MITIGATION PLAN

The Texas Department of Transportation (TxDOT) proposes to improve Interstate Highway 45 (IH 45) from south of the Galveston Causeway Bridge to 61st Street in Galveston, Galveston County, Texas (CSJ 0500-01-119). The proposed IH 45 improvements would include reconstructing and widening IH 45 from south of the Galveston Causeway Bridge to 61st Street and adding a direct connector from northbound 61st Street to northbound IH 45. The proposed improvement would consist of eight 12-foot-wide travel lanes (four in each direction) with 4-foot-wide inside and 12-foot-wide outside shoulders. The frontage roads would include four 11-foot-wide travel lanes (two in each direction) with a 5-foot-wide bike path and 5-foot-wide sidewalk separated from the frontage roads by a 1-foot offset. Grade separated intersections, with U-turns and turning lanes would be constructed at the following intersections: Harborside Drive, 71st Street, and 61st Street onto northbound IH 45. The proposed project would require approximately 4.57 acres of additional right-of-way (ROW).

Delineated and impacted acreages of jurisdictional Waters of the U.S., including wetlands, for the proposed project right of way (ROW) are summarized in **Table 3**. The proposed project is anticipated to permanently impact 1.39 acres (ac) of wetlands.

In accordance with the stated preference of Transportation Equity Act (TEA-21), TxDOT proposes to compensate for these losses through banking credits from the approved Brazoria Coastal Bottomland Mitigation Bank (BCMBM). TxDOT is proposing to mitigate for impacts to freshwater impacts within the project area through the purchase of credits at the BCMBM. Two of the thirteen wetlands identified within the project area (0.234 acres total) are considered freshwater wetlands. Impacts to these wetlands totals 0.0002 acres. Credits were calculated using appropriate ratios, as stated in the BCMBM Mitigation Banking Instrument. As stated in the BCBMB Mitigation Banking Instrument, preservation-based wetland credits are debited at scaled ratios (2:1, 4:1, and 6:1) depending on functionality (low, medium, high) of the wetlands that are being impacted. Freshwater wetlands within the project area were palustrine scrub-shrub. The purchase of in-kind wetland credits is expected, as the BCBMB is a highly diverse wetland habitat complex which includes willow swamps, bottomland hardwoods, and most notably applicable to this project, an expansive gilgai wetland-upland complex. Freshwater wetlands within the project area are presented in **Table 1** below.

Table 1. Freshwater Impact Totals

Wetland Name	Total Acreage	Permanent Impacts (Acres)
Wetland 4	0.089	0.0002
Wetland 5	0.145	0
Totals	**0.234**	**0.0002**

Using a 2:1 ratio, TxDOT is proposing to mitigate for the 0.0002 acres of freshwater impacts with the purchase of **1 credit** at the BCBMB.

Eleven wetlands were identified within the project area that were determined to be tidally influenced marsh. Impacts are anticipated for eight of the tidally influenced waters and totals 1.39 acres. Tidally influenced wetlands impacted by the proposed project were assessed using the Interim Hydrogeomorphic Approach for Assessing Wetland Function (iHGM), specifically for Tidal Fringe. The Functional Capacity Units (FCUs) calculated for tidally influenced wetlands and waters within the project area are listed below:

Table 2. iHGM Totals – Tidal Fringe

Wetland Name	Biota FCUs	Botanical FCUs	Physical FCUs	Chemical FCUs
Wetland 2	0.028	0.031	0.022	0.025
Wetland 6	0.073	0.110	0.086	0.072
Wetland 8	0.506	0.770	0.462	0.501
Wetland 9	0.024	0.040	0.022	0.022
Wetland 10	0.132	0.220	0.123	0.121
Wetland 11	0.081	0.126	0.119	0.072
Wetland 12	0.020	0.030	0.018	0.020
Wetland 13	0.014	0.014	0.013	0.017
Total	**0.878**	**1.341**	**0.865**	**0.850**

TxDOT proposes to mitigate for the potential loses of function to tidally influenced waters at the approved Gulf Coastal Plains Mitigation Bank (GCP). GCP has available credits for the proposed impacts and would be considered in-kind. As per the mitigation banking instrument for GCP, a multiplier of 1.5 is used for impacts to tidal emergent wetlands in the secondary service area. Galveston Island, which the proposed project is on, is not within the secondary service area of GCP, but immediately adjacent. While the proposed project is outside of the secondary service area, the relative functions and values of the wetlands at the project site and the GCP are in kind. Wetlands in the project area and GCP possess similar hydrologic regimes and plant community types. Both sites are within the Level III Ecoregion: Western Gulf Coastal Plain and are coastal marsh with tidal influence. The proposed mitigation in total is as follows:

- **Biota: 1.317 credits**
- **Botanical: 2.012 credits**
- **Physical: 1.298 credits**
- **Chemical: 1.275 credits**

The 100-year floodplain areas affected by the project would be mitigated by the use of floodplain mitigation basins throughout the project area. Therefore, the proposed project would not increase the base flood elevation level and would not violate the applicable floodplain regulations or ordinances. The hydraulic design practices would be in accordance with current TxDOT and Federal Highway Administration (FHWA) design policies and standards. In cooperation with the Federal Emergency Management Agency (FEMA), TxDOT would conform to the standard for temporary and permanent fill set by Flood Insurance Rate Maps.

AVOIDANCE AND MINIMIZATION

Results of the wetland delineation, along with field assessments of the functions and values of the various jurisdictional waters within the proposed project study area, were evaluated during the project planning phase. The objective of the evaluation process was to design a project that satisfied the recommended sequencing process of avoidance, minimization, and compensation for unavoidable impacts to jurisdictional waters and wetlands. As a result of this process, portions of the jurisdictional wetland acreage existing in the proposed project ROW would be avoided in final design (**Table 2**).

Avoidance of jurisdictional waters in project design would be accomplished primarily by reducing the project footprint and limiting the amount of additional ROW. Additionally, bridges with adequate spans between columns will be utilized to minimize disturbances to aquatic and wetland functions and habitats. Widening at this location is preferable to constructing another road that might result in greater impacts to these crossings or other wetlands. Excavation is an unavoidable temporary impact of crossing improvements. In areas where impacts were unavoidable, project design would minimize these impacts by specifying retaining walls rather than side slopes, where practicable.

PROPOSED COMPENSATION FOR UNAVOIDABLE LOSSES

The purchase of banking credits recognizes and conforms to the mandate of the Transportation Equity Act of the 21st Century (TEA-21, Public Law 105-178), which established a preference for mitigation banking to satisfy compensatory mitigation requirements for unavoidable losses to wetlands and other natural habitats for the purpose of federally-funded linear transportation projects. The design of the proposed project satisfies CWA Section 404(b)(1) guidelines requiring that no discharge of dredged or fill material in Waters of the U.S. be permitted unless appropriate and practicable steps have been taken to minimize adverse effects associated with the discharge [40 CFR

230.10(d)]. The proposed project also complies with the mandated mitigation sequence established by Section 404(b)(1) of avoidance, minimization, and compensation for unavoidable losses to the aquatic environment, and the 1989 Federal policy goal of “no net loss” of wetlands.