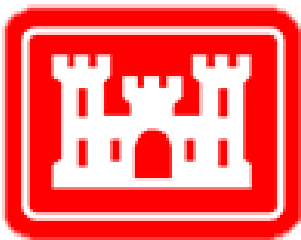


Draft
Supplemental Environmental Assessment

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

Jefferson County
Texas

August 2022



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 B – Biological Assessment
- Appendix C – Clean Water Act Section 404(b)(1) Short Form Analysis

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 and funding for the Sabine Pass to Galveston Bay Coastal Storm Risk Management and Ecosystem Restoration Project was accomplished by the Bipartisan Budget Act of 2018, Public Law 115-123 Title IV Corps of Engineers – Civil Department of Army Construction. This authorization is for necessary expenses to construct, rehabilitate and repair damages caused by natural disasters to USACE projects, and to construct flood and storm damage reduction, including shore protection, for projects that currently have signed Chief’s Reports as of the date of enactment.

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.

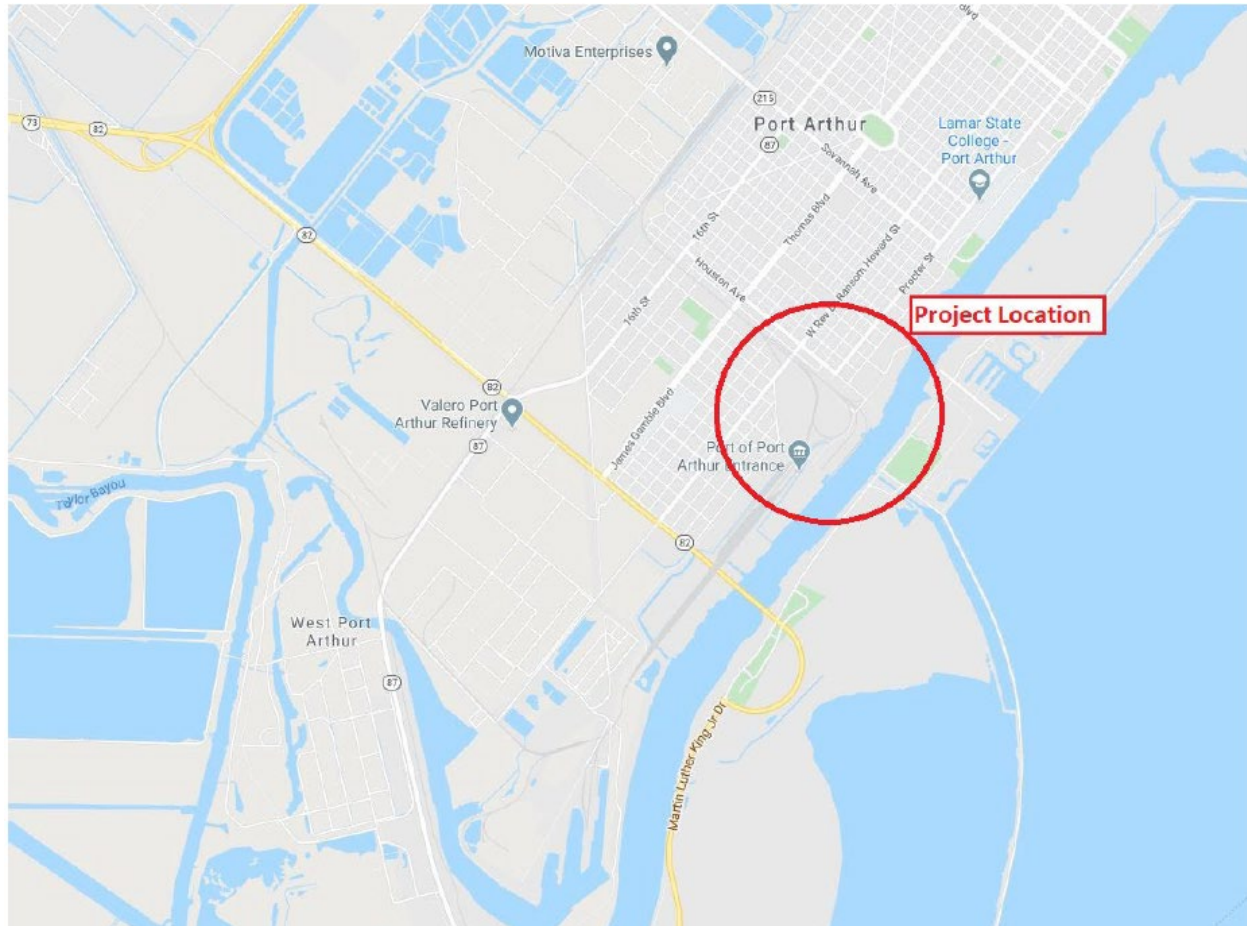


Figure 1. Project Location

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

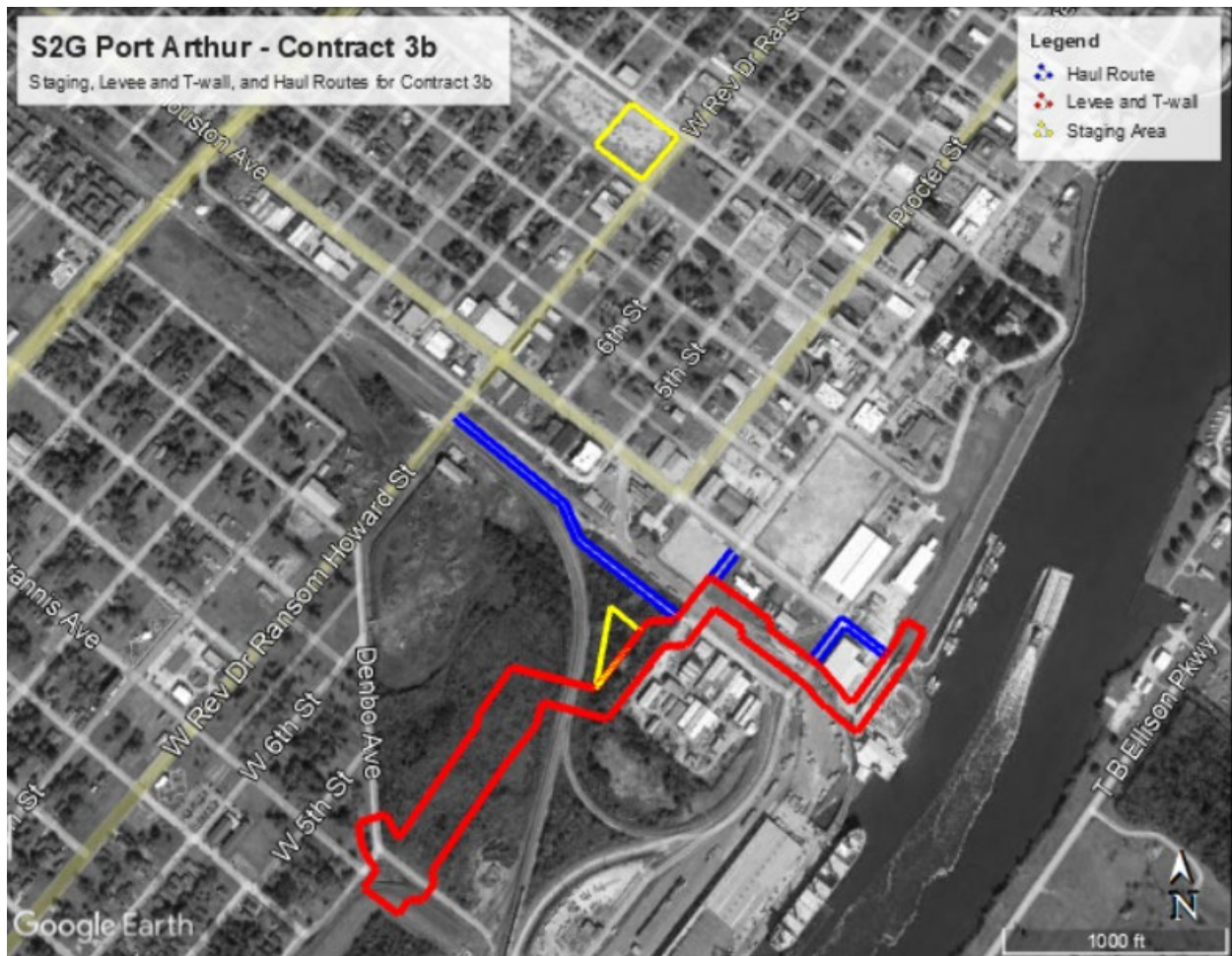


Figure 3. Staging Areas, Levee and T-wall, and Haul Routes for PAV03B

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.

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 PAV03A and is expected to be left in place upon completion of the contract.

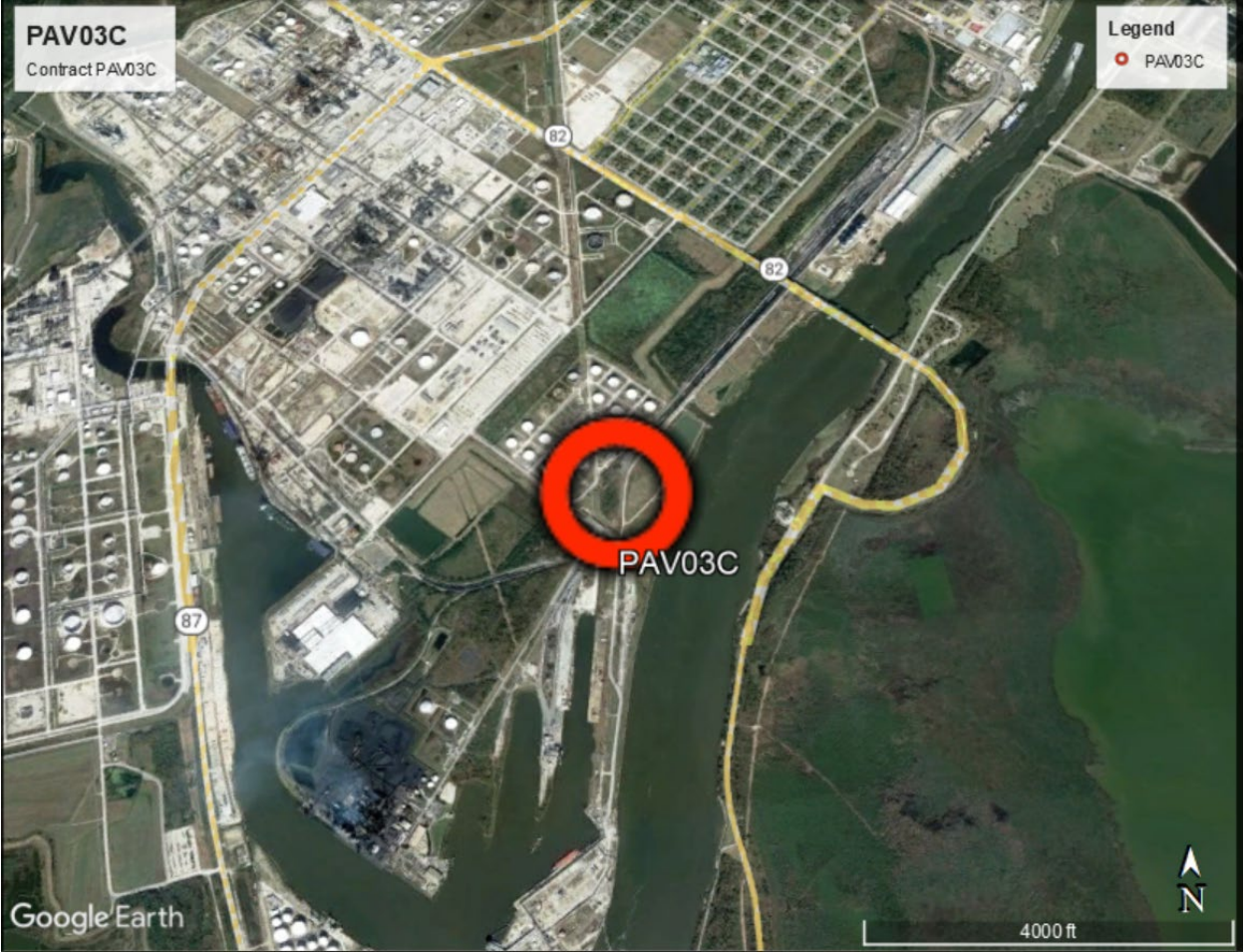


Figure 4. PAV03C Location



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 Navigation Projects in the Study Area

No updating of information in this subsection was necessary for the SEA (see Section 1.10.2 of the EIS [USACE, 2017]).

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 spikeweed (*Eleocharis quadrangulate*), hairy umbrellaweed (*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 (*Nymphaoides 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 (*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 Air Quality

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. The PAV03B solicitation will include specifications and a bid schedule with separate line items for activities associated with the regulatory closure of the vault and appropriate handling and disposal of contaminated soil within the project area. DD7 will be solely responsible for the costs of these response actions, as well as performance of TCEQ regulatory coordination.

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 CSRMs

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 CSRMs 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 CSRMs 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; however, USACE has made the determination that the project “may affect, but is not likely to adversely affect” eastern black rail (*Laterallus jamaicensis jamaicensis*) and whooping crane (*Grus americana*).

5.4.6.4 Freeport and Vicinity CSRM 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 Reevaluation 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 CSRSM 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 CSRSM 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.

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 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, due to the constraints associated with the contracts to include schedule, real estate, life safety impacts, NFS preference, and full compensation of the habitat losses - the USACE will initiate purchase of credits from Sea Breeze Wetland Mitigation Bank as the proposed mitigation plan.

6.4.3 Historic Properties Mitigation

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.

6.11.1.1 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.

6.11.2 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 OPERATION AND MAINTENANCE, REPAIR, REHABILITATION, AND REPLACEMENT (OMRR&R)

No updating of information in this subsection was necessary for the SEA (see Section 6.12 of the EIS [USACE, 2017]).

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 Clean Air Act

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.

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 and PAV03C would have no effect on the following listed animal species: piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), West Indian manatee (*Trichechus manatus*), five sea turtle species (green [*Chelonia mydas*], Kemp’s ridley [*Eretmochelys imbricata*], loggerhead [*Lepidochelys kempii*], hawksbill [*Dermochelys coriacea*], and leatherback [*Caretta caretta*]), and monarch butterfly (*Danaus plexippus*). The USACE has determined PAV03B may affect, but is not likely to adversely affect, eastern black rail (*Laterallus jamaicensis jamaicensis*) and whooping crane (*Grus americana*). There is no designated critical habitat in the project area. Contract PAV03C will have no effect on eastern black rail and whooping crane.

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]).

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

No updating of information in this subsection was necessary for the SEA (see Section 6.15.8 of the EIS [USACE, 2017]).

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 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 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 Executive Order 12898, Environmental Justice

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

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 Executive Order 13045, Protection of Children from Environmental Safety Risks

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

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 7.2.1.1 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 CSR 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 CSRM 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 CSRM 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 CSR 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 CSR 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 CSR 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 CSR 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 CSR 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 CSR 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. 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.

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 CSRMs would 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, eastern black rail and whooping crane. No critical habitat is located in the project areas. The details of this assessment may be found in the USACE BA (Appendix B).

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 CSRMs

No updating of information in this subsection was necessary for the SEA (see Section 7.7.1 of the EIS [USACE, 2017]).

7.8.1.2 Freeport and Vicinity CSRMs

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

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 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

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 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]).

7.10.1.3 Freeport and Vicinity 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]).

7.10.2 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 CSRMs 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 CSRM 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 CSRM 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 CSRM 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 CSRM 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRMs 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 CSRM 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 CUMULATIVE IMPACTS

No updating of information in this subsection was necessary for the SEA (see Section 7.17 of the EIS [USACE, 2017]).

7.18.1 Sabine Region

7.18.1.1 Sabine Region Past or Present Actions

No updating of information in this subsection was necessary for the SEA (see Section 7.17.1.1 of the EIS [USACE, 2017]).

7.18.1.2 Sabine Region Reasonably Foreseeable Future Actions

No updating of information in this subsection was necessary for the SEA (see Section 7.17.1.2 of the EIS [USACE, 2017]).

7.18.1.3 Sabine Region Resource Impact Evaluation

No updating of information in this subsection was necessary for the SEA (see Section 7.17.1.3 of the EIS [USACE, 2017]).

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 general area, 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]).

8.1 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]).

8.2 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]).

8.3 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]).

8.4 IMPLEMENTATION PLAN

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

8.5 COST-SHARING APPORTIONMENT

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

8.6 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]).

8.6.1 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]).

8.6.2 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

9.1 PUBLIC INVOLVEMENT ACTIVITIES

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

9.2 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]).

9.3 COMMENTS ON THE DIRF-EIS

No updating of information in this subsection was necessary for the SEA (see Section 9.3 of the EIS [USACE, 2017]).

9.3.1 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]).

9.3.2 Summary of Resource Agency Comments

No updating of information in this subsection was necessary for the SEA (see Section 9.3.2 of the EIS [USACE, 2017]).

9.4 ^{REVISED} DISTRIBUTION LIST

A Notice of Availability to review the Draft SEA has been provided to state and Federal agencies to include: TCEQ, TPWD, USFWS, 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.

10 ^{REVISED} RECOMMENDATIONS

10.1 ^{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, this Draft SEA will undergo public review. The study team will address any outstanding issues raised during the review.

10.2 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

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