

MARAIS PIPELINE, LLC

MARAIS PIPELINE PROJECT

Joint Permit Application Narrative

Submitted to

Louisiana Department of Energy and Natural Resources

Office of Coastal Management

(Permit Application No. 2025XXXX)

and

U.S. Army Corps of Engineers

New Orleans District, Regulatory Branch, Western Evaluation Section

(U.S. Army Corps of Engineers Permit Application File No. XXX-XXXX-XXXX-XXX)

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1.0 INTRODUCTION

Marais Pipeline, LLC (Marais or Applicant) plans to site, construct, and operate a new natural gas pipeline and associated facilities in Calcasieu and Cameron Parishes, Louisiana. The purpose of the pipeline is to provide an additional 1.9 billion cubic feet per day (Bcf/d) of gas supply to Venture Global CP2 LNG, LLC's CP2 LNG Terminal via connection to existing natural gas infrastructure in Calcasieu Parish. The proposed development is referred to as the Marais Pipeline Project (Project). The Project is within the U.S. Army Corps of Engineers (USACE) New Orleans (USACE-New Orleans) District and fully within the Louisiana Coastal Zone. The Project's regional location is displayed on an aerial map in Sheet 1 and a U.S. Geological Survey topographic map in Sheet 2.

Marais will construct approximately 44.0 miles of new, 48-inch diameter, Class 900 natural gas pipeline and associated aboveground facilities, including two meter stations, four mainline valves (MLVs), and two tap valves.

This Joint Permit Application (JPA) Narrative (Narrative) serves to describe the proposed work, environmental analyses, and impact avoidance and minimization measures associated with the authorizations sought by Marais from the Louisiana Department of Energy and Natural Resources/Office of Coastal Management (LDENR/OCM) under the Coastal Use Permit regulations in Louisiana Administrative Code (LAC) Title 43, Part I, Chapter 7 and the USACE-New Orleans District under Clean Water Act Section 404 and Rivers and Harbors Act of 1899 Sections 10 and 14. A Nationwide Permit Preconstruction Notification Form (Engineering Form 6082) is included as Appendix A.

As indicated in Sheets 1 and 2, the Project is entirely within the USACE-New Orleans District and the Louisiana Coastal Zone. A joint pre-application meeting with the USACE-New Orleans District and the LDENR/OCM was held on March 5, 2025. The Applicant submits this Narrative to the USACE-New Orleans District and the LDENR/OCM as part of the complete JPA for the Project.

The JPA submitted by Marais includes the following:

- Application Form for work associated with the Project.
- Pipeline Drawings (Plats) depicting proposed work for the Project.
- Narrative as a complement to the Application Form. The Narrative provides additional details about the Project's two principal elements: Aboveground Facilities and Pipeline. It describes the work to be conducted by Marais, identifies associated impacts, and provides the necessary needs, alternatives, and justification analyses. It also discusses preliminary compensatory mitigation for

permanent wetland and waterbody impacts. The Narrative includes the following appendices:

- o Appendix A Nationwide Permit Preconstruction Notification (Engineering Form 6082)
- o Appendix B Alternatives Figure Sets
- o Appendix C Access Roads and Additional Temporary Workspace Justification
- o Appendix D Horizontal Directional Drill Site Specific Crossing Plans and Justification
- o Appendix E Wetland Delineation Report
- o Appendix F Wetlands and Waterbodies Crossed by the Project
- o Appendix G Project-related Permits, Approvals, and Consultations

2.0 JUSTIFICATION AND NEEDS – JPA STEPS 8E AND 8F

The purpose of the Marais Pipeline Project is to create the firm transportation capacity required to support the additional feed gas needed by the CP2 LNG Terminal beyond the supply to be provided by Venture Global CP Express LLC's CP Express Pipeline. Capacity provided by the Marais Pipeline will represent an increase of 1.9 Bcf/d in gas supply to the CP2 LNG Terminal. In addition to incremental gas supply, the Project will serve as a supplementary source of feed gas to the CP2 LNG Terminal in the event of temporary inoperability of the CP Express Pipeline, strengthening reliability of the CP2 LNG Terminal and ability to fulfill commitments to customers.

The Project will result in the following benefits to the public interest:

- Stimulate the local, state, regional, and national economies through job creation;
- Generate substantial tax revenues and increase economic activity;
- Increase trade with foreign nations and strengthen the United States' balance of trade;
- Support international allies in diversification in energy supply and contribution to energy security; and
- Displace more carbon-intensive energy sources.

The Project will transport abundant domestically produced natural gas to the permitted CP2 LNG Terminal for liquefaction, storage, and export to overseas markets, providing additional natural gas supply and greater diversification of global energy sources. Specifically, the Project will further strengthen the United States' ability to meet European allies' growing demand for LNG.

In addition to these geopolitical benefits and in partnership with renewables, the Project will support global decarbonization efforts as a replacement for highly carbon-intensive power sources in international economies, especially in Asia.

In addition to being consistent with the public interest, the Project is consistent with supporting Louisiana's role in the United States' objective to position itself as the international leader in energy development, further demonstrating its justification and need.¹

2.1 PROJECT PURPOSE—ENGINEERING FORM 6082 BLOCK 21

The purpose of the Project is to develop a new natural gas pipeline to supply an additional 1.9 Bcf/d of domestically produced gas to the CP2 LNG Terminal for export to overseas markets. The Marais Pipeline will connect with the pipeline transmission grid in southwest Louisiana to obtain additional feed gas required for the CP2 LNG Terminal to liquefy, store, and subsequently export LNG to overseas markets via ocean-going LNG carriers. This additional gas is needed to maximize LNG production from the CP2 LNG Terminal to satisfy global demand for LNG.

2.2 LOUISIANA DEPARTMENT OF ENERGY AND NATURAL RESOURCES PURPOSE AND NEED

Article IX, Section 1 of the Louisiana Constitution of 1974 sets forth the “public trust doctrine” and imposes “a duty of environmental protection on all state agencies and officials, establishes a standard of environmental protection, and mandates the legislature to enact laws to implement fully this policy.”² The State and Local Coastal Restoration Management Act (Act) was enacted by the Louisiana Legislature (La. R.S. 49:214.22(1)). The Act establishes a coastal management program with LDENR and requires anyone seeking to engage in activities that will significantly impact coastal waters to obtain a coastal use permit from LDENR (La. R.S. 49:214.26; La. R.S. 49:214.30). LAC Title 43, Part I, Chapter 7 fulfills the constitutional requirement by providing guidelines for applicable coastal uses and requirements for permits, including consideration of purpose, need, alternatives, and mitigation. Specifically, the LDENR Coastal Use Guidelines (LAC 43:I.701.F) require all applicants for a permit to provide information on (among other things) the following:

7. Economic need for use and extent of impacts of use on economy of locality.

¹ The White House, Executive Order 14154: Unleashing American Energy (January 2025), *available online at:* <https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-american-energy/>.

² *Save Ourselves, Inc. v. Louisiana Environmental Control Commission*, 452 So.2d 1152, 1156 (La.1984).

8. Extent of resulting public and private benefits.

* * *

13. The extent to which regional, state and national interests are served including the national interest in resources and the siting of facilities in the coastal zones as identified in the coastal resources program.

As public trustee for the coastal management program, LDENR is required to follow the guidelines when determining whether to grant a coastal use permit. As discussed above and in greater detail herein, there will be significant positive economic impacts, public and private benefits in terms of tax revenues and job creation, and positive impacts on state and national interests.

2.3 DETERMINATION OF BENEFITS

Through provision of additional transportation capacity, the Marais Pipeline will provide a cost-effective outlet for new domestic natural gas to meet international market demand and customer requirements via export from the CP2 LNG Terminal. Based on various recent economic studies of the United States' current and projected patterns of supply and demand of domestically produced LNG, the Project will provide benefits that will outweigh adverse impacts. As noted on the Louisiana Office of the Governor's website, "Since 2016 the LNG industry has supported an average of 273,000 American jobs, contributed \$408 billion to our [gross domestic product], and is projected to generate \$165 billion in new state and federal tax revenues through 2040..."³ The Marais Pipeline will support further development in the United States' LNG industry, resulting in additional benefits summarized below.

Direct Job Creation/Employment Sustainability

The Project will require approximately 450 workers for construction of the pipeline system. Hundreds of off-site workers will also be required to support the Project.

Economic Benefits

In addition to job creation to support construction, the Project will result in increased tax revenues for the parishes in which the facilities will be located. At the local level, the Project will generate sales tax revenues, as well as ad valorem tax revenue.

³ Jeff Landry Office of the Governor, Governor's Coalition for Energy Security Criticizes Biden's LNG Export Study, Landry Announces (December 2024), *available online at*: <https://gov.louisiana.gov/news/4704>.

National Security and Foreign Relations

By promoting a global, liquid, and robust market for natural gas, the United States will increase economic trade and ties with foreign nations by providing access to a reliable supply of LNG. This trade will enhance the national security of the United States by encouraging positive foreign relations and promoting economic prosperity with trading partners.

Recent public comments from European officials confirm countries across Europe are looking to purchase additional LNG from the United States.^{4,5} The Federal Energy Regulatory Commission (FERC) noted in its “Order Granting Authorizations Under Sections 3 and 7 of the Natural Gas Act” (Order) for the CP2 LNG and CP Express Project that international energy and utility companies have advocated for the need for the CP2 LNG Terminal. The Order further stated, “Inpex Corporation and JERA, of Japan, and EnBW Energie Baden-Wurtemberg AG, of Germany, each filed comments stressing the importance of the CP2 LNG Project. The entities note that the project will contribute to energy security in Japan, Germany, and globally.”⁶ The Marais Pipeline will further promote stabilization in international energy supply through provision of additional gas capacity to the CP2 LNG Terminal for liquefaction and export to overseas allies.

Environmental Benefits

Benefits will be realized from the importation of LNG by foreign countries and its consequent increased availability as fuel for power generation and transportation. LNG will displace existing and future coal, heavy fuel oil, and diesel power generation, and displace heavy fuel oil, diesel, and gasoline for vehicles and marine engines, thereby reducing greenhouse gases, sulfur oxides, nitrogen oxides, and other products of combustion.

3.0 PROJECT FACILITIES DESCRIPTION – JPA STEP 5A

The Marais Pipeline will transport gas from a meter station in Calcasieu Parish, Louisiana to the CP2 LNG Terminal in Cameron Parish, Louisiana. Table 3-1 provides the overall land

⁴ Reuters, Germany's Scholz welcomes U.S. turnaround in energy policy, Handelsblatt reports (January 2025), *available online at:* <https://www.reuters.com/business/energy/germanys-scholz-welcomes-us-turnaround-energy-policy-handelsblatt-reports-2025-01-26/>.

⁵ Reuters, EU may consider replacing Russian LNG imports with those from US, von der Leyen says (November 2024), *available online at:* <https://www.reuters.com/business/energy/eu-may-consider-replacing-russian-lng-imports-with-those-us-von-der-leyen-says-2024-11-08/>.

⁶ Federal Energy Regulatory Commission, 187 FERC ¶ 61,199: Order Granting Authorizations Under Sections 3 and 7 of the Natural Gas Act (June 2024), *available online at:* https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20240627-3107&optimized=false.

requirements for Project facilities; a narrative description of the Project facilities is provided in Section 3.1.

TABLE 3-1: Summary of Project Land Requirements			
Marais Pipeline Project			
Project Facility	Temporary Workspace (acres)^a	Operational Footprint (acres)^b	Total
Marais Pipeline Right-of-Way	670.2	196.6	866.8
Permanent Workspace	0.0	196.6 ^c	196.6
Temporary Workspace	540.6	0.0	540.6
Additional Temporary Workspace	129.5	0.0	129.5
Aboveground Facilities	2.1	17.3	19.4
Marais Meter Station / MLV1	2.1	13.4	15.5
MLV2	0.0	0.2	0.2
MLV3	0.0	0.2	0.2
Tap Valve Site MP 3.1	0.0	0.1	0.1
Tap Valve Site MP 42.1	0.0	0.1	0.1
Meter Station 2 / MLV4	0.0	3.5	3.5
Access Roads	20.6	5.2	25.9
Contractor Yards^d	15.4	0.0	15.4
Total^e	708.2	219.2	927.4

^a Temporary workspace refers to workspace beyond the operational footprint needed to safely construct the Marais Pipeline.

^b Operational footprint of the pipeline right-of-way refers to areas used during construction of the Marais Pipeline that will be retained by Marais following construction as a permanent easement for operations and maintenance.

^c Specific areas of the operational footprint will be subject to limited periodic vegetation maintenance to ensure pipeline integrity during operations; the width and location of maintained areas will depend on vegetation type, upland/wetland status, and pipeline installation method.

^d Three temporary contractor yards will be used for various purposes during pipeline construction; however, one yard is excluded from the summary of land requirements as it is outside the Coastal Zone and not subject to LDENR or USACE permitting.

^e Totals may not match the sum of addends due to rounding.

3.1 PROJECT FACILITIES

The Project facilities are described below.

3.1.1 Pipeline Right-of-Way

The Marais Pipeline will consist of approximately 44.0 miles of new Class 900, 48-inch-diameter natural gas pipeline beginning in Calcasieu Parish, Louisiana and terminating

within the CP2 LNG Terminal in Cameron Parish, Louisiana. The typical Project right-of-way workspace layout is described in Section 5.

The temporary workspace identified in Table 3-1 refers to workspace beyond the operational footprint needed to safely construct the Marais Pipeline. The operational footprint of the pipeline right-of-way refers to areas used during construction of the Marais Pipeline that will be retained by Marais following construction as a permanent easement for operations and maintenance. In addition to the operational footprint (i.e., permanent workspace) and typical temporary workspace required for construction, additional temporary workspace (ATWS) outside the typical construction right-of-way will be required in certain situations, including at, but not limited to, the following locations: road, waterbody, and existing utility line and pipeline crossings; points of inflection; staging areas; spread breaks; reverse lay sections; hydrostatic test section breaks; MLV and other aboveground facilities; areas where special construction methods will be implemented (e.g., horizontal directional drill [HDD]); and areas where additional space is needed for storage of stripped topsoil. Unless topographic or other factors impose constraints or if the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land, ATWS will be set back at least 50 feet from the edges of waterbodies and wetlands. When construction is complete, ATWS will be restored to preconstruction conditions.

3.1.2 Aboveground Facilities

Project aboveground facilities will include two meter stations, four MLVs, and two tap valves. Meter stations will include the following:

- One meter station at the origin of the Marais Pipeline at milepost (MP) 0.0 (the Marais Meter Station)
- One meter station at the terminus of the Marais Pipeline at MP 44.0 within the CP2 LNG Terminal

MLVs will include the following:

- One MLV at MP 0.0 within the Marais Meter Station (MLV-1)
- One MLV at MP 11.7 (MLV-2)
- One MLV at MP 31.2 (MLV-3)
- One MLV at MP 44.0 within the CP2 LNG Terminal (MLV-4)

Tap valves will include the following:

- One tap valve at MP 3.1
- One tap valve at MP 42.1

3.1.3 Access Roads

Access roads will be used to transport construction workers, equipment, and materials between the construction work area and public highways/roads. These access roads include some private roads and/or two-track roads previously permitted by Venture Global CP Express, LLC and Venture Global CP2 LNG, LLC for the CP2 LNG and CP Express Project and/or by Venture Global Calcasieu Pass, LLC and TransCameron Pipeline, LLC for the Calcasieu Pass and TransCameron Pipeline Project. Some roads may require minor modification or improvement to safely support expected loads. Where needed, the access roads will be improved by widening to a nominal 20 feet. Following Project construction, temporary access roads will be returned to preconstruction conditions, or if outside wetlands, improvements may be left in place with landowner approval. Permanent access roads will be retained for use during operations. Access roads are shown on the alignment sheets provided in the plats.

3.1.4 Contractor Yards

Three temporary contractor yards will be used for various purposes during pipeline construction, such as pipe fabrication, concrete coating operations, construction staging, construction materials storage, equipment and employee parking, and temporary construction offices. Following construction, contractor yards will be restored in accordance with the landowner agreement and permit requirements. The three yards proposed for Project construction were previously used for construction of the TransCameron Pipeline and/or permitted as workspace for construction of the CP Express Pipeline. One of the three yards is outside the Louisiana Coastal Zone and not subject to LDENR or USACE permitting.

4.0 ALTERNATIVES

4.1 PIPELINE ROUTE ALTERNATIVES

Marais evaluated four pipeline routes beginning at the Marais Meter Station to determine each route's viability and impacts on coastal resources (see Appendix B). To minimize environmental impacts to the greatest extent practicable, Marais collocated the pipeline route with existing and/or permitted rights-of-way (ROWs), namely the CP Express Pipeline and TransCameron Pipeline ROWs. Collocating with existing ROWs can reduce habitat fragmentation and often allows construction workspaces to overlap previously disturbed areas, reducing overall impact. As a result of prioritizing collocation, the alternative routes considered by Marais were minor deviations from the proposed route. An environmental comparison of the proposed route and three alternatives (Alternative 1, Alternative 2, and Alternative 3) is presented in Table 4-1 and in Appendix B.

TABLE 4-1: Comparison of Major Pipeline Route Alternatives					
Marais Pipeline Project					
Environmental Factor	Unit	Proposed Pipeline Route	Alternative 1	Alternative 2	Alternative 3
Length	miles	44.0	43.9	43.8	43.9
Collocation with existing/permitted rights-of-way	miles (percent)	41.4 (94.2)	39.2 (89.4)	43.4 (98.9)	43.5 (98.9)
Roads crossed	no.	24	23	24	25
Forestland crossed ^a	miles	0.3	0.3	0.3	0.3
Agricultural land crossed ^a	miles	0.2	0.2	0.2	0.2
Waterbodies crossed	no.	121	116	106	119
Delineated wetlands crossed	miles	30.3	30.1	34.5	30.3
Estuarine emergent	miles	20.2	20.2	16.7	20.2
Estuarine scrub-shrub	miles	<0.1	<0.1	<0.1	<0.1
Palustrine forested	miles	0.5	0.5	0.5	0.5
Palustrine scrub-shrub	miles	0.8	1.1	1.0	0.8
Palustrine emergent	miles	8.9	8.4	16.3	8.9
Total delineated wetlands crossed	miles	30.3	30.1	34.5	30.3

^a Source: Annual National Land Cover Database Collection

Of the four pipeline routes, Alternative 2 is the shortest (43.8 miles) followed by Alternatives 1 and 3 (each 43.9 miles) and then the proposed route (44.0 miles). Alternatives 2 and 3 are collocated with existing/permitted rights-of-way for a greater percentage of their length (98.9 percent) when compared to the proposed route (94.2 percent) and Alternative 1 (89.4 percent). All four pipeline routes cross the same amount of forestland (0.3 mile) and agricultural land (0.2 mile).

During the early stages of Project routing, Alternative 1 was considered the preferred route for the Marais Pipeline. However, Alternative 1 crosses roughly one mile of land that is part of the United States Department of Agriculture Natural Resources Conservation Service’s (NRCS’s) Wetland Reserve Program (WRP). Through the WRP, the NRCS provides financial and technical assistance to eligible private landowners to protect, restore, and enhance wetlands that were previously degraded due to agricultural use. To construct the pipeline through this easement, Marais would need to obtain a Compatible Use Authorization from the NRCS prior to construction. A Compatible Use Authorization is only granted if, upon a determination by the NRCS, the proposed use is consistent with the long-term protection and enhancement of the wetland and other natural values of the easement area. Given the potential impacts within the easement area that would result from construction and long-term maintenance of the Project, it was unknown if a Compatible Use Authorization would be granted by the NRCS; furthermore, the timeframe for

obtaining a Compatible Use Authorization was anticipated to delay Project construction by an estimated 18 months.

The proposed route was designed to avoid crossing the WRP conservation easement by routing the pipeline north of Ellis Moss Road and the WRP property. Compared to Alternative 1, the proposed route results in only a 0.1 mile increase in total pipeline length and a marginal increase of 0.2 mile of wetlands crossed. Due to the potential for delays in Project construction and the minimal difference in total pipeline length and wetland impacts, Alternative 1 was eliminated from consideration in favor of the proposed route.

Alternative 2 has an advantage of being the shortest route considered for the Project (43.8 miles), matches Alternative 3 for the greatest percentage of collocated mileage (98.9 percent), and crosses the fewest waterbodies (106). Alternative 2 crosses the least amount of estuarine emergent wetlands (16.7 miles); however, it also crosses the greatest amount of palustrine emergent wetlands (16.3 miles) and the greatest total amount of wetlands (34.5 miles) of the routes considered. During design and evaluation of Alternative 2, some landowners requested the pipeline be relocated further north, which was accommodated by Marais through design of the proposed route. For this reason, Alternative 2 was eliminated from consideration in favor of the proposed route.

During evaluation of Alternative 3, it was determined the pipeline would cross a privately owned levee, and the owner of the parcel on which the levee is located requested Marais reroute the pipeline to avoid the levee crossing. The proposed route accommodates this request. Alternative 3 offers no significant advantage over the proposed route. Alternative 3 (43.9 miles) is slightly shorter than the proposed route (44.0 miles) and is collocated for a greater percentage (98.9 percent) than the proposed route (94.2 percent). Alternative 3 crosses more roads (25) than the proposed route (24) but also crosses fewer waterbodies (119) than the proposed route (121). Both Alternative 3 and the proposed route cross a total of 30.3 miles of wetlands, with identical mileage crossed in estuarine and palustrine habitats. Given that Alternative 3 offers no significant advantage over the proposed route and must cross the privately owned levee, Alternative 3 was eliminated from consideration in favor of the proposed route.

4.2 ALTERNATIVES AND JUSTIFICATION OF CONSTRUCTION METHODOLOGY

4.2.1 Marais Meter Station

A 37.5-acre compressor station (the Marais Compressor Station) was originally proposed at the current site of the Marais Meter Station at MP 0.0. However, upon further evaluation, Marais determined impacts could be minimized and the Project purpose could still be accomplished through installation of a meter station and free-flowing gas to the CP2 LNG Terminal. As a result, Marais elected to replace the compressor station with the currently proposed Marais Meter Station, thereby reducing permanent Project impacts by 24.1 acres.

During initial siting of the compressor station, Marais prioritized avoidance of impacts on sensitive mapped resources (e.g., wetlands and waterbodies) to the greatest extent practicable. The site selected for the original Marais Compressor Station consisted of upland agricultural land and a small amount of wetlands. Marais selected this site primarily due to its high elevation relative to the surrounding area. The Marais Meter Station footprint, aside from a small area in the southeast corner, would be located above five feet North American Vertical Datum of 1988 (NAVD 88).

The Marais Meter Station facility will be on a 13.4-acre footprint in the same location as the former Marais Compressor Station. Notably, the Marais Meter Station facility now avoids the majority of wetlands that would have been permanently impacted by the compressor station. Marais did not identify environmental concerns at the Marais Meter Station site requiring the need to identify and evaluate an alternative meter station site or configuration.

4.2.2 Access Roads

During Project design, Marais considered how to minimize impacts on coastal resources while evaluating the need for new and/or improved access roads. Due to the proposed pipeline route being more than 90% collocated with the permitted CP Express Pipeline and/or operational TransCameron Pipeline, Marais will utilize private roads and/or two-track access roads previously permitted for the CP Express Pipeline and/or TransCameron Pipeline. New access roads constructed for the Project will be limited to areas of the pipeline route where utilization of previously existing or permitted roads is not feasible and will be a typical width of 20-feet. It is necessary to keep access roads to a typical width of 20 feet to allow enough room for vehicles and construction equipment to safely travel and pass each other without incident. By utilizing existing and permitted roads to the greatest extent possible, Marais has further minimized Project impacts. Appendix C provides a table of Project access roads with a description of the improvements required.

4.2.3 Contractor Yards

Marais also considered how to minimize impacts on coastal resources through selection of contractor yards. It was determined that two contractor yards permitted for the CP Express Pipeline could also be utilized for the Marais Pipeline Project. As such, the previously permitted Savoie Yard (MP 35.0) and Boy's Village Road Yard (outside the Louisiana Coastal Zone in Calcasieu Parish) will be utilized during construction. The Savoie Yard was also previously used during construction of the TransCameron Pipeline. The KM Laydown Site at MP 3.1 was previously permitted as workspace for the CP Express Pipeline.

4.2.4 Mainline Valves

Mainline valve site locations are sited in accordance with the Code of Federal Regulations (CFR) Title 49 Part 192 and are primarily within the permanent easement of the Marais Pipeline. As a result, no alternative locations were evaluated.

4.3 CONSTRUCTION METHODOLOGY JUSTIFICATION

As further detailed in Section 5, various pipeline installation methods necessitate minimum construction ROW widths and workspace sizes to safely construct a large diameter 48-inch, Class 900 pipeline. Installation methods, ROW widths, and workspace dimensions are also dictated by constraints imposed by environmental conditions.

4.3.1 Construction in Saturated Wetland/Open Water Areas - Marsh Push

For installation in saturated wetland/open water areas where HDD is not proposed, Marais considered the use of conventional lay trenching versus marsh push installation. The marsh push method, as noted in Section 5, requires a ROW width of 150-feet, consisting of a 75-foot-wide spoil storage side and a 75-foot-wide working side for trenching and pipeline installation equipment. This width is based on the minimum width necessary for safe and practicable push installation, a 1.25 swell factor for excavated material that is subsequently stored as spoil, a minimum pipeline cover depth of three feet, and the addition of a 3.5-inch-thick concrete coat for negative buoyancy. Project soils are anticipated to have characteristically poor cohesion and will require shallow trench slopes to prevent safety concerns associated with sloughing of the trench walls. These soils are difficult to contain and require additional measures to keep storage piles within the ROW.

With the push method, the pipe joints are welded at the entry point and the pipe string floated along the pre-excavated water-filled ditch. This contrasts with the conventional lay method's use of multiple equipment pieces and vehicles along the entire length of the construction ROW, where pipe joints are laid out and welded alongside the ditch. Thus, conventional lay involves a higher level of construction activity and more repetitive disturbance than push installation, where activity along the ROW is largely restricted to trench excavation, pipeline guidance, float removal, and trench backfilling. If the pipeline was installed in these same areas via conventional lay (i.e., non-push construction), a construction ROW wider than 150 feet would be needed.

In addition to the larger footprint, the conventional lay construction method in these saturated wetland/open water areas would likely require additional matting (i.e., vertical stacking of mats). The stacked mats needed to establish an equipment travel lane in these locations would result in greater impacts on the terrain, requiring more extensive restoration efforts to return the areas to preconstruction conditions.

Moreover, in areas with significant amounts of open water and heavily inundated marshland, the conventional lay method is not feasible. The environmental conditions require the use of barges, large amphibious excavators, and/or excavators on semisubmersible mats. Marais did not select a method requiring barge use, given the availability of other methods with a smaller travel and workspace footprint and potential access restrictions in many locations. If the push method is not viable due to water level, a barge may be used. However, the push method represents the most viable alternative in these areas with the most limited footprint.

Accordingly, ROW width in saturated wetlands and open water areas has been minimized by selecting the marsh push rather than conventional lay construction method.

4.3.2 Construction in Non-saturated Wetlands – Conventional Lay

For installation in non-saturated wetlands, Marais will require a construction ROW width of 125 feet, consisting of a 50-foot-wide spoil storage side and a 75-foot-wide working side for trenching and pipeline installation equipment. These widths are based on utilization of the open cut construction method, a 1.25 swell factor for excavated material that is subsequently stored as spoil, and a minimum pipeline cover depth of 3 feet. Deeper-seated saturated soils are anticipated, which will require additional storage volume irrespective of the “non-saturated” designation applied to the wetlands crossed using this ROW width.

4.3.3 Additional Temporary Workspace

During Project design, Marais considered the size, configuration, and need for additional temporary workspace (ATWS) during construction. To minimize impacts, ATWS are sited in non-wetland areas to the greatest extent practicable and utilize the minimum space necessary for safe equipment operation and successful installation. Appendix C provides a table of Project ATWS and includes I.D. number, milepost, size, direction from centerline, acreage, and purpose (e.g., road crossing, waterbody crossing, HDD, etc.) with justification.

4.3.4 HDD Entry and Exit Workspaces

Marais will utilize the HDD installation method at eight locations along the pipeline route. HDD workspace at the entry and exit locations of a drill requires sufficient space between equipment for safe walking/travel lanes and to ensure secondary containment can be installed properly and maintained without damage. In addition, the size and weight of the pipe and the necessary equipment to successfully install the pipeline require sufficient area. Some HDD workspaces require atypical sizing or configuration due to environmental site conditions, need for additional tie-in locations, or distance from existing features such as public roads. However, the HDD entry and exit workspaces have been designed to minimize impacts to the greatest extent practicable. Locations, required dimensions, and justification for workspace requirements are provided in Appendix D.

4.4 SUMMARY

In accordance with LDENR Coastal Use Guidelines (LAC 43:1.701.B), Marais Pipeline's route and construction methodology were designed to minimize adverse impacts on coastal resources. The Marais Pipeline is collocated with existing or permitted ROWs for more than 90% of its route, with significant overlap in workspace with the CP Express Pipeline and TransCameron Pipeline. Aboveground facilities were sited in upland locations where possible, and re-use of previously approved access roads and yards was maximized.

5.0 CONSTRUCTION SEQUENCE

5.1 WORKSPACE LAYOUT AND PROCEDURES

This section summarizes the construction methods, potential impacts, and planned mitigation measures to be implemented during Project construction to avoid and minimize environmental impacts on sensitive resource crossings such as wetlands and waterbodies.

5.2 CONSTRUCTION RIGHT-OF-WAY LAYOUT

Typical construction layout diagrams are provided as Sheets 50 through 100. Sheet 50 depicts the typical upland construction layout for the 48-inch-diameter, Class 900 Marais Pipeline. The construction corridor width in uplands will measure 150 feet, with a 50-foot-wide spoil side and a 100-foot-wide working side. The typical construction right-of-way will accommodate temporary storage of trench spoil, the area needed for operation of large equipment, and anticipated construction activities, including automatic welding operations. The 150-foot-wide construction corridor is the minimum width needed to allow for a safe work area due to the large diameter and weight of the pipeline and consequent larger equipment required for installation.

Sheet 52 depicts the typical wetland construction layout for the Marais Pipeline. In non-saturated wetlands, the width of the construction right-of-way for conventional lay was reduced to 125 feet, with 50 feet on the spoil side and 75 feet on the working side. These dimensions are necessary to allow for a safe work area due to the large diameter of the pipeline, larger equipment, and the spoil storage space required to accommodate wetland soil conditions.

Sheets 54, 60, and 61 show the typical marsh push construction layout. In areas where the marsh push method is used (i.e., saturated wetland and open water areas), Marais will use a 150-foot-wide construction right-of-way to accommodate the more saturated, less cohesive soils, which require a wider trench and additional area for spoil storage to account for sloughing. Selection of the marsh push installation method in these saturated areas minimizes the right-of-way width required for successful installation; if the pipeline was installed in these same saturated areas via conventional lay (i.e., non-push construction), a construction right-of-way wider than 150 feet would be needed. In lieu of a marsh excavator digging the ditch and the pipe being installed from the designated push pad (per the marsh push method), conventional lay would

involve multiple crews (e.g., stringing, ditching, welding, coating, lowering-in, backfill, etc.) traversing the right-of-way. Conventional lay generally requires a larger footprint due to the additional equipment and crews needed, resulting in a wider right-of-way and more extensive impacts to wetlands. Accordingly, the right-of-way width in saturated wetland/open water areas has been minimized by selecting the marsh push rather than conventional lay construction method. In addition to the larger footprint, the conventional lay construction method in these saturated wetland/open water areas would likely require additional matting (i.e., vertical stacking of mats). The stacked mats needed to establish an equipment travel lane in these locations would result in greater impacts on the terrain, requiring more extensive restoration efforts to return the areas to preconstruction conditions.

Sheets 51, 53, and 55 through 59 depict the various construction layouts associated with collocation of the 48-inch-diameter Marais Pipeline with other pipelines and powerlines.

Sheet 62 shows the typical HDD construction layout with a maximum 50-foot-wide permanent easement across the drill path from entry to exit staging areas. Typical HDD pad site dimensions will be 225 feet by 250 feet in wetlands and 250 feet by 250 feet in uplands. Site-specific HDD drawings are provided in Appendix D.

Marais will acquire a nominal 50-foot-wide permanent easement in areas not collocated with TransCameron Pipeline or CP Express Pipeline. In areas of collocation with TransCameron Pipeline or CP Express Pipeline, the Marais Pipeline permanent easement will fluctuate between approximately 30 feet and 50 feet, predicated on the width of the shared easement of the two pipelines.⁷ Routine vegetation mowing or clearing during operations will be conducted to facilitate periodic corrosion/leak surveys and maintain integrity of the pipe in accordance with regulatory requirements, as applicable.

5.3 PIPELINE CONSTRUCTION

5.3.1 General Construction Procedures

Pipeline construction using conventional techniques typically involves the following sequential activities: clearing, grading, stringing, bending, welding, coating, trenching, lowering-in, backfilling, hydrostatic testing, tie-ins, cleanup, restoration, and revegetation. The pipeline alignment and workspace will be surveyed prior to construction. Before construction, the

⁷ TransCameron Pipeline, CP Express Pipeline, and Marais Pipeline are owned by affiliated entities, each of which is a wholly owned subsidiary of Venture Global LNG, Inc.

Louisiana one-call system will be contacted so buried utilities can be identified and flagged by the facility owners to prevent accidental damage during pipeline construction.

Construction techniques will follow the requirements set forth in permit conditions. Construction specifications will also require adherence to a Stormwater Pollution Prevention Plan (SWPPP) for construction stormwater discharges, a Spill Prevention and Response Plan or Spill Prevention, Control, and Countermeasure (SPCC) Plan, as applicable, for management of fuels, hydraulic fluids, and lubricants, and procedures for specialized construction techniques (e.g., HDD).

5.3.1.1 Right-of-Way Surveying

The pipeline alignment will be surveyed before construction. This task will include staking the pipeline centerline, foreign line crossings, workspace limits, and boundaries of wetlands and other environmentally sensitive areas. Sensitive areas to be avoided will be flagged as appropriate, and wetland boundaries will be clearly marked using easily identifiable flagging and/or temporary signage.

5.3.1.2 Clearing and Grading

Immediately after initial disturbance of the soil, appropriate temporary erosion controls will be installed where feasible. Typically, silt fence or other sediment barriers are positioned along the limits of disturbance where required and across the right-of-way adjacent to wetlands and waterbody crossings. Environmental Inspectors and construction staff will monitor field conditions daily to ensure appropriate erosion and sedimentation control measures are maintained until the construction workspace is fully stabilized. Clearing and grading operations will incorporate procedures to minimize vegetation removal from slopes, wetlands, and waterbody banks, and to prevent unnecessary soil disturbance.

The construction work area will be cleared to remove trees, rocks, brush, and roots. After clearing, the construction right-of-way will be graded as necessary to create a safe and level work surface. Trees will only be removed when necessary to facilitate safe and practicable construction. Timber and other vegetation debris may be chipped for use as erosion-control mulch, burned, or otherwise disposed of in accordance with applicable federal, state, and local regulations and landowner requirements. If requested by the landowner, timber, brush, or woodchips may be stockpiled in an accessible location within the Project's permitted workspace for a limited period for the landowner to retrieve for beneficial reuse.

Fences will be cut and braced along the right-of-way, and temporary gates or gaps will be installed to provide construction access. Segregated topsoil will be placed along the right-of-way in a manner that allows for access, material transport, and pipe assembly. In areas where Marais stores topsoil and subsoil on the same side of the right-of-way, sufficient space or a barrier will

be maintained to prevent topsoil and subsoil mixing. Generally, machinery will operate on one side of the trench and excavated materials will be stockpiled on the other side of the trench.

5.3.1.3 Trenching

Trenching involves excavation of the pipeline trench. Trenching may be performed ahead of stringing activities or after field joint coating, depending on the contractor's execution plan. Trench sides will be sloped as required for safety and to minimize soil sloughing into the ditch. The construction right-of-way will accommodate necessary spoil storage requirements and minimize subsoil/topsoil mixing and sloughing. The trench will be excavated to a sufficient depth to allow a minimum of 3 feet of cover over the pipeline, except for agricultural lands and waterbody crossings, where the minimum depth of cover will be 4 feet. Both the top and bottom trench width will vary depending on local soil conditions at the time of construction. Blasting is not anticipated for the Project.

Crossing existing third-party pipelines will generally require the Marais Pipeline to be buried at a greater depth than the existing pipelines; these areas will be identified and flagged during the preconstruction survey. Trenching near an existing pipeline will proceed only after appropriate field potholing or approved locating methods are completed to confirm the exact location of the pipeline or other foreign utility.

In wetlands, active cropland, residential areas, or at the landowner's request, topsoil is routinely segregated from subsoil during trenching or grading operations and remains segregated during construction to avoid loss through mixing with stockpiled subsoil.

In accordance with the SWPPP, measures will be implemented to minimize erosion and sedimentation, including measures to minimize the free flow of surface water into the trench and through the trench from upland areas into waterbodies. Erosion control measures will also be implemented as necessary for bank stabilization at waterbody crossings.

If trench dewatering is necessary, discharge to the ground is generally permitted where adequate vegetation along the right-of-way functions effectively as a filter medium. In areas adjacent to waterways or areas of minimal vegetation, haybale filters, sediment filtration bags, or other appropriate measures will be used to limit sediment deposition. Trench dewatering will be performed in accordance with applicable permit specifications.

5.3.1.4 Stringing, Welding, and Installation

Stringing involves moving pipe joints into position along the prepared construction right-of-way. Construction of the pipeline will require large side booms to lift and move the pipe, which may include Caterpillar 594 and Caterpillar 589 pipe laying equipment. These units require a considerable width for safe operation. A Caterpillar 587 with the boom and counterweight retracted requires a minimum width of 15 feet, while the operational width necessary for boom

extension and counterweight is about 38 feet. For safety and operational considerations, a minimum 5-foot buffer is maintained between the equipment and the welded pipe, and depending on soil stability, greater distances may be required. A 5-foot buffer is also required on the ditch side of the welded pipe for worker safety.

In upland areas, trucks and loaders will move the joints from the pipe yards and string them parallel to the trench line. Stringing activities will be coordinated with the trenching and pipe-laying crews. Stringing trucks will travel along the right-of-way and lay or string the individual pipe sections on temporary supports (skids) along the working side of the trench to prepare for subsequent bending, line-up, welding, joint coating, lowering-in, backfilling, and associated inspection activities. At waterbody crossings, the pipe required for the waterbody crossing will typically be stockpiled in temporary work areas on one or both banks of the waterbody.

Marais will use concrete-coated pipe, screw anchors, or PipeSaks in areas where buoyancy control is required. In certain situations where use of concrete-coated pipe was not anticipated, the coating may be applied at the contractor yard or in another approved upland area. To avoid or minimize adverse impacts on revegetation and surface water, wastewater generated during concrete-coating activities will be contained in a leak-proof structure and equipment used during the concrete-coating process will not be washed within 100 feet of a wetland or waterbody. Any waste concrete will be contained and disposed of at an approved disposal site.

Welding will be performed in accordance with regulatory requirements. Following integrity inspections, the pipe will be lowered into the trench using sideboom tractors or similar equipment and bedded with padding material (e.g., screened native material, Rockshield, etc.) if required prior to backfilling.

An automatic/mechanized welding process will be used for most of the pipeline welds on the Project. Automatic welding operations will be conducted in portable shelters (i.e., "sheds"). The standard width of a shed is 10 feet, and each shed is moved by track-mounted side booms in a leapfrog manner during welding operations. Depending on the size of the vehicle used, movement of the sheds could require a travel width up to approximately 30 feet. Additional workspace is required for worker safety on either side of the equipment and sheds moving along the construction right-of-way. If there is insufficient room for the movement of the sheds in the normal construction sequence, welding operations will occur in tandem operations, resulting in a slower rate of overall progress.

5.3.1.5 Coating Application, Inspection, and Repair

To prevent corrosion, the pipeline will be coated in compliance with U.S. Department of Transportation (DOT) regulations. The pipe joints will be coated (sprayed-on epoxy) prior to being delivered to the Project. The ends of each piece will be left bare to allow for welding. Once each weld has been inspected and accepted, the weld area will be field-coated by the coating crew.

5.3.1.6 Backfilling and Grade Restoration

After the pipe is lowered into the trench and bedded with padding material, the trench will be backfilled with previously excavated material, using barge-mounted track hoes, amphibious equipment, bulldozers, loaders, and/or compactors, depending on the site conditions. Excess excavated material or components unsuitable for backfill will be disposed of or beneficially reused in accordance with applicable regulations.

In areas where topsoil was segregated, backfilling will involve returning excavated subsoil to the trench bottom and placing the stored topsoil over the returned subsoil in the trench. Decompaction may be conducted via plowing/ripping, if necessary. A minor soil mound (i.e., “crown”) will be left over the trench to allow for soil settlement. During backfilling, care will be taken to minimize erosion, restore the natural ground contours, and restore surface drainage patterns as close to preconstruction conditions as practicable.

5.3.1.7 Hydrostatic Testing and Tie-Ins

Upon completion of tie-ins at various crossings, the pipeline will be hydrostatically tested to verify its integrity and to ensure its ability to withstand the maximum allowable operating pressure. Topography, class locations, construction spread break points, and the availability of test water will determine the length of each test segment. Pipeline test segments will be capped and filled with water. The pipe test section will then be pressurized and hydrostatically tested in accordance with applicable regulations. Any loss of pressure that cannot be attributed to specific factors such as temperature changes will be investigated. Any leaks detected will be repaired and the test section retested.

Hydrostatic test water will be obtained in compliance with Louisiana regulations and in accordance with Project permits. Upon completion of hydrostatic testing, the water will be pumped to the next segment for testing or discharged at a permitted outfall location. Test water will be discharged through energy dissipating devices (e.g., haybale filter structures) in accordance with the requirements of the Louisiana Department of Environmental Quality’s (LDEQ’s) hydrostatic wastewater discharge general permit (LAG670000).

5.3.1.8 Clean-Up and Restoration

After the completion of backfilling and topsoil replacement across the construction workspace, disturbed areas will be final graded and remaining trash, debris, or unsuitable backfill will be disposed of in accordance with applicable regulations. Subsequently, the workspace will be stabilized via implementation of appropriate erosion control measures, including site-specific contouring and, if necessary, reseeding with an approved seed mix.

5.3.2 Road and Railroad Crossing Procedures

Pipeline construction across major paved roadways, railroads, and unpaved roads where traffic cannot be interrupted will be accomplished by using HDD or a conventional bore technique as described below. Smaller unpaved roads and driveways will be crossed by open trenching. If an open-cut road requires extensive construction time, provisions will be made for detours or other measures to permit traffic flow during construction.

To complete a bore, two pits will be excavated, one on each side of the feature. A boring machine will be lowered into one pit and a hole bored to a diameter slightly larger than the diameter of the pipe (or casing, if required) at the depth of the pipeline installation. The pipeline section and/or casing will be pushed through the bore to the opposite pit. Once the bore has reached the other pit, the pipeline segment will be tied into the main pipeline sections already installed on either or both sides. If additional pipeline sections are required to span the length of the bore, they will be welded to the first section of the pipeline in the bore pit before being pushed through the bore. With this method, the pipeline will pass under the railroad or roadway with limited disturbance to traffic.

5.3.3 Waterbody and Wetland Crossing Procedures

Crossings of waterbodies and wetlands will be completed in accordance with permit conditions. In addition to the conventional open-cut method, HDD, bore, and marsh push methods will also be used to cross waterbodies and wetlands.

Waterbody crossings will be constructed in accordance with federal, state, and local permits. These crossings will generally require additional temporary workspace (ATWS) on each side of the waterbody to stage equipment and materials, fabricate the pipeline, and store trench spoil. ATWS will typically be located at least 50 feet from the waterbody's edge to minimize impacts on riparian vegetation associated with the waterbody. In certain situations, such as where agricultural fields or improved pasture lands are present or where site-specific conditions (e.g., a road crossing adjacent to a waterbody) require a smaller set-back, ATWS may be located closer to, but not less than 10 feet from, the waterbody's edge.

Marais will install the pipeline with the amount of cover needed to meet or exceed regulatory requirements. Waterbody crossings will generally require at least four feet of cover over the pipeline. In certain areas, such as those where mechanized dredging or natural channel migration may occur, deeper burial may be required to provide sufficient cover over the pipeline. At certain ditch crossings maintained by the Calcasieu Parish Gravity Drainage Districts, an articulated concrete mat will be installed between the Marais Pipeline and the bottom of the ditch. Installation of the mats was requested by the Calcasieu Parish Gravity Drainage Districts to provide additional protection of the pipeline during the Parish's ongoing maintenance dredging

and ditch cleanout activities. Sheet 95 shows the typical installation design at these crossings, which are identified on the alignment sheets provided in the plats.

Temporary equipment bridges will be required along the construction right-of-way to facilitate equipment access across waterbodies and prevent sedimentation caused by construction. Types of equipment bridges used on the Project may include, but are not limited to, culverts, equipment mats, and railroad car bridges. Equipment bridges will be constructed and maintained to allow unrestricted flow and to prevent soil from entering the waterbody. The bridges will be designed to withstand and pass the highest flow anticipated to occur while the bridge is in place. Bridges may include clean rock fill over culverts or flume pipes, or timber mat structures, that will remain in place until they are no longer needed. Except for equipment used for clearing and bridge installation, construction equipment on the right-of-way will be required to use the bridges.

Open-Cut Method

The open-cut construction method involves trench excavation, pipeline installation, and backfill in a waterbody without controlling stream flow (wet-ditch open-cut method) or while diverting streamflow (dry-ditch open-cut method). With the wet-ditch open-cut method, the trench is excavated across the stream using equipment working within the waterbody, on equipment bridges, and/or from the streambanks. Once the trench excavation across the entire waterbody is complete, a pre-fabricated section of pipe is lowered into the trench. The trench is then backfilled with the previously excavated material. Following pipe installation and backfilling, the streambanks are reestablished to approximate preconstruction contours and stabilized. Erosion and sediment control measures are then installed across the right-of-way to reduce streambank and upland erosion and sediment transport into the waterbody.

Flume and Dam-and-Pump Construction Methods

Dry-ditch crossing methods involve conventional trenching of channels that are either dry (contain no discernible flow) or not flowing at the time of crossing. A dry-ditch crossing of a flowing waterbody requires the installation of flume or dam-and-pump structures to isolate the majority of the stream flow from the trench construction. The flume method involves diverting the flow of water across the construction work area through one or more flume pipes placed in the waterbody. After the flume pipes are placed in the waterbody, sandbags or equivalent dam diversion structures are installed in the waterbody upstream and downstream of the trench area. These devices dam the stream and direct the water flow through the flume pipes, thereby isolating the water flow from the construction area between the dams. A backhoe then reaches under the flume pipe to dig the trench. The flume pipes and dams typically remain in place during pipeline installation and until final cleanup of the streambed and banks is completed.

The dam-and-pump method is similar to the flume crossing method except pumps and hoses are used instead of flumes to move water across or around the dammed construction work

area. The technique involves damming the stream channel, installing a pump upstream of the crossing, and running a discharge hose from the pump across the construction area to a discharge point downstream of the trench line area. Water flow is maintained throughout the dam-and-pump operation until the pipeline is installed and the streambed and banks are restored and stabilized.

Horizontal Directional Drill Method

The HDD method is a process that allows for trenchless pipeline installation by drilling a hole beneath a surface feature, such as a waterbody or other resource, and installing a prefabricated segment of pipeline through the hole. For each HDD crossing, electric guide wires will be laid along the pipeline centerline to create an electromagnetic sensor grid. The grid will be used by the HDD operator to steer the drill head during drilling.

To complete each HDD, a drill rig will be placed on the entry side of the crossing and a small-diameter pilot hole will be drilled along a pre-determined path beneath the surface feature, using a powered drill bit. As drilling progresses, additional segments of drill pipe will be inserted into the pilot hole to extend the length of the drill. The drill bit will be steered and monitored throughout the process to maintain the designated path of the pilot hole. Once the pilot hole is complete, the electromagnetic sensor grid will be removed and the hole will be enlarged via progressively larger reaming passes until the diameter of the hole is sufficient to accommodate the pipeline.

Throughout the drilling process, a fluid mixture consisting of water and bentonite clay (a naturally occurring mineral) will be pumped into the drill hole to lubricate the bit, transport cuttings to the surface, and maintain the integrity of the hole. Water for the mixture will be pumped to the drill site through a hose or other temporary piping or trucked in from another source.

The pipeline segment (i.e., pullback section) to be installed beneath the surface feature will be fabricated in the ATWS on the exit side of the crossing. False right-of-way for pipe backstringing during pullback fabrication is required for two HDDs on the Project, which include the Intracoastal HDD (MP 7.9 to MP 8.4) and the Terminal HDD (MP 43.6 to MP 43.9). This additional workspace is included in the requested limits of disturbance. The pullback section will be inspected and hydrostatically tested prior to installation. After the hole is completed, the pullback section will be attached to the drill string on the exit side of the hole and pulled back through the hole toward the drill rig on the entry side.

Mechanical vegetation clearing between HDD entry and exit workspaces is not planned, although minimal vegetation clearing between HDD entry and exit workspaces will be required to accommodate the installation of the guide wires. Travel between the HDD entry and exit workspaces will be primarily by pedestrian means, except at the Strategic Reserve HDD and the Pipeline Crossings #2 HDD, where equipment travel lanes will be established using equipment mats. Mats will be installed on the ground surface and vegetation will remain intact. The Marshall Street HDD corridor south of Marshall Street will also be used as workspace during construction. In certain instances between the entry and exit workspaces at the remaining HDDs, light vehicle

access (using rubber-tired vehicles only) may be necessary to set up pumps to support the HDD operations, for inspection purposes, and/or to manage potential drilling mud releases as described below. Ground disturbance due to light vehicle access is anticipated to be minimal. Vegetation clearing required to accommodate light vehicle access will be conducted by hand.

If a natural fracture or weak area in the ground is encountered during drilling, an inadvertent return of drilling fluid to the environment could occur. Depending on the orientation of the natural fracture or substrate, the drilling fluid may move laterally or vertically from the drill hole. The Project will develop and implement an HDD Monitoring and Contingency Plan that will outline the procedures to be followed to minimize the potential for an inadvertent release of drilling mud and cleanup measures to be utilized should a release occur.

Table 5-1 lists the HDD crossings for the Project.

TABLE 5-1: HDD Locations on the Marais Pipeline								
Marais Pipeline Project								
HDD	Entry			Exit			Pipe Length (miles)	Pipe Length (ft.)
	Milepost (MP)	Latitude	Longitude	MP	Latitude	Longitude		
Calcasieu Parish								
Energy Corridor	0.3	30.10114	-93.45602	0.5	30.097578	-93.45356	0.29	1,531.2
Canal #2	4.2	30.08651	-93.39938	3.9	30.088341	-93.40377	0.29	1,531.2
Strategic Reserve	5.6	30.08515	-93.37629	6.0	30.085027	-93.36887	0.45	2,376.0
Intracoastal	7.9	30.06676	-93.34866	8.4	30.067084	-93.33980	0.50	2,640.0
Mud Lake	8.9	30.06655	-93.33293	9.8	30.066573	-93.31779	0.91	4,804.8
Cameron Parish								
Pipeline Crossings #2	41.7	29.81129	-93.29658	42.0	29.807454	-93.29906	0.28	1,478.4
Marshall Street	43.3	29.79141	-93.31136	43.0	29.795744	-93.30827	0.35	1,848.0
Terminal	43.6	29.78836	-93.30999	43.9	29.78370	-93.31048	0.32	1,665.2

Marsh Push Method

The push method is typically used in saturated wetlands, wet soil areas, and open water areas. Equipment on the construction right-of-way would be minimized and, when used, would be of the type having the least environmental impact. Equipment may include mats, marsh buggies, airboats, amphibious equipment, tracked equipment, and barges. The contractor would use discretion in choosing the equipment that would create the least ground pressure for the specific application. Some of the push work in open water sections may be performed from barges, as required by access and site conditions.

The appropriate clearing equipment (amphibious or tracked) would be selected to prepare the right-of-way for the pipe. Where there is standing water, only enough clearing and trenching would be done to accommodate the pipe, trench spoil storage, and passage of equipment and barges, if required.

Suitable “push sites” have been identified and are included in the Project workspace. At the push sites, various pipeline operations would take place, including welding, non-destructive testing, joint coating, coating repairs, and flotation apparatus installation. When used, the pipe sections, which are typically concrete-coated, would be transported as needed by truck or barge from the pipe staging area to the push sites. After the pipe joints are welded together, the weld joints coated, and the floats attached at the push sites, the pipe string would be floated into the cleared right-of-way trench as part of the pipeline push operation. If necessary, a cable would be attached to the front of the pipe string and pulled from the other end of the right-of-way section to assist the push operation. During these activities, traffic on the right-of-way would be restricted, except to remove the floats once the pipe is in place. Trench backfilling would begin once the pipe is in place.

5.3.4 Aboveground Facilities Construction

At the aboveground facility sites, construction would involve the following: clearing and grading; placing concrete pad foundations; fabrication welding; installing equipment and equipment housing, electrical and instrumentation systems, and permanent perimeter fencing; and conducting surface cleanup. Open areas within the fence line would be covered in aggregate material, per design specifications.

6.0 IMPACT DETERMINATION

Table 3-1 provides the overall land requirements for the Project facilities. Much of the proposed Project workspace, including access roads and yards, were permitted by Venture Global CP Express, LLC for the CP Express Pipeline project, which has not commenced construction as of this application submittal. For purposes of calculating impacts associated with construction and operation of the Project for this application, workspaces are assumed to be in their current condition (i.e., unmodified by Venture Global CP Express, LLC), unless otherwise noted. Construction of the CP Express Pipeline is anticipated to commence in third quarter 2025 upon receipt of Notice to Proceed from the FERC. A description of how impacts on coastal resources were quantified for the Project is DESCRIBED BELOW.

6.1 WETLAND AND WATERBODY DELINEATION

The Project Survey Area encompasses approximately 1,939 acres, or 44.0 miles with a 300-foot corridor, in Cameron and Calcasieu Parishes, Louisiana, and includes areas previously surveyed for the Calcasieu Pass LNG and TransCameron Pipeline Project and the CP2 LNG and

CP Express Project. These previous delineations were supplemented with new delineations conducted using both desktop review and pedestrian field surveys, following USACE methodologies where the Survey Area for the Marais Pipeline Project extended beyond the previous survey corridors or in areas where the previous delineations were no longer defensible. The field surveys to perform wetland and waterbody delineations were conducted in January and February 2025. The purpose of the delineations were to support permitting for the Marais Pipeline Project, determine the presence/absence of wetlands using the three-parameter approach, delineate the geographic position and boundaries of wetland and water features within the Survey Area using a global positioning system (GPS), and assess waterbodies to identify the ordinary high-water mark (OHWM) or High Tide Line (HTL). A Wetland Delineation Report summarizing the results of this effort is included as Appendix E.

Based on the Cowardin (1979) classification system, the wetland types identified within the Marais Pipeline Project Survey Area include estuarine intertidal emergent (E2EM), estuarine intertidal scrub-shrub (E2SS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO). A preliminary Compensatory Mitigation Plan is included in Section 7.

6.2 PROJECT AREAS FIVE FEET OR MORE ABOVE MEAN SEA LEVEL

Louisiana Coastal Use Permit regulations (R.S. 49:214.34) exempt activities occurring wholly on lands five feet or more above mean sea level from requiring a coastal use permit, unless the LDENR Secretary determines the activity would have a direct and significant impact on coastal waters. As portions of the Project are situated more than five feet above mean sea level, these areas are excluded from the impacts summary in Table 7-1. Alignment sheets provided in the plats show contour lines indicating ground elevation to the nearest foot. Table 6-1 tabulates land requirement acreages by Project facility that are assumed to be exempt from coastal use permitting due to elevation.

TABLE 6-1: Areas Not Subject to Coastal Use Permitting	
Marais Pipeline Project	
Pipeline Facility	Above 5-foot Contour (acres)
Marais Pipeline Right-of-Way	35.7
Permanent Workspace	9.4 ^a
Temporary Workspace	18.4
Additional Temporary Workspace	7.9
Aboveground Facilities	12.8
Marais Meter Station / MLV1	12.8
MLVs	0.0
Tap Valves	0.0
Meter Station 2 / MLV4	0.0
Access Roads	2.5
Contractor Yards^b	<0.1
Total	51.1

^a Of the 9.4 permanent workspace acres above the 5-ft contour, 1.9 acres of impacts will be avoided through use of the HDD construction method.

^b Only includes the two yards in the Louisiana Coastal Zone.

6.3 IMPACTS ASSOCIATED WITH THE CP EXPRESS PROJECT

As previously described, to minimize environmental impacts to the greatest extent practicable, Marais collocated the pipeline route with existing and/or permitted ROWs, namely the permitted CP Express Pipeline and operational TransCameron Pipeline ROWs. Impacts on coastal resources associated with the TransCameron Pipeline were permitted through issuance of an Individual Permit (MVN-2014-02715-WII) from the USACE – New Orleans District and Coastal Use Permit P20150858 from the LDENR/OCM. Impacts on coastal resources associated with the CP Express Pipeline were permitted through the issuance of an Individual Permit (MVN-2021-00560-WII) from the USACE – New Orleans District and Coastal Use Permit P20211132 from the LDENR/OCM. Construction of the CP Express Pipeline is anticipated to commence in third quarter 2025 upon receipt of Notice to Proceed from the FERC. Construction of the Marais Pipeline is expected to begin prior to restoration of the CP Express Pipeline. Despite the notable overlap in workspace between the CP Express Pipeline ROW and the Marais Pipeline ROW, coastal resources impact calculations for the Marais Pipeline Project are represented in this application without consideration of anticipated disturbance by the CP Express Pipeline, unless otherwise noted. However, for informational purposes, Table 6-2 tabulates impacts on wetlands and waterbodies associated with the Marais Pipeline Project that are also associated with the CP Express and/or TransCameron Pipeline Project.

TABLE 6-2: Marais Pipeline and CP Express Pipeline / TransCameron Pipeline Overlap			
Marais Pipeline Project			
Project Facility	Marais Overlap with CP Express and TransCameron Pipeline Wetland and Waterbody Impacts (acres)	New Marais Pipeline Wetland and Waterbody Impacts (acres)	Total Marais Pipeline Wetland and Waterbody Impacts (acres)
Marais Pipeline Right-of-Way	507.2	285.8	793.0
Permanent Workspace	155.0	23.4	178.4
Temporary Workspace	306.1	197.6	503.7
Additional Temporary Workspace	46.1	64.8	110.9
Aboveground Facilities	2.6	0.0	2.6
Marais Meter Station / MLV1	0.0	0.0	0.0
MLVs	0.3	0.0	0.3
Tap Valves	0.1	0.0	0.1
Meter Station 2 / MLV4	2.2	0.0	2.2
Access Roads	6.6	0.0	6.6
Contractor Yards^a	0.1	0.0	0.1
Total	516.5	285.8	802.3

^a Only includes the two yards in the Louisiana Coastal Zone.

7.0 COMPENSATORY MITIGATION PLAN

Pursuant to both federal and Louisiana state law, mitigation is required to address unavoidable, permanent impacts in wetlands and coastal waters.

Under USACE regulations, compensatory mitigation must be used to offset those unavoidable permanent impacts on Waters of the United States that are authorized through the issuance of Department of the Army (DA) permits, pursuant to Section 404 of the Clean Water Act and/or Sections 9 or 10 of the Rivers and Harbors Act of 1899. The USACE regulations set forth three types of compensatory mitigation: permittee-responsible mitigation, mitigation banking, and in-lieu fee (ILF) mitigation. When evaluating compensatory mitigation options, the USACE will consider what is “environmentally preferable,” and retains the discretion “to determine the appropriateness and practicability of any compensatory mitigation required for DA permits.”

Furthermore, USACE Nationwide Permit 12 General Condition 23(f)(5) requires compensatory mitigation projects utilizing mitigation bank credits or ILF program credits to offset losses of aquatic resources to address only the baseline conditions at the impact site and the number of credits to be provided. Required information pertaining to baseline conditions and

determination of required credits is described in 33 CFR § 332.4(c) of the Federal Register (Volume 73, Number 70). Impacts on wetlands and waterbodies subject to USACE permitting are tabulated and shown in the figure set in Appendix F.

Under LDENR regulations, compensatory mitigation is required to offset those unavoidable impacts on state wetlands that are authorized through the issuance of a coastal use permit, pursuant to LAC 43: 1.724.A. LDENR regulations provide for permittee-responsible mitigation, mitigation banking, ILF mitigation, and such other mitigation as may be approved by the LDENR. Impacts on wetlands and waterbodies under the jurisdiction of the LDENR are summarized in Table 7-1.

TABLE 7-1: Project Impacts by Habitat Type

Marais Pipeline Project															
Project Facility^a	Estuarine Emergent (E2EM)		Estuarine Scrub-shrub (E2SS)^b		Palustrine Forested (PFO)		Palustrine Scrub-shrub (PSS)^b		Palustrine Emergent (PEM)		Open Water^c		Total^d		
	Temp	Perm	Temp	Perm	Temp	Perm ^e	Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm	
Marais Pipeline Right-of-Way															
Operational Workspace ^f	92.2 ^g	0.0	0.3	0.0	0.0	1.5	0.0	1.9	33.3	0.0	49.2	0.0	175.0	3.4	
Construction Workspace	286.2	0.0	0.1	0.0	4.1	0.0	6.6	0.0	104.0	0.0	102.7	0.0	503.7	0.0	
ATWS	57.5	0.0	0.1	0.0	0.1	0.0	2.5	0.0	28.8	0.0	21.9	0.0	110.9	0.0	
Aboveground Facilities															
Marais Meter Station / MLV 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MLVs	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
Tap Valves	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Meter Station 2 / MLV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	2.2	
Access Roads	4.4	0.4	0.1	0.0	0.0	0.0	0.2	0.0	1.1	0.0	0.2	0.2	6.0	0.6	
Yards^h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	
TOTAL	440.3	0.8	0.6	0.0	4.2	1.5	9.3	1.9	167.3	2.2	174.0	0.2	795.7	6.6	
Notes:															
^a Project impacts exclude areas with an elevation greater than 5 feet.															
^b Impacts on E2SS and PSS are considered permanent if associated with aboveground facilities, permanent access roads, or are permanently converted to PEM through easement maintenance. All other impacts are considered temporary.															
^c Permanent impacts on open water are associated with areas that will be permanently filled. All other impacts are considered temporary.															
^d Totals may not match the sum of addends due to rounding.															
^e Impacts on PFO wetlands in the operational footprint of the Marais Pipeline are considered temporary unless they will be permanently converted to PEM or PSS wetland through easement maintenance. All other impacts are considered temporary.															

TABLE 7-1: Project Impacts by Habitat Type

Marais Pipeline Project

f	Operational footprint of the pipeline right-of-way refers to areas used during construction of the Marais Pipeline that will be retained by Marais following construction as a permanent easement for operations and maintenance. Specific areas of the operational footprint will be subject to periodic vegetation maintenance to ensure pipeline integrity during operations.
g	92.2 acres of E2EM impacts are in the operational footprint of the Marais Pipeline, which will be allowed to revegetate and will not be subject to permanent impacts.
h	Only includes the two yards in the Louisiana Coastal Zone.

Marais is proposing to purchase credits from appropriate wetland mitigation banks to compensate for the Project's unavoidable permanent acreage loss and permanent type conversion impacts on wetlands and waters. Bank credits will be purchased to offset 9.6 acres of unavoidable, permanent loss or permanent conversion of wetlands of palustrine forested (PFO) wetlands to palustrine emergent (PEM) and/or palustrine scrub-shrub (PSS) wetlands and 2.2 acres of unavoidable, permanent loss or permanent conversion of PSS wetlands to PEM wetlands. Should the appropriate type and quantity of mitigation bank credits be unavailable within the same hydrologic basin where impacts are anticipated, Marais will compensate for permanent wetland loss and conversion through purchase of credits from an approved ILF program or, where applicable, a contribution to the Coastal Mitigation Account.

This compensatory mitigation plan (CMP) has been prepared in accordance with 33 CFR § 332.4 (c) and the State and Local Coastal Resources Management Act, as amended (Act 361, La. R.S. 49:214.21) to provide appropriate mitigation for permanent wetland loss associated with construction of the Project. Since the Applicant intends to meet mitigation obligations by securing credits from mitigation banks, this mitigation plan is required to include the following two components.

7.1 BASELINE INFORMATION

On behalf of the Applicant, Environmental Resources Management, Inc. (ERM) conducted wetland delineations between January 27 to January 31, 2025 and February 17 to February 18, 2025. A portion of the Survey Area was previously delineated by wetland scientists at T. Baker Smith and Matrix New World in support of permitting efforts for the CP2 LNG and CP Express Project, which resulted in issuance of an Individual Permit (MVN-2021-00560-WII) and Coastal Use Permits P20211131 and P20211132. The January and February 2025 field surveys conducted by ERM included evaluation of areas not included in the Preliminary Jurisdictional Determination for the CP2 LNG and CP Express Project. All delineation surveys were conducted in accordance with the routine determination procedures described in the USACE Wetland Delineation Manual (USACE, 1987) and Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2 (Regional Supplement) (USACE, 2010). Corresponding wetland delineation survey results for the Project are presented in Appendix E. Additional baseline information pertaining to ecological characteristics of the impact site, descriptions of plant communities, land use, soil conditions, and hydrology are also presented in Appendix E.

Based on the Cowardin (1979) classification system, the wetland types identified in the Project Survey Area include estuarine emergent (E2EM), palustrine forested (PFO), palustrine emergent (PEM), estuarine scrub-shrub (E2SS) and palustrine scrub-shrub (PSS). Table 7-2 shows how these classifications align with those referenced in the respective methodologies used by the LDENR/OCM (WVA) and the USACE – New Orleans District (LRAM Version 2.0) to assess wetlands functional value.

TABLE 7-2: Wetland Type Classifications and Methodology Alignment		
Marais Pipeline Project		
Wetland Type (Cowardin)	Wetland Value Assessment (WVA)	Louisiana Wetlands Rapid Assessment Method (LRAM) Version 2.0
Estuarine Emergent (E2EM) Estuarine Scrub-shrub (E2SS)	Brackish Marsh, Saline Marsh	Brackish Marsh, Saline Marsh
Palustrine Emergent (PEM) Palustrine Scrub-shrub (PSS)	Fresh Marsh	Fresh/Intermediate Marsh / Wet Pasture / Coastal Prairie
Palustrine Forested (PFO)	Bottomland Hardwood	Bottomland Hardwood

The Project will require a total construction footprint of 927.4 acres (including the two contractor yards in the Louisiana Coastal Zone), which includes impacts on 648.7 acres of wetlands and 174.6 acres of waters. Most of these features will be subject to short-term temporary impacts and will be restored to pre-construction conditions in accordance with USACE and LDENR regulations. As such, they are not addressed further in this CMP.

Of the 648.7 acres of wetlands within the construction footprint, 11.8 acres will undergo a longer-term type conversion from PFO to PSS or PEM, or PSS to PEM. Type conversion impacts from PFO and PSS to PEM will occur within a 30-foot-wide corridor centered over the pipeline and maintained during operations to ensure pipeline integrity and facilitate periodic safety inspections. Temporary impacts on PFO wetlands are also anticipated in areas within the operational footprint that will not be maintained during operations, and in temporary workspace and ATWS. In these areas, mitigation for a type conversion from PFO to PSS is proposed. The Applicant proposes to mitigate the permanent and other long-term conversion impacts on these wetlands through bank credit purchases.

A quantitative impact profile for the Project, showing wetland classifications and acreage details for permanent and type conversion impacts on a facility-specific basis, is presented in Table 7-3.

TABLE 7-3: Wetland Acreages by Facility, Habitat Classification, and Impact Type					
Marais Pipeline Project					
Facility/Milepost	Wetland Type	Wetland Impact Acreage			
		Permanent	Conversion		
			Inside 30' Corridor (acres)	Outside 30' Corridor (acres)	Total Conversion
Aboveground Facilities					
Marais Meter Station	Palustrine Emergent (Fresh Marsh)	<0.1	N/A	N/A	N/A
MLV-2 & Access Road (MP 11.7)	Estuarine Emergent (Brackish Marsh)	0.3	N/A	N/A	N/A
MLV-3 & Access Road (MP 31.2)	Estuarine Emergent (Brackish Marsh)	0.3	N/A	N/A	N/A
Tap Valve 2 & Access Road (MP 42.1)	Estuarine Emergent (Brackish Marsh)	0.2	N/A	N/A	N/A
Meter Station 2 / MLV-4 (MP 44.0)	Palustrine Emergent (Fresh Marsh)	2.2 ^a	N/A	N/A	N/A
Mainline Pipeline					
MP 0.0 – MP 44.0	Palustrine Forested (Bottomland Hardwoods)	N/A	2.1	7.5	9.6
	Palustrine Scrub Shrub (Fresh Marsh)	N/A	2.2	0.0	2.2
	Estuarine Scrub Shrub (Brackish Marsh)	N/A	<0.1	0.0	<0.1
Project Total:		0.8	4.3	7.5	11.8
N/A Not Applicable					
^a Permanent impacts at Meter Station 2 / MLV-4 at MP 44.0 are excluded from mitigation calculations as the meter station is wholly within the permanent footprint of the previously permitted and mitigated CP2 LNG Terminal.					

7.2 DETERMINATION OF CREDITS

Within the USACE – New Orleans District, most wetland impacts associated with pipeline construction will be short-term (up to one-year duration) and will therefore not require compensatory mitigation. However, construction of aboveground facilities and associated access roads will result in permanent loss of wetlands and pipeline operational maintenance will necessitate the permanent conversion of forested wetlands to other wetland types.

Approximately 0.6 acre of E2EM wetlands will be permanently impacted at MLV-2 and MLV-3 (including access roads), located at approximate MP 11.7 and MP 31.2, respectively. Approximately 0.2 acre of E2EM wetlands will be permanently impacted at Tap Valve 2 (including the access road) located at approximate MP 42.1. Within the Marais Pipeline ROW, approximately 9.6 acres of impacts involve permanent conversion of PFO (bottomland hardwoods) and 2.2 acres of PSS wetlands (fresh marsh) to emergent wetlands through maintenance of a permanent 30-foot-wide corridor. As previously noted, this corridor will be centered over the pipeline during operations to ensure pipeline integrity and facilitate safety inspections. Outside this corridor, 7.5 acres of PFO wetlands will be cleared during construction

and allowed to revegetate, resulting in a long-term conversion from PFO to PSS. The Applicant proposes compensating for the Project's permanent impacts to fresh and brackish marsh and the permanent impacts and long-term conversion of forested wetlands by purchasing suitable credits from regional mitigation banks.

Proposed compensatory mitigation for the Project is summarized in Table 7-4. This section of the CMP will be updated once suitable mitigation banks and credit availability are identified.

TABLE 7-4: Required Mitigation by Wetland Type and Mitigation Site

Marais Pipeline Project							
PROPOSED MITIGATION							
Impact by Wetland Type	Mitigation Site (Wetland Offset Type)	Permanent Impacts (acres) & i-value sum	Conversion Impacts		LRAM Credits Offered per Acre	LRAM Credits Required	Mitigation Acres Required
			Maintained ROW (acres) & i-value sum	Non-Maintained ROW (acres) & i-value sum			
PFO (Bottomland Hardwoods)	TBD	0.0	2.09 <i>i-value sum:</i> 6.3	7.48 <i>i-value sum:</i> 6.3	TBD	60.3	TBD
PEM (Fresh Marsh)	TBD	0.1 <i>i-value sum</i> 5.5	0.0	0.0	TBD	0.6	TBD
PSS (Fresh Marsh)	TBD	0.0	2.18 <i>i-value sum:</i> 3.0	0.0	TBD	6.5	TBD
E2EM (Brackish Marsh)	TBD	0.73 <i>i-value sum</i> 11.8	0.0	0.0	TBD	8.6	TBD
ESS/E2SS(Brackish Marsh)	TBD	0.0	0.04 <i>i-value sum:</i> 8.3	0.0	TBD	0.3	TBD
TOTAL:		0.83 acre	4.31 acres	7.48 acres			

7.3 SUMMARY

This CMP complies with USACE and LDENR mitigation requirements and their regulatory bases. The Applicants' intent to purchase bank credits to offset permanent acreage loss and permanent type conversion impacts on wetlands will result in no, or minimal, impact on the environment and no "net loss of coastal ecological value." Similarly, this CMP will achieve the USACE's "fundamental objective" of using compensatory mitigation to offset environmental losses from unavoidable impacts to wetlands and Waters of the United States.

8.0 PROJECT-RELATED PERMITS, APPROVALS AND CONSULTATIONS

Appendix G provides a list of required permits, approvals, and clearances relevant to the Project and identifies the issuing federal, state, or local agency for each authorization. While the USACE is responsible for agency-to-agency consultations as the lead federal agency for the Project, the USACE provided approval for Marais to initiate coordination of agency consultations during the Project pre-application meeting on March 5, 2025.

8.1 NATIONAL HISTORIC PRESERVATION ACT

Marais has completed Phase I cultural resources surveys to the extent current property access allows. During the surveys, no resources on or presumed to be eligible for the National Register of Historic Places were identified that would be adversely affected by the Project. An archaeological and architectural survey report for the Project was submitted to the Louisiana State Historic Preservation Office (SHPO) on March 21, 2025. The report and clearance documentation will be provided upon SHPO's acceptance of the report as final and issuance of the clearance letter. Remaining tracts will be surveyed upon acquisition of landowner survey permissions and associated survey reports and SHPO clearances will be provided to the USACE.

8.2 ENDANGERED SPECIES ACT

Marais conducted an initial review of Endangered Species Act (ESA) Section 7 listed species with the potential to occur in the Project area, as identified by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC). Documentation of this review was sent to the USFWS on April 10, 2025, requesting review and concurrence with the stated effects determinations. A copy of Marais's request for review and concurrence is included in Appendix G.

Marais also conducted an initial review of ESA Section 7 listed species under the jurisdiction of the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) with potential to occur in the Project area. NOAA's ESA Section 7 Mapper identified the portions of Turner Bay, the Calcasieu Ship Channel, and the Gulf Intracoastal Waterway crossed by the Project to be potential habitat for the green sea turtle, Kemp's Ridley sea turtle, and the loggerhead sea turtle. Marais determined the Project will have

no effect on NMFS-jurisdictional species due to proposed pipeline installation methods and the lack of suitable habitat within the relevant Project areas. As NMFS does not provide concurrence on no effect determinations, no additional consultation under Section 7 of the ESA with NMFS is anticipated.

8.3 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

Marais reviewed potential Project effects on Essential Fish Habitat (EFH) protected under Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA, 16 U.S.C. 1801 et seq.), which requires an assessment of impacts that may adversely affect EFH when planning projects or activities and measures to avoid, minimize, mitigate, or offset potential adverse effects (NOAA, 2002). The Project is in Gulf of Mexico EFH Ecoregion 4: East Texas and West Louisiana, which extends from the Mississippi Delta in Louisiana to Freeport, Texas (Gulf Council, 2016).

Based on review of the NOAA NMFS EFH Mapper, the Project overlaps EFH designated areas within Turner Bay, the Calcasieu Ship Channel, and the Gulf Intracoastal Waterway (NOAA NMFS, 2025b). Marais completed an EFH assessment to evaluate habitat protected by the MSA under NOAA NMFS jurisdiction (Appendix G). Due to the temporary nature of impacts and proposed avoidance and minimization measures, adverse effects to EFH are not anticipated for the Project.

REFERENCES

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