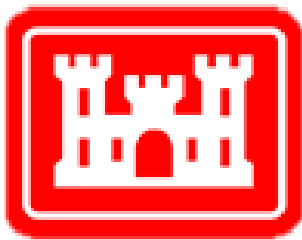


Final
Supplemental Environmental Assessment

Sabine Pass to Galveston Bay
Port Arthur and Vicinity
Contracts 3B and 3C

Jefferson County
Texas

August 2023



Galveston District
U.S. Army Corps of Engineers

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This Supplemental Environmental Assessment (SEA) follows the same general format as the 2017 Environmental Impact Statement (EIS). For the SEA, those sections that have been updated (revised) or where new sections have been added (new) are clearly marked. For information that is unchanged, text has been added to denote exactly where details can be found within the 2017 EIS.

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- Appendix C – Clean Water Act Section 404(b)(1) Short Form Analysis
- Appendix D – Public, Agency, and Tribal Coordination

1 STUDY INFORMATION

1.1 Revised INTRODUCTION

The U.S. Army Corps of Engineers (USACE) has prepared this Draft Supplemental Environmental Assessment (SEA) in accordance with 33 Code of Federal Regulations (CFR) Part 230 and the Council on Environmental Quality (CEQ) regulations 40 CFR § 1500-1508, as amended in 2022, and reflected in the USACE Engineering Regulation (ER) 200-2-2. The National Environmental Policy Act (NEPA) is the primary legislation that sets forth regulations for the consideration of environmental consequences in the decision-making process of proposed major Federal actions.

At the time of the 2017 EIS, the USACE evaluated three distinct project areas: Orange-Jefferson Coastal Storm Risk Management (CSRМ) Project Area, Port Arthur and Vicinity (PAV) CSRМ, and Freeport and Vicinity CSRМ. Due to the proximity and measures associated with the three project areas, they were separated prior to the pre-construction, engineering, and design phase (PED). As a result, this Draft SEA will only focus on the environmental impacts associated with changes to the Port Arthur and Vicinity CSRМ – specifically Contracts 3B and 3C (otherwise known as PAV03B and PAV03C).

1.2 Revised STUDY AUTHORITY

1.2.1 Revised General Authority

Authorization of the Sabine Pass to Galveston Bay, Texas coastal storm risk management project including the Port Arthur and Vicinity Separable Element was provided by Section 1401(3)(3) of the Water Resources Development Act of 2018, Public Law 115-270 in accordance with the Report of the Chief of Engineers dated December 7, 2017. Appropriations were provided under the Construction heading, Title IV, Division B of the Bipartisan Budget Act of 2018, Public Law 115-123. The study authority remains unchanged from that stated in the Final Environmental Impact Statement (FEIS).

1.2.2 Additional Study Guidelines

No updating of information in this subsection was necessary for the SEA (see Section 1.2.2 of the EIS [USACE, 2017]).

1.3 STUDY PURPOSE AND SCOPE

No updating of information in this subsection was necessary for the SEA (see Section 1.3 of the EIS [USACE, 2017]).

1.4 Revised NON-FEDERAL SPONSOR

The PAV, Texas Hurricane Flood Protection Project (HFPP) is located in Port Arthur, Jefferson County, TX and is operated by Jefferson County Drainage District No. 7 (DD7), the project Non-Federal Sponsor (NFS).

1.5 STUDY AREA

No updating of information in this subsection was necessary for the SEA (see Section 1.5 of the EIS [USACE, 2017]).

1.6 Revised PROJECT AREA

1.6.1 New PAV03B

Contract 3B of the Sabine Pass to Galveston Bay PAV CSRM is located in Port Arthur, Jefferson County, TX, approximately 90 miles east of Houston.

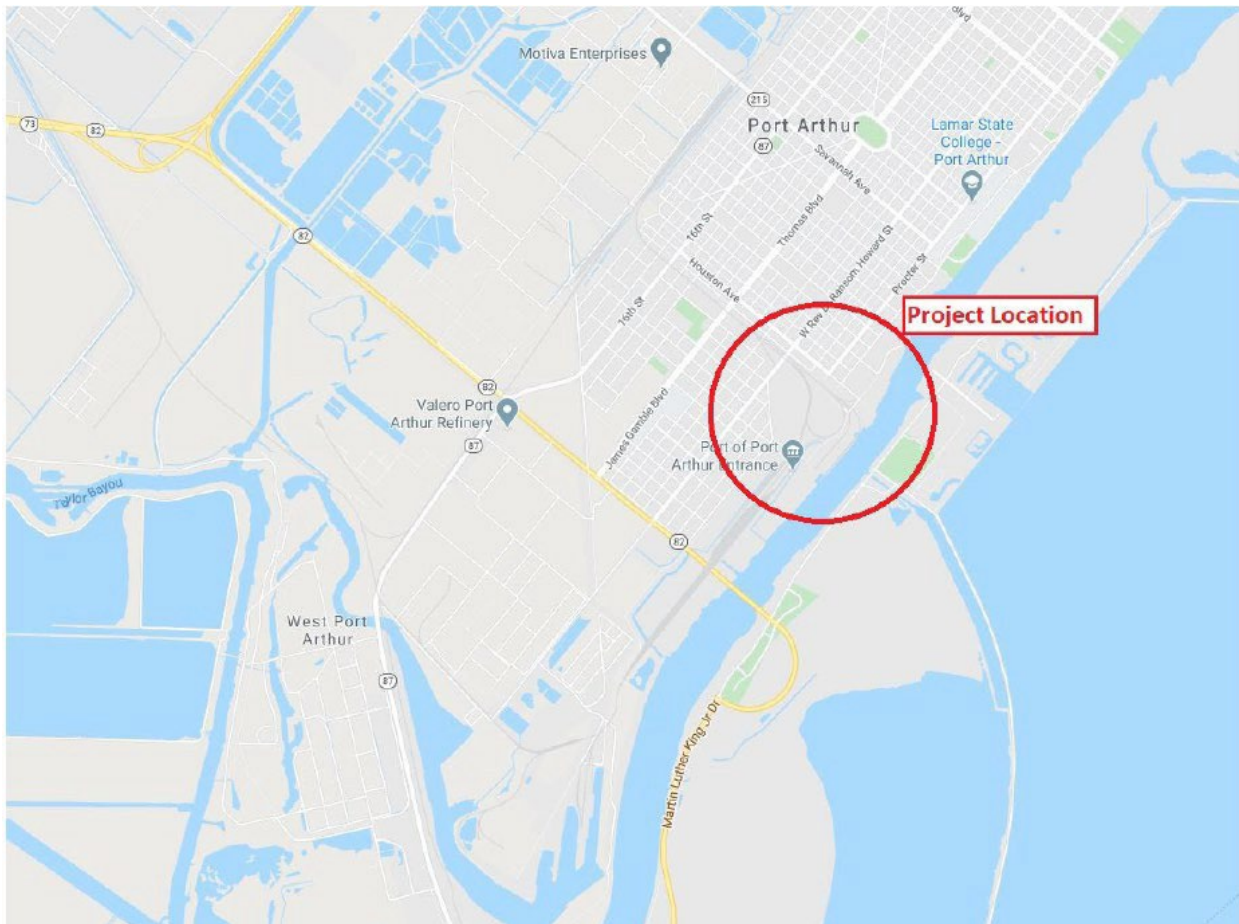


Figure 1. Project Location

Contract PAV03B consists of the construction of approximately 4,000 linear feet of floodwall and levee on property occupied by the City of Port Arthur, Port of Port Arthur (POPA), Kansas City Southern Railroad (KCS), JBS Packing, and Entergy Texas, Inc. The work also includes demolition and removal of the existing sheet pile floodwall and gate closures only where required for new construction. The majority of the existing alignment through the 3B area will remain in place but be removed from the Federal Project, and ownership will revert to DD7. See Figure 1 for an overview of the existing project location.

Contract PAV03B extends from Station 617+00 to 647+89 per the 2017 EIS, with an existing floodwall elevation through this area of 15.5 feet (ft). Based on site specific restrictions, particularly the POPA operational facilities that have been constructed over top of the existing alignment, a revised alignment location was developed by the Project Delivery Team (PDT) in coordination with the NFS and the local landowners, POPA and KCS.

The new design alignment will tie into the existing system's levee at Station 617+00 and Station 655+00. The existing levee between Stations 647+89 and 655+00 will be removed from the Federal Project and turned back over to the NFS. The design alignment is shown in Figure 2, with each of the six closure gates called out by number.

The seventh alignment crossing shown will be a ramp crossing over top of the levee.



Figure 2. PAV03B Alignment

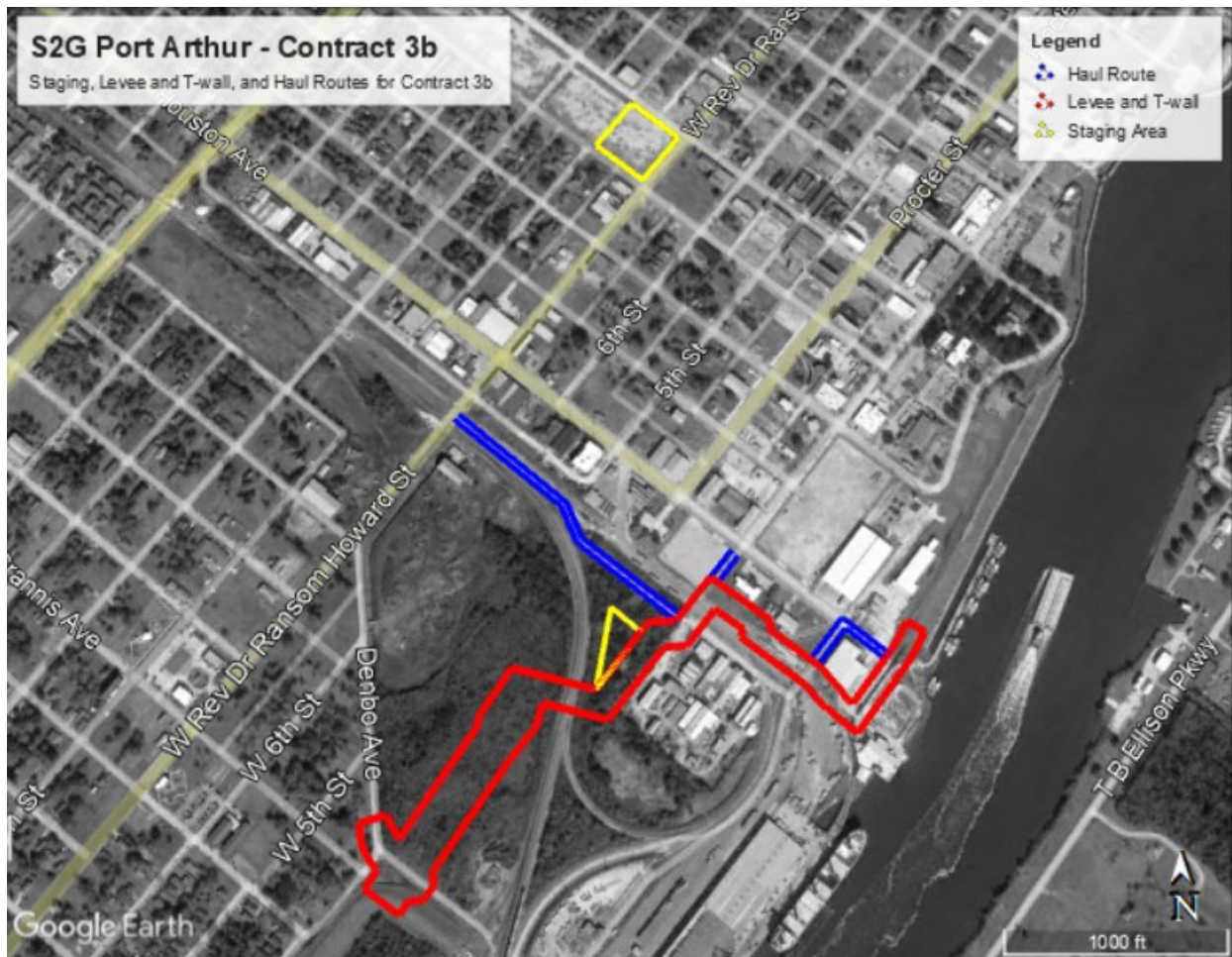


Figure 3. Staging Areas, Levee and T-wall, and Haul Routes for PAV03B

The existing ground surface elevations throughout the contract area vary from approximately 0 ft elevation in the KCS-owned property, to 6 ft at the existing floodwall location near the docks. The first approximately 700 ft of the floodwall alignment, beginning from the northeast at Station 617+00, will replace the existing wall. This portion will also be built to a higher design elevation to accommodate its location along the waterway.

The first 2,800 ft of the alignment will be a pile-founded concrete T-wall. This portion crosses through busy operational areas used by the POPA, JBS Packing, and Standard Alloys. Gates 1, 2 and 4 shown on Figure 2 will be single-leaf swing gates. Gate 3, which crosses 4th Ave, will be a roller gate given the required clear crossing width of 43 ft. Gates 5 and 6 and their associated storage monoliths have been removed from the PAV03B Contract, as they require further design coordination with KCS that cannot be completed in the required schedule for this effort. An approximately 50 percent (%) design has been completed for those gates with 100% design of associated features. The draft gate design is for specially designed large, 100 ft+ gates to provide clearance for continued operations by KCS and the POPA. Point 7 is an over the levee road crossing with no closure gate.

The southwest 1,100 ft of the contract will consist of new levee construction. An additional access point to the levee system, as well as to the property outside of the

new levee, will be provided at the existing Denbo Avenue. A ramp system will lead to the levee crest for operations and maintenance, and over top the levee for emergency access.

Contract PAV03B will tie into the existing levee system at its starting and ending points of Station 617+00 and 655+00. New stationing has been provided for this Contract since it significantly deviates from the existing system. The north tie-ins will be in accordance with the standard floodwall to levee transition details provided in the Sabine Pass to Galveston Bay Design Criteria. The south tie-in will be an extension of the existing levee, while meeting the new design elevations. There will be an additional tie-in at Station 7+00 to the existing I-wall system that will remain in place through the POPA's facilities. Attachment A of Appendix A depicts photos of the project area.

1.6.2 New PAV03C

Originally, PAV03C was part of Contract PAV03A. Contract PAV03A provides for the delivery of contract documents for the construction of improvements to existing levees, floodwalls, closure structures, highway crossings, and pump station fronting protection to improve HFPP for Port Arthur, in Jefferson County, Texas (Figure 4). The scope of PAV03A is to address risk drivers identified as Potential Failure Modes that were determined during a Semi-Quantitative Risk Analysis for the Sabine Pass to Galveston Bay CSRM & Ecosystem Restoration Project. The objective includes both hurricane flood protection and ecosystem restoration. The contract originally included eight segments identified as Zones 1 through 8.

Between STA. 731+03.06 B and STA. 733+30.14 B, the existing utility corridor area contains a utility pipe bridge and counterfort wall that has dozens of pipes passing through the wall below grade. It is not feasible or cost-effective to retrofit the counterfort to meet the required design loads, so a new floodwall will be installed on the landside of the existing counterfort. In addition, the existing pipe bridge is within the right-of-way or conflicts with the new wall and will need to be removed. Pipe will be relocated to a new pipe bridge.

The floodwalls will be constructed by the Government-hired contractor, while the pipe bridge and pipe relocation will be constructed by a different contractor under a separate contract. Both contractors will have to coordinate construction of each of their elements with each other. Because the floodwalls are pile supported, all underground piping/utilities must be relocated prior to driving piles. In addition, the portions of the floodwall should be built prior to construction of the pipe bridge. The pipe bridge and pipe relocation are considered PAV03C. A staging area, shown in Figure 5, will be needed to accommodate the construction associated with PAV03C and PAV03B and is expected to be left in place upon completion of the contract. Attachment A of Appendix A depicts photos of the project area.

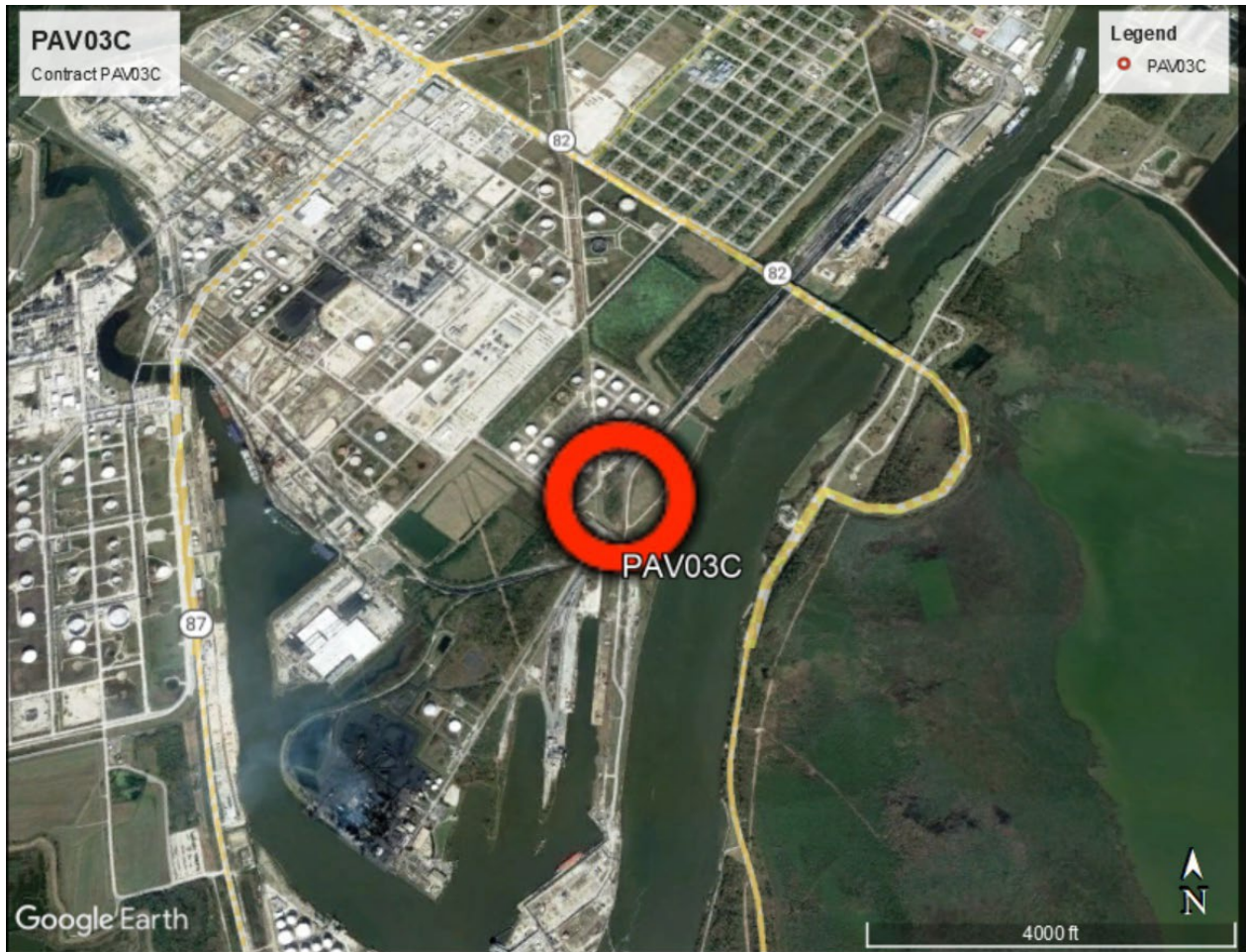


Figure 4. PAV03C Location



Figure 5. Pipe Relocation and Staging Area for PAV03C

1.7 PROJECT DATUMS

No updating of information in this subsection was necessary for the SEA (see Section 1.7 of the EIS [USACE, 2017]).

1.8 MAJOR HISTORICAL SURGE EVENTS IN THE STUDY AREA

No updating of information in this subsection was necessary for the SEA (see Section 1.8 of the EIS [USACE, 2017]).

1.9 HISTORY OF THE INVESTIGATION

No updating of information in this subsection was necessary for the SEA (see Section 1.9 of the EIS [USACE, 2017]).

1.10 PRIOR STUDIES AND EXISTING USACE WATER PROJECTS

No updating of information in this subsection was necessary for the SEA (see Section 1.10 of the EIS [USACE, 2017]).

1.10.1 Existing Coastal Storm Risk Management Projects

No updating of information in this subsection was necessary for the SEA (see Section 1.10.1 of the EIS [USACE, 2017]).

1.10.1.1 Port Arthur HFPP, Texas

No updating of information in this subsection was necessary for the SEA (see Section 1.10.1.1 of the EIS [USACE, 2017]).

1.10.1.2 Texas City HFPP, Texas

No updating of information in this subsection was necessary for the SEA (see Section 1.10.1.2 of the EIS [USACE, 2017]).

1.10.1.3 Freeport HFPP, Texas

No updating of information in this subsection was necessary for the SEA (see Section 1.10.1.2 of the EIS [USACE, 2017]).

1.10.2 ^{Revised} Navigation Projects in the Study Area

The project for the authorized channel improvement project for the deepening of the Sabine Neches Waterway to 48ft MLLW is being constructed at the time of this SEA. It is expected, based on schedules, construction of the channel may be concurrent with construction of Port Arthur's CSRMS.

2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT

2.1 GENERAL

No updating of information in this subsection was necessary for the SEA (see Section 2.1 of the EIS [USACE, 2017]).

2.2 PHYSICAL DESCRIPTION OF THE EXISTING AREA

2.2.1 Tides

No updating of information in this subsection was necessary for the SEA (see Section 2.2.1 of the EIS [USACE, 2017]).

2.2.2 Currents and Circulation

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2 of the EIS [USACE, 2017]).

2.2.2.1 Sabine Lake Estuary

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2.1 of the EIS [USACE, 2017]).

2.2.2.2 Galveston Bay Estuary

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2.2 of the EIS [USACE, 2017]).

2.2.2.3 Brazos River System

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2.3 of the EIS [USACE, 2017]).

2.2.2.4 GIWW

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2.4 of the EIS [USACE, 2017]).

2.2.2.5 Additional Waterways

No updating of information in this subsection was necessary for the SEA (see Section 2.2.2.4 of the EIS [USACE, 2017]).

2.2.3 Relative Sea Level Change

No updating of information in this subsection was necessary for the SEA (see Section 2.2.3 of the EIS [USACE, 2017]).

2.3 ENVIRONMENTAL AND HISTORIC RESOURCES

2.3.1 Description of the Ecological Region

No updating of information in this subsection was necessary for the SEA (see Section 2.3.1 of the EIS [USACE, 2017]).

2.3.2 Storm Surge Effects on the Study Area

No updating of information in this subsection was necessary for the SEA (see Section 2.3.1 of the EIS [USACE, 2017]).

2.3.3 Attenuation of Storm Surge Impacts by Coastal Wetlands

No updating of information in this subsection was necessary for the SEA (see Section 2.3.1 of the EIS [USACE, 2017]).

2.3.4 Protected Lands in the Study Area

2.3.4.1 Sabine Region

No updating of information in this subsection was necessary for the SEA (see Section 2.3.4.1 of the EIS [USACE, 2017]).

2.3.4.2 Galveston Region

No updating of information in this subsection was necessary for the SEA (see Section 2.3.4.2 of the EIS [USACE, 2017]).

2.3.4.3 Brazoria Region

No updating of information in this subsection was necessary for the SEA (see Section 2.3.4.2 of the EIS [USACE, 2017]).

2.3.5 Physical and Hydrological Characteristics of the Study Area

No updating of information in this subsection was necessary for the SEA (see Section 2.3.5 of the EIS [USACE, 2017]).

2.3.6 Biological Communities in the Study Area

2.3.6.1 Revised Coastal Prairies

Some aquatic habitats within the project limits of PAV03B consist of coastal prairie pondshore. This habitat type occurs as ponds or swales within coastal prairie matrix. Most soils within this habitat are poorly drained and surface water from rainfall and

runoff can be retained within the ponds and swales for an extended period of time (TPWD, 2022a). This wetland type is primarily herbaceous with occurrences of some woody cover but are mostly composed of species such as squarestem spikeseed (*Eleocharis quadrangulate*), hairy umbrellaseed (*Fuirena squarrosa*), beaksedges (*Rhynchospora spp.*), busy bluestem (*Andropogon glomeratus*), and rattlebox (*Sesbania spp.*). Open water areas may contain submerged aquatic species such as sago pondweed (*Stuckenia pectinate*), coontail (*Ceratophyllum demersum*), Schreber watershield (*Brasenia schreberi*), largeleaf floating heart (*Nymphoides aquatica*) and yellow lotus (*Nelumbo lutea*).

2.3.6.2 Coastal Marshes

No updating of information in this subsection was necessary for the SEA (see Section 2.3.6.2 of the EIS [USACE, 2017]).

2.3.6.3 Forested Wetlands

No updating of information in this subsection was necessary for the SEA (see Section 2.3.6.3 of the EIS [USACE, 2017]).

2.3.6.4 Revised Other Aquatic Habitats

Palustrine emergent wetlands exist within the project limits of PAV03B and PAV03C. Within this particular habitat for both contracts, there is an abundance of cattail (*Typha spp.*). Cattails can expand across large distances and are not especially sensitive species. This type of wetland can survive in a variety of ecosystems, which can sometimes drive out a multitude of other native emergent wetland species due to their ability to thrive and produce dense stands of monoculture vegetation. Although cattails are highly competitive, they can still produce beneficial effects on wetland systems through improvements in water quality as well as the production of biofuel material.

2.3.7 Essential Fish Habitat

No updating of information in this subsection was necessary for the SEA (see Section 2.3.6.3 of the EIS [USACE, 2017]).

2.3.8 Revised Threatened and Endangered Species

Eleven Endangered Species Act (ESA)-listed species have been identified in the U.S. Fish and Wildlife Service (USFWS) Official Species List dated April 6, 2022 and July 13, 2022. There is no critical habitat designated in the focused study area.

Two new additions as compared to the 2017 EIS include eastern black rail (BLRA) (*Laterallus jamaicensis ssp. jamaicensis*) and monarch butterfly (*Danaus plexippus*). A supplemental Biological Assessment (BA) has been prepared and is included as Appendix B.

2.3.9 Water and Sediment Quality

No updating of information in this subsection was necessary for the SEA (see Section 2.3.9 of the EIS [USACE, 2017]).

2.3.10 Revised Air Quality

The Beaumont-Port Arthur counties were either in attainment or unclassified/attainment

with the National Air Quality Standards (NAAQS). Therefore, no updating of information in this subsection was necessary for the SEA (see Section 2.3.10 of the EIS [USACE, 2017]).

2.3.11 ^{Revised} Hazardous, Toxic, and Radioactive Waste Concerns

Review of the original 1960's-vintage floodwall design drawings indicated the presence of a buried concrete vault or underground storage tank within the PAV03B alignment between the current JBS Packing and POPA Terminal facilities. Previous use of the vault was unknown, but a 1930 Sanborn Map showed a gasoline tank, pump house, auto service warehouse, and the Texas Company Oil Depot in the vicinity of the mapped vault location. Based on knowledge of the historic land use for petroleum-related activities, an invasive Phase II Environmental Site Assessment (Phase II ESA) was performed by LJA Environmental Services (LJA) under contract with DD7. The LJA Phase II ESA report dated July 6, 2022, indicated hydrocarbon odor and staining at the vault location, and waste characterization analysis suggested that soils excavated from the area surrounding the vault would likely require disposal as Nonhazardous Industrial Class 2 waste under statutes administered by the Texas Commission on Environmental Quality (TCEQ). In accordance with USACE regulations, the remediation of petroleum contamination or other hazardous constituents for a Civil Works project with a local sponsor is to be performed at 100% non-federal cost. DD7 will coordinate with the appropriate regulatory agencies and will be responsible for ensuring that, to the extent contaminated areas or impacts cannot be avoided, the development and execution of any required response actions are accomplished at 100% non-project cost.

2.3.12 Cultural Resources

No updating of information in this subsection was necessary for the SEA (see Section 2.3.12 of the EIS [USACE, 2017]).

2.3.13 Energy and Mineral Resources

No updating of information in this subsection was necessary for the SEA (see Section 2.3.13 of the EIS [USACE, 2017]).

2.3.14 Socioeconomic Considerations

No updating of information in this subsection was necessary for the SEA (see Section 2.3.14 of the EIS [USACE, 2017]).

3 NO ACTION ALTERNATIVE (FUTURE WITHOUT-PROJECT CONDITIONS)

The USACE is required to consider the No Action Alternative during the planning process and assessment of impacts to comply with the NEPA and CEQ guidance (40 CFR §1502.14) as well as USACE regulations (ER 200-2-2) for implementing the NEPA. The No Action Alternative is a forecast of the future without-project (FWOP) conditions that provides the basis for plan formulation and eventual comparison to all other alternative plans. The terms “No Action Alternative”, “future without-project” or “future without-project condition” are used synonymously or interchangeably throughout the SEA. With the No Action Alternative, it is assumed that no project would be implemented by the Federal Government or by local interests to achieve the planning

objective. The No Action Alternative forms the basis against which all other alternative plans are measured.

3.1 PROJECT AREA

No updating of information in this subsection was necessary for the SEA (see Section 3.1 of the EIS [USACE, 2017]).

3.2 ECONOMIC CONDITIONS

No updating of information in this subsection was necessary for the SEA (see Section 3.2 of the EIS [USACE, 2017]).

3.2.1 Initial and Evaluation Array of Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 3.2.1 of the EIS [USACE, 2017]).

3.2.2 Final Array of Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 3.2.2 of the EIS [USACE, 2017]).

3.3 ENVIRONMENTAL CONDITIONS

No updating of information in this subsection was necessary for the SEA (see Section 3.3 of the EIS [USACE, 2017]).

3.4 LIFE SAFETY

No updating of information in this subsection was necessary for the SEA (see Section 3.4 of the EIS [USACE, 2017]).

3.5 CRITICAL INFRASTRUCTURE

No updating of information in this subsection was necessary for the SEA (see Section 3.5 of the EIS [USACE, 2017]).

3.6 RELATIVE SEA LEVEL CHANGE

No updating of information in this subsection was necessary for the SEA (see Section 3.6 of the EIS [USACE, 2017]).

3.7 FUTURE WITHOUT-PROJECT CONDITIONS SUMMARY

No updating of information in this subsection was necessary for the SEA (see Section 3.6 of the EIS [USACE, 2017]).

4 PROBLEMS AND OPPORTUNITIES

4.1 PROBLEMS AND OPPORTUNITIES/NEED FOR ACTION

No updating of information in this subsection was necessary for the SEA (see Section 4.1 of the EIS [USACE, 2017]).

4.1.1 Problem Statements

No updating of information in this subsection was necessary for the SEA (see Section 4.1.1 of the EIS [USACE, 2017]).

4.1.2 Opportunity Statements

No updating of information in this subsection was necessary for the SEA (see Section 4.1.2 of the EIS [USACE, 2017]).

4.2 PLANNING GOALS AND OBJECTIVES

4.2.1 Planning Goals

No updating of information in this subsection was necessary for the SEA (see Section 4.2.1 of the EIS [USACE, 2017]).

4.2.2 Public Concerns

No updating of information in this subsection was necessary for the SEA (see Section 4.2.2 of the EIS [USACE, 2017]).

4.2.3 Planning Objectives

No updating of information in this subsection was necessary for the SEA (see Section 4.2.3 of the EIS [USACE, 2017]).

4.2.4 Planning Constraints

No updating of information in this subsection was necessary for the SEA (see Section 4.2.4 of the EIS [USACE, 2017]).

4.2.5 ^{Revised} Related Project Documents

New related project documents include the following:

- 2017 Final IFR-EIS, Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem Restoration Final Integrated Feasibility Report – Environmental Impact Statement (May 2017).

5 FORMULATION AND EVALUATION OF ALTERNATIVE PLANS

No updating of information in this subsection was necessary for the SEA (see Section 5 of the EIS [USACE, 2017]).

5.1 PLAN FORMULATION RATIONALE

No updating of information in this subsection was necessary for the SEA (see Section 5.1 of the EIS [USACE, 2017]).

5.2 MANAGEMENT MEASURES

No updating of information in this subsection was necessary for the SEA (see Section 5.2 of the EIS [USACE, 2017]).

5.3 SUMMARY OF ALTERNATIVES ANALYSIS

No updating of information in this subsection was necessary for the SEA (see Section 5.3 of the EIS [USACE, 2017]).

5.3.1 Initial Array of Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 5.3.1 of the EIS [USACE, 2017]).

5.3.2 Evaluation Array of Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 5.3.2 of the EIS [USACE, 2017]).

5.3.3 Scoping of Study under 3x3x3 Guidelines

No updating of information in this subsection was necessary for the SEA (see Section 5.3.3 of the EIS [USACE, 2017]).

5.3.4 Final Array of Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 5.3.4 of the EIS [USACE, 2017]).

5.4 COMPARISON OF FINAL ARRAY OF ALTERNATIVE PLANS AND DECISION CRITERIA

No updating of information in this subsection was necessary for the SEA (see Section 5.4 of the EIS [USACE, 2017]).

5.4.1 Final Screening Criteria

No updating of information in this subsection was necessary for the SEA (see Section 5.4.1 of the EIS [USACE, 2017]).

5.4.2 Final Array of Evaluation Results

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2 of the EIS [USACE, 2017]).

5.4.2.1 No Action/Future Without-Project Condition

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2.1 of the EIS [USACE, 2017]).

5.4.2.2 Orange-Jefferson CSR Project Area

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2.2 of the EIS [USACE, 2017]).

5.4.2.3 Port Arthur and Vicinity CSR

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2.3 of the EIS [USACE, 2017]).

5.4.2.4 Freeport and Vicinity CSR

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2.4 of the EIS [USACE, 2017]).

5.4.2.5 Brazoria and Sabine Nonstructural

No updating of information in this subsection was necessary for the SEA (see Section 5.4.2.5 of the EIS [USACE, 2017]).

5.4.3 Comparison of Alternative Plans

No updating of information in this subsection was necessary for the SEA (see Section 5.4.3 of the EIS [USACE, 2017]).

5.4.4 Identifying a Tentatively Selected Plan (TSP)

No updating of information in this subsection was necessary for the SEA (see Section 5.4.4 of the EIS [USACE, 2017]).

5.4.5 Selection of the TSP for the DIFR-EIS

No updating of information in this subsection was necessary for the SEA (see Section 5.4.5 of the EIS [USACE, 2017]).

5.4.6 Comparison of Environmental Impacts for Final Array of Alternatives

5.4.6.1 Revised WVA Modeling of Alternatives

Wetland Value Assessment modeling was utilized to quantify impacts of PAV03B and PAV03C on palustrine wetlands (includes coastal prairie pondshore). The WVA is a suite of habitat-based models originally developed by the USFWS that utilizes a community approach to quantify changes to fish and wildlife habitat quality, measured in Average Annual Habitat Units (AAHUs). The WVA Marsh Model was approved for use by Headquarters USACE memo dated May 6, 2014; the WVA Marsh model is certified. A description of the WVA model is presented as an attachment in Appendix A.

Direct impacts as quantified by the model reflect the assumed loss of all palustrine wetlands within the construction right-of-way of PAV03B and PAV03C in the first year of construction. Staging areas for PAV03B are not situated to minimize impacts on wetlands, so the loss of habitat has been considered and will be compensated (Figure 3).

5.4.6.2 Orange-Jefferson CSRSM Project Area

No updating of information in this subsection was necessary for the SEA (see Section 5.4.6.2 of the EIS [USACE, 2017]).

5.4.6.3 Revised Port Arthur and Vicinity CSRSM Project Area

The 2017 EIS assumed the PAV contracts would not have a deviation from existing levee and floodwall alignments. However, during the Pre-construction, Engineering, and Design (PED) phase the alignment for PAV03B was modified to account for cost, feasibility, operation of POPA, operation of KCS, and implementation risk. In addition, PAV03C was added to account for the need to relocate utilities, i.e. pipelines, and the staging necessary to complete the construction associated with PAV03C.

A direct impact on wetlands is expected with construction of PAV03B and PAV03C.

No other significant environmental impacts have been identified for PAV03B and PAV03C. USACE has made the determination that the project “may affect, but is not likely to adversely affect” BLRA and whooping crane (*Grus americana*) on PAV03B. PAV03C is expected to have “no effect” on BLRA and whooping crane due to the degraded habitat present at the site, size of the location, and surrounding land uses (industrial).

5.4.6.4 Freeport and Vicinity CSRSM Project Area

No updating of information in this subsection was necessary for the SEA (see Section 5.4.6.4 of the EIS [USACE, 2017]).

5.4.6.5 Environmentally Preferable Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 5.4.6.5 of the EIS [USACE, 2017]).

5.4.6.6 Comparison of Socioeconomic Impacts of Final Array Alternatives

No updating of information in this subsection was necessary for the SEA (see Section 5.4.6.6 of the EIS [USACE, 2017]).

5.5 CHANGES TO TSP AND SELECTION OF THE RECOMMENDED PLAN SUMMARY

No updating of information in this subsection was necessary for the SEA (see Section 5.5 of the EIS [USACE, 2017]).

5.5.1 Removal of Beaumont a New levee (12-foot) and Jefferson Main New Levee (11-foot) from Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 5.5.1 of the EIS [USACE, 2017]).

5.5.2 Reevaluation of Orange 3 as a Component of the Recommended NED Plan

No updating of information in this subsection was necessary for the SEA (see Section 5.5.2 of the EIS [USACE, 2017]).

5.5.2.1 Revaluation of Orange 3 vs Gate

No updating of information in this subsection was necessary for the SEA (see Section 5.5.2.1 of the EIS [USACE, 2017]).

5.5.2.2 Reevaluation of Orange 3 vs Ring Levees or Nonstructural Measures

No updating of information in this subsection was necessary for the SEA (see Section 5.5.2.2 of the EIS [USACE, 2017]).

5.5.3 Confirmation of Orange 3 as a Component of the Recommended NED Plan

No updating of information in this subsection was necessary for the SEA (see Section 5.5.3 of the EIS [USACE, 2017]).

6 RECOMMENDED PLAN

6.1 PLAN COMPONENTS

No updating of information in this subsection was necessary for the SEA (see Section 6.1 of the EIS [USACE, 2017]).

6.2 DESCRIPTION OF THE RECOMMENDED PLAN

6.2.1 Orange CSRSM Project Area

No updating of information in this subsection was necessary for the SEA (see Section 6.2.1 of the EIS [USACE, 2017]).

6.2.2 Revised Port Arthur and Vicinity CSRM Project Area

Please refer to Section 1.6 for a discussion of the PAV project area and updated project features.

6.2.3 Freeport and Vicinity CSRM Project Area

No updating of information in this subsection was necessary for the SEA (see Section 6.2.3 of the EIS [USACE, 2017]).

6.3 SEPARABLE ELEMENTS

No updating of information in this subsection was necessary for the SEA (see Section 6.3 of the EIS [USACE, 2017]).

6.4 Revised FISH AND WILDLIFE MITIGATION

6.4.1 Revised Summary of Environmental Impacts

Environmental impacts on specific resources are described in Section 7. No significant environmental impacts have been identified for PAV03B or PAV03C. All environmental impacts identified for the contracts are limited to palustrine emergent wetland impacts. Direct impacts, affecting approximately 8 acres, would result from construction of the new levee-floodwall system, utility relocation, and permanent staging/work areas.

Mitigation is needed to compensate for the loss of eight (8) acres or three (3) AAHUs of palustrine emergent wetlands.

6.4.2 Revised Mitigation Plan

In accordance with the mitigation framework established by Section 906 of the Water Resources Development Act (WRDA) of 1986 (33 U.S.C. 2283), as amended by Section 2036 of WRDA 2007, Section 1040 of the Water Resources Reform and Development Act (WRRDA) of 2014, and Section 1162 of WRDA 2016; the CEQ's NEPA regulations (40 CFR Sections 1502.14(f), 1502.16(h), and 1508.20); and Section C-3 of Engineer Regulation (ER) 1105-2-100, USACE will ensure that project-caused adverse impacts to ecological resources are avoided or minimized to the extent practicable, and that remaining, unavoidable impacts are compensated to the extent justified. A detailed description of the mitigation plan is presented in Appendix A. The description provided below is a brief description of the information presented there. Mitigation would be needed to compensate for a loss of 3 AAHUs or 8 acres from palustrine emergent wetlands. Remaining unavoidable impacts will be fully compensated with in-kind mitigation.

Mitigation banks with service areas including the project impact areas were investigated to determine if sufficient and appropriate mitigation credits were available. One has been identified that could be utilized for PAV03B and PAV03C mitigation. Only one approved bank, Sea Breeze Wetland Mitigation Bank, has a service area that includes PAV impact areas and affected wetland types. Due to the timeline associated with PAV03B and PAV03C, this mitigation bank will be used to compensate for the loss of palustrine emergent wetlands. This mitigation plan is the only practicable method to compensate for the loss of wetlands that avoids significantly impacting the overall

schedule and funding of PAV03B and PAV03C.

USACE purchase of credits from the Sea Breeze Mitigation Bank will be in parallel to any land clearing or other construction activities. USACE will provide to the resource agencies a copy of the signed and dated credit transaction letter from the bank sponsor demonstrating that the purchase of wetland credits is complete.

6.4.2.1 ^{Revised} **Description of the Mitigation Plan**

There are approximately 8 acres of impact that would require mitigation with the Sabine Lake HUC (12020007), which is within the secondary service area for Sea Breeze. Because the impacts were not evaluated with the Interim Hydrogeomorphic (iHGM) Wetland Functional Assessment, USACE assumed a Functional Capacity Index (FCI) of 1.0. This is the highest index for each variable as described by iHGM. Based on these assumptions, as more fully described in Appendix A, the following mitigation plan was prepared:

- Calculation
 - $1.0 \text{ FCI} \times 8 \text{ acres} = 8 \text{ FCU's per Function Category}$
 - $8 \text{ FCU's per Function Category} \times 1.5 = 12 \text{ FCU's per Function Category}$
 - $12 \text{ FCU's per Function Category}$, also described as a total of 36 FCU's
- Total mitigation cost of \$1,980,000.

The purchase of 36 FCU credits from Sea Breeze Wetland Mitigation Bank would fully compensate for the loss of 8 acres of palustrine emergent wetland habitat if all variables associated with iHGM are evaluated at an FCI of 1.0

6.4.2.2 ^{Revised} **Monitoring/Adaptive Management Plan**

According to the Wetland Mitigation Bank Prospectus for Sea Breeze, monitoring of the site prior to the final release of credits will occur at a quarterly minimum and last for a minimum of seven years after completion of the mitigation efforts. Monitoring also includes an inspection of the site for invasive species noted by the Texas Invasive Plant & Pest Council Monitoring. Long-term monitoring of the site will occur quarterly. Quantitative monitoring parameters include herbaceous and midstory cover by species, trees per acre, basal area per acre, etc. These parameters will be monitored through permanent square and circular plots established post-construction and reported in the as-built report. Wetland establishment areas will be monitored for the presence of regionally appropriate wetland indicators outlined in the Gulf Coastal Plains Regional Supplement (U.S. Army Corps of Engineers, 2010) supplemented, if necessary, by data from shallow groundwater monitoring wells (Sea Breeze, 2017).

6.4.2.3 ^{Revised} **Resource Agency Views on the Mitigation Plan**

As described in Appendix A, there are two mitigation plans evaluated for implementation. The use of the Sea Breeze Wetland Mitigation Bank is not preferred by resource agencies when other options are available. However, the Sea Breeze Wetland Mitigation Bank was selected due to costs per USACE policy. The USACE will initiate purchase of credits from Sea Breeze Wetland Mitigation Bank as the proposed mitigation plan.

6.4.3 Revised Historic Properties Mitigation

In the EIS, USACE committed to a development of a mitigation plan that would be developed in PED when surveys and site assessments are completed. Surveys and assessments have been ongoing during PED for Port Arthur. Surveys have been conducted for most of the proposed footprints within PAV CSRMS. Currently, a contractor is being solicited for surveys of PAV03B and PAV03C. If impacts are identified, archeological historic properties would require data recovery excavations or avoidance and cemeteries would need disinterment and interment of burials to a new location. The relocation of burials from impacted cemeteries might also involve purchasing land if other arrangements cannot be made. No work shall be conducted until all surveys and site assessments are completed if no resources are impacted. If resources are impacted, a mitigation plan and coordination with the State Historical Preservation Office (SHPO) shall occur. No work would proceed until all coordination and concurrence is received in compliance with the law. No updating of information in this subsection was necessary for the SEA (see Section 6.4.3 of the EIS [USACE, 2017]).

6.5 COST ESTIMATE

No updating of information in this subsection was necessary for the SEA (see Section 6.5 of the EIS [USACE, 2017]).

6.6 PROJECT SCHEDULE AND INTEREST DURING CONSTRUCTION

No updating of information in this subsection was necessary for the SEA (see Section 6.6 of the EIS [USACE, 2017]).

6.7 DESIGN AND CONSTRUCTION CONSIDERATIONS

No updating of information in this subsection was necessary for the SEA (see Section 6.7 of the EIS [USACE, 2017]).

6.8 DEFERRED MAINTENANCE CONSIDERATIONS

No updating of information in this subsection was necessary for the SEA (see Section 6.8 of the EIS [USACE, 2017]).

6.9 VALUE ENGINEERING (VE)

No updating of information in this subsection was necessary for the SEA (see Section 6.9 of the EIS [USACE, 2017]).

6.10 SEA LEVEL AND CLIMATE CHANGE

No updating of information in this subsection was necessary for the SEA (see Section 6.10 of the EIS [USACE, 2017]).

6.11 REAL ESTATE CONSIDERATIONS

No updating of information in this subsection was necessary for the SEA (see Section 6.11 of the EIS [USACE, 2017]).

6.11.1 Revised Lands, Easements, and Rights-of-Way

6.11.1.1 New PAV03B

Contract PAV03B consists of the construction of approximately 4,000 linear feet of

floodwall and levee on property occupied by the City of Port Arthur, POPA, KCS, JBS Packing, and Entergy Texas, Inc. The work also includes demolition and removal of the existing sheet pile floodwall and gate closures only where required for new construction. The majority of the existing alignment through the 3B area will remain in place but will be removed from the Federal Project, and ownership will revert to DD7.

6.11.1.2 **New PAV03C**

Contract PAV03C is divided into three zones, zones 1, 2 and 4 consisting of approximately 4 miles levee raise, 0.46 miles of floodwall, 3 pump station fronting protection features, associated drainage features, and civil improvements.

- Zone 1 is 11,453 LF from Stations 504+54A to 617+76.5A where approx. 7,437 LF is levee and 4,026 LF is floodwall/fronting protection.
- Zone 2 is 11,109 LF from Stations 652+85B to 752+79B where approx. 10,039 LF is levee and 1,070 LF is floodwall/fronting protection.
- Zone 4 is 3,896 LF from Stations 932+95D to 970+67D which consists of levee improvements with no proposed floodwalls/fronting protection.

All proposed pump station fronting protection locations are being designed and constructed to a final top of structure elevation equal to the 100-year intermediate year 2127 elevations. The floodwalls will be constructed to the 50-year intermediate year 2077 elevations, but the floodwall design includes adaptability to the 100-year intermediate year 2127 elevations. The levee embankments are being designed and constructed to a final top of structure elevation equal to the 50-year intermediate for year 2077. Future design and construction contracts will further raise the floodwalls and levees to the 100-year intermediate year 2127 elevation. Hydraulic, geotechnical, civil and structural design of the project were based off the latest S2G criteria and related USACE Engineering Manuals. Proper access and maintenance of the flood protection system is required which includes a Vegetation Free Zone of 15 ft and where maintenance is required. The criteria also included requirements for access roads and ramps onto levees. The S2G Design Criteria was the primary basis for establishing proposed right-of-way limits as well as determining utility relocation requirements.

6.11.3 Facility Removals/Utility Relocations

Multiple utilities will be impacted by PAV03C. Relocation costs for utilities were identified in the project area using a state database and the expertise of the Architect-Engineer Contractor. All utility relocations will be initiated by the NFS for the purposes of PAV03C.

6.12 **Revised OPERATION AND MAINTENANCE, REPAIR, REHABILITATION, AND REPLACEMENT (OMRR&R)**

The conclusions of the EIS remain the same, OMRR&R for the constructed facilities for PAV CSRMS contracts would be extensive. PAV CSRMS is a complex system constructed with some elements in a marine environment. OMRR&R requirements would include, but not be limited to, biannual exercising of the systems road and railroad gates and closure structures, regular levee grass mowing, painting, pump station O&M, drainage, maintenance, and alteration approvals under Section 408. The purpose of OMRR&R is to sustain the constructed federal project and to maintain the stated level of benefits at the completion of construction. Under 33 U.S. Code 408 (commonly referred

to as Section 408), the Secretary of the Army, on the recommendations of the Chief of Engineers, may grant permission for the alteration of a USACE civil works project if it is determined that the alteration would not be injurious to the public interest and would not impair the usefulness of the project. The local sponsors would also be required to coordinate with stakeholders for OMRR&R concerns and evacuation/emergency action planning. The NFS is not obligated to address loss of risk reduction due to relative sea level change through future levee lifts or structure modification, but they would still be required to repair, rehabilitation or provide replacement of components to maintain the original project benefits. An OMRR&R manual would be developed to outline the expected OMRR&R requirements. After the District Engineer provides notice of construction completion for the project, or functional portion of the project, the NFS would commence OMRR&R responsibilities associated with the project. At the completion of all environmental coordination, the OMRR&R manual would include any newly added features that have been described in supplemental NEPA documents.

6.13 ECONOMIC ANALYSIS FOR RECOMMENDED PLAN

6.13.1 Summary of Accounts

6.13.1.1 National Economic Development (NED)

No updating of information in this subsection was necessary for the SEA (see Section 6.13.1.1 of the EIS [USACE, 2017]).

6.13.1.2 Environmental Quality (EQ)

No updating of information in this subsection was necessary for the SEA (see Section 6.13.1.2 of the EIS [USACE, 2017]).

6.13.1.3 Regional Economic Development Benefits (RED)

No updating of information in this subsection was necessary for the SEA (see Section 6.13.1.3 of the EIS [USACE, 2017]).

6.13.1.4 Other Social Effects (OSE)

No updating of information in this subsection was necessary for the SEA (see Section 6.13.1.4 of the EIS [USACE, 2017]).

6.14 RISK AND UNCERTAINTY

6.14.1 Engineering Data and Models

No updating of information in this subsection was necessary for the SEA (see Section 6.14.1 of the EIS [USACE, 2017]).

6.14.1.1 Hydrology and Hydraulics

No updating of information in this subsection was necessary for the SEA (see Section 6.14.1.1 of the EIS [USACE, 2017]).

6.14.1.2 Other Engineering Risk and Uncertainty

No updating of information in this subsection was necessary for the SEA (see Section 6.14.1.2 of the EIS [USACE, 2017]).

6.14.2 Economic and Life Safety Risks

No updating of information in this subsection was necessary for the SEA (see Section 6.14.2 of the EIS [USACE, 2017]).

6.14.3 Revised Environmental Data and Analyses

No updating of information in this subsection was necessary for the SEA (See Section 6.14.3 of the EIS [USACE, 2017]).

6.15 REVISED CONSISTENCY WITH OTHER STATE AND FEDERAL LAWS

This SEA has been prepared to satisfy the requirements of all applicable environmental laws and regulations and has been prepared using the CEQ NEPA regulations (40 CFR Part 1500–1508), as amended in 2022, and the USACE’s regulation ER 200-2-2 - Environmental Quality: Policy and Procedures for Implementing NEPA, 33 CFR 230. In implementing PAV03B and PAV03C, USACE would follow provisions of all applicable laws, regulations, and policies related to the proposed actions. The following sections present brief summaries of Federal environmental laws, regulations, and coordination requirements applicable to this SEA.

6.15.1 Revised Clean Air Act

The Beaumont-Port Arthur area within the Texas State Implementation Plan (SIP) were found to all be in attainment/unclassifiable status following national ambient air quality standards (NAAQS). There will be temporary increases in emissions from construction equipment needed for PAV03B and PAV03C. However, these emissions will be temporary in nature and not significantly greater than the no- action alternative. Therefore, no updating of information in this subsection was necessary for the SEA (see Section 6.15.1 of the EIS [USACE, 2017]).

6.15.2 Revised Clean Water Act

Section 404 of the Clean Water Act (CWA) regulates dredge-and/or-fill activities in waters of the U.S. In Texas, Section 401 of the CWA (State Water Quality Certification Program) is regulated by the TCEQ. The USACE requested a Section 401 pre-filing certification meeting with TCEQ on May 9, 2022. One type of special aquatic sites (“wetlands”) would be impacted by construction of PAV03B and PAV03C. Unavoidable impacts would be fully mitigated by the proposed mitigation plan. The CWA Section 404(b)(1) Evaluation (presented in Appendix C) concludes that the discharge of fill material in conjunction with construction of PAV03B and PAV03C complies with Section 404(b)(1) Guidelines. A water quality certification for PAV03B and PAV03C was obtained on November 18, 2022.

6.15.3 Revised Endangered Species Act

A Biological Assessment (BA) was prepared describing the project area, federally listed threatened and endangered species of potential occurrence in the study area as identified by the USFWS, and potential impacts of PAV03B and PAV03C on these protected species (Appendix B).

The USACE has determined that PAV03B would continue to have no effect on the following listed animal species: piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), West Indian manatee (*Trichechus manatus*), and five sea turtle species

(green [*Chelonia mydas*], Kemp's ridley [*Lepidochelys kempii*], loggerhead [*Caretta caretta*], hawksbill [*Eretmochelys imbricata*], and leatherback [*Dermochelys coriacea*]) and monarch butterfly (*Danaus plexippus*). PAV03B may affect but is not likely to adversely affect whooping crane and BLRA. USACE received concurrence on the determination from U.S. Fish and Wildlife Service on May 25, 2023.

Contract PAV03C will have no effect on any of the ESA species listed above.

There is no designated critical habitat in either the PAV03B or PAV03C project area.

6.15.4 Magnuson-Stevens Fishery Conservation and Management Act

No updating of information in this subsection was necessary for the SEA (see Section 6.15.4 of the EIS [USACE, 2017]).

6.15.5 Coastal Zone Management Act

No updating of information in this subsection was necessary for the SEA (see Section 6.15.4 of the EIS [USACE, 2017]). The Texas General Land Office performed a consistency review of the project (Appendix D).

6.15.6 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) provides for consultation with the USFWS and, in Texas, with the Texas Parks and Wildlife Department (TPWD) whenever the waters or channel of a body of water are modified by a department or agency of the U.S. The USFWS and TPWD have actively participated in the extensive resource agency meetings conducted to evaluate impacts and develop mitigation measures for the selected alternative.

A Final Coordination Act Report (CAR) can be found in Appendix K of the 2017 EIS.

6.15.7 Marine Mammal Protection Act of 1972

No updating of information in this subsection was necessary for the SEA (see Section 6.15.7 of the EIS [USACE, 2017]).

6.15.8 National Historic Preservation Act

USACE and the NFS are soliciting and acquiring qualified contractors to survey and assess if any historical resources would be impacted by construction of PAV03B and PAV03C. The conclusions of the EIS remain the same, no disturbance activities shall be conducted until after the surveys and any resources impacted would be mitigated for.

6.15.9 Federal Water Project Recreation Act

No updating of information in this subsection was necessary for the SEA (see Section 6.15.9 of the EIS [USACE, 2017]).

6.15.10 ^{Revised} Farmland Protection Policy Act of 1981 and the CEQ Memorandum Prime and Unique Farmlands

The purpose of the Farmland Protection Policy Act of 1981 and the CEQ's Environmental Statement Memorandum "Prime and Unique Agricultural Lands" is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. Neither PAV03B nor PAV03C will have any permanent adverse impacts on prime farmlands because there

are not any prime farmland soils within the project areas.

6.15.11 **Revised Executive Order 11988, Floodplain Management**

Executive Order 11988 Floodplain Management was enacted May 24, 1977, in furtherance of NEPA, as amended (42 U.S.C. 4321 et seq.), the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et seq.), and the Flood Disaster Protection Act of 1973 (Public Law 93-234, 87 Stat. 975). The purpose of the EO was to avoid, to the extent possible, long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

The EO states that each agency will provide and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for: 1) acquiring, managing, and disposing of Federal lands and facilities; 2) providing Federally undertaken, financed, or assisted construction and improvements; and 3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

There will be no net loss of floodplain as a result of PAV03B or PAV03C. The contracts would neither increase nor decrease the floodplain capacity within the study area. Therefore, PAV03B and PAV03C are in compliance with EO 11988.

6.15.12 **Revised Executive Order 11990, Protection of Wetlands**

Executive Order 11990 directs Federal agencies to take action in the conservation of wetlands. Agencies should take part in avoiding possible degradation or destruction of wetlands and promote wetland health. PAV03B and PAV03C will comply with EO 11990 to minimize degradation or destruction of Federal wetlands and improve the circumstances for natural wetlands and their benefits on the environment. There will be permanent damage to palustrine wetlands as a result of PAV03B and PAV03C; however, this loss will be mitigated resulting in a “no net loss” determination.

6.15.13 **Coastal Barrier Improvement Act of 1990**

No updating of information in this subsection was necessary for the SEA (see Section 6.15.13 of the EIS [USACE, 2017]).

6.15.14 **Revised Executive Order 14008 and Executive Order 12898, Environmental Justice**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low populations, to the greatest extent practicable and permitted by law.

Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, and the associated Justice40 Initiative take a government-wide approach to the climate crisis. The EO directs agencies to address the disproportionately adverse health, environmental, climate-related, and cumulative burdens on disadvantaged communities,

as well as the accompanying economic challenges of such impacts.

To determine whether a project has a disproportionate effect on potential communities with environmental justice concerns (i.e., minority or low-income populations), the demographics of an affected population within the vicinity of a project must be considered in the context of the overall region. Guidance from CEQ states that minority populations should be identified where either: (1) the minority population of the affected areas exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. In addition to minority populations, low-income populations should be identified with the annual statistical poverty thresholds from the Bureau of the Census' data. In identifying minority and low-income communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect (CEQ 1997).

The Environmental Justice study area contains all census tracts and census block groups located within the study area. Several of Jefferson County's census tracts were identified by the Climate and Economic Justice Screening Tool to be disadvantaged due to factors ranging from climate change, energy industrial impacts, health, housing, legacy pollution, and workforce development. The project is impacting 56% minority and 40% low-income communities (Table 1).

The proposed PAV CSRMS would not separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups. Construction of the project will minimize flooding and hurricane surge on these communities and others surrounding, from predicted coastal storm risk, thereby reducing damages to residential and personal property. Further, due to the nearby petrochemical and National Priority List Sites near these communities, protection and damage reduction of these facilities would reduce exposure to potential contaminants and legacy concerns. The project would not have a disproportionately high and adverse impact on low-income or minority populations. Instead, the project furthers the goals of the Justice40 Initiative by delivering investment benefits to disadvantaged communities.

Table 1. Port Arthur Environmental Justice Analysis

Variables	Values	State		USA	
		Avg	% Tile	Avg	%Tile
Socioeconomic Indicators					
Demographic Index	46%	46%	52	35%	71
Supplemental Demographic Index	18%	17%	59	15%	70

People of Color	56%	59%	48	40%	70
Low Income	40%	33%	60	30%	68
Unemployment Rate	6%	5%	67	5%	66
Limited English Speaking	7%	7%	65	5%	79
Less than High School Education	18%	16%	62	12%	76
Under Age 5	7%	7%	56	6%	64
Over Age 64	13%	13%	55	16%	42
Low Life Expectancy	19%	20%	44	20%	51

6.15.15 ^{Revised} **Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds and the Migratory Bird Treaty Act**

Sections 3a and 3e of EO 13186 direct Federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential adverse impacts on migratory birds. Any impacts associated with PAV03B and PAV03C will be compliant with this EO as part of the measures described in Section 7.7.

The importance of migratory nongame birds to the nation is embodied in numerous laws, executive orders (EO) and partnerships. The Fish and Wildlife Conservation Act (Nongame Act) of 1980 demonstrates the Federal commitment to conservation of nongame species. Amendments to the Nongame Act adopted in 1988 and 1989 direct the USFWS to undertake activities to research and conserve migratory nongame birds. The EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds directs Federal agencies to promote the conservation of migratory bird populations, including restoring and enhancing habitat. The Migratory Nongame Birds of Management Concern is a list maintained by the USFWS. The list helps fulfill a primary goal of the USFWS to conserve avian diversity in North America. Additionally, the USFWS Migratory Bird Plan is a draft strategic plan to strengthen and guide the agency's Migratory Bird Program.

The nonregulated “take” of migratory birds is prohibited under this act in a manner similar to the prohibition of “take” of threatened and endangered species under the Endangered Species Act. Avoidance and minimization will be implemented with

PAV03B and PAV03C. The area will be surveyed for migratory birds or their nests before any shrubs or trees are cleared during the nesting season or will be avoided in the nesting season completely.

6.15.16 ^{Revised} **Executive Order 13045, Protection of Children from Environmental Safety Risks**

Executive Order 13045- The EO directs Federal agencies to ensure that its policies, programs, activities, and standards address disproportionate environmental health and safety risks to children.

No updating of information in this subsection was necessary for the SEA (see Section 6.15.16 of the EIS [USACE, 2017], and Table 1 above in section 6.15.14).

6.15.17 **Hazardous Wildlife Attractants On or Near Airports**

No updating of information in this subsection was necessary for the SEA (see Section 6.15.17 of the EIS [USACE, 2017]).

6.15.18 **Consultation with Federally-recognized Indian Tribes**

No updating of information in this subsection was necessary for the SEA (see Section 6.15.18 of the EIS [USACE, 2017]).

7 ENVIRONMENTAL CONSEQUENCES

7.1 PROTECTED LANDS

No updating of information in this subsection was necessary for the SEA (see Section 7.1 of the EIS [USACE, 2017]).

7.1.1 Orange 3 CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.1.1 of the EIS [USACE, 2017]).

7.1.2 Port Arthur and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.1.2 of the EIS [USACE, 2017]).

7.1.3 Freeport and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.1.3 of the EIS [USACE, 2017]).

7.2 ^{REVISED} PHYSICAL AND HYDROLOGICAL CHARACTERISTICS

7.2.1 Orange 3 CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.2.1 of the EIS [USACE, 2017]).

7.2.1.1 Design Accommodations to Minimize Impacts

No updating of information in this subsection was necessary for the SEA (see Section 7.1.1.1 of the EIS [USACE, 2017]).

7.2.1.2 Unavoidable Indirect Impacts

No updating of information in this subsection was necessary for the SEA (see Section 7.2.1.2 of the EIS [USACE, 2017]).

7.2.2 Revised Port Arthur and Vicinity CSRM Plan

No Action Alternative. The area served by the existing Port Arthur HFP System is densely covered with residential, commercial, and industrial development with a few isolated wetland areas. Drainages flow primarily into the Neches River to the north, the Sabine-Neches Canal to the east, and Taylors Bayou to the west. The configuration of the HFP would continue to be maintained at the existing dimensions. Higher water levels associated with Intermediate and High Relative Sea Level Change (RSLC) could result in overtopping during future storm surges.

Recommended Plan. The Port Arthur CSRM Plan improvements would result in physical impacts on the floodplain due to changes in the levee alignment of PAV03B and impacts to the project area of PAV03C for pipeline relocation and construction staging. Interior drainage would be managed in the same manner as the Orange CSRM Plan, such that improvements would have negligible impacts on the general hydrology of the floodplain both inside and outside of the levee system. No impacts on the large marsh systems west of PAV03B or PAV03C are expected.

7.2.3 Freeport and Vicinity CSRM Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.2.3 of the EIS [USACE, 2017]).

7.3 COASTAL PRAIRIE

7.3.1 Revised Sabine Region CSRM Plans

No Action Alternative. Coastal prairie would continue to be critically imperiled in the nearby regions. Although no remnant tracts of native tall grass or salty prairies were identified in the study area, evaluation of the PAV03B location resulted in a positive identification of coastal prairie. The site is heavily degraded with invasive species and is bounded on all sides by W Reverend Drive Ransom Howard Street, Denbo Avenue, and KCS. The coastal prairie is expected to degrade with the No Action Alternative.

Proposed Action. The PAV03B plan would install a levee and floodwall resiliency features. This improvement will be made outside of the existing right-of-way and therefore would have permanent impacts on the physical characteristics of the system within this project area. There will be direct impacts from construction along the PAV03B levee/floodwall system in Jefferson County that would result in a loss of about six (6) acres of degraded/wooded coastal prairie habitat (also labeled as palustrine wetland for the purposes of mitigation). The right-of-way was sized to include lands needed to construct a levee or floodwall suitable for the Intermediate RSLC scenario plus additional lands needed for construction, and it was assumed that all wetlands within the right-of-way would be permanently lost due to construction. The plan currently calls for all earthen material for the levee system to be obtained from lands owned in fee by the non-Federal sponsor. Staging areas that are part of PAV03C needed to support construction will be located in previously disturbed or non-wetland upland areas.

The direct palustrine wetland impacts described above have been illustrated, captured, and quantified with WVA modeling that is described in Appendix A.

7.3.2 Freeport and Vicinity CSRMs Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.3.1 of the EIS [USACE, 2017]).

7.4 COASTAL MARSH

7.4.1 Orange 3 CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.4.1 of the EIS [USACE, 2017]).

7.4.2 Port Arthur and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.4.2 of the EIS [USACE, 2017]).

7.4.3 Freeport and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.4.3 of the EIS [USACE, 2017]).

7.5 FORESTED WETLANDS

7.5.1 Orange 3 CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.5.1 of the EIS [USACE, 2017]).

7.5.2 Port Arthur and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.5.2 of the EIS [USACE, 2017]).

7.5.3 Freeport and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.5.3 of the EIS [USACE, 2017]).

7.6 ^{NEW} PALUSTRINE EMERGENT WETLANDS

7.6.1 ^{New} Port Arthur and Vicinity CSRMs Plan

No Action Alternative. Coastal prairie would continue to be critically imperiled in the nearby regions. Although no remnant tracts of native tall grass or salty prairies were identified in the study area, evaluation of the PAV03B location resulted in a positive identification of coastal prairie. The site is heavily degraded with invasive species and is bounded on all sides by W Reverend Drive Ransom Howard Street, Denbo Avenue, and KCS. The coastal prairie is expected to degrade with the No Action Alternative. The location of PAV03C cattail wetland has also been heavily degraded and is expected to decline over time due to the surrounding industrialization.

Proposed Action. The PAV03B plan would install a levee and floodwall resiliency features. This improvement will be made outside of the existing right-of-way and therefore would have permanent impacts on the physical characteristics of the system within this project area. There will be direct impacts from construction along the PAV03B levee/floodwall system in Jefferson County that would result in a loss of about six (6) acres of degraded/wooded coastal prairie habitat (labeled as palustrine emergent wetland for the purposes of mitigation) of varying quality and one (1) acre of cattail

wetland (also labeled as palustrine wetland for the purposes of mitigation). There will also be direct impacts from construction and permanent staging areas from PAV03C in Jefferson County that would result in about one (1) acre of degraded cattail wetland habitat (labeled as palustrine emergent wetland for the purposes of mitigation). The right-of-way for PAV03B was sized to include lands needed to construct a levee or floodwall suitable for the Intermediate RSLC scenario plus additional lands needed for construction, and it was assumed that all wetlands within the right-of-way would be permanently lost due to construction. Fill material required to construct PAV03B would be obtained from approved, upland borrow sources that have undergone contaminant testing. Any areas identified will be evaluated for contaminants prior to use. No adverse impacts from the use of borrow sources for PAV03B are expected to occur. The direct palustrine wetland impacts described above have been illustrated, captured, and quantified with WVA modeling that is described in Appendix A.

7.7 REVISED IMPACTS TO FISH AND WILDLIFE AND THEIR HABITATS

7.7.1 Revised Fish and Wildlife Impacts

7.7.1.1 Revised Sabine Region CSRMs Plans

No Action Alternative. Natural habitats within the PAV03B and PAV03C construction right-of-way would continue to provide cover, roosting, foraging, and nesting habitat for fish and wildlife during the period of analysis. Although wetland habitats would be expected to persist over the 50-year period of analysis, they are expected to degrade in quality due to the industrialization of the project areas. In addition, PAV03C has been disturbed previously, and was fully mowed in 2006 through 2010. Therefore, it can be expected that PAV03C would be disturbed in the future to maintain existing utilities or degraded with implementation of any necessary railroad work.

Recommended Plan. Direct impacts of construction of PAV03B and PAV03C would result in the destruction of approximately 8 acres of natural fish and wildlife habitat over the 50-year period of analysis (Figure 6 and Figure 7). During construction, fish and wildlife would be able to move out of construction corridors into adjacent habitat and avoid harm; however, competition for remaining habitat might result in a small reduction in wildlife productivity. Appropriate BMPs would be enforced to prevent fill material from entering nearby wetlands or waters. Forest clearing during construction would be conducted during the fall or winter to minimize impacts on nesting migratory birds, when practicable. If not practicable, migratory bird surveys will be conducted to ensure there are not adverse effects to nesting and breeding birds that may occur within the project areas. Forested areas in the construction right-of-way would be surveyed prior to construction to avoid impacting nesting bald eagles. Adverse impacts to bald eagle nesting locations would be avoided in accordance with the National Bald and Golden Eagle Management Guidelines, as recommended by the USFWS CAR for this project. Terrestrial wildlife would be able to cross-earthen levee segments to access remaining habitat on either side, as it does now across the levees of the Port Arthur HFP. Floodwall segments would generally be located in developed areas and limited in length; wildlife would be able to utilize nearby levee segments for access as needed.



Figure 6. PAV03B Wetland Impacts



Figure 7. PAV03C Wetland Impacts

7.7.1.2 Freeport and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.6.1.2 of the EIS [USACE, 2017]).

7.7.2 Essential Fish Habitat Impacts

No updating of information in this subsection was necessary for the SEA (see Section 7.6.2 of the EIS [USACE, 2017]).

7.7.2.1 Sabine Region CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.6.2.1 of the EIS [USACE, 2017]).

7.7.2.2 Freeport and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.6.2.2 of the EIS [USACE, 2017]).

7.7.3 Revised Threatened and Endangered Species Impacts

No Action Alternative. Existing threats to listed species described in Jefferson County would be expected to be minor, as most of the species rarely occur, and some do not

occur, in the project areas.

Recommended Plan. The PAV CSRM contracts would continue to have no effect on the following listed animal species: piping plover, red knot, the West Indian manatee, five sea turtle species (green, Kemp's ridley, loggerhead, hawksbill, and leatherback), and the monarch butterfly.

The USACE has determined PAV03B may affect, but is not likely to adversely affect, whooping crane and BLRA. PAV03C will have no effect on any federally listed threatened and endangered species. No critical habitat is located in either the PAV03B or PAV03C project areas. The details of this assessment, as well as in-depth species description can be found in the USACE BA (Appendix B).

7.7.3.1 ^{New} Species Determination for PAV03B and PAV03C

USACE has determined PAV03B May Affect, but is Not Likely to Adversely Affect BLRA, May Affect, but Not Likely to Adversely Affect whooping crane and will have No Effect on piping plover, red knot, West Indian manatee, green sea turtle, Kemp's Ridley sea turtle, hawksbill sea turtle, loggerhead sea turtle, leatherback sea turtle, and monarch butterfly.

USACE has determined there will be No Effect to all Federally listed species within the PAV03C project area due to the lack of suitable habitat.

7.7.3.1.1 ^{New} Piping Plover

On their wintering grounds, piping plovers use beaches, mudflats, sandflats, and dunes. None of the other landscape features attractive to plovers are present in or adjacent to the construction right-of-way. The general area is heavily industrialized with substantial disturbances including roadway traffic, and plant and port activities. The Port Arthur project area is located well inland from the coast and does not contain piping plover habitat, making it highly unlikely that piping plovers would occur in the area.

It is unlikely that piping plovers would frequent the project area because of the lack of acceptable habitat and extensive urban and industrial disturbances. Therefore, USACE has determined that PAV03B and PAV03C would have no effect on piping plovers.

7.7.3.1.2 ^{New} Red Knot

The red knot winters along the Texas coast, foraging on beaches, oyster reefs, and exposed bay bottoms and roosting on high sand flats, and reefs, utilizing the same areas as piping plovers. The potential for occurrence in the project area is the same as that of the piping plover.

It is unlikely that red knots would frequent the project area because of the lack of acceptable habitat and extensive urban and industrial disturbances. Therefore, USACE has determined that PAV03B and PAV03C would have no effect on red knots.

7.7.3.1.3 ^{New} Eastern Black Rail

PAV03B

Texas is a black rail crossroad making it difficult to differentiate breeders from winter residents from migrants (Watts, 2016). Black rail in Texas use tidal salt marshes along the barrier islands and the mainland fringe, as well as drier coastal prairie. The upper

Texas coast (Jefferson, Chambers, Galveston, Harris, and Brazoria counties) has a long history of black rail records that are concentrated within national wildlife refuges and state wildlife management areas. Much of the black rail activity along the upper Texas coast has been concentrated on the Bolivar Peninsula and Brazoria, Anahuac and San Bernard National Wildlife Refuges.

The project area is within the known range of BLRA. There are no e-Bird records of species occurrence in the project area. Identified degraded coastal prairie habitat within the PAV03B project area is not assumed to include preferred habitat (for Texas) since the areas are not dominated by gulf cordgrass (*Spartina spartinae*), salt meadow cordgrass (*S. patens*), salt grass (*Distichlis spicata*), sea oxeye (*Borrichia frutescens*), and eastern baccharis (*Baccharis halimifolia*). However, BLRA may occur in inland palustrine emergent wetlands that have dense herbaceous cover that allow tunnels for BLRA to escape predation.

No BLRA have been documented in the project area; however, call-playback auditory surveys were not performed. It is possible that BLRA may be in the vicinity of the project at the time of construction since potential habitat is present; therefore, presence of BLRA is assumed at the PAV03B project site. Due to the direct impacts associated with vegetation clearing USACE determined there would be potential to affect BLRA. A list of conservation measures is included in Appendix B.

PAV03C

None of the landscape features attractive to BLRA are present in or adjacent to the construction right-of-way. The general area is heavily industrialized with substantial disturbances including roadway and railroad traffic. Figure 5 depicts the high level of disturbance surrounding the site. Although the PAV03C has degraded palustrine wetland habitat, this site is not suitable for BLRA, making it highly unlikely that BLRA would occur in the area.

It is unlikely that BLRA would frequent the PAV03C project area because of the lack of acceptable habitat and extensive urban and industrial disturbances. Therefore, USACE has determined that PAV03C would have no effect on BLRA.

7.7.3.1.4 ^{New} Whooping Crane

PAV03B

The type of coastal marsh system these large birds prefer is not present in the area that would be affected by construction of PAV03B. However, in 2021, a pair of whooping crane spent significant time in Jefferson County, Texas established a territory and nested three times, resulting in one successful chick hatching (Louisiana Department of Wildlife and Fisheries, 2021). This pair is likely to remain and continue to nest in Texas in future years. Although the habitat is not conducive for breeding or foraging, there is a possibility of birds temporarily using the project action area. Therefore, USACE determined PAV03B may affect, but is not likely to adversely affect the Louisiana breeding pair of whooping cranes.

PAV03C

None of the landscape features attractive to whooping cranes are present in or adjacent to the construction right-of-way for PAV03C. The general area is heavily industrialized

with substantial disturbances including roadway and railroad traffic. Although the PAV03C has degraded palustrine wetland habitat, this site is not suitable for whooping cranes, making it highly unlikely that whooping cranes would occur in the area.

It is unlikely that whooping cranes would frequent the PAV03C project area because of the lack of acceptable habitat and extensive urban and industrial disturbances. Therefore, USACE has determined that PAV03C would have no effect on whooping cranes.

7.7.3.1.5 ^{New} West Indian Manatee

Sightings of West Indian manatees are very rare along the Texas coast. The construction right-of-way water crossings are shallow depression wetlands to which manatees would not have access. Given these considerations, USACE has determined that the manatee is not likely to occur in the project areas, and that PAV03B and PAV03C would have no effect on the West Indian manatee.

7.7.3.1.6 ^{New} Sea Turtles

The leatherback is not likely to occur in the project areas due to its preference for deep marine waters. No documented records of hawksbills exist from Jefferson County.

Green, Kemp's ridley, and loggerhead sea turtles are not likely to occur near the construction rights-of-way for Port Arthur plans. Furthermore, project construction will not utilize hopper dredges, which are known to adversely impact sea turtles. Since it would be unlikely that sea turtles would visit the area, USACE has determined that PAV03B and PAV03C would have no effect on sea turtles.

7.7.3.1.7 ^{New} Monarch Butterfly

Threats to the monarch butterfly include loss of milkweed and nectar resources (i.e. breeding and migratory habitat) from conversion and development of grasslands and widespread use of herbicides), exposure to insecticides, availability and quality of overwintering habitat, and climate change.

Milkweed is a large factor in maintaining monarch butterfly populations. Although monarch butterfly can occur within the project areas, they will not be affected by construction due to the lack of milkweed presence and unlikelihood of milkweed to occur in the PAV03B and PAV03C sites due to the severe degradation of habitat by invasive species. Any direct, indirect, or cumulative effects from implementation would have no effect on monarch butterfly.

7.8 WATER AND SEDIMENT QUALITY IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.7 of the EIS [USACE, 2017]).

7.8.1 No Action Alternative

7.8.1.1 Sabine Region CSRM Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.7.1.1 of the EIS [USACE, 2017]).

7.8.1.2 Freeport and Vicinity CSRM Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.7.1.2 of the EIS [USACE, 2017]).

7.8.2 Recommended Plan

7.8.2.1 ^{Revised} Sabine Region CSRMs Plans

Fill material required to construct PAV03B would be obtained from approved, upland borrow sources that have undergone contaminant testing. Any areas identified will be evaluated for contaminants prior to use. No adverse impacts from the use of borrow sources for PAV03B are expected to occur.

A CWA Section 404(b)(1) Evaluation is presented in Appendix C. Approximately 8 acres of palustrine wetlands would be directly impacted by the placement of fill material by bulldozers, or excavation to construct floodwalls. The proposed alignment has been located to minimize, to the greatest extent practicable, impacts on the Neches and Sabine River floodplains and to avoid and minimize impacts on the aquatic ecosystem. Unavoidable, significant impacts would be fully mitigated.

Construction of improvements to the PAV CSRMs Plan would have minimal impacts on water quality. Discharges of fill material into adjacent wetlands and waterways would be minimized by the use of silt curtains and other BMPs.

7.8.2.2 Freeport and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.7.2.2 of the EIS [USACE, 2017]).

7.9 AIR QUALITY IMPACTS

7.9.1 No Action Alternative – All CSRMs Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.8.1 of the EIS [USACE, 2017]).

7.9.2 Recommended Plan

7.9.2.1 Air Emission Impacts

No updating of information in this subsection was necessary for the SEA (see Section 7.8.2.1 of the EIS [USACE, 2017]).

7.9.2.2 Greenhouse Gas Impacts

No updating of information in this subsection was necessary for the SEA (see Section 7.8.2.1 of the EIS [USACE, 2017]).

7.10 NOISE IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.9 of the EIS [USACE, 2017]).

7.10.1 No Action Alternative – All CSRMs Plans

7.10.1.1 Orange CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section

7.9.1.1 of the EIS [USACE, 2017]).

7.10.1.2 Port Arthur and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.9.1.2 of the EIS [USACE, 2017]).

7.10.1.3 Freeport and Vicinity CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.9.1.3 of the EIS [USACE, 2017]).

7.10.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.9.2 of the EIS [USACE, 2017]).

7.11 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.10 of the EIS [USACE, 2017]).

7.11.1 Orange 3 CSR Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.10.1 of the EIS [USACE, 2017]).

7.11.1.1 No Action Alternative

No updating of information in this subsection was necessary for the SEA (see Section 7.10.1.1 of the EIS [USACE, 2017]).

7.11.1.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.10.1.2 of the EIS [USACE, 2017]).

7.11.2 Port Arthur and Vicinity CSR Plan

7.11.2.1 No Action Alternative

The project area would continue to be subject to future risks of I-wall overtopping due to storm surge, and related potential impacts of petrochemical spills from the numerous industrial sites in the Port Arthur area. Large industries have emergency operating plans that help reduce the risks of spills caused by tropical storm impacts, but small businesses in the project area may have limited resources and/or lack knowledgeable staff to appropriately manage these risks.

7.11.2.2 Recommended Plan

The facilities in the Port Arthur area that manufacture, or store crude oil, gasoline, or petrochemicals would experience lower risks of spills associated with storm surge impacts if the PAV CSR Plan is implemented. Any excavated soil with contaminants identified by the Phase II ESA discussed in Section 2.3.11 would be handled and properly disposed of in accordance with federal and state laws, with all associated costs allocated to the local sponsor in accordance with USACE Engineer Regulation (ER)

200-2-3 and ER 1165-2-132. DD7 would also be responsible for ensuring the performance of all regulatory notifications and response coordination with TCEQ.

7.11.3 Freeport and Vicinity CSR Plan

7.11.3.1 No Action Alternative

No updating of information in this subsection was necessary for the SEA (see Section 7.10.3.1 of the EIS [USACE, 2017]).

7.11.3.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.10.3.2 of the EIS [USACE, 2017]).

7.12 CULTURAL RESOURCE IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.11 of the EIS [USACE, 2017]).

7.12.1 No Action Alternative – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.11.1 of the EIS [USACE, 2017]).

7.12.2 Recommended Plan – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.11.2 of the EIS [USACE, 2017]).

7.13 PRIME AND UNIQUE FARMLANDS

No updating of information in this subsection was necessary for the SEA (see Section 7.12 of the EIS [USACE, 2017]).

7.13.1 Orange 3 CSR Plan

7.13.1.1 No Action Alternative

No updating of information in this subsection was necessary for the SEA (see Section 7.12.1.1 of the EIS [USACE, 2017]).

7.13.1.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.12.1.2 of the EIS [USACE, 2017]).

7.13.2 Port Arthur and Vicinity CSR Plan

7.13.2.1 No Action Alternative

No updating of information in this subsection was necessary for the SEA (see Section 7.12.2.1 of the EIS [USACE, 2017]).

7.13.2.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.12.2.2 of the EIS [USACE, 2017]).

7.13.3 Freeport and Vicinity CSR Plan

7.13.3.1 No Action Alternative

No updating of information in this subsection was necessary for the SEA (see Section 7.12.3.1 of the EIS [USACE, 2017]).

7.13.3.2 Recommended Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.12.3.2 of the EIS [USACE, 2017]).

7.14 FLOODPLAIN IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.13 of the EIS [USACE, 2017]).

7.14.1 EO 11988

No updating of information in this subsection was necessary for the SEA (see Section 7.13.1 of the EIS [USACE, 2017]).

7.14.2 EO 11988 Eight-Step Analysis

No updating of information in this subsection was necessary for the SEA (see Section 7.13.2 of the EIS [USACE, 2017]).

7.15 SOCIOECONOMIC IMPACTS (ENVIRONMENTAL JUSTICE)

No updating of information in this subsection was necessary for the SEA (see Section 7.14 of the EIS [USACE, 2017]).

7.15.1 No Action Alternative – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.14.1 of the EIS [USACE, 2017]).

7.15.2 Recommended Plan – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.14.2 of the EIS [USACE, 2017]).

7.16 PROTECTION OF CHILDREN FROM ENVIRONMENTAL AND SAFETY RISKS

No updating of information in this subsection was necessary for the SEA (see Section 7.15 of the EIS [USACE, 2017]).

7.16.1 No Action Alternative – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.15.1 of the EIS [USACE, 2017]).

7.16.2 Recommended Plan – All CSR Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.16.2 of the EIS [USACE, 2017]).

7.17 HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

No updating of information in this subsection was necessary for the SEA (see Section

7.16 of the EIS [USACE, 2017]).

7.17.1 No Action Alternative

7.17.1.1 Sabine Region CSRMs Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.16.1.1 of the EIS [USACE, 2017]).

7.17.1.2 Freeport and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.16.1.2 of the EIS [USACE, 2017]).

7.17.2 Recommended Plan

7.17.2.1 Sabine Region CSRMs Plans

No updating of information in this subsection was necessary for the SEA (see Section 7.16.2.1 of the EIS [USACE, 2017]).

7.17.2.2 Freeport and Vicinity CSRMs Plan

No updating of information in this subsection was necessary for the SEA (see Section 7.16.2.2 of the EIS [USACE, 2017]).

7.18 ^{Revised} CUMULATIVE IMPACTS

Cumulative impacts are defined in 40 CFR 1508.1(g)(3) as . . . “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period.” Cumulative impacts for the recommended were assessed in accordance with CEQ guidance.

7.18.1 ^{Revised} Sabine Region

7.18.1.1 Sabine Region Past or Present Actions

Sabine Neches Water Way Channel Improvement Project (48-Foot MLLW). The 48-Foot Sabine-Neches Waterway Channel Improvement Project (SNWWCIP) was authorized by the 2014 Water Resources Reform and Development Act (WRRDA). The SNWW to Beaumont would be deepened to 48 feet MLLW and the Sabine Bank Channel would be extended an additional 13.2 miles into the Gulf. In addition, the Taylor Bayou channels and turning basins would be deepened and widened, and three new anchorage/turning basins would be constructed on the Neches River. Beneficial use features and mitigation measures have been developed that effectively avoid or mitigate all environmental impacts. Extensive BUDM features would be constructed with new work and maintenance material along the lower Neches River as part of this project. The project started construction in September 2022 is currently ongoing at the time of this draft Supplemental Environmental Assessment.

Sabine-Neches Waterway 40-foot Channel. Channel and port improvements began in

1885 when Army Engineers completed construction of the east and west jetties. Relying on an artificial channel dredged from Sabine Pass and following the western shore of Sabine Lake, the Port Arthur International Public Port was established in 1899. A 9-foot-deep canal was later dug in the Neches River from the Port Arthur Ship Channel to Beaumont in 1908. Multiple subsequent channel improvement projects have resulted in the current 40-foot mean low tide (MLT) authorized depth and a 77-mile-long channel from Port Arthur to Beaumont. In 1912, a 25-foot MLT navigation channel was constructed from the mouth of the Neches River, across the northern edge of Sabine Lake, and up the Sabine River to near the City of Orange, Texas. Also, part of the Sabine-Neches Waterway (SNWW), the Sabine River Channel was deepened to 30 feet MLT in 1922 and remains at that depth today. Route maintenance dredging and dredge material disposal areas would occur in conjunction to PAV CSRMS construction until portions of the SNWWCIP are awarded.

Gulf Intracoastal Water Way – Texas Section, Main Channel and Tributaries. Construction of the GIWW between the Sabine River and Galveston Bay began in 1925. Originally 9 feet MLT by 100 feet wide, it was later enlarged to its current authorized dimensions of 12 feet MLT by 125 feet. As it leaves Louisiana, the Gulf Intracoastal Water Way follows the Sabine River and connects with the Sabine-Neches Waterway approximately 3 miles below Orange, Texas. The GIWW then follows the Sabine River Channel and the Sabine Neches Canal to the head of the Port Arthur Canal, where it exits the SNWW and continues westward to Galveston Bay. Route maintenance dredging and dredge material disposal areas would occur in conjunction to PAV CSRMS construction.

Various Neches River Marsh Restoration Projects. TPWD has restored large areas of marsh in the Old River and Nelda Stark units of the Lower Neches Wildlife Management Area with the beneficial use of dredged material (BUDM) from the SNWW. Marsh has also been created in the Rose City and Old River areas as part of mitigation for private projects or Natural Resource Damage Assessments. In addition, the Sabine-Neches Navigation District and USACE restored marsh in the Bessie Heights area under a Section 204 Continuing Authorities Program project. In all, hundreds of acres of marsh have been restored along the north shore of Neches River south of Interstate 10.

Private Landowners and Petrochemical Facilities Dredging Projects. Several privately owned docks or boat ramps lie within the SNWW and require routine dredging for depth maintenance. It is assumed past and present activities would impact the project area.

Private Coastal Development Projects. Construction of the Texas coast is ongoing throughout the region including Port Arthur, Texas, and vicinity. The extent of urban and industrialization in coastal Texas is increasing and this project, along with others, are slowly expanding regional development.

7.18.1.2 ^{Revised} Sabine Region Reasonably Foreseeable Future Actions

Orange Coastal Storm Risk Management System. Construction and design for each of the coastal storm risk management systems associated with the Sabine Pass to Galveston Bay Coastal Storm Risk Management System and Ecosystem Restoration Project have

separate contracts with independent schedules. The adjacent Orange Coastal Storm Risk Management System would add approximately 15.6 miles of new levees, at elevations ranging from 12.0 to 17.5 feet NAVD88 and approximately 10.7 miles of new floodwalls and gates at elevations ranging from 13.5 to 16 feet NAVD88. New pump stations, a total of 7, would be constructed to mitigate interior flooding during surge events, and navigable sector gates would be constructed in Adams and Cow Bayous to reduce surge penetration. A mitigation plan is included that fully compensates for all impacts of this plan, and a monitoring and adaptive management plan has been developed to ensure that mitigation outcomes are consistent with performance standards, and corrective actions are taken as needed. Design for Orange Coastal Storm Risk Management System is scheduled to start approximately in 2025 with 5 years of construction after design assuming no delays. A Supplemental Environmental Assessment for the Orange Coastal Storm Risk Management System is being developed to describe all deviations from feasibility and the 2017 EIS. The Draft Supplemental Environmental Assessment is scheduled to be available for public review in November 2023.

Port Arthur and Vicinity Coastal Storm Risk Management System Contracts 1, 3, 3A, 3D, and 3E (PAV01, PAV03, PAV03A, PAV03D, PAV03E). All contracts excluding 3B, 3C, 4, 5, and 5A do not deviate from the conclusions and impacts described in the 2017 EIS for the PAV CSRMS. All contracts include levee raises along existing HFPP levees, floodwall replacement within existing alignments, and replacement of road/railroad closure gates within existing or adjacent locations. All environmental and societal impacts described in the EIS remain the same, no mitigation is proposed for these actions since construction will be within the existing alignments. Staging areas will be either within disturbed areas or delineated in contract drawings to avoid sensitive habitat such as wetlands. Portions of 3D and 3E lie within project areas described in the Draft Supplemental Environmental Assessment, Sabine to Galveston Port Arthur and Vicinity Supplemental Environmental Assessment PAV03B and PAV03C (August 2022), compliance for contracts 3D and 3E are tied to PAV03B and PAV03C. A forthcoming supplemental Environmental Assessment will describe the impacts to PAV 02, PAV04, PAV05, and 05A.

7.18.1.3 Revised Sabine Region Resource Impact Evaluation

Historical information for the Sabine Region as listed in Section 7.17.1.3 of the EIS [USACE, 2017]) is unchanged. However, the impact of this supplemental action on the environment including its incremental impact when added to both federal and non-federal projects was not discussed in the 2017 EIS.

The existing SNWW and SNWWCIP would continue to increase salinity intrusion by providing an avenue for salt-water wedge to travel further inland than it naturally would. Further, while not the intent of the PAV CSRMS, the reduction of surge and flooding would continue to increase residential development and oil/gas exploration which would continue to cause subsidence of existing marsh habitat in the Sabine Region. However, conversely, the use of dredged material for beneficial use is expected to increase over time to combat this, USACE's Regional Sediment Management Program with the Engineering, Design, and Research Center (ERDC) aims for utilization of 70% of dredged material for beneficial use by 2030.

Navigation programs within USACE continue to work with stakeholders and other partners to combat challenges within the beneficial use programs to meet this goal. Examples of beneficial use projects within the Galveston District include beach nourishment, bird island restoration, and marsh restoration. Similarly, while dredged significantly less frequently due to shoaling, portions of the GIWW would continue to be dredged, when needed. Suitable dredged material in portions of the GIWW are used for restoration predominantly west of Port Arthur, historically, around Rollover Island. Beneficial use of dredged material is limited to pump distances, incremental project costs are significantly increased if the distance is longer than 3 miles from shoal. The Galveston District is working with stakeholders and agency partners to assist with funding of complex beneficial use projects. Federal projects such as Coastal Texas Protection and Restoration Project are looking to utilize beneficial use for engineering with nature strategies to combat coastal surge and flooding south of Port Arthur, TX.

The loss of wetlands and coastal watersheds would continue to happen as the Texas coast is further developed by industrial and residential entities. Abiotic factors such as climate change and sea level rise would continue to challenge coastal communities and existing habitat. Regulators and environmental agencies would continue to lobby and advocate for Texas's coastal resources and increased protection. State-owned wildlife management areas such as J.D. Murphree WMA would continue to be protected and managed to provide fish and wildlife habitat for the foreseeable future and the deviations to the Port Arthur CSRMS would continue to reduce inundation to the surrounding area including WMAs.

Impacts of the Recommended Plan in the Sabine Region would not be sufficient, when combined with past, present, and reasonably foreseeable future impacts, to lead to significant degradation of the region's environment. Direct and indirect impacts of the Recommended Plan on the wetlands from construction of PAV CSRMS would be fully mitigated. The PAV CSRMS would continue to shield existing wetlands from inundation from sea level rise and surge from wave energy for approximately 50 years after construction. Private residential and industrial development along the Texas coast would continue to pose threats to existing sensitive habitat such as wetlands. However, federal project lands such as the HFPP, PAV CSRMS, Orange CSRMS, and their mitigation sites are protected from development.

7.18.2 Brazoria Region

No updating of information in this subsection was necessary for the SEA (see Section 7.17.2 of the EIS [USACE, 2017]).

7.18.2.1 Brazoria Region Past or Present Actions

No updating of information in this subsection was necessary for the SEA (see Section 7.17.2.1 of the EIS [USACE, 2017]).

7.18.2.2 Brazoria Region Reasonably Foreseeable Future Actions

No updating of information in this subsection was necessary for the SEA (see Section 7.17.2.2 of the EIS [USACE, 2017]).

7.18.2.3 Brazoria Region Resource Impact Evaluation

No updating of information in this subsection was necessary for the SEA (see Section 7.17.2.3 of the EIS [USACE, 2017]).

7.19 Revised ANY ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED SHOULD THE RECOMMENDED PLAN BE IMPLEMENTED

Construction of PAV03B and PAV03C would result in the loss of approximately 8 acres of palustrine emergent wetlands. No other long-term environmental impacts are expected to occur as a result of the contracts.

7.20 Revised ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES INVOLVED IN THE IMPLEMENTATION OF THE RECOMMENDED PLAN

The labor, capital, and material resources expended in the planning and construction of this project are irreversible and irretrievable commitments of human, economic, and natural resources. Approximately 8 acres of palustrine wetlands would be lost from construction and operation of proposed improvements over the period of analysis, but these losses would be fully compensated with in-kind mitigation.

7.21 Revised RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The construction of PAV03B and PAV03C would result in the loss of 8 acres of wetlands over the 50-year period of analysis. These impacts would be fully mitigated in the same watershed, resulting in no net loss of wetlands and preservation of the area's long-term productivity.

7.22 ENERGY AND NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL OF VARIOUS ALTERNATIVES AND MITIGATION MEASURES

No updating of information in this subsection was necessary for the SEA (see Section 7.21 of the EIS [USACE, 2017]).

8 IMPLEMENTATION REQUIREMENTS

No updating of information in this subsection was necessary for the SEA (see Section 8 of the EIS [USACE, 2017]).

8.2 DIVISION OF PLAN RESPONSIBILITIES AND COST-SHARING REQUIREMENTS

No updating of information in this subsection was necessary for the SEA (see Section 8.1 of the EIS [USACE, 2017]).

8.3 COST FOR THE RECOMMENDED PLAN

No updating of information in this subsection was necessary for the SEA (see Section 8.2 of the EIS [USACE, 2017]).

8.4 VIEWS OF NON-FEDERAL SPONSOR AND OTHERS

No updating of information in this subsection was necessary for the SEA (see Section 8.3 of the EIS [USACE, 2017]).

8.5 IMPLEMENTATION PLAN

No updating of information in this subsection was necessary for the SEA (see Section 8.4 of the EIS [USACE, 2017]).

8.6 COST-SHARING APPORTIONMENT

No updating of information in this subsection was necessary for the SEA (see Section 8.5 of the EIS [USACE, 2017]).

8.7 RECOMMENDED PLAN AND RECENT USACE INITIATIVES

No updating of information in this subsection was necessary for the SEA (see Section 8.6 of the EIS [USACE, 2017]).

8.7.1 USACE Campaign Plan

No updating of information in this subsection was necessary for the SEA (see Section 8.6.1 of the EIS [USACE, 2017]).

8.7.2 Environmental Operating Principles

No updating of information in this subsection was necessary for the SEA (see Section 8.6.2 of the EIS [USACE, 2017]).

9 PUBLIC INVOLVEMENT

9.2 PUBLIC INVOLVEMENT ACTIVITIES

No updating of information in this subsection was necessary for the SEA (see Section 9.1 of the EIS [USACE, 2017]).

9.3 SUMMARY OF NOTICE OF INTENT COMMENTS

No updating of information in this subsection was necessary for the SEA (see Section 9.2 of the EIS [USACE, 2017]).

9.4 REVISED COMMENTS ON THE DIRF-EIS

9.4.1 Summary of Public Comments

No updating of information in this subsection was necessary for the SEA (see Section 9.3.1 of the EIS [USACE, 2017]).

9.4.2 ^{Revised} Revised Summary of Resource Agency Comments

A summary of resource agency comments and USACE response can be found in Appendix D. USFWS indicated the description of mitigation plans in the Draft SEA was not adequate, and alternatives should be reevaluated. A more thorough description of mitigation alternatives has been included as part of Appendix A.

9.5 ^{Revised} DISTRIBUTION LIST

A Public Notice to review the Draft SEA was provided to state and Federal agencies to include: TCEQ, TPWD, USFWS, National Marine Fisheries Service, and the EPA. In addition to agencies, the USACE has also provided notice to the general public to review the Draft SEA on social media via the Galveston District webpage (See Appendix D).

10 Revised RECOMMENDATIONS

10.2 Revised OVERVIEW

The USACE coordinated with resource agencies and local industry during the NEPA process. Environmental resource concerns were addressed to assure that adverse impacts were avoided to the maximum extent practicable. The recommendations contained herein reflect the information available at this time. To ensure PAV03B and PAV03C comply with all applicable laws and policies and are acceptable to the public, the Draft SEA underwent public review between August 8, 2022, and September 6, 2022. The study team has addressed any outstanding issues raised during the review. Any comments received during the Draft SEA public comment period can be found in Appendix D.

10.3 RECOMMENDATIONS

No updating of information in this subsection was necessary for the Draft SEA (see Section 10.2 of the EIS [USACE, 2017]).

11 Revised REFERENCES

- Louisiana Department of Wildlife and Fisheries. 2021. 2020-2021 Louisiana Whooping Crane Report. Coastal and Nongame Resources. Internet URL: https://www.wlf.louisiana.gov/assets/Resources/Publications/Whooping_Crane/2020-21_louisiana_whooping_crane_report.pdf. Accessed on 01 June 2022.
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12 INDEX

No updating of information in this subsection was necessary for the SEA (see Section 12 of the EIS [USACE, 2017]).