counties or portions of counties in Louisiana and Texas in attainment for all criteria pollutants; therefore, a General Conformity Determination is not required. As detailed in table B-21 below, the Project's Line CP construction, including modifications within Panola County, Texas, would emit very minor amounts of SO<sub>2</sub> falling well below any applicable threshold requiring a General Conformity Determination.

### **8.2.9 Greenhouse Gases**

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 gases that absorb infrared radiation in the atmosphere, and an increase in emissions of these gases has been determined by the EPA to endanger public health and welfare by contributing to global climate change. The most common GHGs emitted during fossil fuel combustion and natural gas transportation are carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. Emissions of GHGs are typically expressed in terms of CO<sub>2</sub> equivalents (CO<sub>2</sub>e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO<sub>2</sub> over a specific timeframe, or its global warming potential

(GWP). 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. The 100-year GWP of CO<sub>2</sub> is 1, methane is 25, and nitrous oxide is 298. During construction and operation of the Project, these GHGs would be emitted from fossil-fuel-powered engines used in construction and operational equipment, as well as from fugitive methane leaks from the pipeline and aboveground facilities. GHG emissions would occur from combustion of diesel fuel in the emergency generator engine at the Westdale Compressor Station.

On November 8, 2010, the EPA signed a rule that finalized reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of CO<sub>2</sub>e per year to report annual emissions of specified GHGs from various processes within the facility.

Construction emissions are not covered under the GHG Reporting Rule. The existing Westdale Compressor Station is part of the onshore natural gas transmission compression source category and would continue to be subject to mandatory GHG reporting requirements because overall CO<sub>2</sub>e emissions from the site exceed 25,000 metric tons per year. The Westdale Compressor Station would continue to comply with applicable 40 CFR 98 requirements after completion of the Line CP Modifications.

### **8.2.10 Construction Emissions**

Construction of the Project would result in short-term increases in emissions of criteria pollutants (i.e., nitrogen oxides, CO, volatile organic compounds [VOC], SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>), HAPs, and GHGs. Emissions would be produced by vehicles used by construction workers commuting to and from work sites, on-road and off-road construction vehicle traffic, large earth-moving equipment, and other mobile equipment. Earthmoving would also generate fugitive dust. In addition, open burning of vegetation cleared from construction workspaces would produce emissions.

Exhaust emissions from construction equipment would be mitigated by complying with all air quality regulations and emission standards associated with each piece of equipment, and limiting idling of diesel and gasoline-powered on-road vehicles and non-road construction equipment. Fugitive dust emissions during construction would be mitigated by measures outlined in Enable's Fugitive Dust Control Plan, such as spraying water on unpaved areas subject to frequent vehicle traffic.

Construction-related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for each area of the Project.

To estimate exhaust emissions from on-road and non-road construction equipment, Gulf Run used emission factors from another recent project in Louisiana (Venture Global Plaquemines LNG, LLC, and Venture Global Gator Express, LLC, FERC Docket Nos. CP17-66-000 and CP17-67-000). The Venture Global project utilized the EPA's MOVES2014b mobile source emission factor model, which we understand to be the most up-to-date non-road and on-road emission factor model applicable to the Project locations in Louisiana and Texas (EPA, 2020e).

Fugitive dust emissions during construction would occur from vehicle travel on paved and unpaved roads and from soil and material handling. Fugitive dust from travel on paved and unpaved roads were estimated using emission factors from the EPA's AP-42 (EPA, 1995). Soil and material handling fugitive dust emissions were estimated using emission factors from the Western Regional Air Partnership Fugitive Dust Handbook (2006).

Open burning would occur during construction of the Gulf Run Pipeline. In Louisiana, open burning is incorporated into the Louisiana State Implementation Plan by reference to LAC 33:III Chapter 11, Section 1109 (Control of Air Pollution from Outdoor Burning). Subsection C.8 allows for outdoor burning of trees, brush, grass, and other vegetable matter for land clearing and right-of-way maintenance operations where the following conditions are met:

- prevailing winds at the time of the burning are blowing away from town/city;
- burning occurs at least 1,000 feet from any dwelling not on the property;
- dirt on the material being burned is minimized;
- heavy oils, items containing natural or synthetic rubber, or any non-plant material that produce unreasonable amounts of smoke are prohibited;
- burning is conducted between 8:00 a.m. and 5:00 p.m.; and
- burning is controlled so as not to cause a traffic hazard.

Parish-level burn bans may be implemented when weather conditions are conducive to a high fire danger. Enable would consult each parish for active burn bans and near-term potential for burn bans prior to implementing open burning. Parish-level requirements for open burning apply as follows:

- DeSoto Parish Code of Ordinances, Chapter 30, Section 30-1(a)(2) requires that prior to open burning, the DeSoto Parish Communication District E911 Office shall be notified of the nature and approximate time of the intended burn. If the burn is allowed, a permit would be issued and respective fire protection districts notified.
- Beauregard Parish Code of Ordinances, Chapter 5, Section 5-90 restricts open burning during drought conditions. Restrictions would be placed by the parish

police jury. Outside of drought conditions, burning of trees, branches, and leaves is allowed as long as the fire is attended.

- Sabine Parish Code of Ordinances, Chapter 14, Article V applies to outdoor burning of garbage and vegetation debris within the parish. A written burn permit must be submitted to and approved by the fire chief of the applicable fire district. The application for a burn permit must be submitted and approved at least 48 hours in advance of burning.
- Vernon and Red River Parishes do not have regulations for open burning.

Enable estimated that 33,726 tons of vegetation and woody debris would be generated during land clearing. This estimate assumes seventy-five percent of the harvestable timber and twenty-five percent of other vegetation is not burned. Harvestable timber may ultimately be greater than this value due to landowner requirements and would reduce the amount of vegetation burned. Enable used AP-42 Chapter 2.5 and AP-42 Chapter 13.1 to calculate emissions from open burning associated with right-of-way clearing of temporary construction areas and permanent acreage for the Gulf Run Pipeline (EPA, 1995). Estimated open burning emissions are provided in table B-20.

Construction is estimated to occur between September 2021 and August 2022. Following construction, air quality would revert to previous conditions. We proportioned total Gulf Run Pipeline construction emissions provided by Enable over the construction period in each year to determine the annual emissions for each year of construction for the Project, as shown in table B-20.

Open burning would be the dominant source of emissions from construction. These emissions would be temporary and would cease when burning is completed. Total emissions from open burning (shown in table B-20) during construction of the Gulf Run Pipeline and GPPL Meter Station would be distributed throughout the pipeline construction corridor at various locations where vegetation would be temporarily stored and burned. We requested Enable examine alternatives to open burning to reduce emissions where feasible. To minimize open burning emissions to the extent practicable, Enable would consult with construction contractors on alternative methods for disposing of vegetation and woody debris. Alternatives to open burning could include chipping and hauling woody debris to a landfill and forestry mulching.

Table B-20

Estimated Construction Emissions – Gulf Run Pipeline and Golden Pass Pipeline LLC Meter Station  
(tons per year)

Source	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOCs	Total HAPs	GHG (CO <sub>2e</sub> ) <u>a/</u>
<b>2021 (4 months)</b>								
Open Burning	453.78	24.51	0.00	49.05	49.05	19.64	19.75	19,827
Construction Equipment – off-road <u>b/</u>	4.43	8.93	0.00	16.43	2.37	1.02	2.51	1,471
Deliveries/Worker Commute – on-road	59.50	6.18	0.04	1.88	0.44	1.20	0.12	6,798
Fugitive Dust <u>c/</u>	0.00	0.00	0.00	11.69	1.17	0.00	0.00	0
<b>Total</b>	<b>517.71</b>	<b>39.62</b>	<b>0.04</b>	<b>79.05</b>	<b>53.03</b>	<b>21.85</b>	<b>22.37</b>	<b>28,096</b>
<b>2022 (7 months)</b>								
Open Burning	794.12	42.89	0.00	85.85	85.85	34.36	34.55	34,698
Construction Equipment – off-road	7.75	15.62	0.01	28.74	4.15	1.79	4.40	2,574
Deliveries/Worker Commute – on-road	104.13	10.82	0.07	3.29	0.76	2.09	0.20	11,897
Fugitive Dust <u>c/</u>	0.00	0.00	0.00	20.47	2.05	0.00	0.00	0
<b>Total</b>	<b>906.00</b>	<b>69.33</b>	<b>0.08</b>	<b>138.35</b>	<b>92.81</b>	<b>38.25</b>	<b>39.16</b>	<b>49,169</b>

a CO<sub>2e</sub> in metric tons per year.

b Includes pipe sandblasting and coating

c Includes implementation of fugitive dust control.

The same quantity of material (33,726 tons) that would be burned could also be chipped and hauled. Chipping and hauling would eliminate open burning emissions, but also increase trucking activity on local roads and produce emissions from off-road equipment and trucks to haul the material to a landfill but would eliminate open burning emissions.

Forestry mulching could also be used in place of open burning to reduce emissions. The same quantity of material (33,726 tons) that would be burned could also be mulched. However, the quantity of mulch that could be applied to land areas would be limited by landowner requirements, land use types (e.g. agricultural, residential and commercial areas could not be mulched) and areas where mulching would inhibit natural regrowth.

Open burning restrictions contained in local ordinances and in the Louisiana State Implementation Plan and use of harvestable timber by landowners would limit the emissions and potential air quality impact from burning vegetation and woody debris during land clearing. Where feasible, Enable would implement alternative methods of disposing of vegetation and wood debris from land clearing.

Based on the anticipated schedule, some of the Line CP Modifications would occur in 2021, and the remainder in 2022. Total Line CP construction emissions were proportioned evenly in 2021 and 2022 and are summarized in table B-21.

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

Table B-21								
Estimated Construction Emissions – Line CP (tons per year)								
Source	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOCs	Total HAPs	GHG (CO <sub>2e</sub> ) <u>a/</u>
<b>2021 (4 months)</b>								
Construction Equipment – off-road <u>b/</u>	2.9	5.3	0.01	0.4	0.5	0.5	0.095	1,047
Deliveries/Worker Commute – on-road	41.2	4.3	0.02	1.3	0.3	0.8	0.085	4,692
Fugitive Dust <u>c/</u>	-	-	-	0.3	0.03	-	-	-
<b>Total</b>	<b>44.1</b>	<b>9.6</b>	<b>0.03</b>	<b>2.0</b>	<b>0.83</b>	<b>1.3</b>	<b>0.18</b>	<b>5,739</b>
<b>2022 (4 months)</b>								
Construction Equipment – off-road	2.9	5.3	0.01	0.4	0.5	0.5	0.095	1,047
Deliveries/Worker Commute – on-road	41.2	4.3	0.02	1.3	0.3	0.8	0.085	4,692
Fugitive Dust <u>c/</u>	-	-	-	0.3	0.03	-	-	-
<b>Total</b>	<b>44.1</b>	<b>9.6</b>	<b>0.03</b>	<b>2.0</b>	<b>0.83</b>	<b>1.3</b>	<b>0.18</b>	<b>5,739</b>
<p>a CO<sub>2e</sub> in metric tons per year.</p> <p>b Includes pipe sandblasting and coating.</p> <p>c Includes implementation of fugitive dust control.</p> <p>“-“ indicates pollutant not emitted.</p>								

### 8.2.11 Operational Emissions

Modification of the Westdale Compressor Station would include installation of an emergency generator powered by a diesel engine. The engine would run periodically for maintenance purposes. Emissions associated with the proposed generator engine at the Westdale Compressor Station are shown in table B-22.

The GPPL Meter Station would include one standby generator. The engine would run periodically for maintenance purposes, resulting in the potential for minor emissions. Fugitive emissions of methane and VOCs would also occur from piping components. Emissions from the generator engine and fugitive emissions combined are shown in table B-22.

Table B-22								
Estimated Operational Emissions (tons per year)								
Source	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOCs	GHG (CO <sub>2</sub> e)	Total HAPs
Westdale Emergency Generator	0.3	0.15	<0.01	0.01	0.01	0.08	32.7	0.04
GPPL Meter Station Emergency Generator	0.7	0.1	<0.01	<0.01	<0.01	0.02	4.6	0.02
GPPL Meter Station Fugitive	-	-	-	-	-	0.7	124	-
Gulf Run Pipeline Fugitive Emissions	-	-	-	-	-	0.01	31	-
Pipeline Pigging at MP 97.1	-	-	-	-	-	0.01	122	-
Gulf Run Pipeline Blowdowns	-	-	-	-	-	0.6	1,311	-
Line CP Meter Stations Fugitive <u>a/</u>	-	-	-	-	-	2.3	368	-
<b>Total</b>	<b>1.0</b>	<b>0.25</b>	<b>&lt;0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>3.7</b>	<b>1,993</b>	<b>0.06</b>
a Proposed modified ANR, Columbia Gulf, MEP, and EGT Meter Stations, and new CP-3 Meter Station.								
“-“ indicates pollutant not emitted.								

Fugitive releases of methane and VOCs may occur from the Gulf Run Pipeline during normal operation, mainly in the form of leaks from piping components (connectors, valves, flanges) at mainline valves. Pipeline blowdowns would occur periodically throughout the year for maintenance purposes and would emit 0.6 and 1,190 tpy of VOCs and CO<sub>2</sub>e emissions, respectively, as shown in table B-22. Pipeline pigging may occur twice per year, resulting in emissions of VOCs and CO<sub>2</sub>e at the pig launcher/receiver at MP 97.1 in Beauregard Parish, as shown in table B-22.

Five meter stations along the Line CP pipeline would emit minor amounts of natural gas through leaks in valves and fittings, primarily consisting of VOCs and methane. The meter stations' fugitive releases of VOCs and methane (expressed as CO<sub>2</sub>e) are shown in table B-22.

The emergency generator engines would require the use of small diesel fuel storage tanks. Additionally, small oil waste storage tanks would be utilized at two meter stations. Emissions from the diesel fuel and oil storage tanks would be insignificant due

to the low volatility of the stored liquids. Fugitive emissions may change slightly due to piping modifications at the Westdale and Vernon Compressor Stations, but these changes are considered insignificant.

Considering the minimal operational emissions associated with the Project, we conclude that operational emissions would not have a significant impact on air quality.

### 8.3 Noise

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

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA, 1974). 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 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB) to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the  $L_{dn}$  is approximately 6.4 dB above the measured  $L_{eq}$ .

The EPA has indicated that an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the Project at noise sensitive areas (NSAs), such as residences, schools, or hospitals. Also, in general, a person's threshold for perceiving a change in loudness on the A-weighted sound scale 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.

### **8.3.1 Local Noise Regulations**

Project construction and operation would occur in Red River, DeSoto, Sabine, Vernon, Beauregard, Calcasieu, Jackson, and Richland Parishes in Louisiana and in Panola County, Texas. Only DeSoto and Calcasieu Parishes have noise ordinances.

Chapter 50 of the DeSoto Parish Code of Ordinances relates to nuisances and generally prohibits all unnecessary or unauthorized noises or annoying vibrations.

Section 18-96 of the Code of Ordinances for the Parish of Calcasieu prohibits noise that unreasonably interferes with the comfort and repose of others. Exemptions can be granted by obtaining a permit. Section 18-100 of the code includes a prohibition that construction and demolition equipment may not be used within 165 feet of any residence or NSA between sunset and sunrise on weekdays and Saturdays, and from 9:00 p.m. to 8:00 a.m. on Sundays and holidays, except for emergency work. Section 18-101 prohibits operation of any machine, instrument, or device that creates any loud or raucous sounds or noise within 300 feet of a church, synagogue, or regular place of worship where it is foreseeable that such sounds would interfere with the conduct of worship. Enable states that the Project would not involve unnecessary or unauthorized noise. Enable also commits to conducting construction activities within Calcasieu Parish, in compliance with the Calcasieu Parish Noise Ordinance. Compliance with these ordinances pertaining to noise from HDD operations is discussed below.

The Texas legislature has not conferred upon counties the authority to regulate noise in their unincorporated areas. Section 42.01(5) of the Texas Penal Code prohibits a person from intentionally or knowingly causing unreasonable noise in or near a private residence that they have no right to occupy. Section 42.01(5) states noise is presumed unreasonable if the noise level exceeds 85 dB.

### **8.3.2 Methodology**

Enable conducted noise surveys in the vicinity of Project construction sites and Line CP modifications including the Westdale Compressor Station and new and modified meter stations along Line CP within 0.5 mile of an NSA. These surveys consisted of field measurements of existing noise conditions to establish baseline noise levels. Enable's noise impact analysis utilized a predictive noise model to estimate noise impacts during the Project's construction and operation.

#### **8.3.2.1 Noise Assessment Results**

Construction of the Gulf Run Pipeline, new meter station, meter station modifications, and compressor station modifications would involve operation of general

construction equipment including off-road equipment (bulldozers, trenchers, side booms, trucks, etc.) that would generate noise during use.

**Pipeline Construction.** Construction noise would be highly variable at any location along the Gulf Run Pipeline corridor because different types of activities would require different types of equipment and the equipment would be operated intermittently. Individuals in the immediate vicinity of the construction activities would experience an increase in noise as construction activities proceed along the construction right-of-way. The highest sound levels during pipeline construction occur during use of heavy equipment for trenching, pipe laying, and backfilling.

Two occupied residences are within 50 feet of the pipeline construction work areas, and seven occupied residences are within 50 feet of access roads. Noise from pipeline construction activities within these nearby work areas, and the Project's use of these access roads would likely be noticeable at these residences. For these locations, Enable would communicate anticipated work schedules to affected landowners prior to starting construction in order to minimize disruption.

Other nearby locations may notice a temporary increase in noise as the pipeline construction spread operates nearby for up to 10 weeks. Construction equipment would be operated during daytime hours. Some activities such as hydrostatic testing, operation of pumps at waterbody crossings, and certain HDD activities that require continuous work may operate at night (i.e., outside the hours of 7:00 a.m. to 7:00 p.m.). If nighttime construction is required, advance notice would be provided to the residents informing them of the planned activities and duration.

Measures that Enable would employ to mitigate pipeline construction noise include complying with federal regulations limiting noise from trucks, properly maintaining equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition.

**Horizontal Directional Drilling.** Gulf Run Pipeline construction includes eight HDDs. Each HDD includes an entry and exit location where noise is produced during the drilling activity. Each of the HDD entry/exit sites is in a rural area dominated by forest land, open fields, and wetlands. Six of the proposed HDDs have NSAs within 0.5 mile of the HDD entry and/or exit sites. One of these, HDD No. 6, has two NSAs within 0.5 mile. Noise surveys and noise analyses were performed for these six HDD locations.

Enable anticipates that most HDD activities would be limited to a 12-hour daytime shift; however, certain HDD activities such as pull back would require nighttime work. Therefore, noise impacts from HDD operations are analyzed based on their potential to operate on a 24 hour per day basis. Predicted noise levels for HDD activities at the locations with NSAs within 0.5 mile of the HDD entry and/or exit sites are presented in

table B-23. Enable evaluated noise at two NSAs for the HDD No. 6 entry location – the closest NSA and a second NSA that would have the highest increase in noise during HDD activity.

Table B-23						
Estimated HDD Noise Contributions at nearby NSAs						
HDD	Site	Distance (feet) and Direction from Site to nearest NSA	Existing Ambient L <sub>dn</sub> at NSA (dBA)	Estimated L <sub>dn</sub> Noise Contribution (dBA)	Construction Noise Levels+ Ambient L <sub>dn</sub> (dBA)	Average Increase in Noise Levels (dBA)
HDD No. 1 Grand Bayou	Entry	531 SW	64.1	71.7	72.4	8.3
	Exit	1,138 SW	68.9	46.7	69.0	0.1
HDD No. 3 Dolet Bayou	Entry	1,247 SE	55.2	58.5	60.2	5.0
	Exit	2,230 NE	62.6	44.8	62.7	0.1
HDD No. 4 Dolet Bayou/Interstate 49	Entry	1,544 SE	49.7	59.5 <u>a/</u> 37.2 <u>b/</u>	59.9 <u>a/</u> 49.9 <u>b/</u>	10.2 <u>a/</u> 0.2 <u>b/</u>
	Exit	1,285 SW	57.5	50.8	58.3	0.8
HDD No. 6 Sandy Creek/Highway 111	Entry NSA1	860 SW	57.7	64.2	65.1	7.4
	Entry NSA 2	1,107 NW	51.9	63.6 <u>a/</u> 41.2 <u>b/</u>	63.9 <u>a/</u> 52.3 <u>b/</u>	12.0 <u>a/</u> 0.4 <u>b/</u>
	Exit	182 NW	61.0	71.0 <u>a/</u> 51.6 <u>b/</u>	71.4 <u>a/</u> 61.5 <u>b/</u>	10.4 <u>a/</u> 0.5 <u>b/</u>
HDD No. 7 Bayou Anacoco	Exit	863 SW	55.8	50.6	57.0	1.2
HDD No. 8 Green Island Marsh Wetland	Entry	2,196 SE	47.0	50.9	52.4	5.4
	Exit	472 NE	47.0	59.0 <u>a/</u> 38.9 <u>b/</u>	59.3 <u>a/</u> 47.6 <u>b/</u>	12.3 <u>a/</u> 0.6 <u>b/</u>
a Unmitigated						
b Includes mitigation measures.						

HDD work may occur for 24 hours per day or during nighttime hours. Work that occurs at nighttime should contribute noise levels below 55 dBA L<sub>dn</sub> or 48.6 L<sub>eq</sub> at NSA locations where the ambient noise levels are below 55 dBA L<sub>dn</sub>, or no more than 10 dBA over background if ambient noise levels are above 55 dBA L<sub>dn</sub>. Mitigation is typically required if construction noise contributions are above these thresholds. Mitigation is also applied on a case-by-case basis for NSA locations subject to extended periods of construction generated noise like the 24 hours per day associated with HDDs.

Enable estimated unmitigated noise levels due to operation of HDD equipment at the entry and exit locations for the six HDDs identified above. The results, shown in table B-23, indicate that the predicted noise levels at some HDD entry and exit sites would exceed 55 dBA  $L_{dn}$  and result in a 10 dBA or greater increase above existing ambient conditions. These sites are:

- HDD No. 4 entry location;
- HDD No. 6 entry location at NSA 2;
- HDD No. 6 exit location; and
- HDD No. 8 exit location.

To address these noise impacts, Enable proposes to install noise mitigation at these four entry and exit locations. The noise barriers would be 16-foot-tall and consist of either straw bales or 5/16-inch plywood walls capable of achieving noise reduction equivalent to a Sound Transmission Class 17 material. Table B-23 also shows the estimated noise levels with the mitigation, indicating that the noise would be under an  $L_{dn}$  of 55 or result in a less than 10 dBA change at each of these NSAs.

There are three other HDD locations listed in table B-23 that have nearby NSAs that would be subject to an estimated noise level above a  $L_{dn}$  of 55 dBA but Enable has not proposed mitigation. These are the entry sites for HDD No. 1, HDD No. 3, and HDD No. 6 at NSA 1. Although the estimated increase in noise levels would be less than 10 dBA at these NSAs, Enable stated that HDD operations may operate 24 hours per day. As a result, we recommend below that Enable should also apply noise-barrier mitigation to reduce the noise contribution of the HDDs to less than a  $L_{dn}$  of 55 dBA at these NSAs.

Approximately 3.2 miles of the Gulf Run Pipeline construction right-of-way and HDD No. 8 would be within Calcasieu Parish and therefore were evaluated with regards to the Code of Ordinances for the Parish of Calcasieu, Sections 18-96, 18-100 and 18-101. After applying mitigation to HDD site number 8 and minimizing general pipeline construction noise, the Project would comply with Section 18-96. The Project would comply with Section 18-100 by not operating construction equipment within 165 feet of an NSA during the time period specified in the ordinance. The Project would comply with Section 18-101 by not performing construction within 300 feet of places of worship in the parish.

To ensure that the actual noise attributable to HDD Nos. 4, 6 (NSA 2), and 8 reflect the levels predicted in table B-23 with the implementation of the proposed sound barriers and that Enable also includes noise mitigation at the entry points for HDD Nos. 1, 3, and 6 (NSA 1); and, to confirm that Enable makes all reasonable efforts to limit noise attributable to these HDD operations to no more than an  $L_{dn}$  of 55 dBA at nearby NSAs, **we recommend the following:**

- **Prior to construction at HDD Nos. 1, 3, 4, 6, and 8, Enable should file with the Secretary, for review and written approval by the Director of OEP, or the Director’s designee, an HDD noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at nearby NSAs. During drilling operations, Enable should implement the approved plan, monitor noise levels, document the noise levels in the bi-weekly status reports, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than an  $L_{dn}$  of 55 dBA at the NSAs.**

**Compressor Station and Meter Station Modification/Construction.**

Construction activity at the compressor stations and meter stations would range in duration from four to six months and from two to four months, respectively. Construction noise generated would primarily be limited to the immediate vicinity of each station.

The nearest NSAs to the Vernon and Westdale Compressor Stations, existing sound levels, construction equipment sound levels, total sound impact during construction, and estimated increase in ambient sound levels at nearby NSAs are shown in table B-24. Enable would limit the construction activity at each compressor station to daylight hours.

<b>Table B-24</b>					
<b>Compressor Station Construction Noise Impacts at Nearby NSAs</b>					
<b>Compressor Station</b>	<b>Distance (feet) and Direction to nearest NSA</b>	<b>Existing Ambient <math>L_{eq}</math> (dBA)</b>	<b>Estimated Construction Noise (<math>L_{eq}</math> dBA)</b>	<b>Construction Noise Levels+ Ambient (<math>L_{eq}</math> dBA)</b>	<b>Average Increase in Noise Levels (dBA)</b>
Vernon	2,168 NW	50.6	55.0	56.3	5.7
Vernon	2,114 SE	52.3	55.2	57.0	4.7
Westdale	1,562 SE	63.5	57.8	64.5	1.0
Westdale	3,776 N	53.3	50.1	55.0	1.7

Construction of the Gulf Run Pipeline portion of the Project would include constructing the new GPPL Meter Station. No NSAs are within a 0.5-mile radius of this location, and therefore no noise survey or analysis was performed. The nearest NSAs to the ANR, Columbia Gulf/EGT and MEP Meter Stations, existing sound levels,

construction equipment sound levels, total sound impact during construction, and change in sound level are shown in table B-25. Enable would limit the construction activity at each location to daylight hours.

<b>Table B-25</b>					
<b>Meter Station Construction Noise Analysis Impacts at Nearby NSAs</b>					
<b>Meter Station</b>	<b>Distance (feet) and/ Direction to NSA</b>	<b>Existing Ambient <math>L_{eq}</math> (dBA)</b>	<b>Estimated Construction Noise (<math>L_{eq}</math> dBA)</b>	<b>Construction Noise Levels+ Ambient (<math>L_{eq}</math> dBA)</b>	<b>Average Increase in Noise Levels (dBA)</b>
ANR	2,560 SSE	42.2	48.1	49.1	6.9
Columbia Gulf/EGT	300 W	60.2	59.5	62.9	2.7
Columbia Gulf/EGT	1,560 NNW	62.4	51.3	62.7	0.3
MEP	810 NE	49.4	59.5	59.9	10.5

### **Operational Noise**

**Meter Stations.** On-site noise measurements were performed to measure noise levels at the NSAs near each meter station. The measured and predicted sound levels at NSAs near the meter stations after completion of the Project are summarized in table B-26.

As shown in table B-26, the only NSA that may be subject to noise levels attributable to the operation of these meter stations after the proposed modifications that exceed 55 dBA is NSA 1 related to the Columbia Gulf/EGT Meter Stations. There is no new noise-generating equipment proposed for the Columbia Gulf meter station. Because the EGT meter station would be located close to the Columbia Gulf meter station, the two stations were evaluated together in the noise analysis. The existing background for NSA 1 and 2 near the Columbia Gulf/EGT Meter Station is between 60 and 62.4 dBA  $L_{dn}$ . Noise sources contributing to the background sound level include other compressor stations not associated with the Project. Enable noted that noise from these stations was audible during the noise survey. To estimate the noise contribution of the existing Columbia Gulf Meter Station at NSA 1, ambient and on-site measurements were used to attempt to derive the contribution; however, the numerous nearby noise sources likely resulted in a conservative estimate. This resulted in a predicted noise level at the nearest NSA attributable to the combined Columbia Gulf/EGT Meter Station of 69.3 dBA. The potential noise increase at NSA 1 near the Columbia Gulf/EGT Meter Station above

ambient conditions would be 9.7 dB, which would be perceived as almost a doubling of noise. Enable has assessed potential mitigation measures that could be implemented to minimize the increase in noise level at NSA 1. Enable stated that it would perform a post-construction noise measurement study during full load operation of the Columbia Gulf/EGT Meter Stations to verify the facility’s noise contribution at NSA 1 and aid in selecting appropriate mitigation.

<b>Table B-26</b>							
<b>Meter Stations – Estimated Operational Sound Levels and Impact at Nearest NSAs</b>							
<b>Facility</b>	<b>NSA</b>	<b>Distance (feet) and Direction from NSAs</b>	<b>Measured Existing Background L<sub>dn</sub> (dBA)</b>	<b>Existing Station at full load L<sub>dn</sub> (dBA)</b>	<b>Proposed Modified Station L<sub>dn</sub> Full Load Contribution (dBA)</b>	<b>Estimated Total Sound Level After Completion L<sub>dn</sub> (dBA)</b>	<b>Potential Increase Above Existing (dB)</b>
Columbia Gulf and EGT Meter Stations	1	300 W	60.2	53.2	69.3 <sup>a</sup>	69.9	9.7
	2	1,560 NNW	62.4	45.7	50.5	62.7	0.3
MEP Meter Station	1	810 E	55.1	43.9	53.3	57.3	2.2
CP-3 Meter Station	1	645 SE	55.2	44.5	43.7	55.5	0.3
	2	2,905 W	49.1	27.9	27.9	49.1	0.0
a Without proposed mitigation							

There is no new noise-generating equipment proposed for the ANR Meter Station. The modifications at the ANR Meter Station would consist of below-ground and above-ground piping changes to accommodate the reversal of gas flow. Therefore, an operational noise analysis was not performed for the ANR Meter Station.

**Vernon Compressor Station.** A noise assessment was not required for the Vernon Compressor Station because the Project’s modifications would not change the noise levels potentially emitted by this station.

**Westdale Compressor Station.** Table B-27 summarizes measured sound levels at NSAs near the Westdale Compressor Station, predicted sound level contribution at the nearby NSAs due to the proposed modifications, and a prediction of the overall environmental sound levels after completion of the Project. The Westdale Compressor Station would not cause operational noise level increases above 3 dBA at NSAs. The potential increase in noise would not be perceptible and the sound level at the closest NSAs would remain less than 55 dBA L<sub>dn</sub>.

Table B-27 Predicted Noise Impact of Westdale Compressor Station on Nearby NSAs						
Facility	NSAs	Distance (feet) and Direction to NSAs	Measured Existing Background L <sub>dn</sub> (dBA)	Full-load contribution of Station after Modifications L <sub>dn</sub> (dBA)	Estimated Total Sound Level after Completion L <sub>dn</sub> (dBA)	Potential Increase above Existing (dB)
Westdale Compressor Station	1	1,562 SE	54.1	43.4	54.5	0.4
	2	3,776 NE	53.9	32.8	54.0	0.1

The noise attributable to the Westdale Compressor Station at NSAs to each station, as identified in table B-27, is predicted to remain well below an L<sub>dn</sub> of 55 dBA following the proposed modifications, and for this reason we do not recommend that a noise survey be performed for these stations. Similarly, the noise attributable to the CP-3 Meter Station is predicted to slightly decrease following the proposed modifications, and for this reason, we do not recommend that a noise survey be performed for this station. To confirm that noise attributable to operation of the modified Columbia Gulf/EGT Meter Stations and MEP Meter Station at full load would not exceed an L<sub>dn</sub> of 55 dBA at any NSA, we recommend that:

- **Enable should file noise surveys with the Secretary no later than 60 days after placing the modified Columbia Gulf/EGT and MEP Meter Stations in service. If a full load condition noise survey is not possible, Enable should provide an interim survey at the maximum possible horsepower and/or operational load and provide the full load survey within six months. If the noise attributable to the operation of all of the equipment at any station under interim or full load conditions exceeds an L<sub>dn</sub> of 55 dBA at any nearby NSAs, Enable should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. Enable should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Based on the noise analyses conducted, mitigation measures proposed during construction, and our recommendations above, we conclude that noise impacts from the construction and operation of the Project would not be significant

## **9. Reliability and Safety**

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

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If inhaled in high concentrations, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5 percent and 15 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite if there is an ignition source present. A flammable concentration within an enclosed space in the presence of an ignition source can explode. Methane is buoyant at atmospheric temperatures and disperses rapidly in air.

### **9.1 Safety Standards**

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

Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adoption and enforcement of federal standards, while Section 5(b) permits a state agency that does not qualify under Section 5(a) to perform certain inspection and monitoring functions. A state may also act as PHMSA's agent to inspect interstate facilities within its boundaries; however, PHMSA is responsible for enforcement actions. Louisiana and Texas are authorized under Section 5(a) to assume all aspects of the safety program for intrastate, but not interstate facilities (PHMSA 2018a).

PHMSA pipeline design standards are published in 49 CFR 190 through 199. Part 192 specifically addresses natural gas pipeline safety issues. Under a Memorandum of Understanding with FERC on Natural Gas Transportation Facilities dated January 15, 1993, PHMSA has the exclusive authority to promulgate federal safety standards in the

transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by PHMSA in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. FERC accepts this certification and does not impose additional safety standards.

If FERC becomes aware of an existing or potential safety problem, there is a provision within the Memorandum of Understanding to promptly alert PHMSA. The Memorandum of Understanding also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under FERC's jurisdiction. FERC also participates as a member of PHMSA's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

## **9.2 Project Design Requirements**

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with PHMSA's 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. PHMSA specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

## **9.3 Pipeline Safety**

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

- Class 1 Location with 10 or fewer buildings intended for human occupancy.
- Class 2 Location with more than 10 but fewer than 46 buildings intended for human occupancy.
- Class 3 Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people at least 5 days a week for 10 weeks in any 12-month period.

Class 4 Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve. For Class 1 locations the length is 10 miles and for Class 2 is 7.5 miles. Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure (MAOP), inspection and testing of welds, and the frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

The majority of the Project is within Class 1 location areas. A small segment (0.5 mile) is within a Class 2 location.<sup>17</sup> Enable would design, test, and operate the pipeline in accordance with 49 CFR 192, Subpart G. Throughout the life of the pipeline, Enable would monitor population changes near the pipeline in accordance with 49 CFR 192, Subpart L (Section 192.609 and 192.611) to determine whether the pipeline requires upgrades to meet changes in population. If a subsequent increase in population density adjacent to the rights-of-way results in a change in class location for the pipeline, Enable would conduct a study to determine whether the new class location segments should have a reduction in MAOP, a new hydrostatic test, or replace the segment with pipe of sufficient grade and wall thickness, if required, in order to comply with PHMSA requirements for the new class location.

The high consequence areas (HCA) may be defined in one of two ways. In the first method, an HCA includes:

- current class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius<sup>18</sup> is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle;<sup>19</sup> or

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<sup>17</sup> Available on the FERC website at <http://www.ferc.gov>, using Accession Number 20200228-5231.

<sup>18</sup> The potential impact radius is calculated as the product of 0.69 and the square root of the maximum allowable operating pressure of the pipeline in psig multiplied by the square of the pipeline diameter in inches.

<sup>19</sup> The potential impact circle is a circle of radius equal to the potential impact radius.

- any area in Class 1 or 2 where the potential impact circle includes an identified site (as described below).

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

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

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

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The USDOT regulations specify the requirements for the integrity management plan at Section 192.911.

Enable has not identified any HCAs near the Project. If Enable identifies future structures and/or HCAs during operation of the Project, it would be required by 49 CFR 192, subpart O to conduct an HCA assessment every seven years, as described in the above requirements.

#### **9.4 Emergencies**

PHMSA prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Each pipeline operator is required under 49 CFR 192.615 to establish an emergency plan that includes procedures to minimize the hazards of a natural gas pipeline emergency. Enable has indicated its intent to develop and implement an Emergency Response Plan in accordance with the regulation, which requires that a plan be prepared prior to commencing operations for a pipeline (49 CFR 192.615). 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 both safe from actual or potential hazards.

PHMSA requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. Enable would also be required to develop an Emergency Response Plan and to establish and maintain liaison appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. As part of PHMSA requirements Enable 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. Enable would provide the appropriate training to local emergency service personnel before the Project is placed in service.

On October 1, 2019, PHMSA issued new regulations modifying and expanding the standard pipeline safety standards under 49 CFR Parts 191 and 192. These regulations, in part, established new standards for in-line inspections; requirements for newly established moderate consequence areas; requirements to consider seismicity and geotechnical risks in its integrity management plan for the pipeline; new regulations on pipeline patrol frequency for HCAs, moderate consequence areas, and grandfathered pipelines; a policy to reconfirm MAOP for certain pipelines; installation of pressure relief for pig launcher/receivers, and reporting requirements for exceedances of MAOP to PHMSA. These regulations went into effect on July 1, 2020.

## 9.5 Pipeline Accident Data

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

- caused a death or personal injury requiring hospitalization; or
- involve property damage of more than \$50,000 (1984 dollars).<sup>20</sup>

During the 20-year period from 1998 through 2017, a total of 1,365 significant incidents were reported on the more than 300,000 total miles of natural gas transmission pipelines nationwide (PHMSA, 2018b, 2019). Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures.

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<sup>20</sup> In 1984 dollars, \$50,000 is approximately \$125,804.22, as of April 2020 (Bureau of Labor Statistics, 2020)

Table B-28 provides a distribution of the causal factors as well as the number of each incident by cause.

The dominant causes of pipeline incidents are pipeline material, weld, or equipment failure, and corrosion constituting 53.2 percent of all significant incidents. The pipelines included in the data set in table B-28 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

<b>Table B-28</b>		
<b>Natural Gas Transmission Pipeline Significant Incidents by Cause (1998–2017)</b>		
<b>Cause</b>	<b>Number of Incidents a/</b>	<b>Percentage</b>
Pipeline material, weld, or equipment failure	403	29.5
Corrosion	324	23.7
Excavation <b>b/</b>	198	14.5
All other causes <b>c/</b>	148	10.8
Natural forces	148	10.8
Outside force <b>d/</b>	90	6.6
Incorrect operation	54	4.0
<b>Total</b>	<b>1,365</b>	<b>100</b>
<p>a All data gathered from PHMSA's Significant Incident files (PHMSA 2018b).</p> <p>b Includes third party damage.</p> <p>c Miscellaneous causes or unknown causes.</p> <p>d Fire, explosion, vehicle damage, previous damage, intentional damage.</p>		

The frequency of significant incidents is strongly dependent on pipeline age. Older pipelines have a higher frequency of corrosion incidents and material failure because corrosion and pipeline stress/strain are time-dependent processes. The use of both an external protective coating and a cathodic protection,<sup>21</sup> required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially-protected pipe.

Outside forces, excavation, and natural forces are the cause of 31.9 percent of significant pipeline incidents. These result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. Older pipelines have a higher frequency of outside forces

<sup>21</sup> Cathodic protection is a technique to reduce corrosion (rust) of the natural gas pipeline through the use of an induced current or a sacrificial anode (like zinc) that corrodes at a faster rate to reduce corrosion of the protected pipeline.

incidents, in part because their location may be less well known and less well marked as compared to newer pipelines. In addition, older pipelines comprise a disproportionate number of smaller-diameter pipelines, which have a greater rate of outside force incidents. Smaller pipelines are more easily crushed or broken by mechanical equipment or earth movement. Table B-29 provides a breakdown of outside force incidents by cause.

<b>Table B-29</b>		
<b>Outside Forces Incidents by Cause (1998–2017) <u>a/</u></b>		
<b>Cause</b>	<b>Number of Incidents</b>	<b>Percent of Outside Force Incidents</b>
Operator excavation damage	26	6.0
Third-party excavation damage	160	36.7
Unspecified excavation damage / previous damage	12	2.8
Earth movement	29	6.7
Heavy rains/floods	78	17.9
Lightning/Temperature/High winds	30	6.9
Natural force damage (unspecified/other)	11	2.5
Electrical arcing from other equipment/facility	1	0.2
Fire/explosion	10	2.3
Fishing or maritime activity/maritime equipment	9	2.1
Intentional damage	1	0.2
Previous mechanical damage	6	1.4
Unspecified/other outside force	11	2.5
Vehicle (not engaged with excavation)	52	11.9
<b>Total</b>	<b>436</b>	-
a Excavation, outside force, and natural force from table B-28 (PHMSA, 2018b).		

Since 1982, operators have been required to participate in “One-Call” public utility systems in populated areas to minimize unauthorized excavation activities near pipelines. The “One-Call” system is a service used by public utilities and some private sector companies (e.g., oil pipelines, cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. Enable participates in the Louisiana and Texas One-Call systems.

## 9.6 Impact on Public Safety

Enable would comply with all applicable PHMSA pipeline safety standards as well as regular monitoring and testing of the pipeline. While pipeline failures are rare, the potential for pipeline systems to rupture and the risk to nearby residents is discussed below.

The service incidents data summarized above in table B-28 include pipeline failures of all magnitudes with widely varying consequences. Table B-30 below presents annual injuries and fatalities that occurred on natural gas transmission pipelines in the 5-year period between 2015 and 2019.

<b>Table B-30</b>		
<b>Injuries and Fatalities – Natural Gas Transmission Pipelines</b>		
<b>Year a/</b>	<b>Number of Fatalities</b>	<b>Number of Injuries</b>
2015	6	16
2016	3	3
2017	3	3
2018	1	7
2019	1	8

a All data gathered from PHMSA Significant Incident files, September 10, 2020 (PHMSA 2020)

The majority of fatalities from pipelines are due to incidents with local distribution pipelines not regulated by FERC. These are natural gas pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, these distribution lines are smaller diameter pipes and/or plastic pipes, which are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to FERC-regulated natural gas transmission pipelines.

The nationwide total of accidental fatalities from various anthropogenic and natural hazards are listed in table B-31 to provide a relative measure of the industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously because individual exposures to hazards are not uniform among all categories. The data, nonetheless, indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to other hazard categories. Furthermore, the fatality rate associated with natural gas distribution lines is much lower than fatalities from natural hazards such as lightning, tornadoes, or floods.

The available data show that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. From 2000 to 2019, there were an average of 70 significant pipeline incidents, 2 injuries, and 3 fatalities per year (PHMSA, 2020).

As the number of significant incidents on over more than 300,000 miles of natural gas transmission lines indicate the risk is low for an incident at any given location, Enable’s construction and operation of the Project would represent a minimal increase in risk to the nearby public, and we conclude that with implementation of the standard safety design criteria, the Project would be constructed and operated safely.

<b>Table B-31</b>	
<b>Nationwide Accidental Deaths</b>	
<b>Type of Accident</b>	<b>Annual No. of Deaths</b>
All accidents <i>a/</i>	4
Poisoning <i>a/</i>	0
Motor vehicle <i>a/</i>	10
Falls <i>a/</i>	16
Injury at work <i>a/</i>	10
Drowning <i>a/</i>	3,709
Fire, smoke inhalation, flames <i>a/</i>	2,812
Floods <i>b/</i>	85
Lightning <i>b/</i>	44
Tornadoes <i>b/</i>	69
Natural gas distribution lines <i>c/</i>	10
Natural gas transmission pipelines <i>c/</i>	2
<i>a</i> Centers for Disease Control and Prevention, Deaths: Final Data for 2017 (CDC, 2019). <i>b</i> NOAA National Weather Service, Office of Climate, Water and Weather Services, 30-year average 1988-2017 (NOAA, 2018). <i>c</i> PHMSA Significant Incident files, 20-year average 2000 – 2019 (PHMSA, 2020).	

## 10. Cumulative Impacts

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and 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. The CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current

aggregate effects of past actions without delving into the historical details of individual past actions (CEQ, 1997).

To evaluate potential cumulative impacts, we considered past (recently completed projects within one year prior to construction of the Project), current, and reasonably foreseeable future projects within the resource-specific geographic scope, as defined below. We attempted to identify major projects, which include infrastructure construction, FERC jurisdictional and non-jurisdictional pipeline projects, commercial and residential developments, and large industrial facilities construction and operation. Actions outside the proposed Project's geographic scope and timeframe were generally not evaluated because their potential to contribute to a cumulative impact would diminish with increasing distance and time from the Project.

Our cumulative effects analysis focuses on potential impacts from the Project on resource areas or issues where the incremental contribution could result in cumulative impacts when added to the potential impacts of other actions. To 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 also potentially affected by the Project;
- cause this impact within all, or part of, the Project area defined by the resource specific geographic scope; and
- cause this impact within all, or part of, the time span of the Project's estimated impacts.

Present construction projects in the Project area are related to ongoing energy development such as new oil and gas wells and associated infrastructure, pipelines, and liquefied natural gas facilities. There are some abutting projects that could have temporal overlap. As previously described in this EA, constructing and operating the Project would temporarily and permanently affect the environment. However, with the exceptions noted below, we concluded that most of the Project-related impacts would be contained within or adjacent to the construction workspaces, existing pipeline and roadway corridors, or utility easements.

A basic assumption of the cumulative impacts analysis is that if there are no Project-related impacts for a particular resource, there would be no cumulative impacts for that resource. Table B-32 summarizes the resource-specific geographic scopes considered in this analysis and the justification for each. Based on the analysis presented in this EA, we have identified projects that could have both temporal overlap and occur within the geographic scopes of the Project resources. We have eliminated from further discussion under cumulative impacts the following resource areas for which the Project does not have impacts: cultural resources and socioeconomics (excluding traffic).

**Table B-32**

**Resource-Specific Geographic Scope for Determining Cumulative Impacts of the Project**

<b>Resource</b>	<b>Geographic Scope</b>	<b>Rationale for Geographic Scope</b>	<b>Temporal Scope</b>
Geology and Soils	Area of disturbance of the Project and other activities that would be overlapping or abutting each other; the geographic scope for mining activities was set at 0.5 mile	<p>Project impacts on geology and soils would be highly localized and limited to the immediate areas of disturbance during active construction. Cumulative impacts on geology and soils would only occur if construction of other projects were geographically overlapping or abutting Enable's Project.</p> <p>Impact consideration for mining or other resource extraction activities was extended to a 0.5-mile radius scope from the Project construction limits.</p>	Construction through revegetation
Groundwater, Surface Water and Wetlands	Watershed boundary (HUC 12)	Watersheds are well-defined, published natural boundaries for surface water flow. The geographic scope used to assess cumulative impacts on waterbodies is the HUC-12 watershed crossed by the Project. This would be the reasonable scope in which cumulative impacts could occur on surface waterbodies.	Construction through revegetation
Wildlife and Vegetation	Watershed boundary (HUC 12)	The watershed level provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecologic characteristics in the Project area. Wildlife habitat and vegetation in the Project area are generally consistent with land use cover type. Because the Project would require a land use change in a relatively small area, cumulative impacts are expected to be localized.	Construction through revegetation except areas of permanent conversion of vegetation
Land Use and Visual	1 mile and existing visual access points	Impacts on land uses and aesthetics generally occur within and adjacent to construction workspaces. Project impacts on general land uses would be restricted to the construction workspaces. Land use in the Project area is mainly forested, agricultural, and open land with flat topography. Therefore, we considered a 1-mile distance from the projects for the geographic scope because this would cover any land use and visual impacts that could be incremental to the Project.	Limited to construction except where there is a permanent land use and visual landscape conversion
Traffic	Parish/County	Due to the Project's limited scope and the short construction duration, the geographic scope for assessing contributions to cumulative impacts on traffic was evaluated on a parish/county-wide basis.	Limited to construction

**Table B-32**

**Resource-Specific Geographic Scope for Determining Cumulative Impacts of the Project**

<b>Resource</b>	<b>Geographic Scope</b>	<b>Rationale for Geographic Scope</b>	<b>Temporal Scope</b>
Air Quality	0.25 mile - construction	Air emissions during construction would be limited to vehicle and construction equipment emissions and dust and would be localized to the Projects' construction sites.	Construction and operation
Noise	0.5 mile from HDD sites, 0.25 mile from all other construction noise  1.0 mile - operation	Construction and operation noise impacts are highly localized and attenuate quickly as the distance from the noise source increases. Areas in the immediate proximity of construction activities would have the potential to be affected by construction noise. NSAs within 0.5 mile of an HDD could be cumulatively affected if other projects had a concurrent impact on the NSA.  Noise during operation could result in cumulative noise impacts on NSAs within 1 mile from the Project's permanent aboveground facilities.	Construction and operation

Therefore, the resource areas for which we have determined the Project could contribute to cumulative impacts are:

- geology and soils;
- groundwater;
- surface water and wetlands;
- vegetation;
- wildlife;
- land use and visual;
- traffic;
- construction air quality; and
- noise.

The actions considered in our cumulative impact analysis are included based on the likelihood of their impacts coinciding with the Project, meaning the other actions have current or ongoing impacts or are “reasonably foreseeable.” The actions we considered are those that could affect similar resources during the same timeframe as the Project and in the same geographic scope. Table B-33 summarizes projects identified as possible contributors to cumulative impacts. See figures 3 and 4 depicting past, present, and reasonably foreseeable actions within the cumulative impact areas for the Project.

### **10.1 Potential Cumulative Impacts by Resource**

The following sections address the potential cumulative impacts of the Project and the other projects identified within the cumulative geographic scope area on specific environmental resources. The projects that are within the impact area for potential cumulative effects can be quantified. Table B-32 summarizes the resource-specific geographic boundaries considered in this analysis, and the justification for each. Actions outside of these boundaries were not evaluated because their potential to contribute to cumulative impacts diminishes with increasing distance from the Project.

**Table B-33**

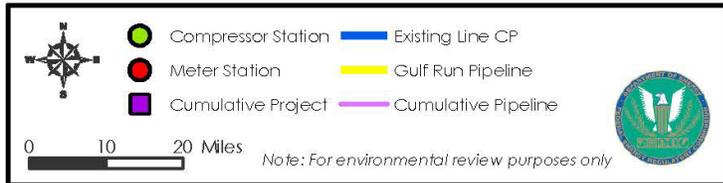
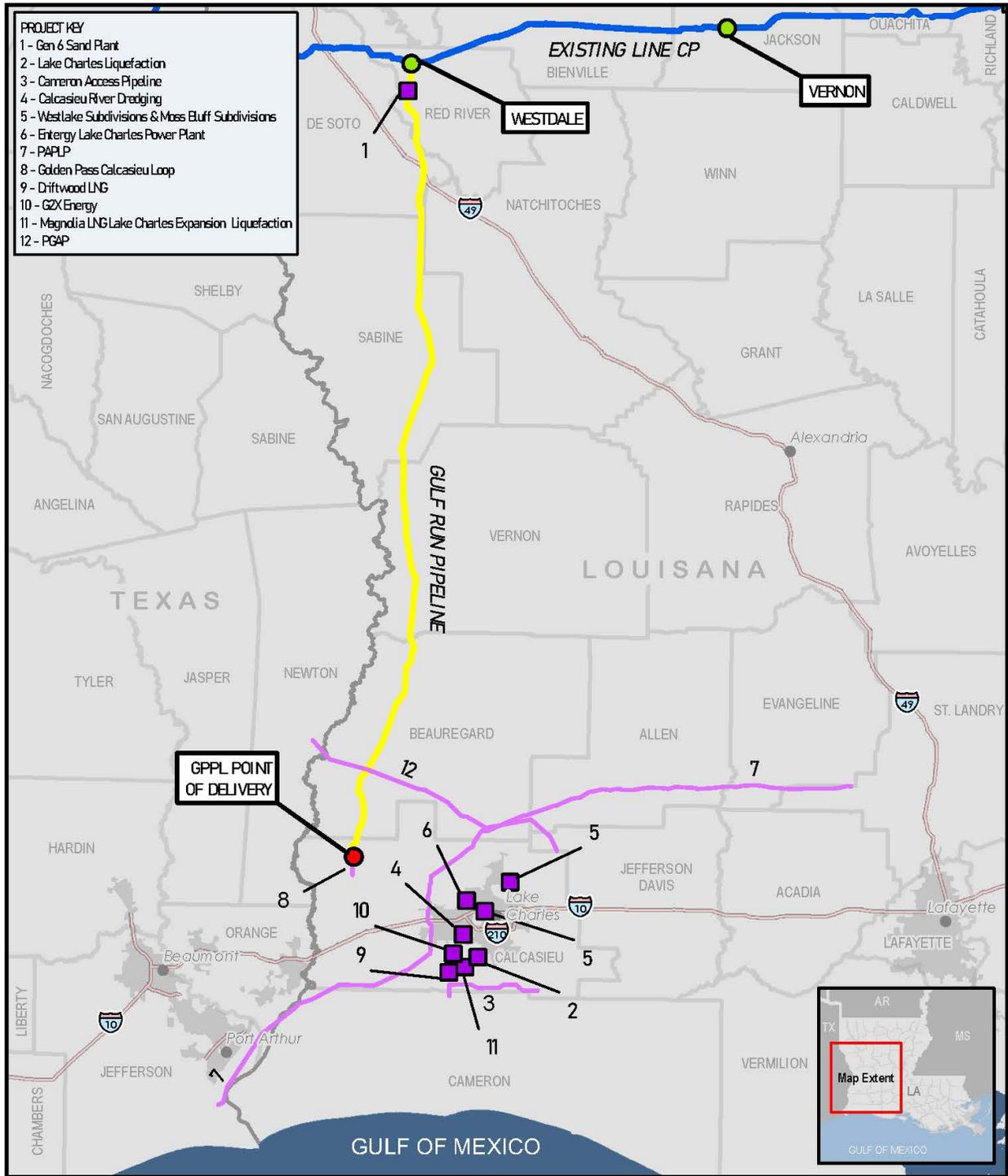
**Past Actions, Present Actions, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Project**

<b>Project Name (Identification Number)</b>	<b>Parishes in Common with Project</b>	<b>Distance from Nearest Proposed Project Facility</b>	<b>Status/Schedule</b>	<b>Resources Assessed for Cumulative Impacts</b>
<b>Past/Present Projects</b>				
Gen6 Proppants, LLC Sand Mine (#1)	Red River	Adjacent to Pipeline MPs 4.7 to 5.5	Under construction.	Surface Water, Wetlands, Wildlife, Vegetation, Geology and Soils, Land Use, Visual, Construction Air Quality, and Construction Noise
Cameron Access Project Natural Gas Pipeline (#3)	Calcasieu	Approximately 26 miles from southern terminus of Pipeline	Construction completed in 2018	Wetlands and Vegetation
Calcasieu River Dredging (#4)	Calcasieu	21 miles from southern terminus of Pipeline	Biennial	Surface Water, Wetlands, Groundwater, and Traffic
Residential Developments (#5)	Calcasieu	22 miles from southern terminus of Pipeline	Planning, construction, existing.	Surface Water, Wetlands, Groundwater, Vegetation, and Traffic
Entergy Lake Charles Power Plant (#6)	Calcasieu	19 miles from southern terminus of Pipeline	Under construction	Wetlands and Vegetation
<b>Reasonably Foreseeable Future Actions</b>				
<b>Projects in Pipeline Cumulative Impact Assessment Area</b>				
Port Arthur Pipeline Louisiana Connector (#7)	Calcasieu, Beauregard	13 miles from southern terminus of Pipeline	Construction start anticipated second quarter 2021.	Surface Water, Wetlands, Groundwater, Vegetation, and Traffic
Golden Pass Calcasieu Loop Pipeline (#8)	Calcasieu	Beginning of Calcasieu Loop is at the site of the GPPL Meter Station.	Not yet determined by Golden Pass.	Surface Water, Wetlands, Groundwater, Wildlife, Vegetation, Traffic, Geology and Soils, Land Use, Visual, Construction Air Quality, and Construction and Operation Noise

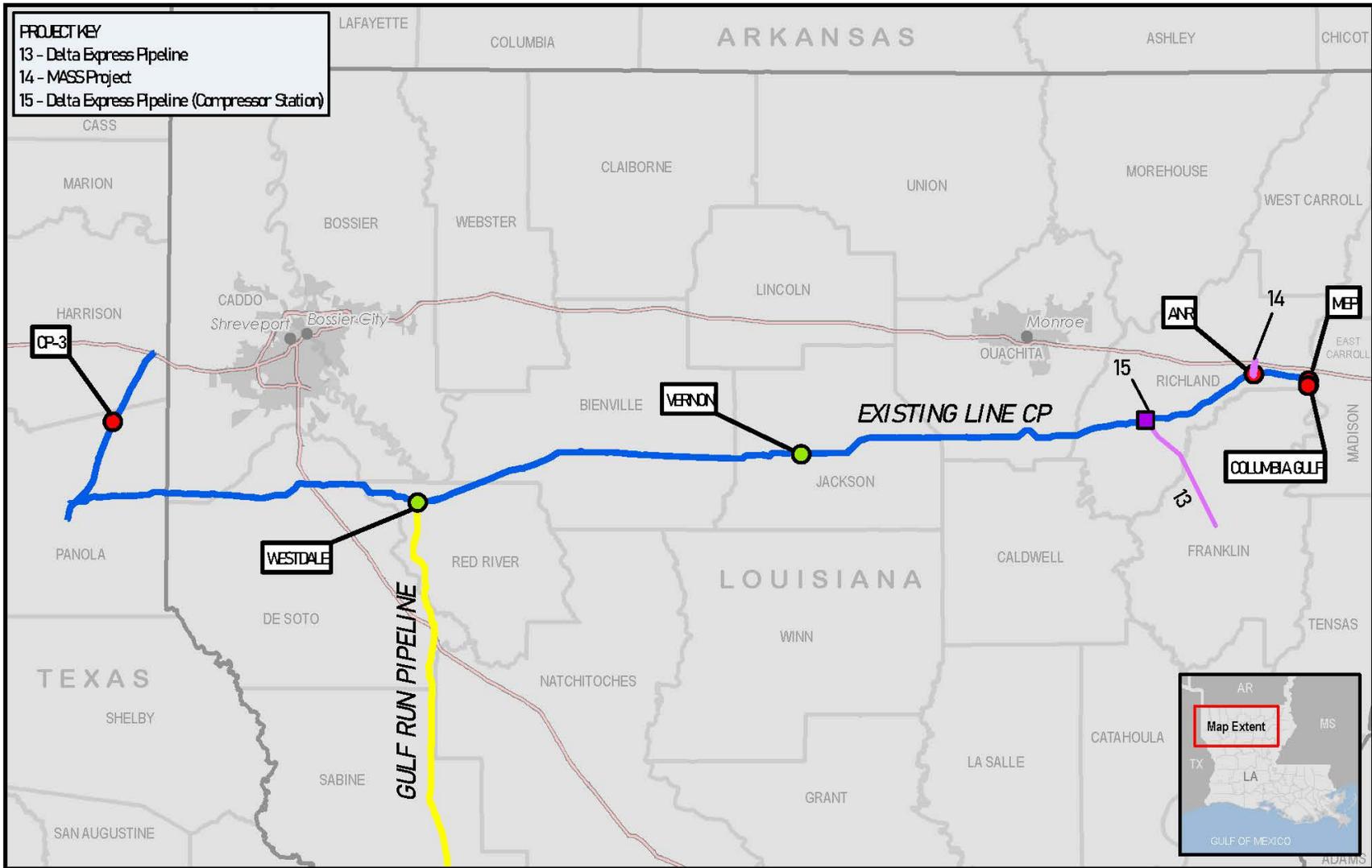
**Table B-33**

**Past Actions, Present Actions, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Project**

<b>Project Name (Identification Number)</b>	<b>Parishes in Common with Project</b>	<b>Distance from Nearest Proposed Project Facility</b>	<b>Status/Schedule</b>	<b>Resources Assessed for Cumulative Impacts</b>
Driftwood LNG Liquefaction Export Facility (#9)	Calcasieu	24 miles from southern terminus of Pipeline	Permitted. Construction to begin in 2020. Operation 2023	Surface Water, Wetlands, Groundwater, Wildlife, Vegetation, and Traffic
G2X Energy Natural Gas to Methanol Plant (#10)	Calcasieu	24 miles from southern terminus of Pipeline	Permitted. Construction delayed. Schedule unknown.	Surface Water, Wetlands, Groundwater, and Wildlife
Lake Charles LNG Export Facility (Energy Transfer LP and Shell US LNG, LLC) (#2)	Calcasieu, Beauregard	25 miles from southern terminus of Pipeline	Permitted. Construction delayed. Schedule unknown.	Surface Water, Wetlands, Groundwater, Wildlife, Vegetation, and Traffic
Magnolia LNG Liquefaction Facility (#11)	Calcasieu	25 miles from southern terminus of Pipeline	Permitted. Construction schedule unknown.	Wetlands, Groundwater, Wildlife, Vegetation, and Traffic
Permian Global Access Pipeline (#12)	Beauregard	Intersecting	Planning phase. Construction planned in 2022.	Surface Water, Wetlands, Groundwater, Wildlife, Vegetation, Traffic, Geology and Soils, Land Use, Visual, Construction Air Quality, and Construction Noise
<b>Projects in Line CP Modifications Cumulative Impact Assessment Area</b>				
Delta Express Pipeline and Compressor Station (#13/15)	Richland	Pipeline origin 15.3 miles southwest of ANR Meter Station	FERC pre-filing. Construction planned in 2022.	Construction Air Quality
MASS Project (#14)	Richland	0.4-mile northeast of ANR Meter Station	Construction planned in 2020/2021.	Construction Air Quality



**Figure 3:**  
**Past, Present, and Reasonably Foreseeable Actions Within the Cumulative Impact Areas for the Gulf Run Pipeline**  
 Date: 8/25/2020 Source: ESRI




 Compressor Station
  Existing Line CP
  Cumulative Projects  
 Meter Station
  Gulf Run Pipeline
  Cumulative Pipeline

0 10 20 Miles *Note: For environmental review purposes only*



**Figure 4:**  
 Past, Present, and Reasonably  
 Foreseeable Actions Within the Cumulative  
 Impact Areas for the Line CP Modifications

Date: 8/25/2020 Source: ESRI

### **10.1.1 Geology and Soils**

Project impacts on geology and soils would be highly localized to the Project footprint during active construction and may extend for 1 to 2 years following construction until revegetation is successful. Therefore, the geographic scope for geology and soils is the Project footprint and immediately adjacent areas. Cumulative impacts on geology and soils would only occur if other geographically overlapping or abutting projects were constructed at the same time as the Project. For mining and related resources, the geographic scope for cumulative impact analysis includes the area within 0.5 mile of the Project to encompass potential oil and gas well development activities.

The Project's localized impact on geology and soils would result from shallow excavations and facility foundations within the Project work area. The past, present, and reasonably foreseeable future actions located within this 0.5-mile buffer include the Permian Global Access Pipeline, Gen6 Proppants Sand Mine, and Golden Pass Calcasieu Loop which would intersect the workspace of the proposed Project. The Permian Global Access Pipeline is currently in the planning phase with an estimated construction period unspecified in 2022, the Gen6 Proppants Sand Mine is currently under construction, and the Golden Pass Calcasieu Loop schedule is not specified. It is possible that the construction of these actions may occur at the same time. To further reduce impact potential, temporary erosion and sediment controls would be installed after initial disturbance, in accordance with the FERC Plan and Procedures. Therefore, the impacts from these projects would be localized and temporary. We conclude that construction and operation of the Project would not significantly contribute to cumulative impacts on geology and soils when considered in conjunction with other past, present, and reasonably foreseeable projects in the geographic scope.

### **10.1.2 Groundwater**

The geographic scope used to assess cumulative impacts on groundwater includes the HUC-12 watersheds crossed by the Project. Several other projects with potentially concurrent construction periods that could affect groundwater were identified (see table B-33). For this analysis, we assumed that all these projects would comply with state and federal permits in order to minimize impacts on groundwater. As discussed in section B.3.1, the Chicot aquifer underlying the southern portion of the Gulf Run Pipeline route is the only SSA identified in the Gulf Run Pipeline area. No SSAs were identified within the Line CP Modifications Project area. An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up properly. Spill-related impacts would be minimized by the implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification

procedure, ensuring equipment is in good operating condition and regularly inspecting equipment.

Groundwater could be encountered during trenching; however, Enable would conduct trench dewatering by implementing the measures in the FERC Plan and Procedures. Construction associated with the Line CP Modifications may result in minor, temporary increases of impervious area; however, these are unlikely to affect infiltration rates beyond facility limits. The Project's impacts on groundwater resources would be temporary and less than significant due to the limited vertical extent of excavations and other ground disturbances and the relatively short duration of construction. Additionally, Enable's commitment to implement the BMPs in the FERC Plan and Procedures, HDD Contingency Plan, and the Project-specific SPCC Plan, along with the other projects' adherence to federal and state permit conditions, would mitigate any potential impacts on groundwater resources. We therefore conclude that construction and operation of the Project would not significantly contribute to cumulative impacts on groundwater when considered in conjunction with other past, present, and reasonably foreseeable projects in the geographic scope.

### **10.1.3 Surface Water and Wetlands**

For the analysis of cumulative impacts on surface water and wetlands, we identified projects occurring within the HUC-12 watersheds crossed by the Project. The Project would cross a total of 283 waterbodies, 17 of which would be crossed by HDD; and one major waterbody, Crooked Bayou, would be crossed by a dry-ditch crossing method. The remaining 265 waterbodies are all minor or intermediate crossings, which would be completed within 24 hours. Water uptake and discharge would be conducted in accordance with the FERC Procedures. As a result, we do not anticipate significant impacts on surface waters resulting from the withdrawal or discharge of water use by the Project.

Construction of the proposed Project would primarily result in short-term and temporary impacts on wetlands. These impacts, such as increased turbidity, would return to baseline conditions over a period of days or weeks following construction. Construction impacts on wetlands range from short-term to permanent depending on the type of wetlands impacted and the type of facility being constructed. Emergent wetlands would revert to similar preconstruction community and functionality within about one to three years; forested wetlands could take 10 to 20 or more years. Enable would minimize temporary and permanent impacts on surface water and wetlands by implementing specific wetland and waterbody construction and mitigation measures, including temporary and permanent erosion controls contained in the FERC Procedures, SPCC Plan, and HDD Contingency Plan. Enable would also comply with its applicable federal and state permitting requirements.

Most of the projects listed in table B-33 would result in temporary impacts on surface water and wetlands during construction, contributing to cumulative impacts. All projects would be required to comply with state and federal permits to minimize impacts of water resources and wetlands. The USACE issues permits under Sections 10/404 of the CWA for construction in jurisdictional Waters of the United States, including wetlands, and requires mitigation or compensation to ensure there is no net loss of wetlands or wetland functions. Based on the minimal amount of wetland impact overall in the context of existing wetlands in the area and the requirement for mitigation for impacts, we conclude that the Project would not significantly contribute to cumulative impacts on surface waters or wetlands.

#### **10.1.4 Vegetation**

The HUC-12 watershed was used as the geographic scope for impacts on vegetation. Cumulative impacts on vegetation is primarily due to the loss of habitat from clearing and grading. The potential for cumulative impact on vegetation would be reduced due to approximately 38 percent of the Gulf Run Pipeline right-of-way overlapping existing utility rights-of-way. The proposed activities associated with the Line CP Modifications involve construction within the fence line of existing facilities, which minimizes the effects of vegetation clearing, particularly forest clearing and fragmentation.

Vegetation clearing from construction of the applicable projects listed in table B-33 could result in changes in vegetation communities over the short and long term. Except for the permanent right-of-way in wooded areas, vegetation is expected to return to preconstruction conditions after construction. Of the actions located within the geographic scope of the Project, the Gen6 Proppants Sand Mine is under construction adjacent to the Gulf Run Pipeline right-of-way near MP 5.0 on a site that is predominantly agricultural and open land. The ground disturbance and vegetation clearing required for the pipeline near this activity is negligible compared to that of the sand mine and would not result in a significant cumulative impact. The Permian Global Access Pipeline route crosses the proposed Gulf Run Pipeline right-of-way near MP 125.0 in pine plantation. Due to the large number of acres in this watershed that is covered by pine plantation, the anticipated acreage of clearing required for these two pipeline rights-of-way would be negligible. The Golden Pass Calcasieu Loop would extend south from the southern terminus of the Project through mostly agricultural and open which would return to preconstruction condition after construction. The remainder of the activities are at least 13 miles east of the southern terminus of the Gulf Run Pipeline right-of-way near Lake Charles, Louisiana, and are not expected to contribute to cumulative impact on vegetation.

The other projects identified in the geographic scope would be required to implement mitigation measures to minimize the potential for erosion, revegetate

temporarily disturbed areas, and control the spread of noxious weeds. Vegetation control in the vicinity of waterbodies would be conducted using mechanical means or through selective application of EPA approved methods, as part of Enable's IVM program. To prevent further spread of noxious weeds that may occur during the Project, Enable would implement BMPs and adhere to the erosion control measures in FERC's Plan and Procedures during construction and operation. As a result, the Project contribution to cumulative impacts on vegetation would be less than significant when considered in conjunction with other past, present, and reasonably foreseeable projects.

### **10.1.5 Wildlife**

Cumulative impacts on wildlife resources could extend beyond of the Project workspaces but would likely be contained to the HUC-12 watershed. Therefore, past, present, and reasonably foreseeable actions within the HUC-12 watersheds are within the geographic scope for cumulative impacts for wildlife, and as previously mentioned are considered in this cumulative impact analysis. As a result of Project construction, wildlife may be directly impacted or may temporarily be displaced to nearby suitable habitat. Where construction schedules of other activities in the vicinity of the Project overlap, increased noise, lighting, and human activity could also disturb wildlife in the area.

The potential for cumulative impact on wildlife in general is related to loss of habitat; therefore, it is like that described for vegetation. The Gen6 Proppants Sand Mine is under construction in an area that is predominantly agricultural and open land. The vegetation clearing required for the pipeline adjacent to the sand mine would be temporary and would not result in a significant cumulative impact. The Permian Global Access Pipeline route crosses the proposed Gulf Run Pipeline right-of-way in pine plantation. Due to the large number of acres of this homogenous habitat in this watershed, the anticipated clearing required for these two pipeline rights-of-way would be negligible. The Golden Pass Calcasieu Loop would extend south from the southern terminus of the Project through mostly agricultural and open which would return to preconstruction condition after construction. The remainder of the activities are at least 13 miles east of the southern terminus of the Gulf Run Pipeline right-of-way and are not expected to contribute to cumulative impact on wildlife.

As discussed in section 4.4, the Project is not expected to significantly impact wildlife, including protected species, and Enable has committed to continue to work with agencies to avoid and minimize impacts on federally or state-listed species. If federal or state listed threatened and endangered species might be affected by other activities in this geographic scope, those impacts would be addressed in permits or clearances issued for each project and appropriate mitigation would be implemented as needed. As a result, we conclude that the Project would not result in a significant cumulative impact on wildlife.

### **10.1.5 Land Use and Visual Resources**

The defined geographic scope for cumulative impacts on land use and visual resources is one mile from the Project facilities. The impacts from the Project on general land uses would be restricted to the construction workspaces and the immediate surrounding vicinity. Land use in the Project area is mainly forested, agricultural, and open land with flat topography. Long-term visual effects during Project operation could result from clearing a new right-of-way through forested areas, the removal of large individual trees that have intrinsic aesthetic value, or the removal or alteration of vegetation that may currently provide a visual barrier.

Of the projects listed in table B-33, land use near the Gen6 Proppants Sand Mine would be permanently altered, while the land use from the Gulf Run Pipeline and Line CP Modifications would be temporary and restored to its prior use. Impacts from the Golden Pass Calcasieu Loop would temporarily disturb approximately 3 acres of land within 0.25 mile of the GPPL Meter Station. The disturbed 3 acres of land would be restored to its prior use following construction. Impacts from the Permian Global Access Pipeline would intersect with the Gulf Run Pipeline at MP 125.0. Cumulative impacts from these projects are expected to be negligible. As described above, the Project area is mainly forested, agricultural, and open land with flat topography and minor changes in land use are expected due to the Project. There are no existing visual access points or known sensitive visual resource viewing areas in the Project area. Therefore, we conclude that the Project's impacts would not result in significant cumulative impacts on land use or visual resources.

### **10.1.6 Traffic**

The geographic scope of potential impact from traffic was considered to include the parish/county affected by the Project because that is where most workers would be expected to commute during construction and operation of the Project. Construction activities would result in temporary and minor effects on local transportation infrastructure and traffic flow, including disruptions from increased transportation of construction equipment, materials, and workers; disruptions from construction of pipeline facilities at or across existing roads; and damage to local roads caused by heavy machinery and materials. Enable would acquire all necessary permits for construction-related impacts on roadways and would repair all roads to preconstruction conditions or better after construction activities have been completed.

Several other projects listed in table B-33 could have concurrent construction periods, which could contribute to cumulative impacts on local traffic. Of the activities listed, only the construction schedule for the Port Arthur Pipeline Connector is known to overlap with anticipated construction schedule for the Gulf Run Pipeline. The remaining

projects in table B-33 either do not overlap the construction schedule, or their schedules are uncertain.

Although the Port Arthur Pipeline Connector would be constructed in the same parish as the Project, it would be 13 miles from southern terminus of the Gulf Run Pipeline. As a result, we anticipate any additional impacts on traffic from construction of these two projects would be negligible. We conclude that the Project would not result in a significant cumulative impact on traffic.

### **10.1.7 Air Quality**

Construction of the Project would result in short-term, intermittent, and temporary impacts on air quality in the vicinity of the Project area. Most of the projects listed in table B-33 would be expected to conduct activities that would generate emissions of air contaminants and fugitive dust during construction; however, they would not affect long-term air quality in the region. Although construction of the proposed Project may take place concurrently with construction of multiple projects listed in table B-33, we expect that cumulative impacts within the 0.25 mile geographic scope defined in table B-32 would be short-term, temporary, and minor. Therefore, the Project's construction emissions are not expected to result in significant cumulative impacts on air quality.

### **10.1.8 Noise**

As discussed in section B.8.3, noise associated with construction of the Project would be limited to the immediate vicinity of construction activities. The geographic scope for assessing potential cumulative impacts on noise from construction activities was determined to be 0.25 mile from general construction areas and 0.5 mile from HDD workspaces.

Noise related to construction of the Gulf Run Pipeline would be temporary and transient, as construction proceeds along the pipeline right-of-way. Activities associated with construction at compressor and meter stations, as well as for HDD operations, would be sustained for a longer period of time at the localized construction site. Overall, construction of the proposed Project may produce a cumulative noise impact when combined with operational activities associated with the sand mine identified in table B-33; however, we expect that any cumulative impact would be temporary and minor.

Construction of the Project may also occur at similar time as construction of the Permian Global Access Pipeline and other construction activities identified in table B-33. The Permian Global pipeline would be regulated by the same agencies with similar permit conditions and mitigation measures as the Gulf Run Pipeline and Line CP Modifications. If construction of the Project occurs at the same time as the Permian Global Access Pipeline or any other activities identified in table B-33, cumulative

impacts on noise may result; however, such impacts would be temporary and less than significant.

Operation of the modifications to the Westdale Compressor Station would result in potential noise increases; however, the increase in sound level at the closest NSAs would remain less than 55 dBA  $L_{dn}$  or not perceptible. None of the projects listed in table B-33 that would generate noise during operation overlap within the 1-mile geographic scope for operational noise related to the Westdale Compressor Station. Therefore, we conclude that the Project would not contribute to cumulative noise impacts with other proposed operational noise sources.

## **10.2 Conclusions on Cumulative Impacts**

Our cumulative impacts review evaluates the incremental effects of the proposed Project and multiple similar activities in the same region at the same time, or in a similar timeframe, to determine whether the additive effect of those projects would result in significant impacts on the regional environment. The Project and most other activities in the area would have or have had minimal cumulative impacts because the other projects are predominately outside the cumulative impact area. The projects in the area are likely to occur in developed spaces, and implementation of BMPs and proposed mitigation plans would minimize environmental impacts. When the impacts of the Project are added to the impacts from the other identified projects, the cumulative impacts would be minimal. As a result, no significant cumulative impacts are anticipated when combining the Project with other identified projects.

## C. ALTERNATIVES

In accordance with NEPA and Commission policy, we considered and/or evaluated alternatives to the proposed action, including the no-action alternative, system alternatives, aboveground facility site alternatives, and route alternatives. Each alternative evaluated was assessed according to whether it:

- meets the objective of the proposed project;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear that it could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison, and to normalize the comparison factors, we used both desktop sources of information (e.g., publicly available data GIS data, aerial imagery) and site-specific information (e.g., Enable's field survey results or detailed designs). Our environmental analysis and this evaluation consider quantitative data (e.g., acreage) and use common comparative factors such as total length, amount of co-location, and land requirements.

### 1. No-Action Alternative

Under the no-action alternative, Enable would not construct or operate the Project, and none of the impacts associated with the Project would occur. The no-action alternative would not meet the objective of the Project, i.e., to provide firm transportation of up to 1,650,000 Dth/d of natural gas from various receipt points along the existing Line CP pipeline to a delivery point near Starks, Louisiana. If the purpose and need of the Project is not met under the no-action alternative, other projects and activities may be needed to meet the market energy needs, and these projects could result in their own environmental impacts that could be equal to or greater than the proposed action and might not meet the Project's objectives. Therefore, we conclude that the no-action alternative would not provide a significant environmental advantage over the Project and would not meet the Project's objectives.

### 2. System Alternatives

Implementation of a system alternative would make it unnecessary to construct all or part of the Project, although some modifications or additions to existing or proposed pipeline systems may be required. The purpose of identifying and evaluating system alternatives is to determine whether the environmental impacts associated with the construction and operation of the Project could be avoided or reduced by using existing, modified, or other proposed facilities rather than constructing new facilities, while still meeting the objectives of the Project.

The increased oil and gas production and substantial demand, particularly in the Gulf Coast states, is largely due to anticipated export of LNG, which needs additional pipeline infrastructure facilities to transport the newly available natural gas out of the Permian basin. The existing transmission pipeline systems in the region of the Project would require additional construction of facilities to serve the Project's customers. The modification or expansion of another existing or new pipeline system that does not connect at or near the specified receipt and delivery points would likely require construction of pipeline and aboveground facilities with similar or greater environmental impact than Enable's proposed Project.

Based on the information available, we considered other natural gas transportation options that included capacity expansions on existing interstate and intrastate pipelines, a variety of new-build pipeline options, and combinations of both. The throughput capacity of the following existing natural gas systems in the Project area are: the Golden Pass Pipeline, Texoma Pipeline, Florida Gas Transmission Company, Tennessee Gas Pipeline Company, Texas Eastern Transmission Company, Transcontinental Gas Pipeline Company, and Natural Gas Pipeline Company of America; none of these would accomplish the Project's purpose without major system expansions. If any of the identified existing pipelines were modified to meet the Project's purpose and need, it would likely result in environmental impacts equal to or greater than those associated with the proposed Project. In addition, there are no other currently proposed systems in the Project area. Thus, we conclude that existing, modified, or proposed pipeline systems could not meet the Project purpose with less environmental impact, and these alternative systems are not further analyzed.

### **3. Route Alternatives and Route Variations**

Route alternatives include those that deviate from the proposed route for a significant distance and provide a substantially different pathway from the source area to the delivery area. A major route alternative would involve a new pipeline route that would still interconnect with the same existing pipeline systems, potentially at different locations. Minor route variations typically involve minor shifts in the pipeline alignment to avoid a site-specific resource issue, or to address landowner concerns, and are generally smaller in scale and shorter than major route alternatives.

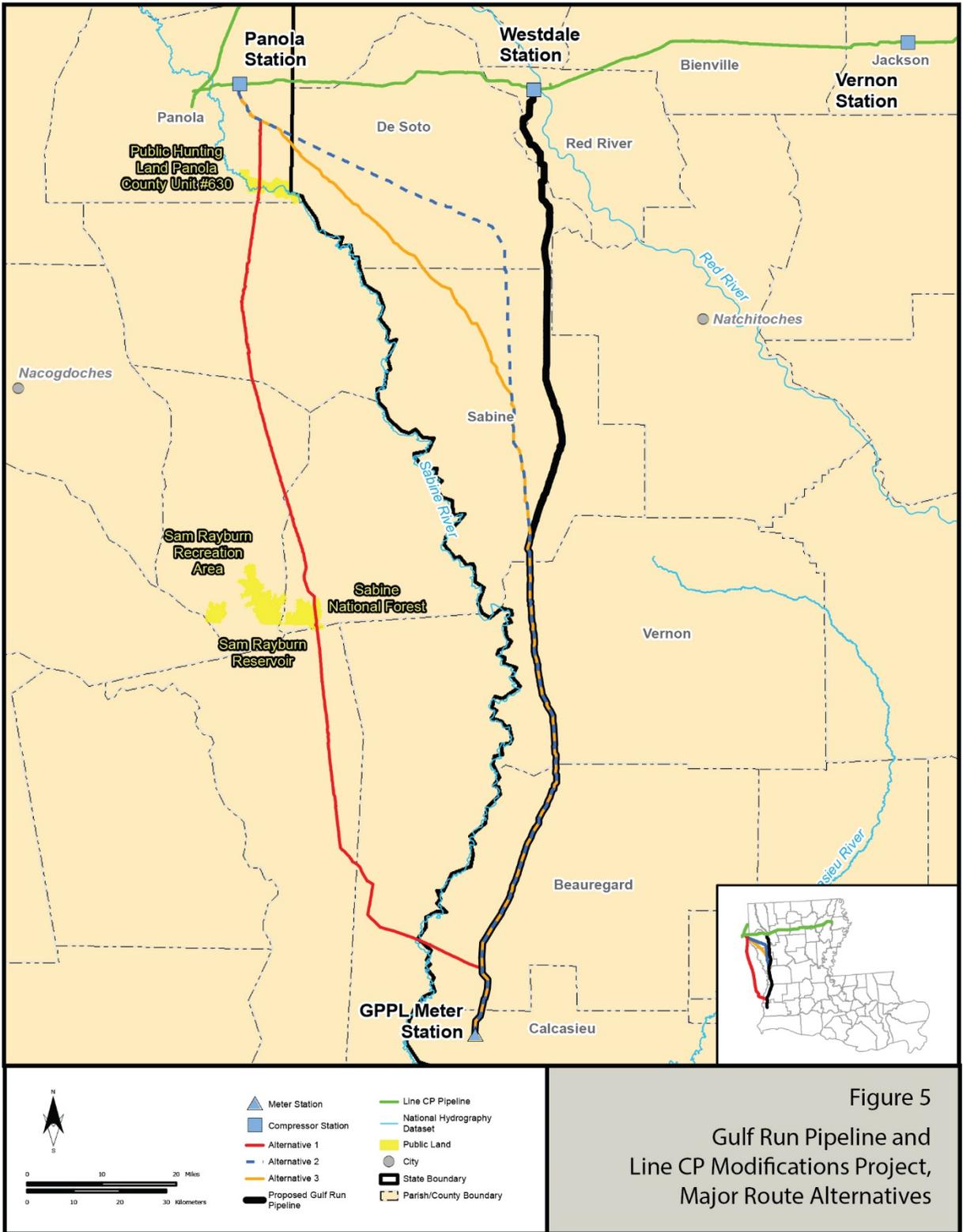
As discussed in detail in sections B.3.2 and B.3.3 of this EA, Enable has designed the Project to avoid and minimize direct and secondary adverse impacts on the waters of the United States to the maximum extent practicable by co-locating approximately 63 miles (47 percent) of the proposed route with existing rights-of-way, using HDDs, reducing the construction footprint to 75 feet wide in wetlands, and maximizing the use of existing access roads. Enable also committed to construct, restore, and operate the Project in accordance with the BMPs contained in the FERC Plan and Procedures and any stipulations attached to CWA permits from the USACE and LDEQ.

During the pre-filing process, Enable made multiple modifications and line shifts to the originally considered or planned pipeline route and aboveground components to address agency and landowner concerns, as well as to avoid or minimize impacts on sensitive environmental resources such as wetlands, cultural resource sites, and sensitive species habitat, and infrastructure. These changes were subsequently adopted by Enable and made part of the proposed route filed in its FERC application and supplemental filings. As such, these are considered part of the proposed Project and included in our environmental evaluation of the Project in section B of this EA.

Major route alternatives were identified and evaluated to determine whether they would be preferable to the proposed Pipeline route. We considered three major route alternatives (Alternatives 1, 2, and 3) for the Gulf Run Pipeline (see figure 5). The comparison of the various alternatives was conducted using publicly available data to provide an accurate evaluation between each alternative. The results of the evaluation indicate that in comparison to the proposed route all major route alternatives would be longer, disturb more land, cross more waterbodies, impact more acres of wetlands, be within 100 feet of more residences, and cross the Sabine River and its associated extensive forested floodplain wetlands (see table C-1). Therefore, the proposed route would result in the least environmental impacts of any of the practicable alternatives.

In addition to the comparative information presented in table C-1, Route Alternative 1, which is the alternative nearest in route length to the proposed route, would result in greater impacts on federal and public lands than the proposed route. Specifically, it would cross over 3 miles of the Sabine National Forest, 2 miles of the Panola County Public Hunting Lands, and a small portion of the Sam Rayburn Recreation Area and Sam Rayburn Reservoir. Finally, Route Alternative 1 would cross 4.8 miles of sensitive species habitats and vegetation communities that would not be crossed by the proposed route or the remaining route alternatives.

The major route alternatives would require additional compression, resulting in greater environmental impacts for both construction and operation of the Gulf Run Pipeline. Due to the shorter overall length, fewer environmental impacts, and economic evaluations considered during the initial planning stages of the Project, we have determined that the proposed route is the preferred route for the Project.



**Table C-1**  
**Comparison of Major Route Alternatives for the Pipeline**

<b>Evaluation Criteria</b>	<b>Unit</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Proposed Route <u>a/</u></b>
Route length	miles	151	161	154	134
Land Affected During Construction (pipeline right-of-way) <u>b/</u>	acres	1,825	1,949	1,871	1,571
Land Affected During Operation (pipeline right-of-way) <u>b/</u>	acres	912	974	935	781
Length adjacent or parallel to existing easements or other maintained corridors	miles	4.4	62.4	26.9	50
	percent	3	39	17	38
Commercial/Industrial land disturbed <u>b/</u>	acres	75	45	44	12
Upland Forest disturbed <u>b/</u>	acres	843	1,023	1,044	837
Agricultural land disturbed <u>b/</u>	acres	129	86	72	289
Railroads crossed	number	8	6	6	3
Residences within 100 feet	number	21	9	3	2
Wetland crossings <u>b/</u>	number/ acres	70/78	85/55	84/51	87/41
Waterbody crossings <u>c/</u>	number	248	252	268	200

a Impacts were calculated using publicly available data from USGS topographic maps, National Wetland Inventory maps, and interpretation of aerial photography to allow for an accurate of comparison of the route alternatives. Therefore, numbers shown for the proposed route differ from those reported in section B of this EA.

b Acreages for the alternative routes were calculated using a nominal 100-foot construction right-of-way width and a 50-foot permanent right-of-way width. Construction right-of-way width in wetlands is 75 feet.

c Total number of crossings. Some waterbodies may be crossed more than once.

#### **4. Aboveground Facility Site Alternatives**

The Gulf Run Pipeline and Line CP Modifications both include construction of new meter station facilities. The locations of those facilities are constrained by the location of existing pipeline systems. As a result, there are no practical alternative locations for the meter stations. As such, we did not consider aboveground facility site alternatives further.

#### **5. Alternatives Conclusion**

Most environmental impacts associated with the Project have been adequately avoided or minimized with measures proposed by Enable and the selection of a preferred alternative. Enable has incorporated multiple modifications to the proposed pipeline routes to address agency and landowner and other stakeholder concerns, as well as to avoid or minimize impacts on resources, such as wetlands, waterbodies, cultural resource sites, and sensitive species. We have made additional recommendations, as warranted, to further reduce environmental impacts associated with the Project. The USACE has done likewise. We conclude that the Project as proposed, along with our recommended additional measures, is the preferred alternative that can meet the Project's objectives.

## D. STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Enable constructs and operates the proposed facilities in accordance with its application and supplements, and our recommended mitigation measures, approval of the Project would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission's Order contain a finding of no significant impact and include the mitigation measures listed below as conditions in any authorization the Commission may issue.

1. Enable shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Enable 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, or the Director's designee, **before using that modification.**
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project. This authority shall allow:
  - a. the modification of conditions of the Order;
  - b. stop-work authority; and
  - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation.
3. **Prior to any construction**, Enable shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of**

**construction**, Enable shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

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

5. Enable 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 of each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

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

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

6. **Within 60 days of the acceptance of the Certificate and before construction begins**, Enable shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. Enable must file revisions to their plan as schedules change. The plan shall identify:
- a. how Enable 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 Enable will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
  - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
  - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
  - e. the location and dates of the environmental compliance training and instructions Enable will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);
  - f. the company personnel (if known) and specific portion of Enable's organization having responsibility for compliance;
  - g. the procedures (including use of contract penalties) Enable will follow if noncompliance occurs; and
  - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    - (1) the completion of all required surveys and reports;
    - (2) the environmental compliance training of onsite personnel;
    - (3) the start of construction; and
    - (4) the start and completion of restoration.
7. Enable shall employ at least one EI for each Gulf Run Pipeline spread. The EI shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
  - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
  - d. in a full-time position, separate from all other activity inspectors;

- e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Enable shall file updated status reports for the Project with the Secretary on a **biweekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Enable's efforts to obtain the necessary federal authorizations;
  - b. the construction status of the project, work planned for the following reporting period and any scheduled changes for stream crossings or work in other environmentally sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
  - d. a description of the corrective actions implemented in response to all instances of noncompliance;
  - e. the effectiveness of all corrective actions implemented;
  - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by Enable from other federal, state, or local permitting agencies concerning instances of noncompliance, and Enable's response.
9. Enable must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities**. To obtain such authorization, Enable must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. Enable must receive written authorization from the Director of OEP, or the Director's designee, **before placing the Project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
11. **Within 30 days of placing the authorized facilities in service**, Enable 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 Enable has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
12. **Prior to Enable's use of any herbicides within 100 feet of waterbodies or wetland areas along the Gulf Run Pipeline**, Enable shall file with the Secretary a statement from the LDWF that EPA-approved herbicides for use in aquatic environments is acceptable Project-wide.
13. **Prior to construction**, Enable shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, a plan for handling any unanticipated discovery of contaminated material.
14. **Prior to construction at HDD Nos. 1, 3, 4, 6, and 8**, Enable shall file with the Secretary, for review and written approval by the Director of OEP, or the Director's designee, an HDD noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at nearby NSAs. During drilling operations, Enable shall implement the approved plan, monitor noise levels, document the noise levels in the bi-weekly status reports, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than an  $L_{dn}$  of 55 dBA at the NSAs.
15. Enable shall file noise surveys with the Secretary **no later than 60 days** after placing the modified Columbia Gulf/EGT and MEP Meter Stations in service. If a full load condition noise survey is not possible, Enable shall provide an interim survey at the maximum possible horsepower and/or operational load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at any station under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Enable shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Enable shall confirm compliance with the above requirements by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

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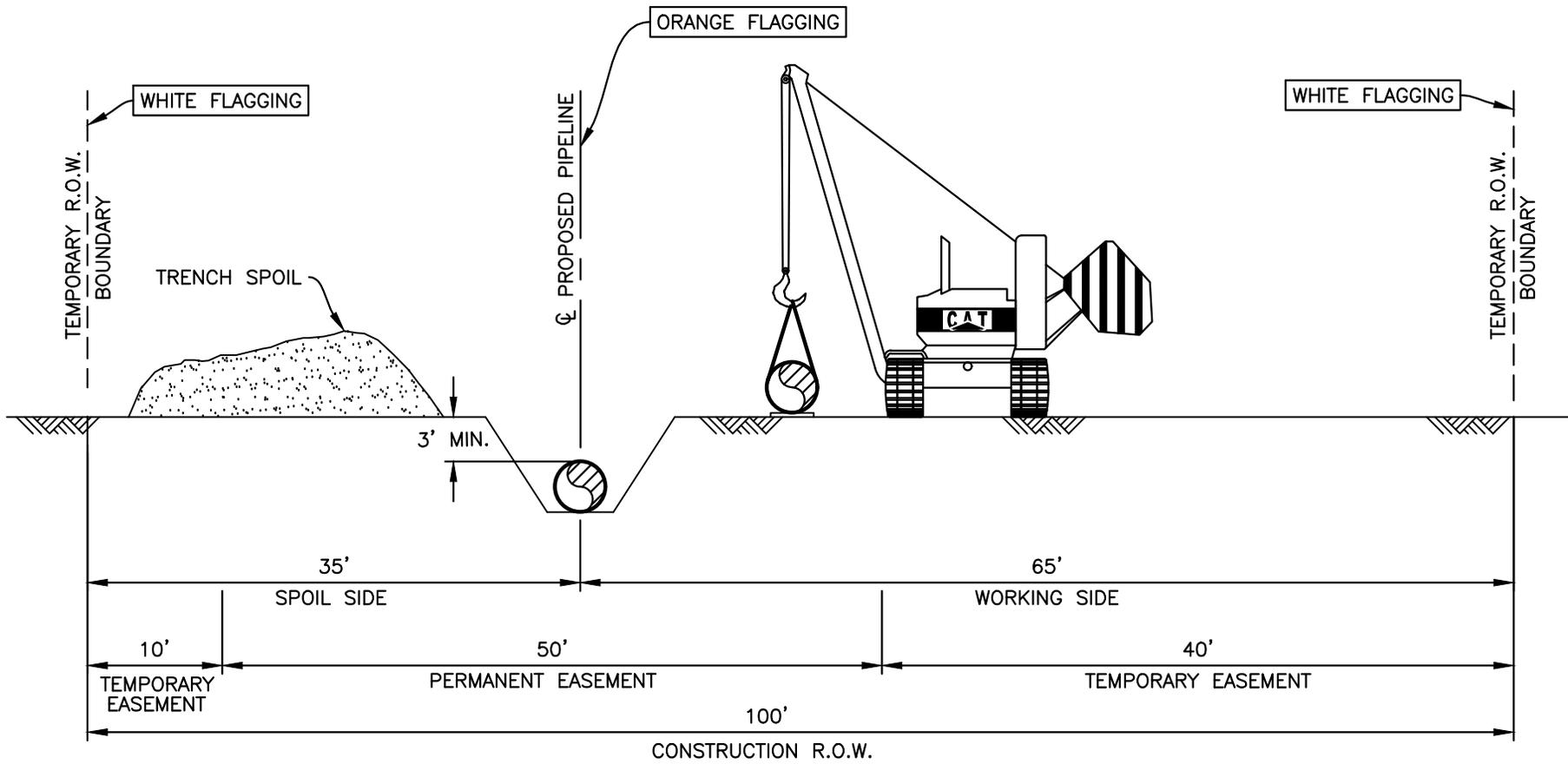
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*WSP USA, Inc. is a third-party contractor assisting the Commission staff in reviewing the environmental aspects of the project application and preparing the environmental documents required by NEPA. Third party contractors are selected by Commission staff and funded by project applicants. Per the procedures in 40 CFR 1506.5(c), third party contractors execute a disclosure statement specifying that they have no financial or other conflicting interest in the outcome of the project. Third party contractors are required to self-report any changes in financial situation and to refresh their disclosure statements annually. The Commission staff solely directs the scope, content, quality, and schedule of the contractor's work. The Commission staff independently evaluates the results of the third-party contractor's work and the Commission, through its staff, bears ultimate responsibility for full compliance with the requirements of NEPA.*

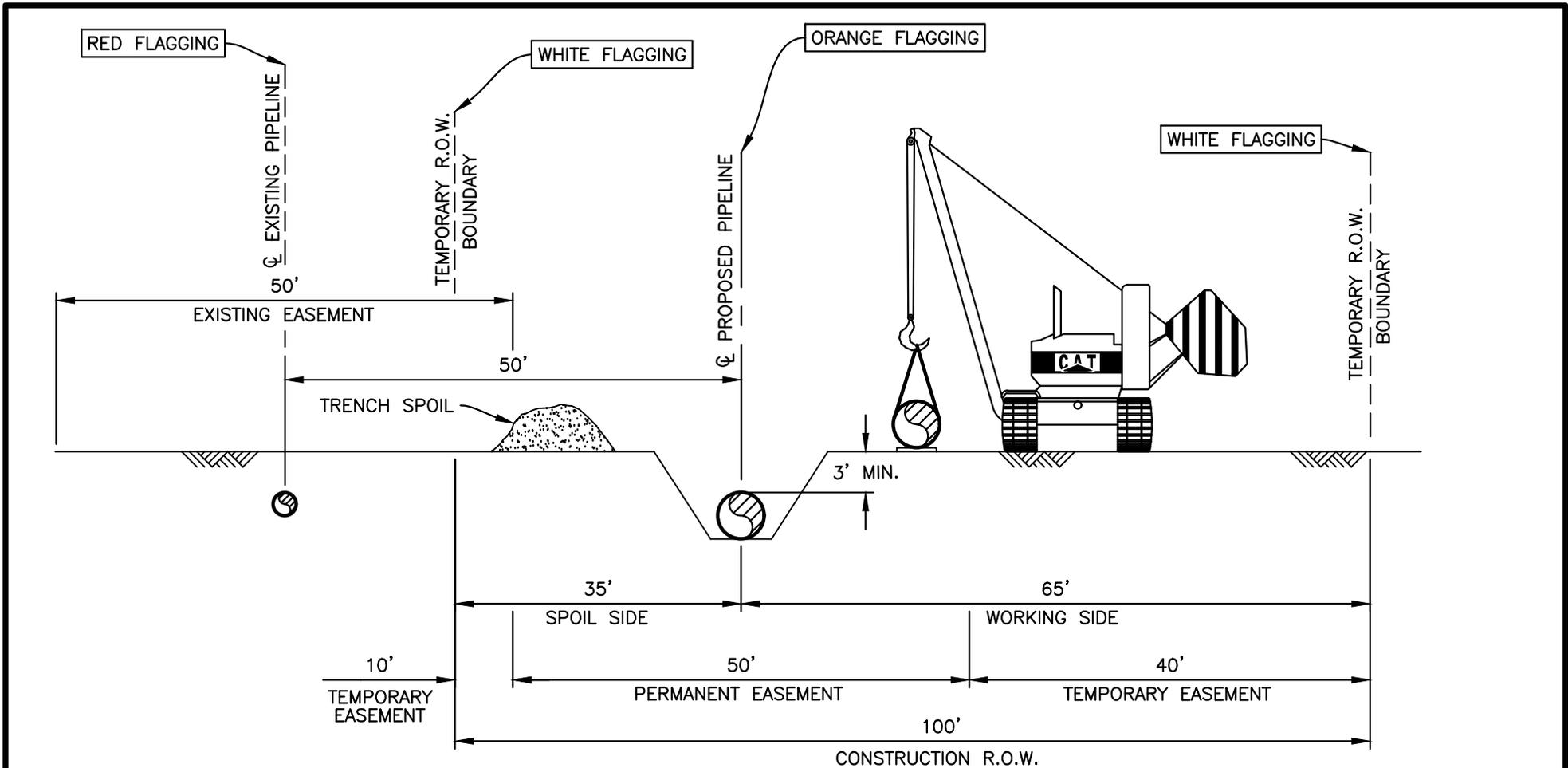
**Appendix A**  
**Typical Right-of-way Construction Diagrams**




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**TYPICAL PIPELINE  
 UPLAND – GREENFIELD  
 CONSTRUCTION ROW CONFIGURATION**

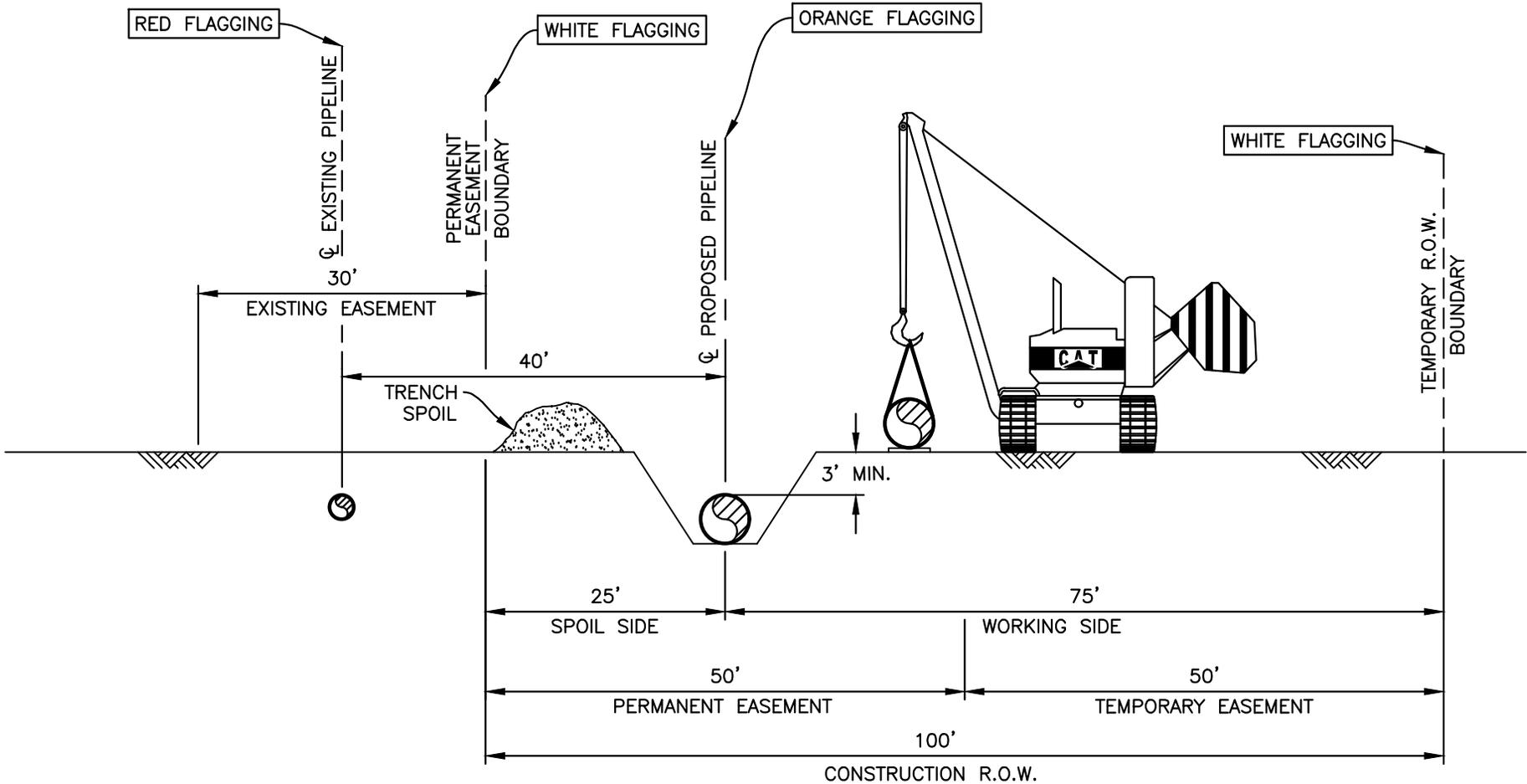
File No.: <b>FIGURE 1</b>	DRAWN BY ISM	DATE 04/25/19	DWG. NO. <b>FIGURE 1</b>
	CHECKED BY JOI	SCALE NTS	
	APPROVED BY CKF	REVISION 0	




 Enable Gulf Run Transmission, LLC
 

**TYPICAL PIPELINE UPLAND – COLLOCATED EXISTING PIPELINE WITH 50' EASEMENT CONSTRUCTION ROW CONFIGURATION**

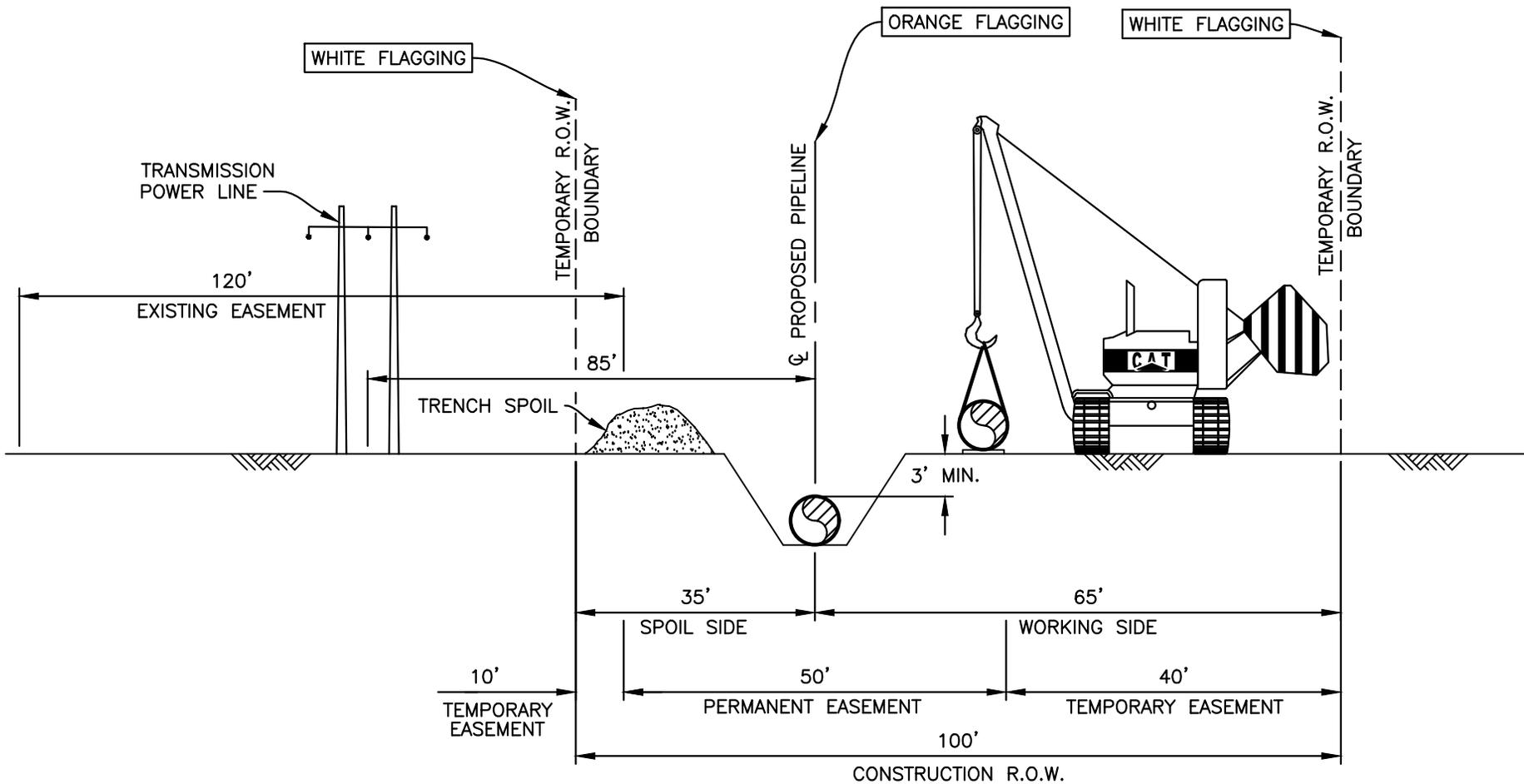
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	CHECKED BY	JOI	SCALE	NTS	
	APPROVED BY	CKF	REVISION	0	



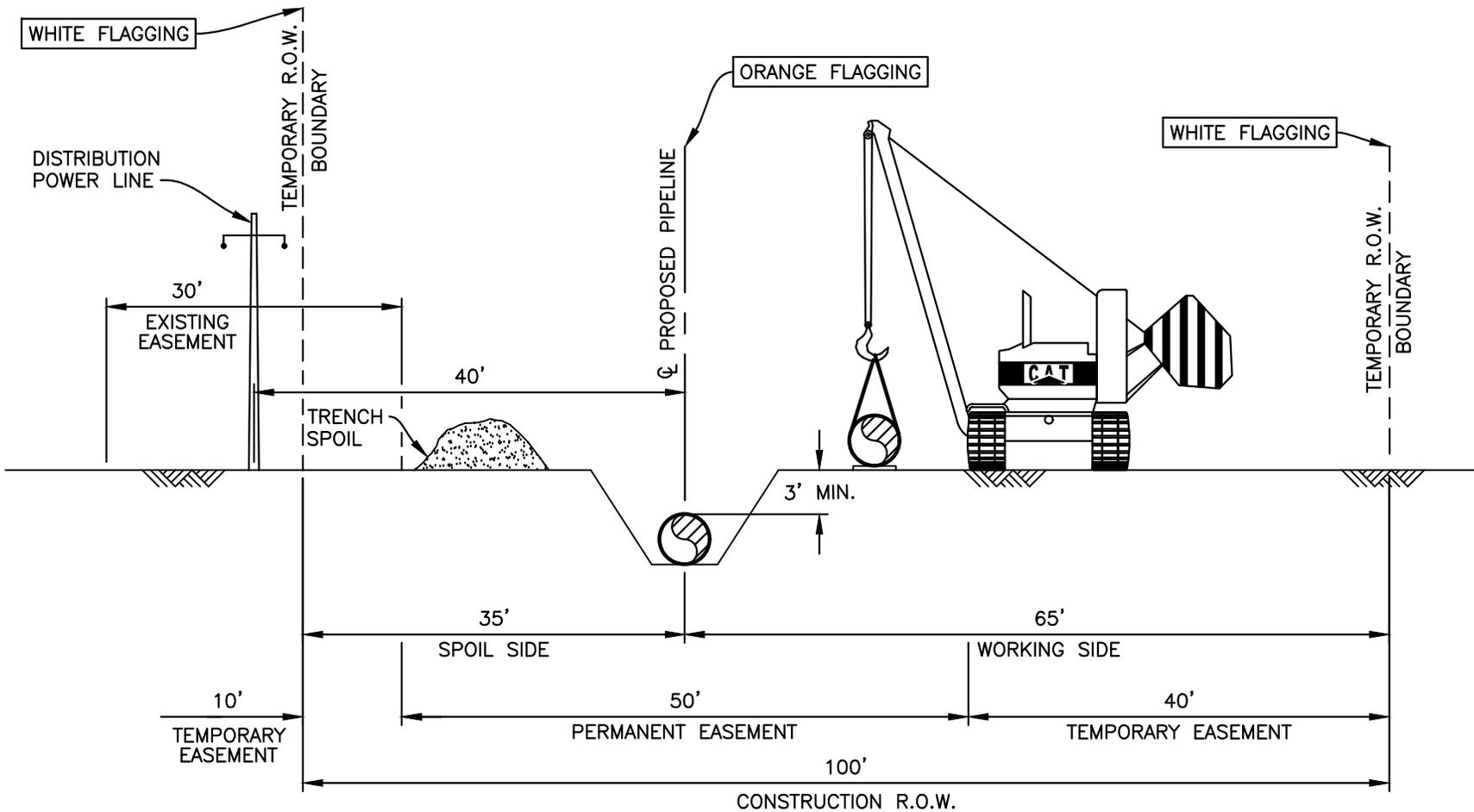

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**TYPICAL PIPELINE UPLAND – COLLOCATED EXISTING PIPELINE WITH 30’ EASEMENT CONSTRUCTION ROW CONFIGURATION**

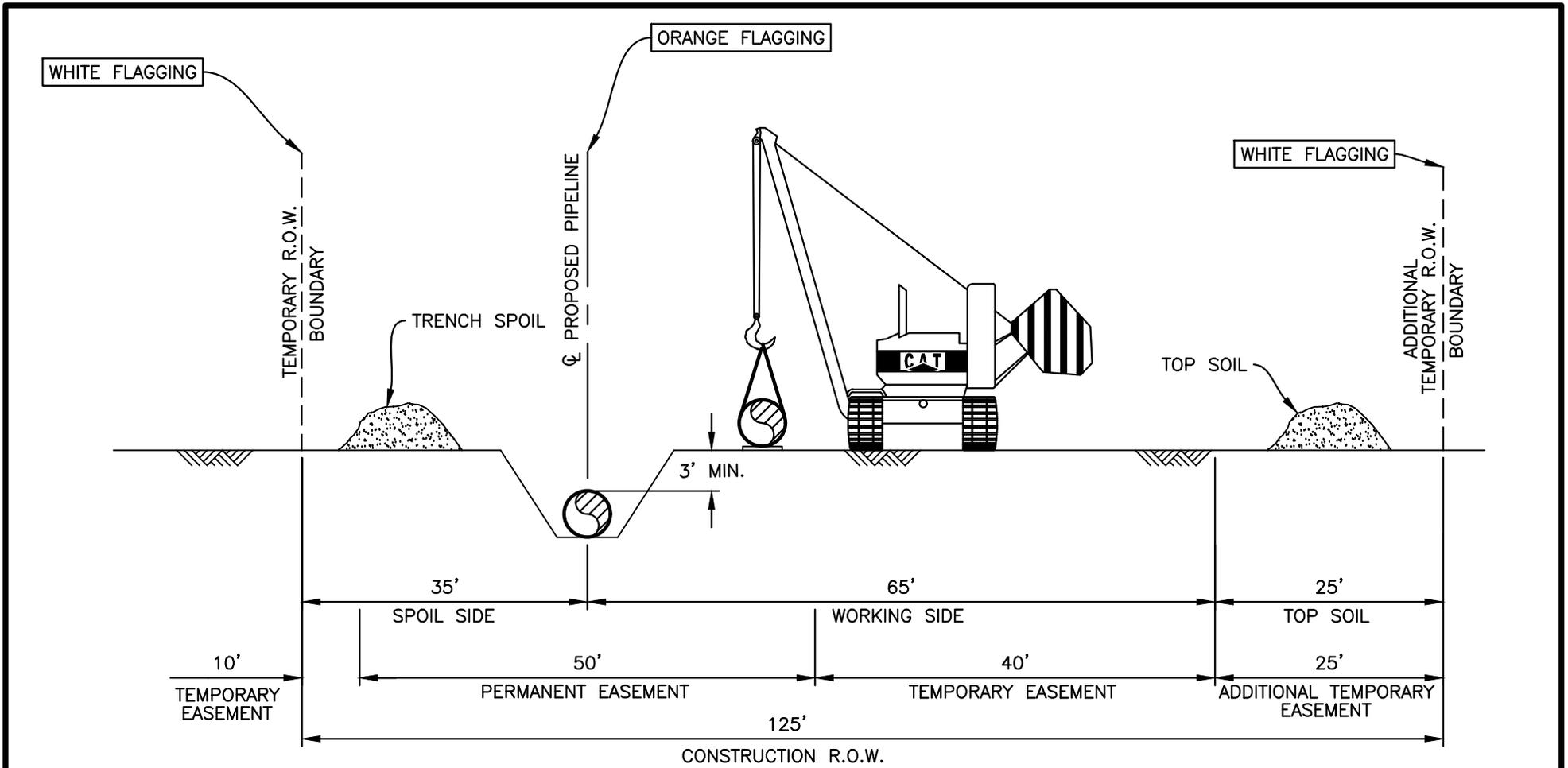
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	CHECKED BY	JOI	SCALE	NTS	FIGURE 3
	APPROVED BY	CKF	REVISION	0	



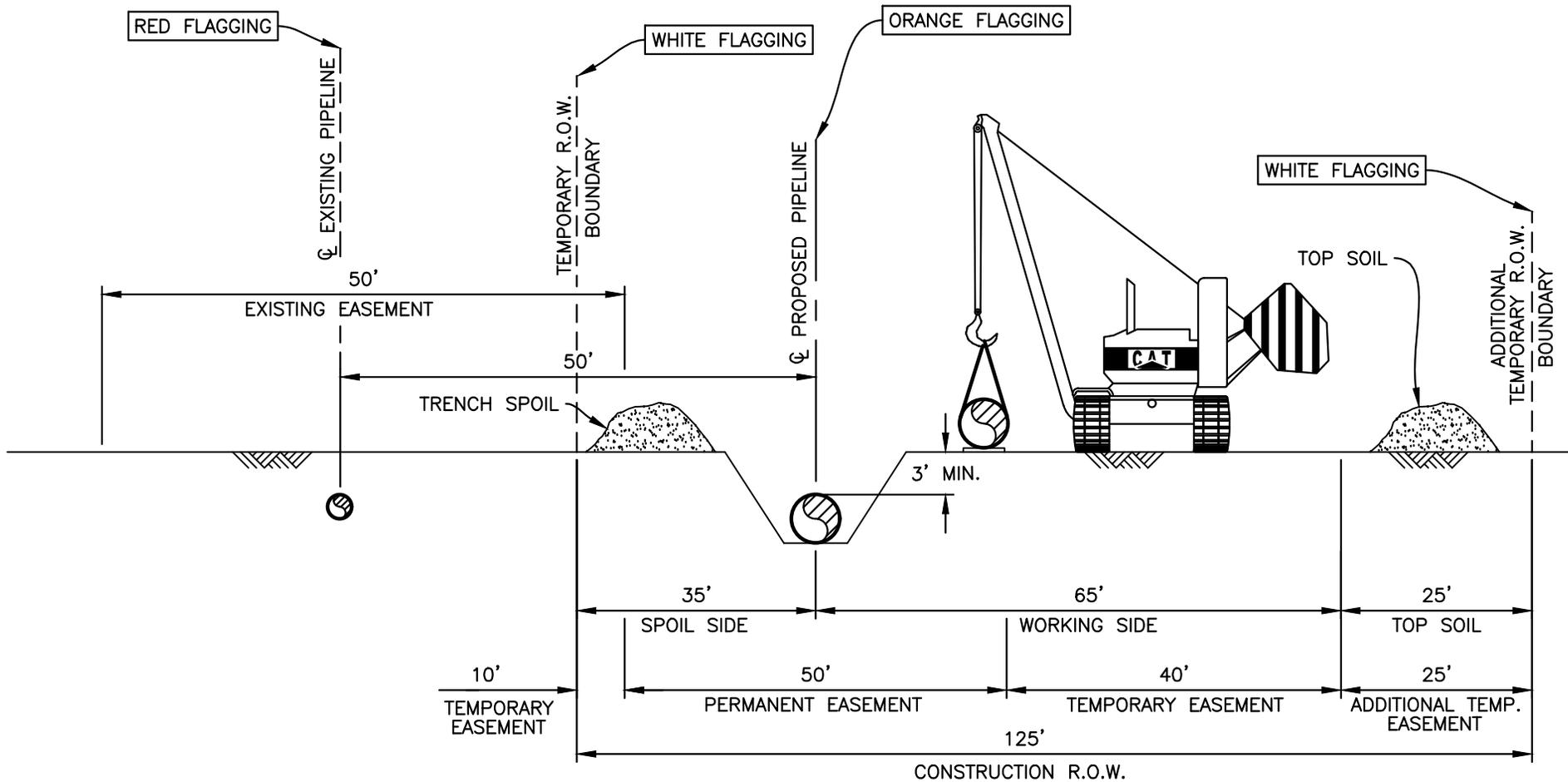
		Enable Gulf Run Transmission, LLC			
File No.: <b>FIGURE 4</b>	<b>TYPICAL PIPELINE          UPLAND – COLLOCATED          TRANSMISSION POWER LINE WITH 120' EASEMENT          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 4</b>		
	APPROVED BY CKF	REVISION 0			



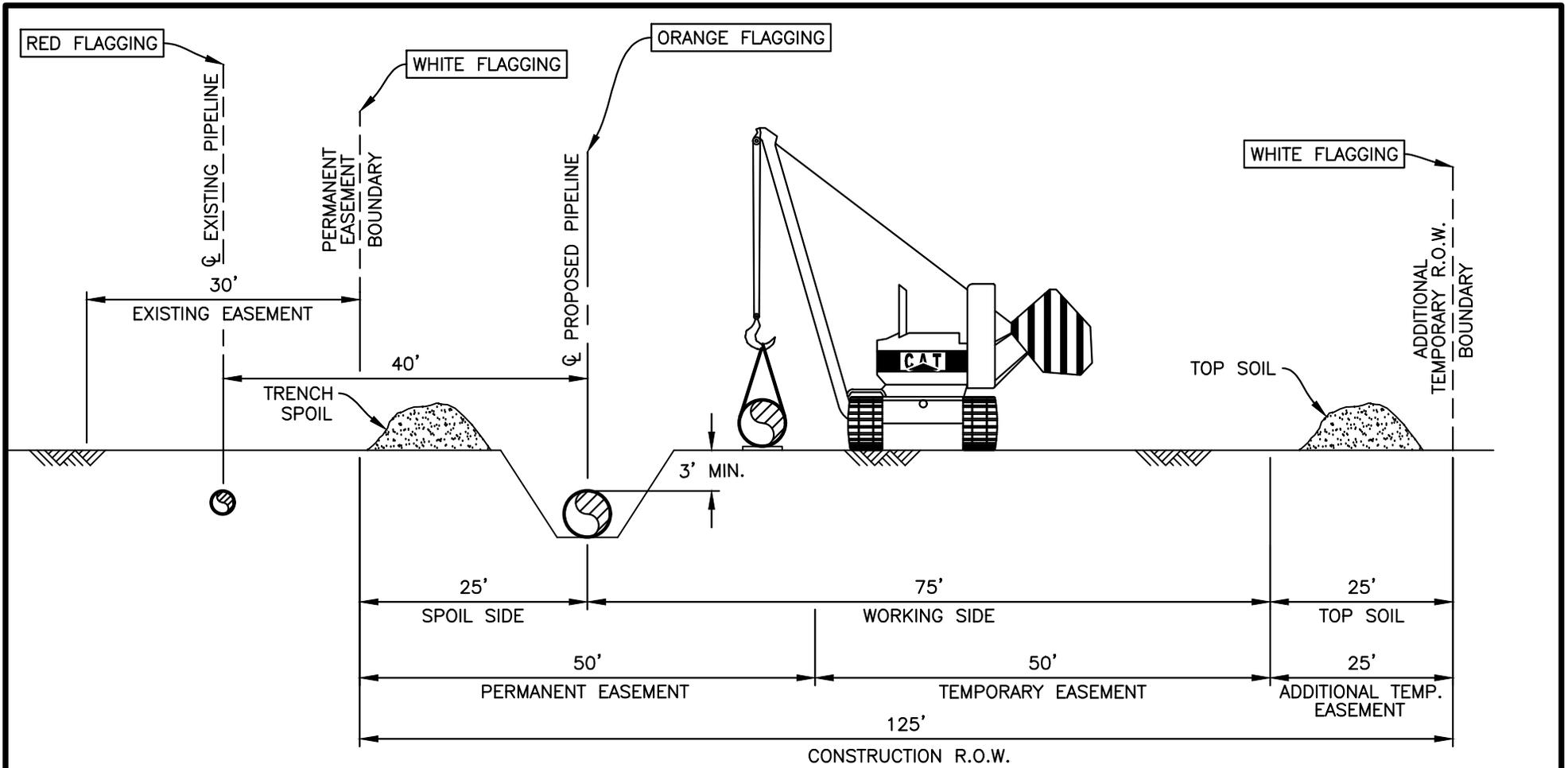
		Enable Gulf Run Transmission, LLC			
File No.: <b>FIGURE 5</b>	<b>TYPICAL PIPELINE          UPLAND – COLLOCATED          DISTRIBUTION POWER LINE WITH 30' EASEMENT          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 5</b>		
	APPROVED BY CKF	REVISION 0			



		Enable Gulf Run Transmission, LLC			
File No.: <b>FIGURE 6</b>	<b>TYPICAL PIPELINE          PASTURE – GREENFIELD          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 6</b>		
	APPROVED BY CKF	REVISION 0			



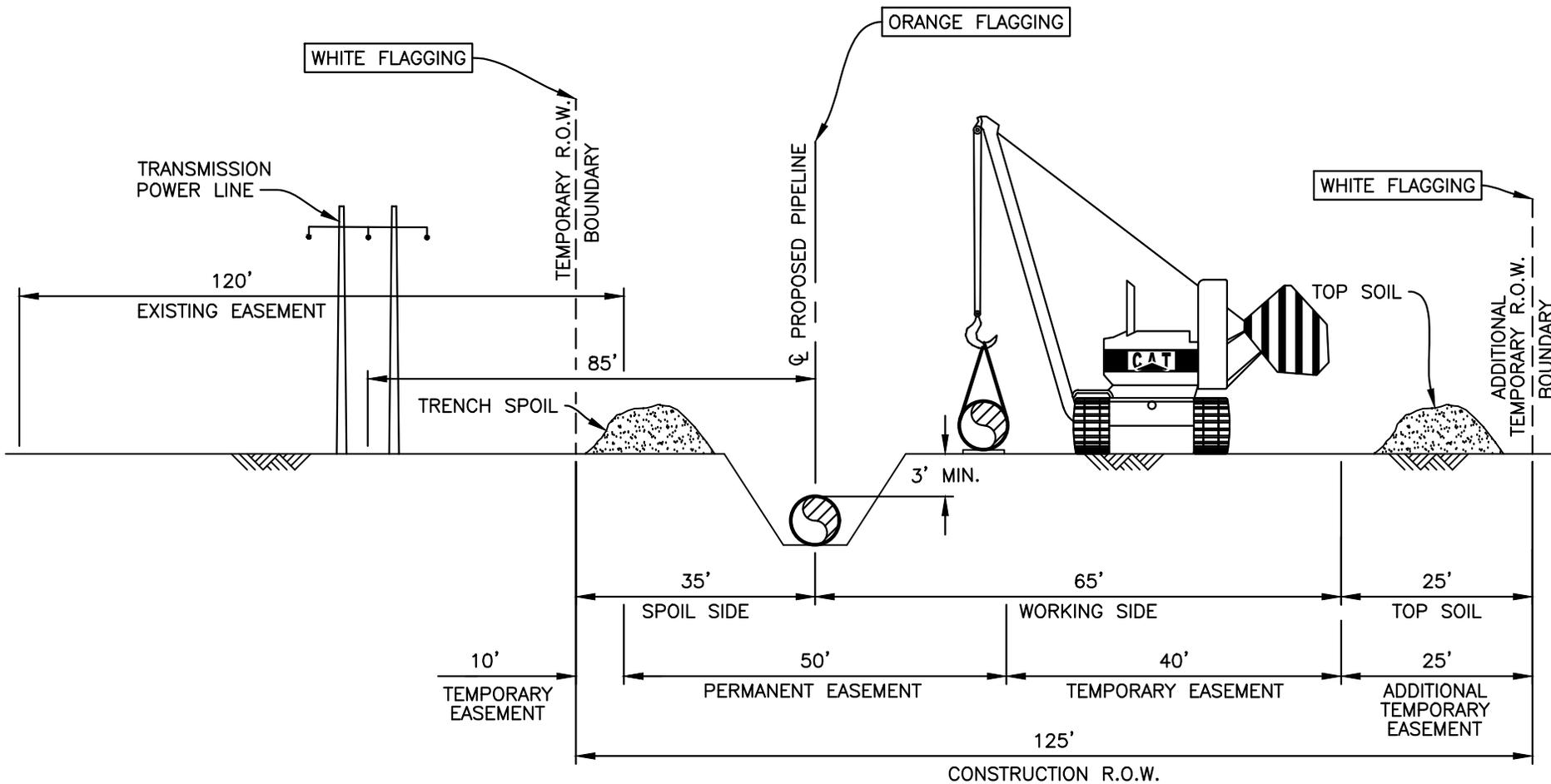
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File No.: <b>FIGURE 7</b>	<b>TYPICAL PIPELINE          PASTURE – COLLOCATED          EXISTING PIPELINE WITH 50' EASEMENT          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 7</b>		
	APPROVED BY CKF	REVISION 0			



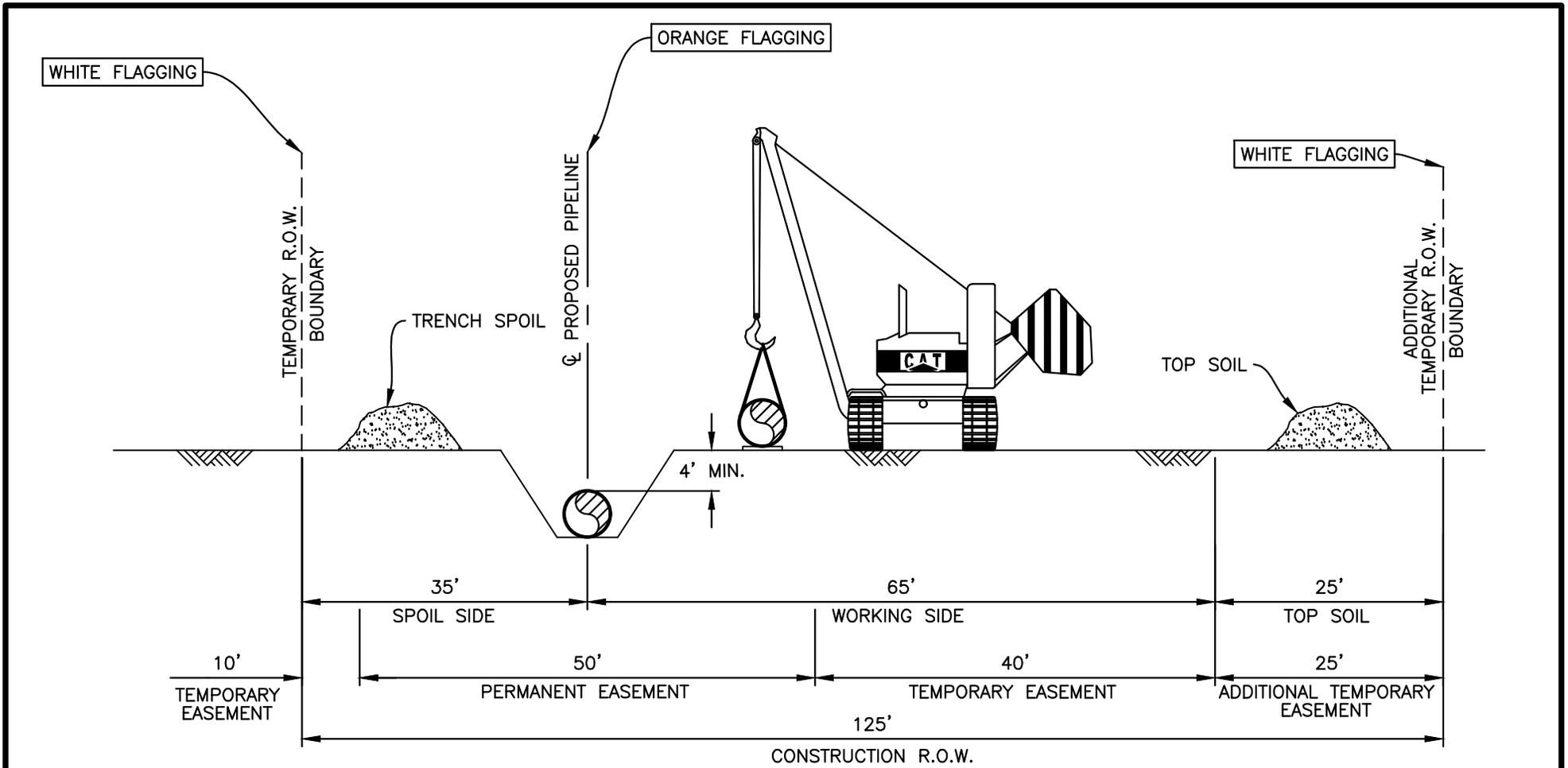

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**TYPICAL PIPELINE  
 PASTURE – COLLOCATED  
 EXISTING PIPELINE WITH 30' EASEMENT  
 CONSTRUCTION ROW CONFIGURATION**

File No.: FIGURE 8	DRAWN BY	ISM	DATE	04/25/19	DWG. NO.
	CHECKED BY	JOI	SCALE	NTS	FIGURE 8
	APPROVED BY	CKF	REVISION	0	



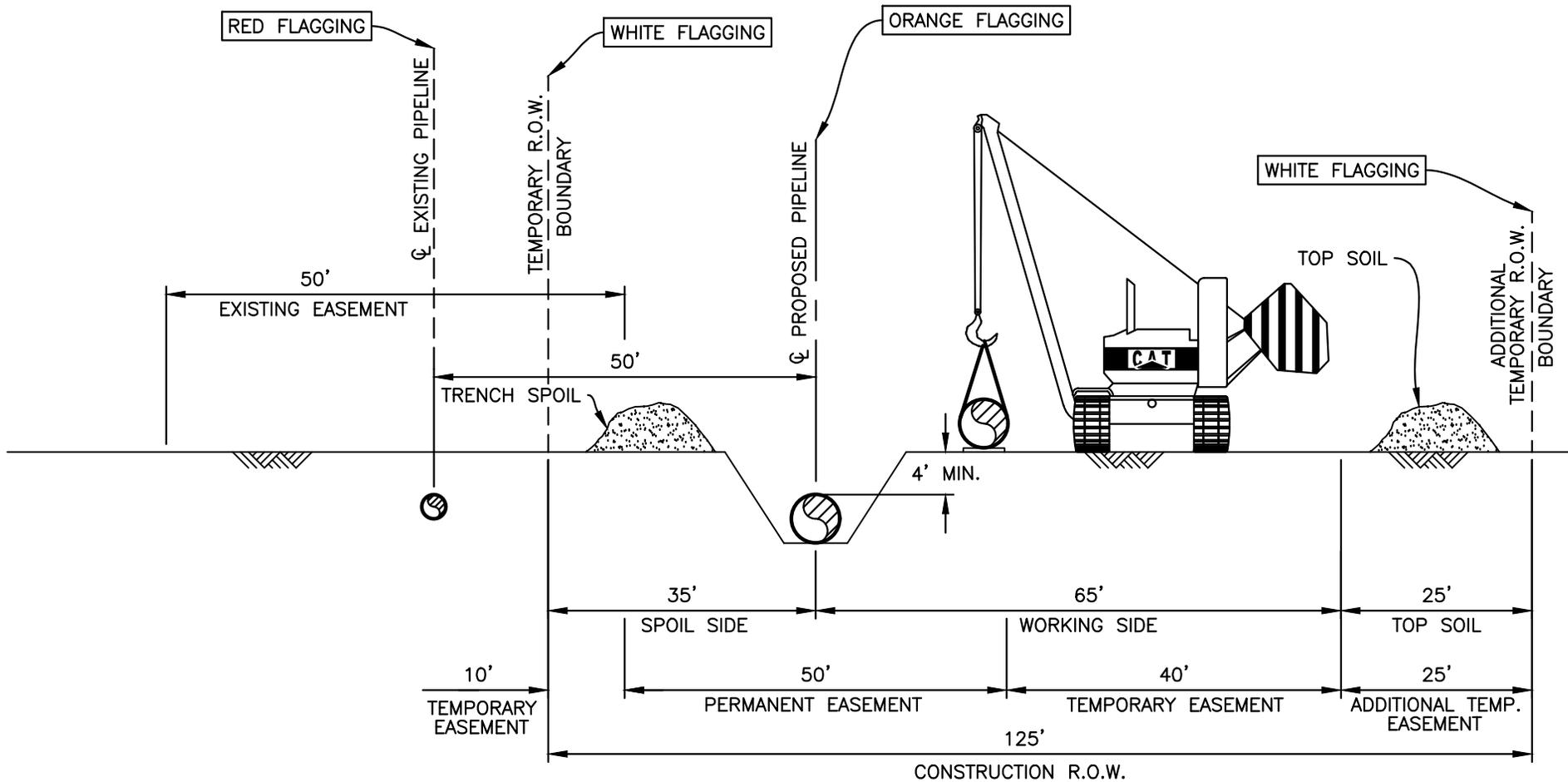
		Enable Gulf Run Transmission, LLC			
File No.: <b>FIGURE 9</b>	<b>TYPICAL PIPELINE          PASTURE – COLLOCATED          TRANSMISSION POWER LINE WITH 120' EASEMENT          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 9</b>		
	APPROVED BY CKF	REVISION 0			




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**TYPICAL PIPELINE  
AGRICULTURAL FIELD – GREENFIELD  
CONSTRUCTION ROW CONFIGURATION**

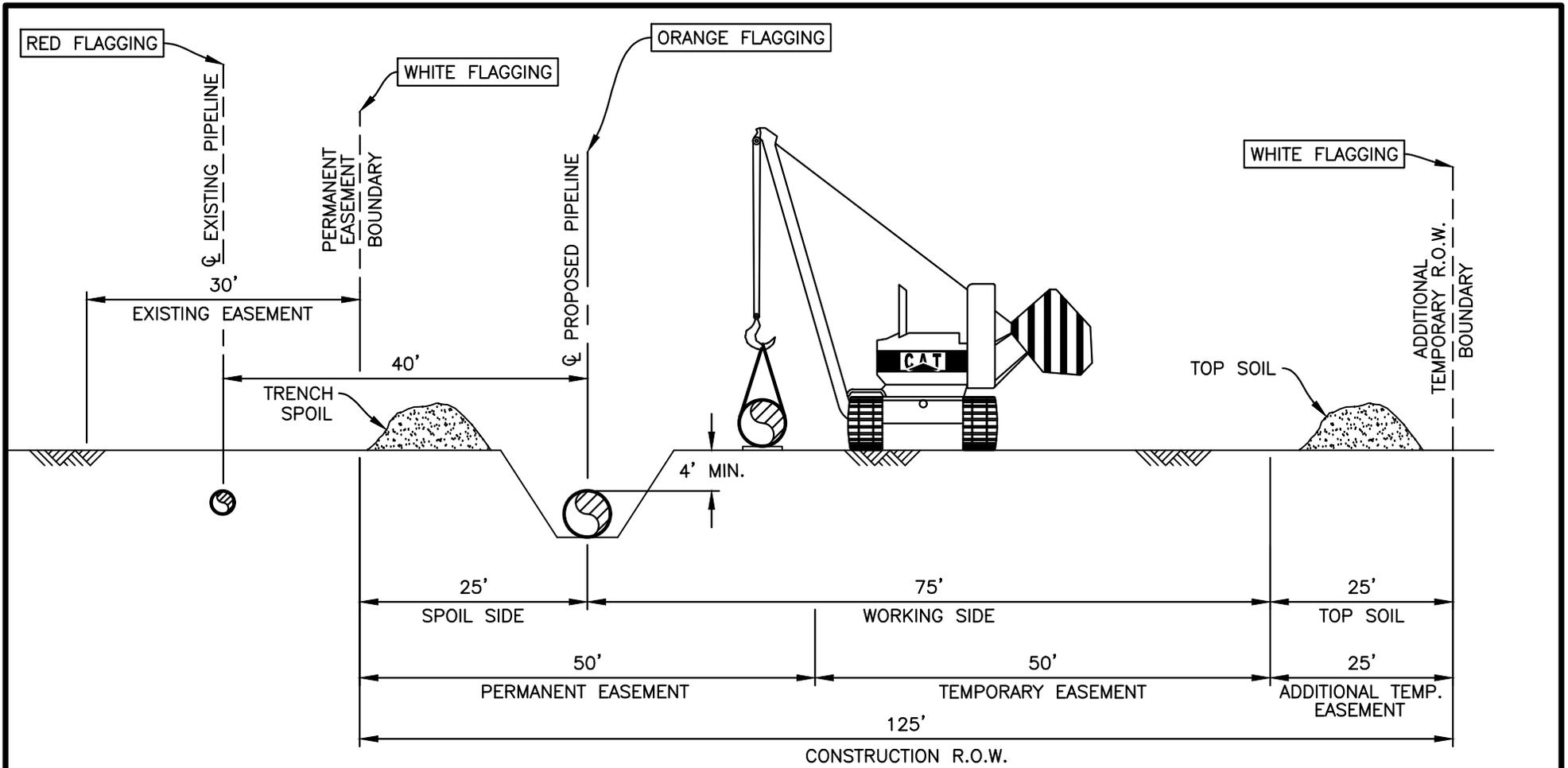
File No.: FIGURE 11	DRAWN BY	ISM	DATE	04/25/19	DWG. NO. <b>FIGURE 11</b>
	CHECKED BY	JOI	SCALE	NTS	
	APPROVED BY	CKF	REVISION	0	




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**TYPICAL PIPELINE  
AGRICULTURAL FIELD – COLLOCATED  
EXISTING PIPELINE WITH 50' EASEMENT  
CONSTRUCTION ROW CONFIGURATION**

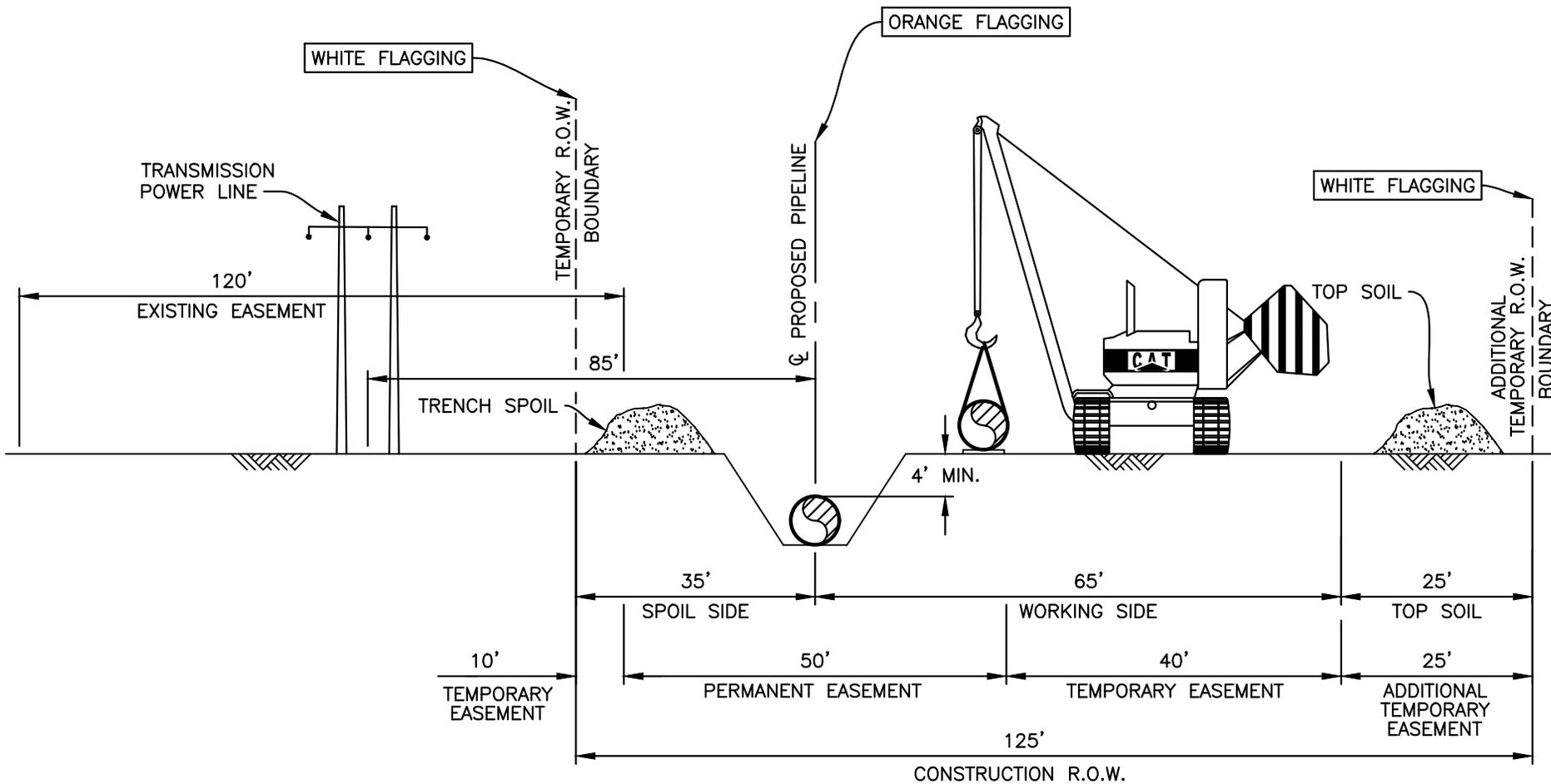
File No.: <b>FIGURE 12</b>	DRAWN BY	ISM	DATE	04/25/19	DWG. NO.
	CHECKED BY	JOI	SCALE	NTS	<b>FIGURE 12</b>
	APPROVED BY	CKF	REVISION	0	



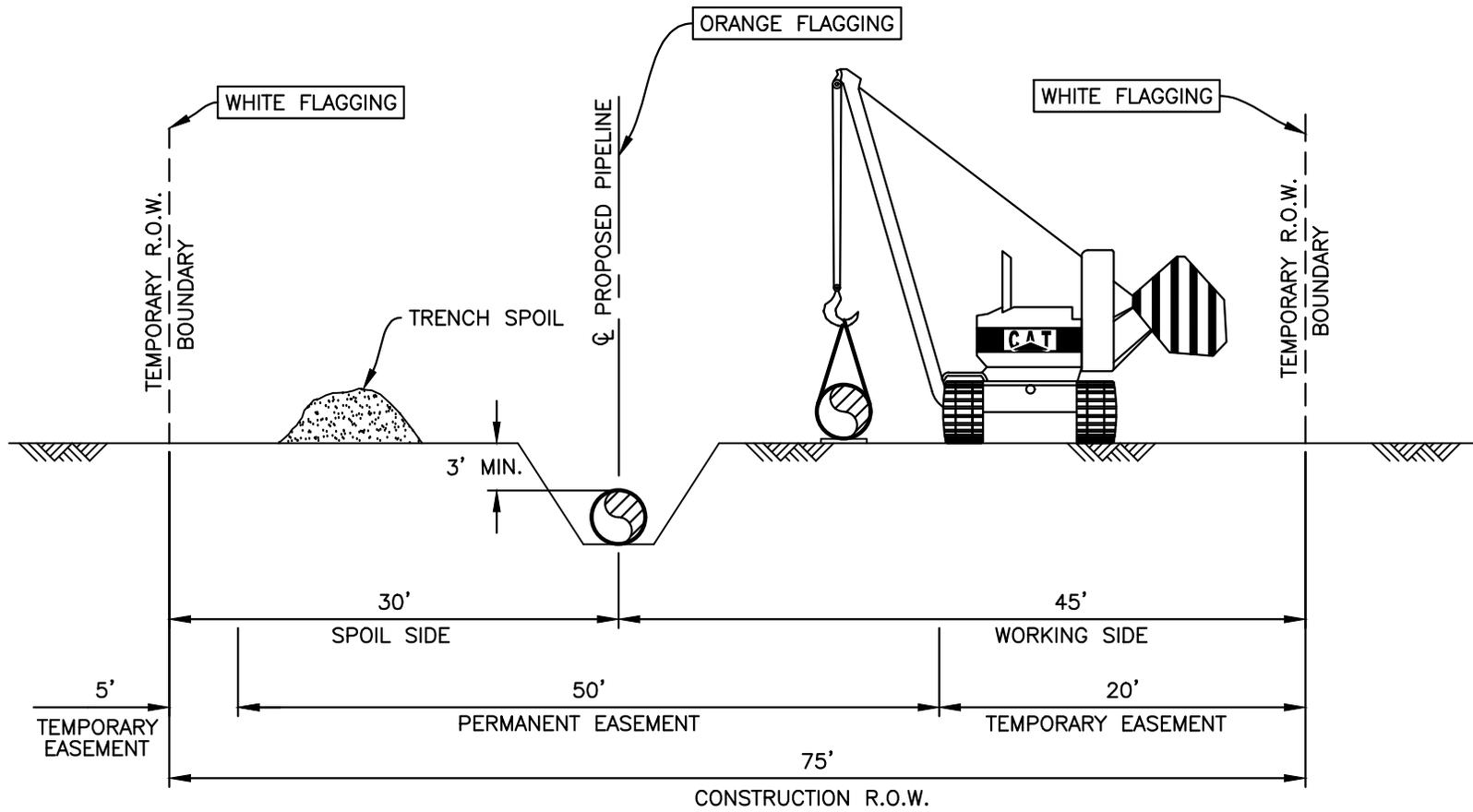

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**TYPICAL PIPELINE  
AGRICULTURAL FIELD – COLLOCATED  
EXISTING PIPELINE WITH 30' EASEMENT  
CONSTRUCTION ROW CONFIGURATION**

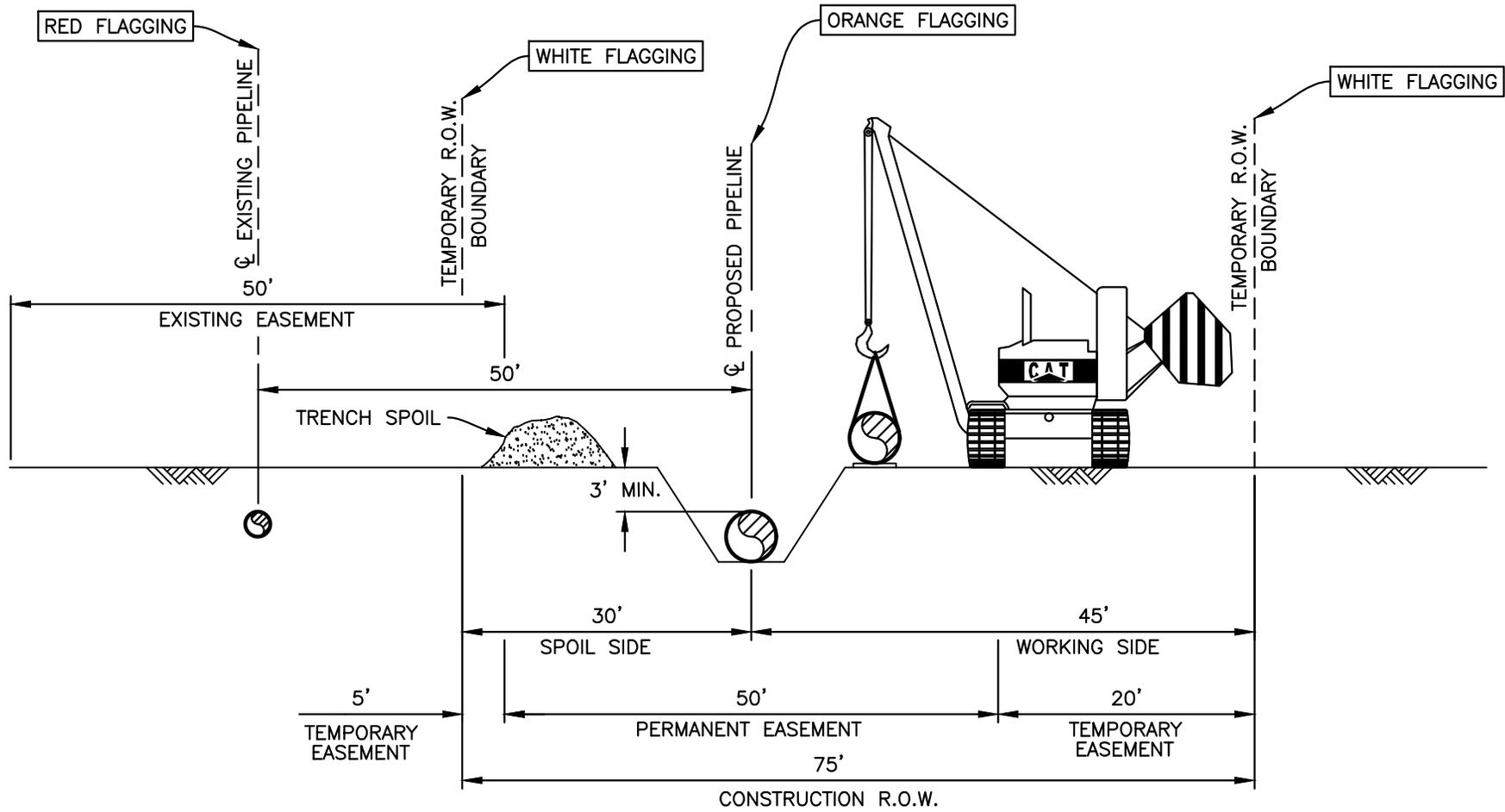
File No.: FIGURE 13	DRAWN BY	ISM	DATE	04/25/19	DWG. NO. <b>FIGURE 13</b>
	CHECKED BY	JOI	SCALE	NTS	
	APPROVED BY	CKF	REVISION	0	



		Enable Gulf Run Transmission, LLC			
File No.: <b>FIGURE 14</b>	<b>TYPICAL PIPELINE          AGRICULTURAL FIELD – COLLOCATED          TRANSMISSION POWER LINE WITH 120’ EASEMENT          CONSTRUCTION ROW CONFIGURATION</b>				
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.		
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 14</b>		
	APPROVED BY CKF	REVISION 0			



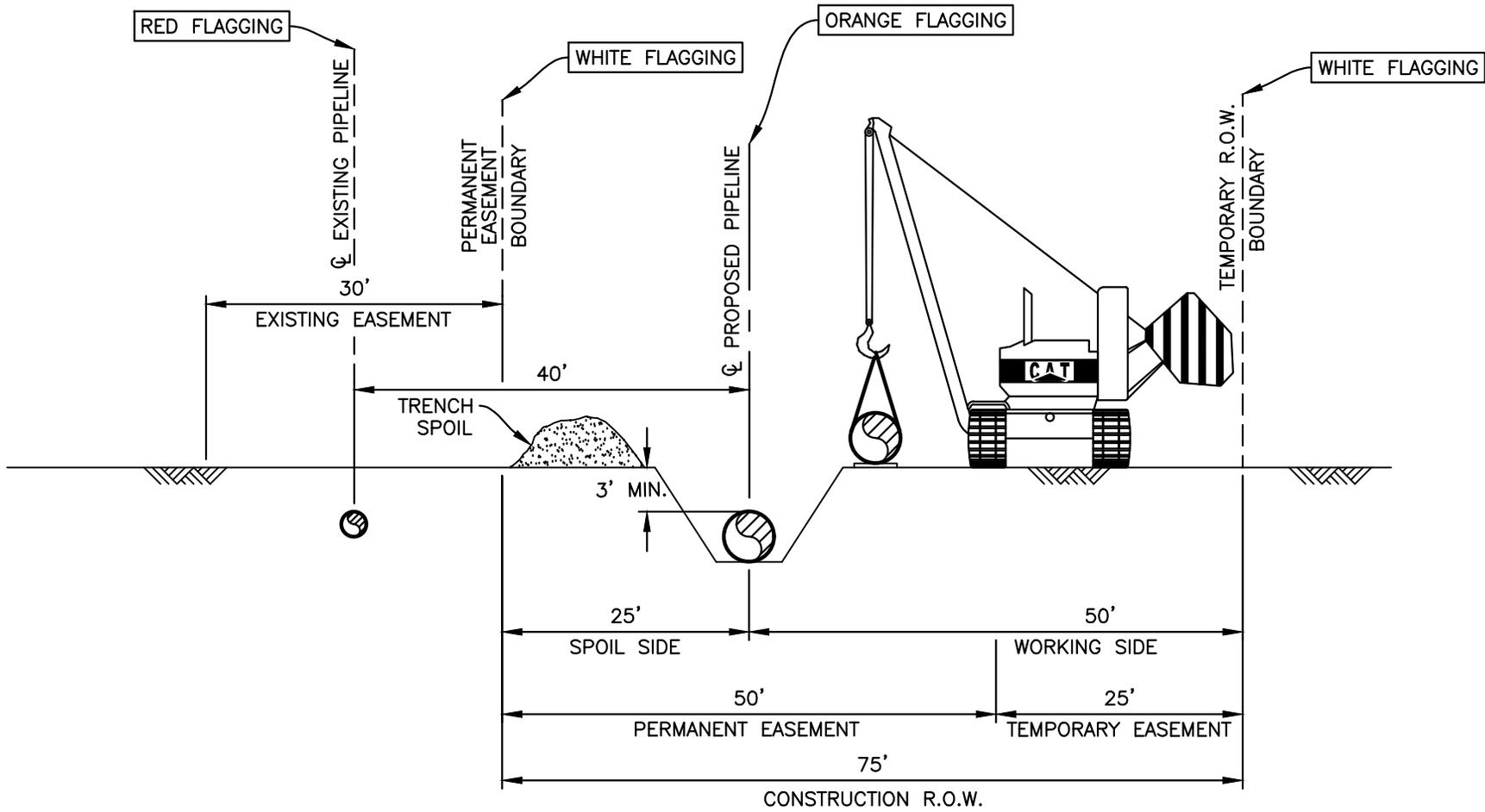
		Enable Gulf Run Transmission, LLC		
File No.: FIGURE 16	<b>TYPICAL PIPELINE          WETLAND – GREENFIELD          CONSTRUCTION ROW CONFIGURATION</b>			
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.	
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 16</b>	
	APPROVED BY CKF	REVISION 0		




 Enable Gulf Run Transmission, LLC
 

**TYPICAL PIPELINE WETLAND - COLLOCATED EXISTING PIPELINE WITH 50' EASEMENT CONSTRUCTION ROW CONFIGURATION**

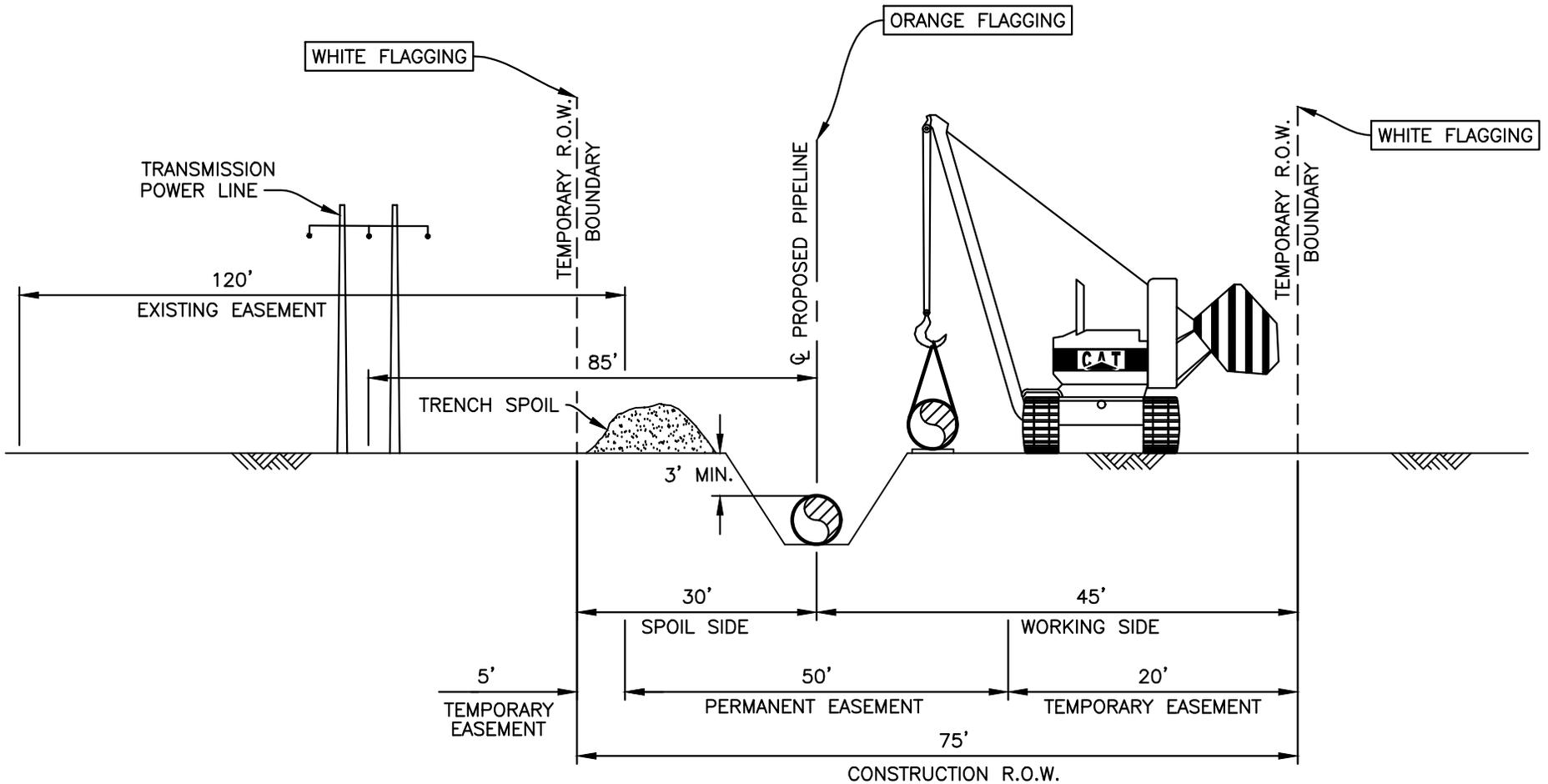
File No.: <b>FIGURE 17</b>	DRAWN BY ISM	DATE 04/25/19	DWG. NO. <b>FIGURE 17</b>
	CHECKED BY JOI	SCALE NTS	
	APPROVED BY CKF	REVISION 0	




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**TYPICAL PIPELINE WETLAND – COLLOCATED EXISTING PIPELINE WITH 30' EASEMENT CONSTRUCTION ROW CONFIGURATION**

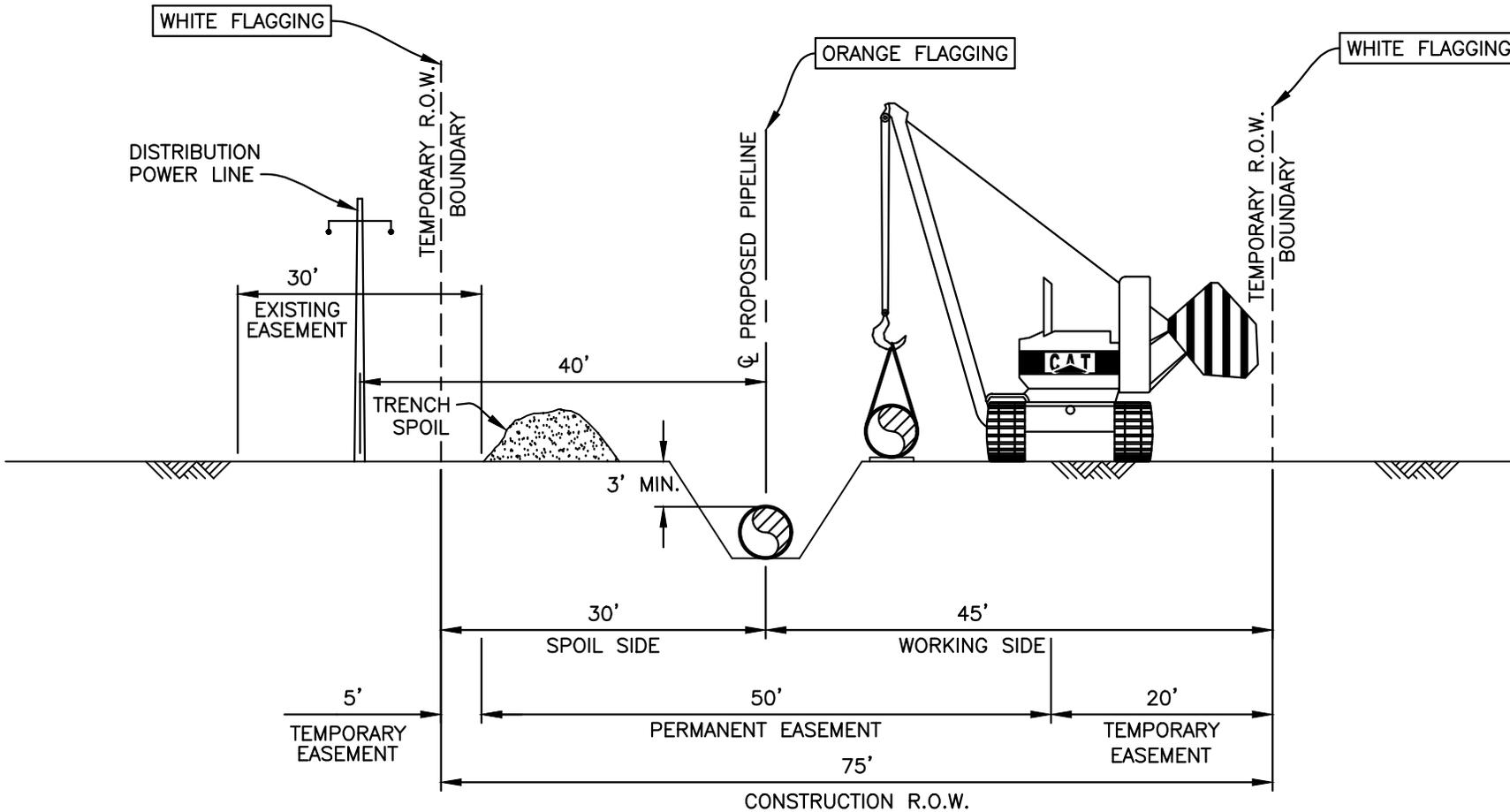
File No.: FIGURE 18	DRAWN BY	ISM	DATE	04/25/19	DWG. NO. <b>FIGURE 18</b>
	CHECKED BY	JOI	SCALE	NTS	
	APPROVED BY	CKF	REVISION	0	




 Enable Gulf Run Transmission, LLC
 

**TYPICAL PIPELINE  
 WETLAND – COLLOCATED  
 TRANSMISSION POWER LINE WITH 120' EASEMENT  
 CONSTRUCTION ROW CONFIGURATION**

File No.: FIGURE 19	DRAWN BY ISM	DATE 04/25/19	DWG. NO. <b>FIGURE 19</b>
	CHECKED BY JOI	SCALE NTS	
	APPROVED BY CKF	REVISION 0	



Enable Gulf Run Transmission, LLC

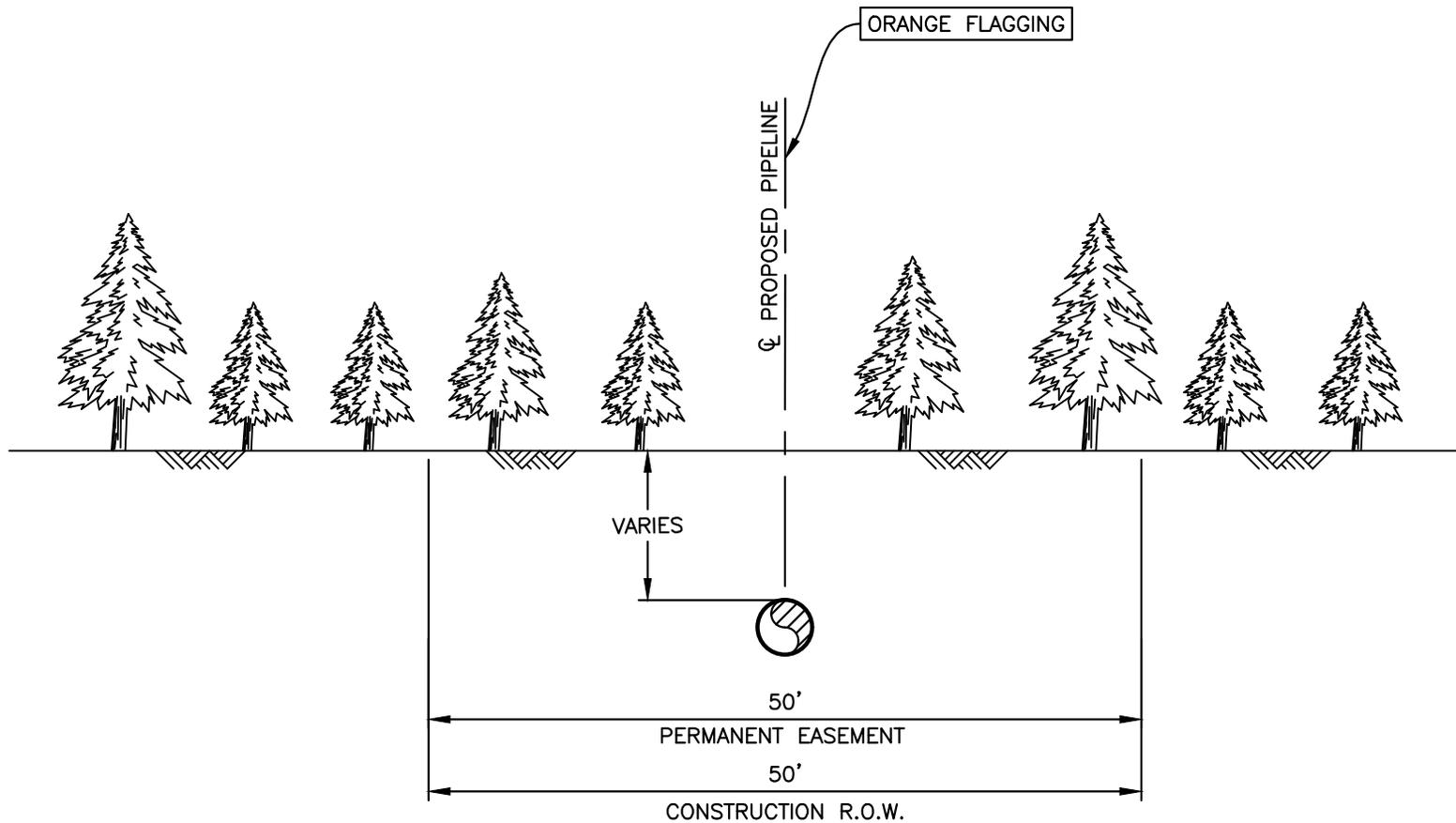


File No.:  
FIGURE 20

TYPICAL PIPELINE  
WETLAND - COLLOCATED  
DISTRIBUTION POWER LINE WITH 30' EASEMENT  
CONSTRUCTION ROW CONFIGURATION

DRAWN BY	ISM	DATE	04/25/19
CHECKED BY	JOI	SCALE	NTS
APPROVED BY	CKF	REVISION	0

DWG. NO.  
**FIGURE 20**



		Enable Gulf Run Transmission, LLC		
File No.: FIGURE 21	<b>TYPICAL PIPELINE          HORIZONTAL DIRECTIONAL DRILL          CONSTRUCTION ROW CONFIGURATION</b>			
	DRAWN BY ISM	DATE 04/25/19	DWG. NO.	
	CHECKED BY JOI	SCALE NTS	<b>FIGURE 21</b>	
	APPROVED BY CKF	REVISION 0		

**Appendix B**  
**Oversized Tables**

Table 1: “Proposed Access Roads”

Table 2: “Wetlands Affected by the Project”

Table 3: “ATWS Within 50 Feet of Wetlands and Waterbodies”

Table 4: “Louisiana Rare Plant Species that may Occur in the Gulf Run Pipeline Area“

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
<b>Gulf Run Pipeline</b>				
TAR-001	0.3	0.0	Agricultural Land	None
PAR-001	0.3	0.3	Agricultural Land, Commercial/Industrial, Open Land	None
TAR-001.1	1.9	0.7	Agricultural Land, Commercial/Industrial	None
TAR-001.2	3.3	0.2	Agricultural Land, Commercial/Industrial	None
TAR-001.3	5.5	0.1	Agricultural Land, Open Land	Grade
TAR-010.1	6.3	0.0	Agricultural Land	None
TAR-010	6.5	0.2	Agricultural Land, Open Land	None
TAR-011	6.7	0.3	Commercial/Industrial, Open Land	None
TAR-011.1	7.9	0.2	Agricultural Land, Upland Forest	Grade
TAR-011.2	8.1	0.2	Agricultural Land	Grade
TAR-012.1	8.3	0.3	Agricultural Land, Commercial/Industrial	Grade
TAR-013	8.8	0.3	Agricultural Land, Non-forested Wetland, Open Land	Grade <u>a/</u>
TAR-014	9.2	0.9	Agricultural Land, Commercial/Industrial	Grade
TAR-015	12.1	0.8	Agricultural Land, Commercial/Industrial, Open Land, Upland Forest	Grade
TAR-015.1	12.9	0.8	Agricultural Land, Commercial/Industrial, Open Land	None
TAR-016	13.6	1.0	Agricultural Land, Commercial/Industrial, Open Land	Grade
TAR-017	14.4	0.1	Agricultural Land	Grade
TAR-018	14.5	0.1	Agricultural Land, Upland Forest	Grade
TAR-019	14.7	0.6	Agricultural Land, Open Land	Grade
PAR-002.1	15.8	0.4	Agricultural Land, Open Land	None
TAR-020	16.4	0.3	Agricultural Land, Commercial/Industrial	None
TAR-020.1	17.0	0.0	Agricultural Land	Grade
TAR-021	17.4	0.3	Agricultural Land, Open Land	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-022	17.9	0.4	Agricultural Land, Commercial/Industrial, Open Land, Upland Forest	Widen, Grade
TAR-023	18.1	0.5	Agricultural Land, Commercial/Industrial, Open Land	Widen, Grade
TAR-024	18.8	0.3	Agricultural Land, Open Land	None
TAR-026	20.3	0.3	Pine Plantation, Upland Forest	None
TAR-027	20.4	0.2	Open Land, Pine Plantation	Widen, Grade
TAR-028	21.8	0.2	Open Land, Upland Forest	Widen, Grade
TAR-029	22.2	0.2	Open Land, Pine Plantation, Upland Forest	Grade
TAR-030	23.3	0.1	Open Land, Upland Forest	Widen, Grade
TAR-031	23.4	0.5	Open Land, Upland Forest	Grade
TAR-032	23.8	0.1	Open Land, Pine Plantation, Upland Forest	Grade
TAR-033	25.2	0.3	Pine Plantation	Grade
TAR-034	27.4	0.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-035	28.1	1.0	Pine Plantation, Upland Forest	Widen, Grade
TAR-038	31.5	0.7	Open Land, Pine Plantation, Upland Forest	Widen, Grade
TAR-037	31.5	0.4	Open Land, Pine Plantation, Upland Forest	Widen, Grade
TAR-039	33.3	0.0	Pine Plantation	None
TAR-041	33.8	0.7	Pine Plantation	None
TAR-040	33.8	0.6	Pine Plantation	None
TAR-042	34.3	0.3	Pine Plantation	None
TAR-043	34.3	0.7	Pine Plantation	None
PAR-003	35.0	0.0	Agricultural Land, Open Land	Grade
TAR-044	35.9	0.7	Open Land, Pine Plantation	Grade
TAR-045	36.4	0.6	Open Land, Pine Plantation	Grade
TAR-046	36.8	0.2	Open Land, Pine Plantation	None
TAR-047	37.0	0.2	Open Land, Pine Plantation, Upland Forest	None
TAR-048	37.5	0.9	Commercial/Industrial, Open Land, Upland Forest	None

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-049	39.0	0.6	Open Land, Pine Plantation, Upland Forest	None
TAR-050	39.1	3.1	Open Land, Pine Plantation, Upland Forest	None
TAR-051	39.1	0.5	Pine Plantation, Upland Forest	None
TAR-052	40.7	0.3	Agricultural Land, Open Land	Grade
TAR-053	41.5	0.2	Open Land	Widen, Grade
TAR-054	43.2	0.1	Open Land, Upland Forest	Grade
TAR-055	45.5	0.4	Pine Plantation, Upland Forest	Widen, Grade
PAR-003.1	45.8	0.0	Open Land, Pine Plantation	Grade
TAR-056	46.0	0.1	Open Land	Grade
TAR-059	47.2	0.0	Pine Plantation	Widen, Grade
TAR-060	47.9	0.1	Open Land, Pine Plantation	Grade
TAR-061	48.3	0.1	Open Land, Pine Plantation	Grade
TAR-062	48.5	0.3	Open Land, Pine Plantation	Widen, Grade
TAR-063	48.8	1.1	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-064	49.2	0.4	Open Land	Grade
TAR-065	50.9	0.1	Commercial/Industrial, Open Land, Pine Plantation	None
TAR-066	50.9	0.5	Agricultural Land, Open Land, Pine Plantation, Upland Forest	None
TAR-068	51.2	0.0	Pine Plantation	Widen, Grade
TAR-069	52.8	0.9	Agricultural Land, Commercial/Industrial, Open Land, Pine Plantation	Grade
TAR-070	54.0	0.5	Commercial/Industrial, Open Land, Upland Forest	Grade
TAR-071	54.4	1.2	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-072	55.0	0.0	Open Land	Grade
TAR-073	55.5	0.0	Open Land, Upland Forest	Grade
TAR-075	57.4	0.2	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-076	58.4	0.0	Upland Forest	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-077	58.5	0.0	Upland Forest	Grade
TAR-078	58.6	0.0	Upland Forest	Grade
TAR-079	58.6	0.0	Open Land, Upland Forest	Grade
TAR-104	58.6	0.4	Commercial/Industrial, Open Land, Upland Forest	Grade
TAR-104.1	58.7	1.8	Open Land, Upland Forest	Grade
TAR-097	60.7	0.0	Open Land	Grade
TAR-098	60.8	0.0	Open Land, Upland Forest	Grade
TAR-099	60.9	0.0	Open Land, Upland Forest	Grade
TAR-100	60.9	0.0	Upland Forest	Grade
TAR-101	61.0	0.0	Upland Forest	Grade
TAR-102	61.3	0.0	Upland Forest	Grade
TAR-103	61.4	0.0	Upland Forest	Grade
TAR-104.2	61.6	1.1	Open Land, Pine Plantation, Upland Forest	Grade
TAR-104.3	61.6	0.2	Open Land, Upland Forest	Grade
TAR-105	62.8	2.8	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-107	63.4	0.3	Open Land, Pine Plantation	Grade
TAR-106	63.4	1.3	Open Land, Pine Plantation, Upland Forest	Grade
TAR-108	63.9	0.7	Pine Plantation, Upland Forest	Grade
TAR-109	63.9	0.7	Pine Plantation	Grade
TAR-110	64.7	0.4	Open Land, Pine Plantation	Grade
TAR-111	65.0	2.7	Open Land, Pine Plantation, Upland Forest	Grade
PAR-005	65.1	0.0	Pine Plantation	Grade
TAR-112	65.8	0.1	Pine Plantation	Grade
TAR-113	66.3	1.8	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-114	66.4	2.5	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-115	66.4	1.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade

<b>Table 1</b>				
<b>Proposed Access Roads</b>				
<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-116	67.3	2.9	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-117	67.4	3.6	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-118	67.9	0.5	Commercial/Industrial, Pine Plantation, Upland Forest	Grade
TAR-119	68.7	0.0	Commercial/Industrial, Open Land	Grade
TAR-120	68.7	0.0	Open Land	Grade
TAR-121	68.8	0.2	Commercial/Industrial, Open Land, Pine Plantation	Grade
TAR-122	68.8	0.7	Commercial/Industrial, Forested Wetland, Open Land, Pine Plantation, Upland Forest	Grade <u>a/</u>
TAR-123	69.5	0.3	Open Land, Pine Plantation, Upland Forest	Grade
TAR-127.1	69.6	0	Unlisted	Grade
TAR-124	69.9	0.4	Pine Plantation	Grade
TAR-125	69.9	0.7	Open Land, Pine Plantation, Upland Forest	Grade
TAR-126	70.4	1.1	Pine Plantation	Grade
TAR-127	71.6	6.1	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-128	71.8	4.0	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-129	71.8	0.1	Commercial/Industrial, Open Land	Grade
TAR-131	73.6	2.6	Open Land, Pine Plantation	Grade
TAR-132	74.5	0.6	Open Land, Pine Plantation, Upland Forest	Grade
TAR-133	75.2	1.5	Open Land, Pine Plantation, Upland Forest	Grade
TAR-134	75.4	0.3	Pine Plantation, Upland Forest	Grade
TAR-135	76.0	0.7	Open Land, Pine Plantation, Upland Forest	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-137	76.5	1.4	Open Land, Pine Plantation, Upland Forest	Grade
TAR-136	77.0	0.6	Open Land, Pine Plantation, Upland Forest	Grade
TAR-138	77.3	0.7	Open Land, Pine Plantation	Grade
TAR-139	77.3	2.6	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-140	77.7	0.1	Open Land, Pine Plantation	Grade
TAR-141	77.7	2.5	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-142	78.4	0.1	Pine Plantation, Upland Forest	Grade
TAR-143	78.9	0.7	Pine Plantation	Widen, Grade
TAR-144	79.2	0.4	Open Land, Pine Plantation, Upland Forest	Grade
TAR-145	79.8	11.4	Agricultural Land, Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-146	79.8	1.2	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-147	80.4	0.7	Pine Plantation	Grade
PAR-006	81.3	0.0	Upland Forest	Grade
TAR-148	81.4	0.1	Pine Plantation, Upland Forest	Grade
TAR-149	83.4	0.3	Open Land, Pine Plantation	None
TAR-150	86.1	0.9	Pine Plantation, Upland Forest	Grade
TAR-151	86.5	0.4	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-152	86.5	2.1	Open Land, Pine Plantation, Upland Forest	None
TAR-153	86.9	1.6	Pine Plantation	None
TAR-154	87.4	0.3	Pine Plantation	None
TAR-155	88.6	0.6	Pine Plantation	None
TAR-156	89.2	0.1	Upland Forest	None
TAR-157	90.1	1.2	Pine Plantation	Grade
TAR-158	91.8	0.1	Pine Plantation	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-159	92.2	0.1	Pine Plantation, Upland Forest	Grade
TAR-160	92.4	0.5	Pine Plantation, Upland Forest	Grade
TAR-161	93.7	0.0	Pine Plantation	Grade
TAR-162	95.0	0.0	Upland Forest	Grade
TAR-163	95.2	0.0	Pine Plantation	Grade
TAR-164	95.4	0.0	Pine Plantation	Grade
TAR-165	95.9	0.2	Pine Plantation, Upland Forest	Grade
TAR-166	95.9	0.1	Pine Plantation	Grade
TAR-166.1	96.5	0.3	Forested Wetlands, Open Land, Pine Plantation, Upland Forest	Widen, Grade
TAR-166.2	96.5	0.2	Open Land, Upland Forest	Grade
PAR-007	97.1	0.1	Open Land, Pine Plantation	Grade
TAR-167	97.6	0.2	Open Land, Pine Plantation, Upland Forest	Widen, Grade
TAR-168	99.5	0.4	Open Land, Pine Plantation	Widen, Grade
TAR-169	100.4	0.3	Pine Plantation, Upland Forest	Grade
TAR-170	100.7	0.8	Commercial/Industrial, Pine Plantation	Grade
TAR-171	101.6	1.7	Open Land, Pine Plantation, Upland Forest	Grade
TAR-173	102.2	2.8	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-172	102.2	1.7	Open Land, Pine Plantation, Upland Forest	Grade
TAR-175	103.0	0.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-174	103.2	0.8	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-176	103.2	1.2	Commercial/Industrial, Open Land, Upland Forest	Grade
TAR-178	104.1	4.2	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-177	104.6	1.3	Commercial/Industrial, Open Land, Upland Forest	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-177.1	104.8	0.2	Commercial/Industrial, Open Land	None
TAR-177.2	106.3	2.1	Commercial/Industrial, Open Land, Upland Forest	None
TAR-177.3	106.7	0.5	Open Land	None
TAR-185	107.2	0.7	Commercial/Industrial, Pine Plantation	Grade
TAR-188	107.6	0.1	Pine Plantation	Grade
PAR-008	107.7	0.0	Commercial/Industrial, Pine Plantation	Widen, Grade
TAR-189	108.1	0.5	Commercial/Industrial, Open Land, Pine Plantation	Widen, Grade
TAR-190	108.1	1.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Widen, Grade
TAR-191	108.6	0.6	Open Land, Pine Plantation	Widen, Grade
TAR-192	108.6	0.2	Open Land, Pine Plantation	Widen, Grade
TAR-193	109.2	1.7	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-194	109.2	0.1	Open Land, Pine Plantation	Grade
TAR-195	109.5	1.3	Pine Plantation	Widen, Grade
TAR-196	109.7	0.2	Open Land, Pine Plantation	Grade
TAR-197	109.7	1.2	Open Land, Pine Plantation	Grade
TAR-198	110.2	0.9	Pine Plantation	Grade
TAR-199	110.3	1.3	Open Land, Pine Plantation	None
TAR-200	110.7	0.9	Pine Plantation, Upland Forest	Grade
TAR-202	111.2	0.7	Open Land, Pine Plantation	Widen, Grade
TAR-201	111.7	0.6	Pine Plantation	Widen, Grade
TAR-203	111.9	0.7	Open Land, Pine Plantation	Grade
TAR-204	112.4	0.0	Pine Plantation, Upland Forest	Widen, Grade
TAR-205	112.5	0.8	Open Land, Pine Plantation, Upland Forest	Grade
TAR-206	112.6	0.5	Pine Plantation, Upland Forest	Widen, Grade
TAR-208	113.0	0.7	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-207	113.0	0.2	Open Land, Pine Plantation	Grade

Table 1				
Proposed Access Roads				
Access Road ID	Milepost	Acres	Current Land Use	Planned Improvements
TAR-209	113.5	0.3	Open Land, Pine Plantation, Upland Forest	Grade
TAR-210	113.5	0.6	Open Land, Pine Plantation	Grade
TAR-211	114.0	6.1	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-212	114.0	1.8	Commercial/Industrial, Open Land, Pine Plantation	Grade
TAR-213	114.0	2.0	Commercial/Industrial, Pine Plantation, Upland Forest	Grade
TAR-214	114.4	0.6	Non-forested Wetland, Open Land, Pine Plantation, Upland Forest	Widen, Grade <u>b/</u>
TAR-215	114.6	2.1	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-216	115.1	1.1	Commercial/Industrial, Pine Plantation	Grade
TAR-217	116.2	0.0	Commercial/Industrial, Pine Plantation, Upland Forest	Grade
TAR-218	116.2	0.9	Commercial/Industrial, Pine Plantation, Upland Forest	Grade
TAR-219	116.3	1.7	Commercial/Industrial, Open Land, Pine Plantation	Grade
TAR-220	116.8	0.3	Commercial/Industrial, Open Land, Pine Plantation	None
TAR-221	117.3	0.5	Open Land, Pine Plantation, Upland Forest	Grade
TAR-222	118.2	0.9	Open Land, Pine Plantation	Grade
TAR-223	118.2	0.6	Open Land, Pine Plantation, Upland Forest	Grade
TAR-224	118.7	2.5	Forested Wetland, Open Land, Pine Plantation, Upland Forest	Grade <u>a/</u>
TAR-225	118.8	1.8	Pine Plantation	Grade
TAR-226	119.0	1.7	Open Land, Pine Plantation	Grade
TAR-227	119.5	0.9	Pine Plantation, Upland Forest	Grade
TAR-228	120.2	0.9	Commercial/Industrial, Pine Plantation	Grade
TAR-229	121.4	0.3	Commercial/Industrial, Pine Plantation, Upland Forest	Grade

**Table 1**  
**Proposed Access Roads**

<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
TAR-230	122.1	0.1	Pine Plantation	Grade
TAR-231	122.2	0.3	Commercial/Industrial, Pine Plantation	Grade
TAR-232	122.8	0.5	Commercial/Industrial, Pine Plantation, Upland Forest	Grade
TAR-233	122.8	0.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-234	122.9	0.1	Commercial/Industrial, Pine Plantation	Grade
PAR-009	123.1	0.0	Commercial/Industrial, Pine Plantation	Grade
TAR-235	123.6	0.0	Commercial/Industrial, Open Land	None
TAR-236	123.8	0.1	Pine Plantation	Widen, Grade
TAR-237	124.4	0.7	Pine Plantation, Upland Forest	Grade
TAR-238	124.5	0.6	Commercial/Industrial, Forested Wetland, Open Land, Pine Plantation, Upland Forest	Grade <u>a/</u>
TAR-239	124.6	0.2	Pine Plantation	Grade
TAR-240	125.9	0.8	Forested Wetland, Open Land, Pine Plantation, Upland Forest	Grade <u>a/</u>
TAR-242	126.0	2.3	Open Land, Pine Plantation, Upland Forest	Grade
TAR-241	126.0	0.1	Open Land, Pine Plantation, Upland Forest	Grade
TAR-243	126.6	0.3	Open Land, Pine Plantation	Grade
TAR-245	127.7	0.3	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-246	128.7	1.2	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	Grade
TAR-247	128.7	0.0	Pine Plantation	Grade
TAR-248	131.9	10.9 <u>a/</u>	Commercial/Industrial, Forested Wetland, Open Land, Pine Plantation, Upland Forest	Grade <u>a/</u>

<b>Table 1</b>				
<b>Proposed Access Roads</b>				
<b>Access Road ID</b>	<b>Milepost</b>	<b>Acres</b>	<b>Current Land Use</b>	<b>Planned Improvements</b>
PAR-010	134.0	0.7	Commercial/Industrial, Open Land, Pine Plantation, Upland Forest	None
TAR-249	134.0	0.1	Open Land, Upland Forest	Widen, Grade
<b>Total</b>		<b>185.5</b>		
<p>a No widening to this road is proposed.</p> <p>b Widening to this road is proposed; however, no widening is proposed in wetlands.</p> <p>TAR = temporary access road  PAR = permanent access road</p>				

Table 2

Wetlands Within the Project Workspaces

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
<b>Pipeline</b>							
0.2	WD007	PEM	720.7	Open Cut	1.14	0	Red River
0.4	WD005	PEM	44.4	Open Cut	0.09	0	Red River
0.6	WD003	PEM	NA <u>c/</u>	NA	0.03	0	Red River
6.7	WD017	PEM	NA <u>c/</u>	NA	0.04	0	Red River
6.8	WD018	PEM	198.1	Open Cut	0.30	0	Red River
7.7	WD020	PEM	152.2	Open Cut	0.17	0	Red River
8.1	WD021	PFO	33.4	HDD	0	0	Red River
8.3	WD022	PFO	18.3	Open Cut	0.03	0.01	Red River
8.4	WD023	PFO	64.1	Open Cut	0.10	0.04	Red River
8.5	WD024	PFO	NA <u>c/</u>	NA	0.01	0	Red River
8.6	WD025b	PEM	330.3	Open Cut	0.77	0	Red River
8.9	WD026b	PEM	52.4	Open Cut	0.07	0	Red River
9.0	WD027b	PEM	77.0	Open Cut	0.13	0	Red River
9.3	WD028b	PEM	131.6	Open Cut	0.19	0	Red River
9.5	WD029	PEM	373.2	Open Cut	0.60	0	Red River
9.6	WD030	PEM	26.9	Open Cut	0.05	0	Red River
10.7	WD031	PEM	NA <u>c/</u>	NA	0.22	0	Red River
11.1	WB030	PEM	189.9	Open Cut	0.28	0	Red River
11.2	WB029	PEM	134.0	Open Cut	0.25	0	Red River
15.3	WD028a	PEM	240.2	Open Cut	0.38	0	DeSoto
15.7	WD027a	PEM	NA <u>c/</u>	NA	0.01	0	DeSoto
16.1	WD026a	PEM	71.2	Open Cut	0.11	0	DeSoto

**Table 2**

**Wetlands Within the Project Workspaces**

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a</u> /	Operation <u>b</u> /	
17.1	WD025a	PFO	37.5	HDD	0	0	DeSoto
17.1	WD025	PEM	18.1	HDD	0	0	DeSoto
17.3	WD024a	PFO	71.9	HDD	0	0	DeSoto
17.5	WB023	PFO - Bald Cypress/ Tupelo	65.5	Open Cut	0.11	0.05	DeSoto
17.7	WB022	PFO	566.1	Open Cut	0.89	0.38	DeSoto
17.7	WB022	PEM	NA <u>c</u> /	NA	0.07	0	DeSoto
18.0	WB021	PEM	34.9	HDD	0	0	DeSoto
19.1	WB046	PEM	66.7	Open Cut	0.42	0	DeSoto
19.2	WB046	PFO	1,831.2	Open Cut	2.82	1.26	DeSoto
19.8	WB047	PFO	249.8	Open Cut	0.40	0.17	DeSoto
21.2	WC001	PFO	169.1	Open Cut	0.30	0.12	DeSoto
21.4	WC002	PFO	1,133.2	Open Cut	1.82	0.78	DeSoto
21.5	WC002	PEM	NA <u>c</u> /	NA	0.11	0	DeSoto
22.8	WC003	PFO	180.3	Open Cut	0.31	0.12	DeSoto
23.2	WB001	PFO	172.4	Open Cut	0.30	0.12	DeSoto
23.4	WB002	PSS	NA <u>c</u> /	NA	<0.01	0	DeSoto
23.7	WB003a	PEM	28.6	Open Cut	0.04	0	DeSoto
23.7	WB003	PFO	215.7	Open Cut	0.32	0.15	DeSoto
23.7	WB003	PEM	NA <u>c</u> /	NA	0.03	0	DeSoto
24.3	WF037	PFO	255.1	Open Cut	0.44	0.17	DeSoto
24.6	WF038	PFO	1,032.1	Open Cut	1.78	0.71	DeSoto

**Table 2**

**Wetlands Within the Project Workspaces**

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
30.5	WB006	PFO	84.0	Open Cut	0.13	0.05	Sabine
30.6	WB007	PEM	89.0	Open Cut	0.13	0	Sabine
30.9	WB008	PSS	42.7	Open Cut	0.05	0.01	Sabine
32.1	WB009	PEM	NA <u>c/</u>	NA	0.01	0	Sabine
33.0	WB012b	PFO	80.4	Open Cut	0.12	0.05	Sabine
33.0	WB012a	PFO	1.2	Open Cut	0.05	0	Sabine
34.8	WB011	PSS	115.9	Open Cut	0.20	0.03	Sabine
34.8	WB010	PFO	91.2	Open Cut	0.13	0.06	Sabine
37.2	WB013	PEM	NA <u>c/</u>	NA	<0.01	0	Sabine
39.1	WB014	PFO	31.7	Open Cut	0.07	0.02	Sabine
39.1	WB014	PEM	NA <u>c/</u>	NA	0.01	0	Sabine
39.1	WB015	PFO	84.7	Open Cut	0.11	0.06	Sabine
39.1	WB015	PEM	NA <u>c/</u>	NA	0.02	0	Sabine
39.8	WB015a	PSS	115.8	Open Cut	0.23	0.03	Sabine
40.1	WB016	PEM	NA <u>c/</u>	NA	<0.01	0	Sabine
40.9	WF033	PEM	67.5	Open cut	0.05	0	Sabine
41.1	WF034	PEM	NA <u>c/</u>	NA	0.03	0	Sabine
41.1	WF035	PEM	NA <u>c/</u>	NA	0.07	0	Sabine
42.2	WB018	PFO	816.8	Open Cut	1.44	0.57	Sabine
42.2	WB018	PEM	NA <u>c/</u>	NA	0.01	0	Sabine
42.8	WB018a	PFO	394.3	Open Cut	0.70	0.46	Sabine
44.2	WA016	PEM	57.6	Open Cut	0.11	0	Sabine
44.3	WA015	PSS	43.9	Open Cut	0.07	0.01	Sabine

Table 2

Wetlands Within the Project Workspaces

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
44.3	WA015	PEM	NA <u>c/</u>	NA	0.01	0	Sabine
44.4	WA014	PEM	257.6	Open Cut	0.45	0	Sabine
44.5	WA013	PEM	20.8	Open Cut	0.05	0	Sabine
46.0	WA012	PEM	51.9	Open Cut	0.09	0	Sabine
49.4	WA010	PEM	126.8	Open Cut	0.26	0	Sabine
49.5	WA009	PEM	257.6	Open Cut	0.50	0	Sabine
49.5	WA011	PEM	NA <u>c/</u>	NA	<0.01	0	Sabine
49.6	WA008	PEM	107.2	Open Cut	0.17	0	Sabine
51.7	WA007	PFO	11.3	Open Cut	0.02	0.01	Sabine
52.8	WA006	PFO	131.2	Open Cut	0.33	0.09	Sabine
57.7	WA005	PSS	109.6	Open Cut	0.2	0.03	Sabine
57.9	WC008	PSS	56.1	Open Cut	0.1	0.01	Sabine
58.3	WA004	PSS	90.2	Open Cut	0.17	0.02	Sabine
59.3	WG601	PEM	89.2	Open Cut	0.13	0	Sabine
61.8	WC004	PFO - Bald Cypress/ Tupelo	102.7	HDD	0	0	Sabine
61.9	WA003	PEM	0	HDD	0	0	Sabine
61.9	WA003	PFO	77.8	HDD	0	0	Sabine
63.1	WA001	PFO	NA <u>c/</u>	NA	0.01	0	Sabine
64.1	WA002	PEM	NA <u>c/</u>	NA	<0.01	0	Sabine
72.3	WA021	PFO	160.2	Open Cut	0.27	0.1	Vernon
72.8	WA038	PFO	47.0	HDD	0	0	Vernon

Table 2

Wetlands Within the Project Workspaces

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
73.1	WA037	PFO	NA <u>c/</u>	NA	0.02	0	Vernon
73.1	WA039	PFO	105.9	Open Cut	0.2	0.07	Vernon
73.8	WA040	PSS	89.9	Open Cut	0.17	0.02	Vernon
73.8	WA041	PFO	235.8	Open Cut	0.39	0.16	Vernon
73.9	WE001b	PFO	253.8	Open Cut	0.44	0.18	Vernon
81.8	WA022	PFO	NA <u>c/</u>	NA	0.03	0	Vernon
82.7	WA023	PFO	169.2	Open Cut	0.21	0.11	Vernon
85.6	WA024	PEM	0.0	Open Cut	0.02	0	Vernon
85.6	WA024	PFO	80.1	Open Cut	0.04	0.04	Vernon
85.8	WA025	PFO	53.9	Open Cut	0.07	0.04	Vernon
87.7	WA026	PSS	34.2	Open Cut	0.06	0.01	Vernon
88.3	WA027	PFO	219.5	Open Cut	0.40	0.16	Vernon
89.6	WA028	PFO	12.4	Open Cut	0.02	0.01	Vernon
90.7	WA029	PFO	NA <u>c/</u>	NA	<0.01	0	Vernon
91.3	WA030	PFO	117.4	Open Cut	0.20	0.08	Vernon
91.7	WA031	PFO	147.1	Open Cut	0.26	0.1	Vernon
94.6	WA033	PFO	1,125.8	Open Cut	1.93	0.77	Vernon
95.4	WA034	PFO	336.4	Open Cut	0.51	0.22	Vernon
95.6	WA035	PEM	118.4	Open Cut	0.21	0	Vernon
95.7	WH003	PSS	30.0	Open Cut	0.06	0.01	Vernon
95.7	WH002	PFO	NA <u>c/</u>	NA	0.02	0	Vernon

Table 2

Wetlands Within the Project Workspaces

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a</u> /	Operation <u>b</u> /	
96.1	WH004	PFO - Bald Cypress/ Tupelo	232.0	HDD	0	0	Vernon
96.4	WF009	PFO	569.1	HDD/Open cut	0.32	0.13	Beauregard
98.7	WA043	PFO	232.2	Open Cut	0.38	0.16	Beauregard
99.1	WE002	PFO	322.3	Open Cut	0.55	0.22	Beauregard
99.9	WF003	PFO	154.6	Open Cut	0.29	0.11	Beauregard
100.5	WB045	PFO	134.4	Open Cut	0.22	0.09	Beauregard
101.0	WB044	PFO	106.1	Open Cut	0.16	0.07	Beauregard
101.6	WB043	PFO	217.4	Open Cut	0.35	0.15	Beauregard
102.4	WB042	PFO	101.4	Open Cut	0.19	0.07	Beauregard
106.9	WG500	PFO	172.2	Open Cut	0.29	0.12	Beauregard
107.8	WB037	PFO	110.8	Open Cut	0.17	0.08	Beauregard
110.5	WB035b	PFO	121.5	Open Cut	0.24	0.08	Beauregard
110.6	WB034	PFO	400.5	Open Cut	0.67	0.28	Beauregard
111.1	WB031	PFO	88.3	Open Cut	0.13	0.06	Beauregard
113.6	WE001a	PFO	84.9	Open Cut	0.11	0.06	Beauregard
114.4	WG002a	PEM	NA <u>c</u> /	NA	0.12	0	Beauregard
114.4	WG002a	PFO	NA <u>c</u> /	NA	<0.01	0	Beauregard
115.8	WE003	PFO	37.2	Open Cut	0.07	0.03	Beauregard
116.3	WE004a	PFO	44.6	Open Cut	0.07	0.03	Beauregard
119.9	WF006	PSS	59.5	Open Cut	0.09	0.01	Beauregard
120.1	WF007	PFO	342.1	Open Cut	0.53	0.23	Beauregard

**Table 2**

**Wetlands Within the Project Workspaces**

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
120.8	WF008	PFO	82.3	Open Cut	0.13	0.06	Beauregard
121.3	WF011	PFO	32.5	Open Cut	0.05	0.02	Beauregard
121.5	WF012	PFO	79.2	Open Cut	0.14	0.05	Beauregard
121.6	WF013	PFO	17.5	Open Cut	0.05	0.01	Beauregard
122.1	WF014	PEM	217.4	Open Cut	0.37	0	Beauregard
123.7	WF015	PFO	31.7	Open Cut	0.05	0.02	Beauregard
124.3	WF016	PFO	NA <u>c/</u>	NA	0.17	0	Beauregard
125.1	WF017	PFO	106.4	Open Cut	0.19	0.08	Beauregard
125.2	WF018	PFO	263.5	Open Cut	0.42	0.18	Beauregard
125.4	WF019	PFO	529.1	Open Cut	0.87	0.37	Beauregard
125.7	WF020	PFO	762.0	Open Cut	1.33	0.52	Beauregard
126.1	WF021	PFO	178.9	Open Cut	0.32	0.12	Beauregard
127.0	WH009	PFO	NA <u>c/</u>	NA	0.02	0	Beauregard
127.4	WH008	PEM	15.2	Open Cut	0.03	0	Beauregard
127.4	WH007	PFO	198.9	Open Cut	0.34	0.14	Beauregard
127.9	WH006	PFO	97.1	Open Cut	0.16	0.07	Beauregard
129.6	WE005c	PFO	299.5	Open Cut	0.51	0.21	Beauregard
131.1	WE005b	PFO	331.3	Open Cut	0.57	0.23	Calcasieu
132.5	WE004b	PFO	1,946.2	HDD	0	0	Calcasieu
<b>Pipeline Subtotal</b>					<b>37.58</b>	<b>11.73</b>	
<b>Access Roads <u>d/</u></b>							
8.8	WG002b	PEM	68.2	Existing Road	0	0	Red River
60.2	WC005	PSS	NA <u>e/</u>	Existing Road	0	0	Sabine

**Table 2**

**Wetlands Within the Project Workspaces**

Approximate Milepost	Wetland ID	Wetland Classification	Crossing Length (feet)	Planned Crossing Method	Wetland Acreage Affected		Parish
					Construction <u>a/</u>	Operation <u>b/</u>	
69.0	WK005	PFO	55.4	Existing Road	0	0	Vernon
73.6	WG003	PEM	NA <u>e/</u>	Existing Road	0	0	Vernon
114.4	WG002a	PEM	52.1	Existing Road	0	0	Beauregard
120.1	WF007	PFO	285.9	Existing Road	0	0	Beauregard
120.8	WF008	PFO	82.6	Existing Road	0	0	Beauregard
124.5	WG001a	PFO	274.6	Existing Road	0	0	Beauregard
126.1	WJ013	PFO	444.1	Existing Road	0	0	Beauregard
129.6	WE005c	PFO	318.0	Existing Road	0	0	Beauregard
131.1	WE005b	PFO	324.0	Existing Road	0	0	Calcasieu
<b>Access Roads Subtotal</b>					<b>0</b>	<b>0</b>	
<b>Project Total</b>					<b>37.58</b>	<b>11.73</b>	

- a Construction impacts on wetlands include the 75-foot-wide construction right-of-way and temporary workspaces, except in areas encompassed by HDD crossings, which would not require construction right-of-way between the HDD entrances and exits.
- b Operational forested wetland impacts calculated based on a 30-foot-wide corridor maintained in a scrub shrub or emergent state. Operational scrub shrub impacts calculated based on a 10-foot-wide corridor maintained in an emergent state. There would be no permanent impacts on emergent wetlands.
- c Crossing of NA indicates that the wetland would not be crossed by the pipeline trench, and the feature is only present in the temporary workspace.
- d Access roads would not require improvements (e.g., grading, expansion, or fill) at wetland crossings.
- e Crossing length of NA indicates that an existing temporary construction access road centerline would not cross the wetland.

HDD = horizontal directional drill  
 PEM = palustrine emergent  
 PFO = palustrine forested  
 PSS = palustrine shrub-scrub

**Table 3**

**ATWS Within 50 Feet of Wetlands and Waterbodies**

<b>ATWS ID</b>	<b>Milepost</b>	<b>Distance from Wetland / Waterbody (feet)</b>	<b>Wetland / Waterbody ID</b>	<b>Justification</b>	<b>ATWS Acreage</b>
<b>Gulf Run Pipeline</b>					
ATWS-0192	20.6	34	SC001	Stream (SC001) begins within construction right-of-way. ATWS required to allow for vehicle parking, equipment and materials offloading and spoil storage for road bore/tie-in.	0.52
ATWS-0217	23.6	23	SB003, WB003	ATWS is placed in location to minimize impact on environmental features in the area. ATWS utilized for spoil storage for safe installation of wetland (WB003, WB003a) and stream (SB004, SB005) crossing	0.51
ATWS-0218	23.7	39	SB005, WB003a	Paralleling creek for extended distance, ATWS is needed for spoil storage for wetland and stream crossing.	0.26
ATWS-0225	24.8	0.0	SF033, WF038	Large elevation change at stream crossing (SF033) with limited area for spoil storage.	0.36
ATWS-0285	30.6	20	SB028, WB007, SB030	ATWS is required for spoil and material storage for the crossing of wetland (WB006) and stream (SB030), area has multiple environment features, ATWS is located for least impact on these features. The location of ATWS-0285 would reduce the amount of equipment and spoil that must be transported across a nearby wetland that does not extend across the full construction right-of-way.	0.40
ATWS-0302	32.2	17	SB042	Stream (SB042) begins at edge of construction right-of-way. Proposed ATWS needed due to elevation change and additional spoil storage for nearby stream crossing (SB041).	0.17

**Table 3**

**ATWS Within 50 Feet of Wetlands and Waterbodies**

<b>ATWS ID</b>	<b>Milepost</b>	<b>Distance from Wetland / Waterbody (feet)</b>	<b>Wetland / Waterbody ID</b>	<b>Justification</b>	<b>ATWS Acreage</b>
ATWS-0303	32.3	0	SB042	Stream (SB042) begins at edge of construction right-of-way. Proposed ATWS need to accomplish large diameter pipeline crossing.	0.29
ATWS-0407	42.8	10	SA177, WB018a	Location represents only upland available in area to store spoil for nearby stream (SA177) and wetland (WB018a) crossings.	0.16
ATWS-0502	51.7	8	PA006, WA007, SA045	ATWS is required for spoil and material storage for the crossing of stream (SA045), area has multiple environmental features, ATWS is located for least impact on these features.	0.29
ATWS-0524	53.6	11	SA041	Large elevation change at stream crossing (SA040) with no alternative location for spoil storage.	0.29
ATWS-0622	67.4	4	SA093	Stream (SA093) begins near edge of ATWS, Proposed ATWS needed due to elevation change and additional spoil storage for nearby stream crossing (SA092).	0.19
ATWS-0695	73.9	10	SA158, WA041	Location represents only upland available in area to store spoil for nearby stream (SA158) and wetland (WA041) crossings.	0.38
ATWS-0758	81.8	23	SA126b, SA126a	Location represents only upland available in area to store spoil for crossing of nearby stream (SA126a), given proximity of adjacent, existing pipelines.	0.12
ATWS-0854.2	96.2	12	SF012, WF010	Water withdrawal from Anacoco Bayou.	0.06
ATWS-0872	98.6	27	SA160, SA161	Location represents only upland available in area to store spoil for nearby stream (SA161 and SA160) crossings.	0.09

**Table 3**

**ATWS Within 50 Feet of Wetlands and Waterbodies**

<b>ATWS ID</b>	<b>Milepost</b>	<b>Distance from Wetland / Waterbody (feet)</b>	<b>Wetland / Waterbody ID</b>	<b>Justification</b>	<b>ATWS Acreage</b>
ATWS-0884	100.0	29	WF003	Paralleling wetland for extended distance, and ATWS is needed for soil storage for wetland crossing (WF003).	0.17
ATWS-1044	125.3	0	SF017, WF019, WF018	Location represents only upland available in area to store spoil for nearby stream (SF017) and wetland (WF018 and WF019) crossings.	0.44

ATWS = additional temporary workspace

**Table 4**

**Louisiana Rare Plant Species that may Occur in the Gulf Run Pipeline Area**

<b>Species</b>	<b>Project Parish(es) Occurrences</b>	<b>State Element Rank <u>a</u>/</b>	<b>Habitat</b>	<b>Suitable Habitat Present</b>	<b>Potential for Occurrence Within the Gulf Run Pipeline Area</b>
Compact prairie-clover ( <i>Dalea compacta</i> var. <i>pubescens</i> )	Sabine	S1	Grasslands with dry rocky limestone or chalk slopes, prairies with stony silty clay loam, or disturbed habitat such as roadsides.	No	Not likely
Southern lady's-slipper ( <i>Cypripedium kentuckiense</i> )	DeSoto, Vernon	S1	Mesophytic woods, calcareous forests, and hardwood slope forests.	No	Not likely
Dummond's nailwort ( <i>Paronychia drummondii</i> )	Vernon	S2	Sandy woodlands, clearings, and roadsides.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Spreading pygmyleaf ( <i>Loeflingia squarrosa</i> )	Vernon	S1	Sandy, gravelly areas.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Bloodroot ( <i>Sanguinaria candensis</i> )	Vernon	S2	Moist to dry woods and thickets, often on floodplains and near shores or streams on slopes.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
American alumroot ( <i>Heuchera Americana</i> )	DeSoto	S2	Rich woods; rock outcrops, particularly where soils are subacidic to circumneutral.	No	Not likely.
Missouri coneflower ( <i>Rudbeckia missouriensis</i> )	Vernon	S2	Hill prairies, limestone and dolomite glades, and barren scrubby savannas in upland areas.	No	Not likely.

**Table 4**

**Louisiana Rare Plant Species that may Occur in the Gulf Run Pipeline Area**

<b>Species</b>	<b>Project Parish(es) Occurrences</b>	<b>State Element Rank <u>a</u>/</b>	<b>Habitat</b>	<b>Suitable Habitat Present</b>	<b>Potential for Occurrence Within the Gulf Run Pipeline Area</b>
Purple coneflower ( <i>Echinacea purpurea</i> )	Richland, Vernon	S2	Well-drained limestone, sand, clay, loam; rocky, open woods; thickets; prairies.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Pyramid magnolia ( <i>Magnolia pyramidata</i> )	Sabine	S2	Dense, rich wooded bluffs, ravines; uplands.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Thymeleaf pinweed ( <i>Lechea minor</i> )	Calcasieu	S2	Full sun in dry, sandy woods, clearings, roadside banks.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Heartleaf skullcap ( <i>Scutellaria cardiophylla</i> )	Vernon	S2	Sandy woods.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Long-sepaled false Dragon-head ( <i>Physotegia lonfispala</i> )	Calcasieu	S2	Bottomland hardwood forests along small to mid-size streams and interior fresh marshes in flat terrain.	No	Not likely.
Sabine coneflower ( <i>Rudbeckia scabrifolia</i> )	Vernon	S2	Western hillside seepage bogs in longleaf pine woods.	No	Not likely.
Scarlet catchfly ( <i>Silene subcilata</i> )	Sabine, Vernon	S2	Xeric sandhills and sandy woodlands.	No	Not likely.
Silver croton ( <i>Croton argyranthemus</i> )	Vernon	S2	Well drained uplands, sandy soils.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.

**Table 4**

**Louisiana Rare Plant Species that may Occur in the Gulf Run Pipeline Area**

<b>Species</b>	<b>Project Parish(es) Occurrences</b>	<b>State Element Rank <u>a</u>/</b>	<b>Habitat</b>	<b>Suitable Habitat Present</b>	<b>Potential for Occurrence Within the Gulf Run Pipeline Area</b>
Red milkweed ( <i>Asclepias rubra</i> )	Beauregard, Vernon	S3	Bogs and marshy area in meadows and pine barrens.	Yes	Not likely. No known occurrences in Project footprint per LDWF and no individuals observed in suitable habitat during habitat surveys.
Wand blackroot ( <i>Pterocaulon virgatum</i> )	Beauregard, Calcasieu, DeSoto	S3	Coastal prairie remnants; there are a few occurrences on pimple mounds in saline prairies and in pine flatwoods further inland.	No	Not likely.

Sources: Andreas, 1984; Diggs et al., 1999; Huegel, 2010; Contu, 2012; Hartman and Rabeler, 2012; Lady Bird Johnson Wildflower Center, 2012a, 2012b, 2013, 2014, 2015a, 2015b; Hilty, 2020a; LDWF, 2019a, 2019b, 2019c, 2019d; NatureServe, 2019a, 2019b

a State Element Rank:

- S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation.
- S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation.
- S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations).