

## RECORD OF DECISION

### Houston Ship Channel Expansion Channel Improvement Project Harris, Chambers, and Galveston Counties, Texas

The Final Integrated Feasibility Report and Environmental Impact Statement (FIFR/EIS) dated 23 April 2020, for the Houston Ship Channel (HSC) Expansion Channel Improvement Project addresses deep draft navigation opportunities and feasibility in the Harris, Chambers, and Galveston Counties, Texas. The final recommendation is contained in the report of the Chief of Engineers, dated 9 December 2019. Based on these reports, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and the review by my staff, I find the plan recommended by the Chief of Engineers to be technically feasible, economically justified, in accordance with environmental statutes, and the public interest.

The Final IFR/EIS, incorporated herein by reference, evaluated various alternatives that would provide an efficient and safe navigation channel while contributing to the National Economic Development (NED) consistent with protecting the nation's environment in the study area. The recommended plan is the Locally Preferred Plan (LPP) and includes:

- Four bend easings on main HSC channel with associated relocation of barge lanes (Segment 1);
- Widening the HSC main channel between Bolivar Roads and Barbours Cut Channel (BCC) from the existing 530-foot width to 700 feet with associated relocation of barge lanes (Segment 1);
- Widen Bayport Ship Channel (BSC) on north side of channel to 455 feet (Segment 2);
- Widen BCC on north side of channel 455 feet (Segment 3);
- Widen BCC flare on north and south to create a 1,800-foot diameter turning basin (Segment 3);
- Deepen the HSC main channel from Boggy Bayou to Hunting Turning Basin up to 46.5 feet (Segment 4);
- Widen the HSC main channel from Boggy Bayou to Greens Bayou from the existing 400-foot wide channel up to 530 feet (Segment 4);
- Deepen the HSC main channel from Sims Bayou to I-610 Bridge up to 41.5 feet (Segment 5);
- Deepen the HSC main channel from I-610 Bridge to Main Turning Basin up to 41.5 feet (Segment 6);
- Improve Brady Island turning basin to 900-foot diameter (Segment 6);
- Inclusion into the Federal Project, the Greens Bayou Channel, a 1.6-mile-long combination 41.5-foot and 16.5 feet deep channel (Segment 1); and
- Inclusion into the Federal Project, the Jacintoport Channel measuring 0.76-mile long by 41.5 feet deep (Segment 4)
- Implementation of the environmental compensatory mitigation and associated monitoring and mitigation area adaptive management plan. Monitoring will continue until the mitigation is determined to be successful based on the identified criteria within the Mitigation Plan for Oyster Reef Habitat included in Appendix P-1. Monitoring is expected to last 3 years, but no more than 10 years. Mitigation for wetland impacts would occur through purchase of wetland mitigation bank credits at a bank approved by the USACE Galveston District.

In addition to a “no action” plan, eight alternatives were evaluated. The alternatives included Alternative 1 - Minimum System Wide Plan, Alternative 2 - Bay Plan, Alternative 3 - Suezmax Plan, Alternative 4 - Aframax Plan, Alternative 5 - Bulklers, Tankers, and Vehicle Carriers Plan, Alternative 6 - Bay Mooring Plan, Alternative 7 - Upper Channel Mooring Plan, Alternative 8 - The Comprehensive Plan. Non-structural measures were considered and not selected because they have been historically used

to allow vessel transit of the HSC system and are already practiced to the greatest extent practicable; however, they are not sufficient to alleviate the existing inefficiencies, and would not provide some of the positive environmental impacts for air emissions reduction or beneficial use (BU) that structural alternatives could provide. Alternative 8 was selected for refinement into the NED Plan and the LPP. The LPP impacts 410 acres of oyster reef compared to 88 acres by the NED Plan, and both plans impact approximately 72 acres of terrestrial wetlands. However, the LPP would provide approximately 4 times the reduction of in-port operational emissions and hours of delay, reduce the risk of vessel incidents by providing greater two-way vessel meeting opportunities in one of the highest traffic ports in the Nation, and would provide more BU material to construct an additional 445 acre marsh and a shoaling attenuation feature to reduce the largest source of channel maintenance material. The LPP was recommended for implementation and was identified as the environmentally preferable alternative.

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

**Table 1: Summary of Potential Effects of Recommend Plan**

	Significant adverse effect	Insignificant effects due to mitigation	Insignificant effects	Resource unaffected by action
Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Air quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aquatic resources/wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invasive species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fish and wildlife habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threatened/Endangered species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic properties	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other cultural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hazardous, toxic & radioactive waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydrology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Land use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Navigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise levels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Socio-economics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Environmental justice	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tribal trust resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Climate change	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

All practicable means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the IFR/EIS will be implemented to minimize impacts. Oyster reef and wetland impacts would be adverse and significant if not mitigated, and will require execution of the mitigation plans summarized in Section 7.5 and detailed in Appendix G (Section 3.5) and Appendix P. Their impacts are summarized in Sections 7.2.1.2 and 7.2.2.4, and detailed in Appendix G (Sections 3.2.1.2 and 3.2.2.3) and Appendix P. Practices

for construction air emissions are being determined through the ongoing General Conformity Determination process. Construction of upland PAs will follow applicable local noise ordinances. Construction of BU oyster reef pads will employ submerged diffuser technology to minimize turbidity to nearby reef. Channel maintenance using hopper dredging with placement at the offshore site ODMDS No. 1 will follow the current best management practices (BMP) currently employed for the existing channel maintenance. Construction of upland PAs, or new ones adjacent to existing PAs would consider scheduling to minimize impacts during nesting seasons, and employ nesting surveys as necessary.

The recommended plan will result in unavoidable adverse impacts to oyster reef and wetlands. To mitigate for these unavoidable adverse impacts, the U.S. Army Corps of Engineers will require construction of oyster reef mitigation and purchase of wetland mitigation bank credits. The oyster reef mitigation will require construction of 358.3 acres of reef pads at the San Leon and Dollar Reef areas in Galveston Bay, and 18.1 acres of oyster reef wave trip/shore protection features at the three BU sites in Galveston Bay. Wetland mitigation will require purchase of approximately 18.1 biota and 14.7 chemical functional capacity units (FCU) for construction of new work placement and 34.8 biota and 25.4 chemical FCUs for future construction of the Rosa Allen Expansion maintenance PA at an approved mitigation bank. The details of the acreage and credit types are provided in Section 7.5 and Appendix G (Sections 3.2.1.2 and 3.2.2.3) and Appendix P.

Public review of the draft IFR/EIS was completed on 13 November 2017. The public review began on 1 September 2017, was extended an additional 30 days because much of the interested public had been affected or displaced by Hurricane Harvey. The public review closed for comments on and closed for comments on 13 November 2017. All comments submitted during the public comment period were responded to in the Final IFR/EIS. A 30-day waiting period and state and agency review of the Final IFR/EIS was completed on 27 February 2020. Comments from state and federal agency review did not result in any changes to the final IFR/EIS.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: endangered green, loggerhead, and Kemp's Ridley sea turtles, Giant manta ray, and West Indian manatee. The National Marine Fisheries Service (NMFS) concurred with the Corps' determination on 27 November 2019. The U.S. Fish and Wildlife Service (FWS) concurred with the Corps' determination on 10 December 2019.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties may be adversely affected by the recommended plan. The Corps and the Texas State Historic Preservation Office entered into a Programmatic Agreement (PA), dated 1 February 1988. All terms and conditions resulting from the agreement shall be implemented in order to minimize adverse impacts to historic properties. A new PA is being developed concurrent with this action. The SHPO agrees with these being developed concurrently.

Pursuant to the Clean Water Act of 1972, as amended, all discharges of dredged or fill material associated with the recommended plan have been found to be compliant with the section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in Appendix H of the IFR/EIS.

A water quality certification pursuant to section 401 of the Clean Water Act was obtained from the Texas Commission on Environmental Quality. All conditions of the water quality certification shall be implemented in order to minimize adverse impacts to water quality.

A determination of consistency with the Texas Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 was obtained from the Texas General Land Office. All conditions of the consistency determination shall be implemented in order to minimize adverse impacts to the coastal zone.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed. Impacts to resources under other statutes have been considered including the Clean Air Act, Section 103 of the Marine Protection, Research, and Sanctuaries Act, Magnuson-Stevens Fishery Conservation and Management Act, Fish and Wildlife Coordination Act, Marine Mammal Protection Act, Farmland Protection Policy Act of 1981 and Prime and Unique Farmlands, Executive Order 12898 for Environmental Justice, and the Migratory Bird Treaty Act.

Technical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the review of these evaluations, I find that benefits of the recommended plan outweigh the costs and any adverse effects. This Record of Decision completes the National Environmental Policy Act process.

June 30, 2020

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Date

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R.D. James  
Assistant Secretary of the Army  
(Civil Works)