The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

Environmental Assessment

Farm to Market Road 457
At the Gulf Intracoastal Waterway,
Matagorda County

CSJ: 0605-01-060

Prepared by: TxDOT, Yoakum District
July 2015
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LIST OF ACRONYMS AND ABBREVIATIONS

AASHTO – American Association of State Highway and Transportation Officials

ACS – American Community Survey

ACT – Antiquities Code of Texas

APE – Area of Potential Effect

BMP – Best Management Practice

CAD – Central Appraisal District

CBRA – Coastal Barrier Resources Act

CEPRA – Coastal Erosion Planning and Response Act

CFR – Code of Federal Regulations

CMP – Congestion Management Process

CNRA – Coastal Natural Resource Area

CWA – Clean Water Act

DOT – Department of Transportation

EFH – Essential Fish Habitat

EMST – Ecological Mapping Systems of Texas

EO – Executive Order

EPA – Environmental Protection Agency

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

FM – Farm to Market

FMU – Fishery Management Unit

FPPA – Farmland Protection Policy Act

FWCA – Fish and Wildlife Coordination Act

GIWW – Gulf Intracoastal Waterway
GLO—General Land Office

HAPC – Habitat Areas of Particular Concern

H-GAC – Houston-Galveston Area Council

ISA – Initial Site Assessment

LEP – Limited English Proficiency

MOU – Memorandum of Understanding

MSAT – Mobile Source Air Toxics

MSL – Mean Sea Level

NAAQS – National Ambient Air Quality Standards

NEPA – National Environmental Policy Act

NCHRP – National Cooperative Highway Research Program

NMFS – National Marine Fisheries Service

NOI – Notice of Intent

NRHP – National Register of Historic Places

NWP – Nationwide Permit

PA-TU – Programmatic Agreement Regarding the Implementation of Transportation Undertakings

PCN – Pre-Construction Notification

RSA – Resource Study Area

TCEQ – Texas Commission on Environmental Quality

THC – Texas Historical Commission

TPDES – Texas Pollutant Discharge Elimination System

TPWD – Texas Parks and Wildlife Department

TSS – Total Suspended Solids

TWDB – Texas Water Development Board

TxDOT – Texas Department of Transportation
TXNDD – Texas Natural Diversity Database
SGCN – Species of Greatest Conservation Need
SHPO – Texas State Historic Preservation Officer
STIP – Statewide Transportation Improvement Program
SW3P – Stormwater Pollution Prevention Plan
USACE – United States Army Corps of Engineers
USCG – United States Coast Guard
UTP – Unified Transportation Plan
VMT – Vehicle Miles Traveled
WCID – Matagorda County Water Control and Improvement District
1.0 INTRODUCTION

The Yoakum District of the Texas Department of Transportation (TxDOT) is planning to replace the Farm to Market Road (FM) 457 swing bridge over the Gulf Intracoastal Waterway (GIWW) in Matagorda County, Texas (see Figure 1). The replacement bridge and approaches would maintain the current configuration of one lane in each direction; the new bridge would have 10-foot outside shoulders. Acquisition of approximately 4.2 acres of additional right of way would be required for the proposed project.

The proposed project would replace the existing, at-grade, pontoon barge swing span and approach spans with a new fixed-span, high-clearance structure with spiral approaches. In addition to a No Build Alternative (Alternative A), TxDOT is considering two replacement bridge build alternatives (Alternatives B and C as depicted on Figure 1). On the south side of the GIWW, the spiral for Alternative B would be on the west side of FM 457; Alternative C would spiral down and land on the east side of FM 457. The limits of the proposed improvements would extend from Marina Drive on the north to Canal Drive on the south over the GIWW.

2.0 PROJECT DESCRIPTION

2.1 EXISTING FACILITY

The existing facility is a divided roadway with one 12-foot lane in each direction with no shoulders. The 120-foot metal pontoon bridge is at grade and is operated by a control tower regulating both vehicular and water traffic. The bridge swings to the east to allow water vehicles to pass, the bridge then swings back into place to open to vehicular traffic. The width of the existing facility ranges from approximately 24 to 30 feet.

2.2 BUILD ALTERNATIVES

Two Build Alternatives are being assessed, Alternatives B and C. Both alternatives would maintain the current configuration of one lane in each direction with an added 10-foot outside shoulder and would reach a maximum height of approximately 92 feet above ground level (see Figure 2). Both alternatives would replace the movable swing bridge with a fixed concrete structure.

2.3 NO BUILD ALTERNATIVE

Under the No Build Alternative, the proposed project would not be constructed. The No Build Alternative would not require the conversion of approximately 4.2 acres from existing land uses to transportation use. However, the No Build Alternative would not meet the purpose and need of the proposed project. The No Build Alternative was considered for comparison to the proposed build alternatives.
3.0 PURPOSE AND NEED FOR THE PROPOSED PROJECT

3.1 NEED FOR THE PROPOSED PROJECT

Replacement of the FM 457 swing bridge is needed due to the functionally obsolete and structurally deficient condition of the current bridge, the high cost of maintenance, and the delays for both vehicular and waterborne traffic associated with bridge operation. The February 2011 bridge inspection record for the current bridge found that timber stringers are heavily decayed in the bearing area at the north and south abutments and many of the stringer ends have little or no bearing capacity remaining. The cost to maintain the existing structure is approximately $500,000 per year; there are no yearly maintenance costs for the proposed replacement bridge barring any accidents that may damage the structure and require repair. Current maintenance costs also include expenditures for repairs to the existing structure caused by ship collisions with bridge elements, which could be more easily avoided if a fixed-span bridge allowing wider clearance were constructed. The swing bridge is an at-grade pontoon bridge that requires an operator to be on staff 24 hours a day to open and close the bridge to allow for the passage of vessel traffic. The bridge swings open to allow passage of waterborne traffic in the GIWW, at which point all pedestrian and/or vehicular traffic must wait to cross the bridge. The wait time not only delays local traffic, but also poses a safety concern for those requiring emergency services. The FM 457 bridge is the only access point to the island of Sargent Beach. Finally, the current bridge does not include shoulders or accommodations for pedestrian and bicycle traffic, important aspects of current roadway design standards.

3.2 PURPOSE OF THE PROPOSED PROJECT

The purpose of the proposed project is to provide a replacement structure that offers a more structurally sound bridge, reduced maintenance costs, and timely, reliable access across the GIWW along FM 457. By constructing a fixed-span, high-clearance bridge, vehicles would be able to cross the GIWW without delay, damage to the structure from waterborne traffic could be avoided, and roadway design standards would be made current.

4.0 PLANNING AND PROGRAMMING STATUS

The proposed action is included in the 2015-2018 Statewide Transportation Improvement Plan (STIP) as a grouped CSJ for Bridge Replacement and Rehabilitation as well as the 2015 Unified Transportation Program (see Appendix B). The estimated total project cost is $31,233,847.
5.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The project objectives and environmental issues were a primary focus in the planning, design, and environmental analysis processes. In support of this Environmental Assessment (EA), the following technical reports were prepared:

- TxDOT 2014b. Draft Archeological Resources Background Study.
- TxDOT 2015b. Initial Site Assessment Form.

Based on the above technical studies, scoping, and thorough analysis, it was determined that the proposed project would have no impact in the following resource categories: Farmland; Groundwater; Wild and Scenic Rivers; Section 6(f) Properties; and Section 4(f) Properties. Resource categories with the potential to be affected by the implementation of the proposed project are summarized in the following sections. The technical reports and studies are located in ECOS and at the TxDOT Yoakum District Office.

5.1 RIGHT OF WAY/DISPLACEMENTS SUMMARY

Either of the proposed build alternatives would require approximately 4.2 acres of new right of way, none of which has been previously acquired through early acquisition (TxDOT 2014a). The proposed build alternatives would require new right of way from five parcels, according to data obtained from the Matagorda County Appraisal District.

Four single-family residences and one vacant commercial building would be displaced by Alternative B. One single-family home would be displaced by Alternative C. A water supply well operated by Matagorda County Water Control and Improvement District (WCID) would be impacted by Alternative B, although discussions with WCID indicate the well could remain under certain circumstances, within the state-owned right of way (see Section 5.9.1 for further detail). A TxDOT-owned building, used for swing bridge operations, and several other buildings for storage would be impacted by both Alternatives B and C.

All right of way acquisition would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Under the No Build Alternative, no additional right of way would be acquired and no residential or commercial displacements would be necessary.
5.2 LAND USE SUMMARY

The project area is located on the Gulf of Mexico, south of Sargent, Texas. The GIWW was constructed through the project area. Historically the project area has sustained hurricane damage and beach erosion. Since 2009, the area has seen light commercial growth along the Gulf with the opening of restaurants in the area. Land in the area is primarily rural, with beach houses, vacation rentals, and businesses in and adjacent to the project area on either side of FM 457.

5.3 UTILITIES/EMERGENCY SERVICES SUMMARY

The proposed project would require the relocation of underground and overhead utilities. At this stage of the project, the locations of utilities potentially requiring adjustment or relocation have been identified, however relocation plans have not been proposed. Subsurface and overhead utility relocating would be an element of the detailed design, and coordination with the utility owners on possible relocation options would take place at that time. Utility relocations and adjustment would be accomplished with the minimum practicable disruption in service to customers.

The project area is served by the Sargent Volunteer Fire and Rescue Department along FM 457. The proposed project would preserve emergency access to the project area; including during construction. The No Build Alternative would not affect utilities or the provision of emergency services.

5.4 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES SUMMARY

There would be minor changes in travel patterns as a result of the proposed project. Traffic from adjacent parcels would utilize the existing bridge during the construction phase of the proposed project. The new bridge would be located immediately adjacent to the alignment of the existing bridge.

The proposed project would comply with the March 2011 TxDOT “Guidelines Emphasizing Bicycle and Pedestrian Accommodations” and the March 11, 2010, U.S. Department of Transportation (DOT) Policy Statement on Bicycle and Pedestrian Accommodations, Regulations and Recommendations. The proposed project design for both build alternatives would include a 10-foot outside shoulder along the bridge. The pedestrians and bicyclists would follow a longer route along the proposed build alternatives than exists currently based on the increased elevation of the proposed bridge.

There would be no changes in access under the No Build Alternative; new bicycle and pedestrian accommodations would not be constructed.

5.5 DEMOGRAPHICS

Matagorda County experienced a decrease in population of about 3.1 percent between 2000 and 2010, for a 2010 population of 36,702 (TxDOT 2014a). Population projections for Matagorda County show 11.2 percent growth between 2020 and 2050 with an estimated 2050 population of 43,570 (TxDOT 2014a). Although Matagorda County experienced a population decline between 2000 and 2010, the
Texas Water Development Board (TWBD) population projections consider other factors in addition to the growth rate from this time period. There are several permanent residences in the project area; however the region is known to be a fishing destination with the majority of the area frequented by visitors. The project area is located along the Gulf of Mexico, where the beach homes along the beaches are primarily vacation homes.

5.6 SOCIOECONOMIC IMPACTS SUMMARY

5.6.1 Economic Impacts

The construction of the proposed project would have a positive impact on the local and regional economies. The investment in the construction industry would result in additional jobs (short-term) and income benefits. Estimations of the proposed project’s economic effects can be made using the U.S. Department of Commerce Bureau of Economic Analysis RIMS II Multipliers. When multiplied by Alternative B’s estimated construction cost of approximately $23.9M, the RIMS II multipliers produced an estimated direct household earnings effect of $8.2M and an estimated 171 jobs (TxDOT 2014a). When multiplied by Alternative C’s estimated construction cost of approximately $23.3M, the RIMS II multipliers produced an estimated direct household earnings effect of $8.1M and an estimated 167 jobs (TxDOT 2014a). As these additional jobs would be related to the investment in the construction sector, employment effects are expected to last about as long as the construction period for the project. The proposed improvements would also improve access, a benefit to project area businesses.

If the No Build Alternative were selected, the projected economic benefits of the proposed project construction on the local and regional economies would not occur. The household earnings and employment effects expected to be directly supported by the proposed project would also not be realized.

5.6.2 Community Impacts

The proposed project would require the displacement of one (Alternative C) to four (Alternative B) single-family residences; no businesses are anticipated to be displaced. A vacant building, which used to be the Pier 57 restaurant, would be impacted by Alternative B, southeast of the existing Swing Bridge. No residential displacements are considered to be in minority or low-income areas. The proposed project would not separate or divide neighborhoods. The proposed build alternative alignments would be similar to the current condition relative to the location of existing neighborhoods and would not introduce a new barrier or affect neighborhood connectivity or cohesion (TxDOT 2014a). The proposed project would provide bicycle accommodations and sidewalks along the proposed facility. The proposed project would accommodate both the local residents and tourists and would improve access across the GIWW.

Under the No Build Alternative, community cohesion would also not be affected. New bicycle and pedestrian accommodations would not be constructed and access across the GIWW would not be improved.
5.6.3 Environmental Justice

An environmental justice analysis was completed in accordance with Executive Order (EO) 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” There are no low-income populations in the project area, based on a comparison of the median household income of project area block groups as reported in the 2008–2012 American Community Survey (ACS) to the 2014 Department of Health and Human Services poverty guideline for a family of four (TxDOT 2014a). According to the 2010 Census, minority populations in project area blocks range from 0 percent to 3.1 percent, and no populated blocks have a minority population of 50 percent or more (TxDOT 2014a).

There are no minority or low-income populations in the project area and the project would not have adverse community impacts—no displacements, no major changes in access, and no effects to community cohesion to the community at large. Therefore, the build alternatives would not cause disproportionately high and adverse effects on minority populations or low income populations and are consistent with EO 12898.

The No Build Alternative would also not cause disproportionately high and adverse effects on minority populations or low income populations.

5.6.4 Limited English Proficiency

Based on data from the 2008–2012 ACS for project area block groups, the percentage of persons with limited English proficiency (LEP) in the project area ranges from 0 to 3.04 percent. Overall, 25 persons in the project area BGs are considered LEP, representing 1.3 percent of the project area’s total block group population over five years old. The language most often spoken by LEP persons in the project area is Other Indo-European languages (100 percent) (TxDOT 2014a). Based on the data, project planners determined that outreach in languages other than English would not be necessary; however, if requests are made to the TxDOT Yoakum District to provide information in other languages, these accommodations would be made.

5.7 VISUAL/AESTHETICS SUMMARY

Highway bridges can affect the aesthetic character of a surrounding landscape and the perceptions of the individuals who reside in and visit these environments. Federal Highway Administration (FHWA) guidance, Visual Impact Assessments for Highway Projects (1988) provides a framework for assessing impacts to visual and aesthetic resources for transportation projects.

5.7.1 Visual Character and Quality

The physiography of the project area is characterized by predominantly flat terrain dipping gradually seaward. Elevations within one mile of the bridge crossing range from sea level to 17 feet above mean sea level (MSL). Primary water features are the GIWW, which the proposed project would span, Dead Caney Lake, and the Gulf of Mexico. There are very few trees in the project area; vegetation consists
primarily of grasses and low shrubs. Manmade developments are minimal along FM 457 within the project area and include predominantly one to two-story (or elevated single-story) residential and commercial structures on parcels adjacent to the road.

The project area was evaluated based on the level of visual relationships. Although visual quality is subjective, FHWA guidance has established the following three concepts as valid and reliable criteria to be used for appraisals of visual quality: vividness, intactness, and unity (FHWA 1988, 47).

**Vividness** refers to the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. The project area is characterized by large expanses of water—the ocean and Intracoastal Waterway—and flat, sparsely developed land areas. There is little vegetation of any meaningful height. Because there are few vertical interruptions, the view shed is open and expansive. Although there is not a high degree of diversity in the landscape, the effect is distinctive. The overall vividness of the project area is moderate.

**Intactness** refers to the visual integrity of the natural and man-built landscape and its freedom from encroaching elements. The natural landscape in the project area is intact and the dominant feature of the area, although manmade elements in the landscape appear to be encroachments as opposed to adding to the visual quality, as they are sporadic and lack cohesion. Therefore, the overall level of intactness is low to moderate.

**Unity** refers to the visual coherence and compositional harmony of the landscape considered as a whole. The flat and open character of the landform along with the many bodies of water gives the project area a feeling of remoteness. These combine to give the project area high level of unity.

All three qualities must be “high” to indicate high visual quality. In the project area, the moderate degree of vividness, combined with low to moderate ratings for intactness, and high rating for unity, result in a moderate overall degree of existing visual quality for the project area.

### 5.7.2 Viewer Sensitivity

Viewer sensitivity is defined by FHWA as the viewer’s variable receptivity to the elements within the environment that he or she is viewing. Viewers of the proposed project would include local residents, water borne travelers, and visitors. As a recreational area in a natural environment (sea shore), it can be assumed that viewer sensitivity to the overall environment is high in the sense that views of the ocean, canal and lakes, as well as long uninterrupted view sheds would be important to residents and visitors.

### 5.7.3 Effects of the Alternatives

The proposed project would generally be in the same location as the existing bridge; however, the design for the build alternatives would differ from that of the existing bridge. The proposed build alternatives would include concrete spiral approaches with a fixed-span, high clearance structure. The replacement bridge would be approximately 92 feet above water level. The existing facility is an at-grade bridge with little visual impact. The proposed bridge and approaches would be constructed at a higher elevation to span the GIWW and would represent a notable difference in the visual landscape of
the project area. Because of the flat topography, the absence of tall vegetation and low structure heights, the proposed project would be seen from all directions in the project area, including from the Intracoastal Waterway and the Gulf of Mexico. The bridge structure and approaches will be considerably higher than surrounding natural or manmade elements and therefore will be highly visible.

The No Build Alternative would not change the existing visual and aesthetic qualities in the project area.

5.8 CULTURAL RESOURCES SUMMARY

5.8.1 Archeological Resources

In accordance with the Antiquities Code of Texas (ACT) and Section 106 of the National Historic Preservation Act of 1966, as amended, a Draft Archeological Resources Background Study (TxDOT 2014b) was conducted to determine the potential of the proposed project to impact archeological resources. According to the Texas Historical Commission’s (THC) Online Archeological Sites Atlas, no archeological sites have been recorded within the project area. However, the proposed project is located within two kilometers of two prehistoric archeological sites (Sites 41MG4 and 41MG59) and one Civil War-era archeological site (Site 41MG82). Given the limited amount of survey that has been conducted in the area, and the potential of the proposed project area to contain intact archeological deposits, intensive archeological survey of the Area of Potential Effect (APE) for both build alternatives is recommended. The THC concurred with the recommendation to conduct the archeological survey upon the selection of an alternative and following right of way acquisition (see Appendix C). Construction of the proposed project would not occur until the survey is completed. Coordination with the THC regarding the potential impacts of the proposed project on archeological resources is ongoing.

The No Build Alternative would have no impacts on archeological resources in the project area.

5.8.2 Historic Resources

An intensive-level Historic Resources Survey Report was previously completed for the FM 457 swing bridge in October 2012. The report finds that the majority of character-defining components of the bridge are non-historic-age; therefore, the bridge is not recommended as eligible for listing on the National Register of Historic Places (NRHP).

A non-archeological historic-age resource survey was completed in June 2014 for the proposed project. Based on Matagorda Central Appraisal District (CAD) data and fieldwork, there are seven historic-age (pre-1971) resources in the 150-foot APEs for both build alternatives. Historic-age resources within the APEs date from 1960–1970 and are all located on the inland (north) side of the GIWW. None of the historic-age resources meet the NRHP Criteria for Eligibility. The preliminary recommendation for both alternatives is no historic properties affected under Section 106 of the National Historic Preservation Act of 1966, as amended. Coordination regarding the potential impacts of the proposed project was completed on August 8, 2014; it was confirmed that there are no historic properties in the APE and individual project coordination with the State Historic Preservation Officer (SHPO) is not required (see Appendix C).
The No Build Alternative would not affect historic properties listed on or eligible for listing on the NRHP.

5.9 PHYSICAL ENVIRONMENT SUMMARY

5.9.1 Water Quality

Water Wells

A search was made for water wells on and adjacent to the proposed build alternatives. Records revealed one freshwater supply well that would be impacted by both build alternatives. A phone conversation with the Matagorda County WCID established that there are no known regulatory concerns with the construction of the proposed project in relation to the public water supply well described above. The position of the operators and utility is that the proposed project can be constructed above the well or, if necessary, the well can be moved. Further coordination with Matagorda County would be advisable if a build alternative were selected to coordinate proper procedures in the event the well was to require relocation.

Sections 404 and 401 of the Clean Water Act: Waters of the U.S. and Water Quality Certification

As detailed in the Water Resources Technical Report (TxDOT 2014c), a review of datasets determined that potential waters of the U.S. exist within the vicinity of the proposed build alternatives. Field reconnaissance confirmed this determination. Four types of potential waters of the U.S., including wetlands, were identified within the study area. Three of these are potentially jurisdictional waters of the U.S. and include: tidal fringe wetlands encompassing an associated tidally influenced drainage ditch and an open water feature; tidal waters associated with the Gulf of Mexico; and the GIWW. Additionally, potentially non-jurisdictional drainage ditches were also identified within the project area.

For Alternative B, because permanent impacts to tidal fringe wetlands would exceed ⅓ acre, a Section 404 Individual Permit would be required prior to construction. For Alternative C, the placement of temporary or permanent dredge or fill material into potentially jurisdictional waters of the U.S., including wetlands, would be authorized under Nationwide Permit (NWP) 14; because the proposed permanent impacts would exceed 0.10 acre and there would be a discharge into a special aquatic site, a Pre-construction Notification (PCN) for NWP 14 would be required. Either of the proposed build alternatives would be authorized under a U.S. Army Corps of Engineers (USACE) Section 404 Permit; therefore, construction activities would require compliance with the State of Texas Water Quality Certification Program. Both of the proposed build alternatives would impact less than 1,500 linear feet of stream and/or 3 acres of waters of the U.S. and would not affect rare or ecologically significant wetlands; therefore, Section 401 Tier I Certification would be required. A Tier I Checklist would be completed and submitted to the Texas Commission on Environmental Quality (TCEQ) and the USACE. Compliance with Section 401 of the Clean Water Act requires the use of best management practices (BMPs) to manage water quality on sites affecting jurisdictional waters.
These BMPs would address each of the following categories: 1) erosion control, 2) post construction total suspended solids (TSS) control, and 3) sedimentation control. Water quality BMPs that would be implemented include the following:

- Approved temporary vegetation
- Blankets/matting or mulch filter berms
- Vegetated filter strips
- Silt fence, sand bag and/or compost filter berms and socks

Under the No Build Alternative, there would be no fill impacts to waters of the U.S. or project-related erosion, sedimentation, or runoff impacts to project area waterways.

**Section 303(d) of the Clean Water Act**

The State of Texas is required, under Sections 305(b) and 303(d) of the federal Clean Water Act (CWA), to prepare biennial statewide water quality assessments that identify the status of use attainment for water bodies, and to identify water bodies for which effluent limitations are not stringent enough to implement water quality standards. Based on the assessments, the areas of potential effect are accounted for on the 303(d) list. According to the provisions of the TxDOT-TCEQ memorandum of understanding (MOU), coordination with TCEQ is required for environmental review documents if all or part of the project drains to an impaired assessment unit that is within five miles of the project and in the same watershed as the project. Coordination with TCEQ was completed on December 16, 2014 (see Appendix C).

The proposed project drains to and is within five miles and within the same watershed of Segment 1304_01, Caney Creek Tidal, Segment 2501_05, Caney Creek Tidal, the Gulf of Mexico, and Segment 2441OW_01, East Matagorda Bay (TxDOT 2014c). Segment 1304_01 is listed as threatened/impaired for bacteria, Segment 2501_05 is listed as threatened/impaired for mercury in edible tissue, and Segment 2441OW_01 is listed as threatened/impaired for bacteria (oyster waters) on the 2012 303(d) list. These impaired assessment units do not have an Environmental Protection Agency (EPA)-approved TMDL. The project and associated activities would be implemented, operated, and maintained using the BMPs described above to control the discharge of pollutants from the project site.

**Rivers and Harbors Act of 1899 and the General Bridge Act of 1946**

Either of the proposed build alternatives would include the replacement of a bridge over a navigable water of the U.S. as defined by 33 Code of Federal Regulations (CFR) 2.36; therefore, coordination with the US Coast Guard (USCG) would be required under the General Bridge Act if a build alternative were selected.

Alternative B would not include the construction of wharfs, piers, jetties, a weir, dolphins, bank protection, or other structures that could be considered obstructions to a navigable water. Alternative C would include the placement of pilings and dolphins into a portion of the GIWW; however, per the 1973
USCG/USACE MOA, highway bridges are under the jurisdiction of the USCG and therefore exempt from USACE permitting under Section 10. Therefore, a permit under Section 10 of the Rivers and Harbors Act from the USACE would not be required for the construction of the proposed project.

5.9.2 Floodplains

As detailed in the Water Resources Technical Report (TxDOT 2014c), both alternatives are located entirely within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. The hydraulic design for this project would be in accordance with current FHWA and TxDOT design policies. The facility would permit the conveyance of the 100-year flood, inundation of the roadway being acceptable, without causing significant damage to the facility, stream or other property. The proposed build alternatives would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local Floodplain Administrator would be required.

The No Build Alternative would not affect the 100-year floodplain.

5.9.3 Hazardous Materials

A review of environmental regulatory databases and an Initial Site Assessment (ISA) was performed in April 2014 to identify sites or facilities that might pose a potential for hazardous materials impacts to the proposed project (TxDOT 2015b). No sites were identified in the regulatory database search.

During field visits, no sites of concern were noted within the project area. Septic systems for the residences in the area were identified; these systems would need to be properly disposed prior to the construction of the proposed bridge if they occur within the right of way. Several water wells appear to be within the proposed right of way or within close proximity to the proposed project. Depending on the location, the proposed project may be constructed over the wells; however, adjustment plans would be made for any waterlines interfering with supporting bridge columns.

The existing bridge would be demolished upon completion of the proposed project. The existing bridge has been inspected for asbestos containing material and lead based paint. The report concluded 1.75 percent Chrysotile on the white paint on the bridge rails; no other asbestos containing material was detected. Asbestos containing material has been identified and surveyed on the existing bridge. Prior to the demolition of the structure if a build alternative is selected, all asbestos containing material must be removed and the Department of State Health Services must be notified 10 working days prior to demolition.

A small percentage of lead paint was detected on the existing bridge, however the percentage on the bridge is less than the threshold for concern, and therefore steps would not need to be taken for the removal of lead paint prior to the demolition of the existing bridge.

No impacts to potential hazardous materials sites would occur from construction of the No Build Alternative.
5.9.4 Air Quality

The project is located in Matagorda County, which is in an area in attainment or unclassifiable for all national ambient air quality standards (NAAQS); therefore, the transportation conformity rules do not apply. As the proposed project is not adding capacity in a nonattainment or maintenance area of the state, coordination with TCEQ for air quality is not required.

The build alternatives have been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and have not been linked with any special Mobile Source Air Toxic (MSAT) concerns (TxDOT 2014d).

Design year traffic for this project is well under the trigger for the need for a traffic air quality analysis; therefore, a traffic air quality analysis is not required.

The No Build Alternative may result in gradually increasing vehicle miles traveled (VMT) if traffic volumes increase and traffic congestion worsens within the existing roadway system over time. However, MSAT emissions will likely be lower than present levels in future years as a result of EPA’s national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050.

5.9.5 Traffic Noise

A traffic noise analysis was conducted for the proposed project in accordance with TxDOT’s (FHWA approved) 2011 Guidelines for Analysis and Abatement of Highway Traffic Noise (TxDOT 2014e). The traffic noise analysis determined that there would be no traffic noise impacts to the modeled receivers, for either Alternative B or Alternative C, and therefore noise abatement measures are not necessary.

Under the No Build Alternative, the proposed project would not be constructed and traffic noise impacts would not occur.

5.10 BIOLOGICAL ENVIRONMENT SUMMARY

Impacts to ecological resources are detailed in the Biological Resources Technical Report (TxDOT 2015c), the Biological Evaluation Form, and the Water Resources Technical Report (TxDOT 2014c). The build alternatives would not impact species listed on Texas Parks and Wildlife Department (TPWD) Texas Natural Diversity Database (TXNDD), Bald or Golden Eagles, prime farmlands protected by the Farmland Protection Policy Act (FPPA), and areas protected by the Coastal Barrier Resources Act (CBRA).

5.10.1 Vegetation

The Biological Resources Survey Report (TxDOT 2015c) describes six Ecological Mapping Systems of Texas (EMST) vegetation types impacted by the project area. EMST categorized this vegetation into six categories: 1) Coastal: Tidal Flat; 2) Gulf Coast: Salty Prairie; 3) Native Invasive: Baccharis Shrubland; 4) Open Water; 5) Urban High Intensity and 6) Urban Low Intensity (Table 1).
Temporary impacts include the vegetation impacts during the construction of the project; areas included in the calculations include the right of way and the inside of the corkscrew spirals. After the construction has been completed, the inside of the corkscrew spirals would be revegetated.

### Table 1: MOU EMST Vegetation Type Impacted by the Proposed Project

<table>
<thead>
<tr>
<th>Vegetative Community</th>
<th>Area Impacted Within Alternative B</th>
<th>Area Impacted Within Alternative C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Temporary Impacts (acres)</td>
<td>Permanent Impacts (acres)</td>
</tr>
<tr>
<td>Coastal: Tidal Flat</td>
<td>0.904</td>
<td>0.760</td>
</tr>
<tr>
<td>Gulf Coast: Salty Prairie</td>
<td>0.697</td>
<td>0.863</td>
</tr>
<tr>
<td>Native Invasive: Baccharis Shrubland</td>
<td>0.000</td>
<td>0.015</td>
</tr>
<tr>
<td>Open Water</td>
<td>0.000</td>
<td>0.331</td>
</tr>
<tr>
<td>Urban High Intensity</td>
<td>0.000</td>
<td>1.054</td>
</tr>
<tr>
<td>Urban Low Intensity</td>
<td>0.707</td>
<td>0.313</td>
</tr>
</tbody>
</table>


Vegetation communities mapped during field investigations somewhat agreed with the EMST. Three different vegetation communities that would be impacted by the proposed build alternatives as noted during field investigations; low marsh, high marsh, and disturbed (Table 2). As noted above, temporary impacts include the vegetation impacts during the construction of the project; areas included in the calculations include the right of way and the inside of the corkscrew spirals. After the construction has been completed, the inside of the corkscrew spirals would be revegetated.

### Table 2: Vegetation Impacted by the Proposed Project

<table>
<thead>
<tr>
<th>Vegetative Community</th>
<th>MOU Vegetation Type*</th>
<th>Area Impacted Within Alternative B</th>
<th>Area Impacted Within Alternative C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Temporary Impacts (acres)</td>
<td>Permanent Impacts (acres)</td>
<td>Total (acres)</td>
</tr>
<tr>
<td>Low Marsh</td>
<td>Tidal and Salt Marsh</td>
<td>0.82</td>
<td>1.62</td>
</tr>
<tr>
<td>High Marsh</td>
<td>Tidal and Salt Marsh</td>
<td>0.73</td>
<td>1.11</td>
</tr>
<tr>
<td>Disturbed</td>
<td>NA</td>
<td>0.73</td>
<td>1.11</td>
</tr>
</tbody>
</table>


Additionally, unusual vegetation features or special habitat features occurring within the proposed project area were identified and described during field investigations in accordance with the 2013 TxDOT- TPWD MOU. Unusual vegetation features identified during field investigations include water bodies. These features are described in detail in the Biological Resources Survey Report (TxDOT 2015c).
Impacts to vegetation would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable. An approved seed mix, as detailed in the 2014 Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges manual for the Yoakum District would be used in the landscaping and revegetation of disturbed areas.

As detailed in §2.206 of the 2013 MOU, coordination with the TPWD is required for projects based on certain triggers, including the disturbance of habitat in an area equal to or greater than the area of disturbance indicated in the Threshold Table Programmatic Agreement. Vegetation within the proposed project falls into one MOU type, Tidal and Salt Marsh and Beaches. The Threshold Table Programmatic Agreement sets a disturbance threshold of 0.01 acre for this MOU type. Vegetation impacts quantified on Table 1 show that both build alternatives exceed this threshold. Coordination with TPWD was conducted and as a result of the December 8, 2014 coordination efforts, implementation of additional Vegetation BMPs would include notifying contractors to thoroughly clean equipment and vehicles used during project construction prior to mobilizing to the project area to prevent the spread of invasive, non-native species (see Appendix C)(TxDOT 2015c).

If the No Build Alternative were implemented, the proposed project would not be constructed. No effects to vegetation and wildlife habitat related to the construction of the project would occur. Existing land use and activities would continue to periodically affect vegetation communities.

5.10.2 Wildlife

Migratory Bird Treaty Act

The vegetative communities located within the project area and adjacent to Sargent Beach may serve as important stopover habitat for migratory birds during their spring and fall migrations, as well as nesting habitat during the summer months. Migratory birds were observed during the 2012 August and November field investigations and may arrive in the project area to breed during construction of the proposed project. Appropriate measures would be taken to avoid adverse impacts on migratory birds (see Section 9.1).

Migratory birds protected under the Migratory Bird Treaty Act would not be impacted by the No Build Alternative.

Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)

Data collected from the National Marine Fisheries Service (NMFS) regarding potential adverse impacts to Essential Fish Habitat (EFH) concludes that five Fishery Management Unit (FMU) EFH designations exist within and adjacent to the proposed project area (TxDOT 2015c). Alternative B would span the GIWW; therefore, no impacts to EFH would occur as a result of the construction of the proposed alternative. Alternative C would include the placement of pilings into a portion of the GIWW, impacting EFH. Additionally, impacts to EFH could occur as a result of the demolition of the existing swing bridge;
therefore, coordination with NMFS was conducted for both build alternatives. No designated Habitat Areas of Particular Concern (HAPC) occurs in the vicinity of the proposed project.

Coordination with NMFS was completed on December 9, 2014. New pilings and bridge supports, associated with Alternative C, placed within the open water of the GIWW were determined to constitute a minor adverse impact to EFH through the placement of fill material. However, the removal of pilings and supports from the existing swing bridge structure were determined to be adequate to offset new construction impacts. Therefore, NMFS did not provide any EFH conservation recommendations for this project and no further consultation is required for this action (see Appendix C). NMFS recommended TxDOT develop and implement a compensatory wetland mitigation and restoration plan to compensate for all permanent impacts to mid to high marsh wetlands. NMFS would review the plan as part of the USACE permitting process.

Essential Fish Habitat would not be impacted by the No Build Alternative.

**Marine Mammal Protection Act**

The waters of the Texas coast provide suitable habitat for the West Indian manatee (*Trichechus manatus latirostris*), listed as endangered under the ESA, and the bottlenose dolphin (*Tursiops truncatus*). Bottlenose dolphins are occasionally found within the Gulf Intracoastal Water Way system. These dolphins belong to the Gulf of Mexico Bay, Sound, and Estuarine stock or the Western Gulf of Mexico Coastal stock; both are listed as strategic under the MMPA. Bottlenose dolphins are cosmopolitan within Gulf estuaries and may use ship channels such as the GIWW as well. Construction activities would likely deter bottlenose dolphins from coming in close proximity to the project area. Due to this species being highly mobile and the availability of suitable habitat surrounding the bridge location, the project is unlikely to adversely affect bottlenose dolphins.

West Indian manatees are found year-round along the coast of Florida and Georgia. They prefer shallow coastal areas and slow-moving rivers and river mouths and feed on aquatic vegetation, including seagrasses. They migrate seasonally, seeking out warmer waters in winter and can be found around warm springs or power plants that discharge warm water. Transient individuals are occasionally observed in Texas estuaries. The most recent occurrence of a manatee is Texas waters were from Corpus Christi Bay in 2011 and the Trinity Bay in 2014. Although manatees have been observed within Texas bays and estuaries they are unlikely to be found within or adjacent to the project area due to the level of disturbance from vessel traffic, periodic dredging, and the lack of quality foraging habitat. Additionally, construction activities would likely deter manatees from coming in close proximity to the project area.

Although presence of marine mammals is unlikely due to the level of disturbance and lack of quality habitat within the project area, impacts to marine mammals could potentially occur during construction or demolition activities that extend into the open water. Appropriate measures would be taken to avoid adverse impacts on marine mammals (see Section 9.2).
Marine mammals protected under the Marine Mammal Protection Act would not be impacted by the No Build Alternative.

**Fish and Wildlife Coordination Act (FWCA)**

The statute requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; take action to prevent loss or damage to these resources; and provide for the development and improvement of these resources. Preliminary bridge design indicates that Alternative B would be authorized under a USACE Section 404 Individual Permit; therefore, coordination under the FWCA could be required for this alternative. Alternative C would be authorized under a Nationwide Permit (NWP) 14 and, therefore, coordination under FWCA would not be required for this alternative.

### 5.10.3 Threatened and Endangered Species

**Federally listed Species**

As detailed in the Biological Resources Survey Report (TxDOT 2015c), desktop analysis and field investigations conducted on August 29-30, 2012, November 20, 2012 and January 13, 2014, indicate that potential habitat for eight federally listed endangered species occurs in the vicinity of the proposed build alternatives. These species include five reptile species: the Atlantic hawksbill sea turtle (*Eretmochelys imbricata*), the green sea turtle (*Chelonia mydas*), Kemp’s Ridley sea turtle (*Lepidochelys kempii*), the leatherback sea turtle (*Dermochelys coriacea*), and the loggerhead sea turtle (*Caretta caretta*); two bird species, the Piping Plover (*Charadrius melodus*), and the Red Knot (*Calidris canutus rufa*); and one mammal species, the West Indian manatee (*Trichechus manatus*). Further analysis of the proposed project’s effects on these species, including field investigations with the USFWS on May 7, 2014 and consultation with USFWS, which concluded on February 19, 2015 (see Appendix C) determined that the project *may affect, but is not likely to adversely affect* the two bird species, the five sea turtles or the West Indian manatee.

**Piping Plover**

The piping plover winters along coastal Texas beaches and wash-over flats between July and May. Piping plovers have been documented to occur along Sargent Beach, near the project area. Critical habitat has been designated for the piping plover, with the closest Unit being TX-58, located approximately 0.5 mile southwest of the swing bridge. The areas that would be directly affected by this project do not provide habitat for wintering plovers, but plovers could be disturbed by construction activities and noise if they are present in the adjacent beach areas. There are existing disturbances to piping plover wintering habitat near the project site from on-beach driving and recreational activities, therefore, disturbance to the piping plover from project construction should be insignificant and discountable. There will be no impacts to any designated critical habitat units.
Red Knot

The red knot winters along coastal Texas beaches, oyster reefs, and high sand flats between July and May. Critical habitat has not been designated for the red knot. The construction areas that would be directly affected by the proposed project do not provide habitat for wintering red knots, but the species could be disturbed by construction activities and noise if they are present in adjacent beach areas during construction. There are existing disturbances to red knot wintering habitat near the project site from on-beach driving and recreational activities, therefore, disturbance to the red knot from project construction should be insignificant and discountable.

Nesting Sea Turtles

Sea turtle nesting typically occurs between April and July on Texas beaches. Even though there are no proposed impacts to the beach habitat, both adult and hatchling sea turtles can be disoriented by artificial lighting from roadways and residences which may cause the turtles to travel inland away from the beach and ocean. A vegetative buffer exists in the area between the location of Alternative C and Sargent Beach, which would provide an additional protective barrier for any nesting sea turtles and construction activities. The same vegetated buffer does not exist between the location of Alternative B and Sargent Beach. Additional measures to avoid effects to these species were agreed upon during informal consultation with the USFWS and are listed in Section 9.1. Overall, impacts to nesting sea turtles would be insignificant and discountable.

Pelagic Sea Turtles

The five listed sea turtles are periodic residents of Texas coastal waters. These pelagic species are occasionally found in shallow waters and bays where estuarine or feeding habitat occurs. These species may use the GIWW as a travel corridor between suitable sites. The swing bridge is located approximately three miles up channel and fourteen miles down channel from the nearest entrance to an open water bay system. It is unlikely that pelagic sea turtles would be using the GIWW immediately adjacent to the project site. The swing bridge location has high commercial and private vessel traffic and any sea turtles that may be within the project site would be transient and infrequent. The proposed project activities would have no effect on any of the pelagic sea turtles. Additional measures to insure no effect to these species would be covered under the biological monitor measures listed in Section 9.1.

West Indian manatee

The West Indian manatee is a rare, but occasional, visitor to the Texas coast. Manatees rely on submerged aquatic vegetation as an essential food source. This vegetation type is typically located in shallow inland coastal waters. The GIWW at the swing bridge location does not include this type of vegetation community. In general, the GIWW may be used as a travel corridor by manatees to reach locations of aquatic vegetation along the Texas coast. The GIWW has heavy commercial and private vessel traffic, and, coupled with the lack of suitable foraging habitat, the possibility of encountering manatees within the project area is unlikely. Additional conservation measures have been provided for the protection of manatees and are further identified in Section 9.1. Overall, impacts to the manatee would be insignificant and discountable.
The No Build Alternative would not result in effects to any federally listed threatened or endangered species.

**State-listed Species**

Potential habitat exists for four state-listed threatened avian species in the vicinity of the proposed project. These include the Peregrine Falcon (*Falco peregrinus*), the Reddish Egret (*Egretta rufescens*), the White-faced Ibis (*Plegadis chihi*), and the Wood Stork (*Mycteria americana*).

In accordance with the Best Management Practices Programmatic Agreement between the TxDOT and the TPWD, to avoid or minimize potential impacts to the Peregrine Falcon, Reddish Egret, White-faced Ibis and Wood Stork, the following bird BMPs would be implemented:

- The disturbance, destruction, or removal of active nests, including ground nesting birds, during the nesting season would be prohibited;
- The removal of unoccupied, inactive nests would be avoided as practicable;
- The establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair would be prevented; and
- The collection, capture, relocation, or transportation of birds, eggs, young, or active nests without a permit would be prohibited.
- In the event a state-listed species is identified within the project limits and removal of the species would be required, proper permits would be obtained or coordination with appropriate officials would be initiated to facilitate the removal of the species from the project area.

**Species of Greatest Conservation Need**

Potential habitat for eight SGCN occurs in the vicinity of both proposed build alternatives. These include the coastal gay-feather (*Liatris bracteata*), the threeflower broomweed (*Thurovia triflora*), the American eel (*Anguilla rostrata*), the Gulf saltmarsh snake (*Nerodia clarkii*), the Texas diamondbacked terrapin (*Malaclemys terrapin littoralis*), the Black Rail (*Laterallus jamaicensis*), the Brown Pelican (*Pelecanus occidentalis*) and the Snowy Plover (*Charadrius alexandrinus*).

In accordance with the Best Management Practices Programmatic Agreement between the TxDOT and the TPWD, the bird BMPs described above regarding the state-listed species would be implemented to avoid or minimize potential impacts to the Black Rail, Brown Pelican and Snowy Plover. Because there are no BMPs in the Programmatic Agreement for the coastal gay-feather, threeflower broomweed, saltmarsh snake and the Texas diamondbacked terrapin, coordination with TPWD was initiated on September 3, 2014 and concluded December 8, 2014. Qualified biologists would survey the proposed construction areas for threeflower broomweed prior to construction; TPWD would be notified should any of these plants be found within the direct path of construction and/or implement measures to protect those plant species found to be not within areas of construction. Actions would be taken to avoid and minimize impacts to the natural environment as much as possible, which includes habitat for state listed species and SGCN. Additionally, both build alternatives required coordination with TPWD for the American eel since work relating to the construction of Alternative C as well as the demolition of the
existing swing bridge—required for both alternatives—would occur within the water. TPWD recommended the protection measures detailed in Section 5.10.2 for EFH, as coordinated through NMFS, would be applied for the protection of the American eel.

State-listed threatened, endangered, or SGCN would not be impacted by the No Build Alternative.

5.11 INDIRECT AND CUMULATIVE IMPACTS SUMMARY

The indirect and cumulative impacts analysis for the proposed project was developed using TxDOT’s 2014 Environmental Handbook on Indirect and Cumulative Impacts (TxDOT 2015a) and supporting TxDOT resources; the National Cooperative Highway Research Program (NCHRP) Report 466 entitled Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects; and the 2011 American Association of State Highway and Transportation Officials (AASHTO) Practitioner’s Handbook for Assessing Indirect Effects and Cumulative Impacts Under the National Environmental Policy Act (NEPA).

5.11.1 Indirect Impacts

In accordance with TxDOT guidance, the indirect effects analysis focuses on the potential of the proposed project to induce growth based on the nature of the proposed improvements and the economic, land use, and population trends of the surrounding area. This analysis utilized TxDOT’s 2014 Induced Growth Indirect Impacts Decision Tree to determine the likelihood of the proposed project to result in induced growth and related effects. The results of the induced growth decision tree, briefly summarized below, indicate that the proposed project would not result in induced growth within the surrounding area.

The purpose of the proposed project is to provide a replacement structure that offers reduced maintenance costs as well as timely, reliable access across the GIWW. The proposed improvements are not intended to serve an explicit economic development purpose and would be constructed within an area that is not experiencing population or economic growth when compared to the state of Texas as a whole. No substantial increases in access or mobility would result from the proposed project, and no additional capacity would be added to the existing facility. While a small amount of land within the project area is available for development or redevelopment, limiting development factors such as the location of the proposed project within the 100-year floodplain would not be alleviated by the proposed improvements and would continue to impede development or redevelopment from occurring. In addition to these considerations, the nature of the proposed improvements (replacement of an existing bridge within a relatively rural area) indicates the proposed project would not result in induced growth within the area.

5.11.2 Cumulative Impacts

The proposed project would not result in substantial direct or indirect effects to any resource; therefore, only resources considered at risk or in poor or declining health were carried forward for detailed evaluation in the cumulative effects analysis. Given the inherently at-risk nature of threatened and
endangered species and their habitats, combined with the potential of the proposed project to result in impacts to these sensitive resources, biological resources are studied in further detail in the cumulative effects analysis. Species included in the cumulative effects analysis include two federally threatened species (the Piping Plover and the Red Knot); six federally endangered species (Atlantic hawksbill sea turtle, green sea turtle, Kemp’s Ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, and West Indian manatee); four state-threatened species (the Peregrine Falcon, Reddish Egret, White-faced Ibis, and Wood Stork); and eight SGCNs (the American eel, Black Rail, Brown Pelican, Snowy Plover, Gulf Saltmarsh snake, Texas diamondbacked terrapin, coastal gay-feather, and threeflower broomweed).

**Resource Study Area (RSA)**

The potential cumulative effects to these species and their habitats were evaluated within the Biological RSA, defined as the Brazos-Colorado Coastal Basin (TxDOT 2015a). This area encompasses portions of Matagorda, Brazoria, Wharton, Fort Bend, Colorado, and Austin Counties and includes the GIWW and East Matagorda Bay. The temporal boundary for the RSA begins in 1943, the year the swing bridge was constructed, and ends in 2040, the planning horizon year for the Houston-Galveston Area Council (H-GAC) *Our Great Region 2040* long-range plan.

Approximately 90 percent of the RSA is comprised of dry land, five percent is water bodies (including East Matagorda Bay, the GIWW, Cedar Lakes, and portions of the Gulf of Mexico), and five percent is considered swampland/marshland. Additionally, over five percent of the entire Biological RSA is comprised of wildlife refuges or management areas, including the San Bernard National Wildlife Refuge, Big Boggy National Wildlife Refuge, and Justin Hurst Wildlife Management Area (TxDOT 2015a).

**Direct and Indirect Impacts to Biological Resources**

Direct impacts which could contribute to a cumulative effect to biological resources include potential construction-related impacts to vegetation and wildlife, discussed further below. The proposed project would not result in indirect impacts which could contribute to a cumulative effect on sensitive biological resources (TxDOT 2015a).

The proposed project may impact marshes within the project area which could contain the coastal gay-feather and threeflower broomweed, both considered SGCNs. However, impacts to these species would be relatively minor and would be limited to that area which is necessary to construct the proposed project. Potential effects to vegetation could also occur within areas considered to serve as foraging or nesting habitat for sensitive bird species. The cumulative effects analysis focuses on impacts to low and high marshes, which are considered suitable foraging habitat for the federally listed threatened Piping Plover and Red Knot; state-listed threatened Reddish Egret, White-faced Ibis, Wood Stork, and Peregrine Falcon; and SGCN Black Rail. In addition, the SGCN Gulf Saltmarsh snake could also utilize low marsh vegetation within the project area, while marsh vegetation in general could serve as potential habitat for the SGCN Texas diamondbacked terrapin. Alternative B would result in a total of 1.63 acres of impacts to marsh habitat, while Alternative C would result in 2.68 acres of impacts to this vegetative community (see Table 2).
In terms of potential impacts to wildlife, construction of the proposed improvements would occur within or immediately adjacent to the GIWW, which could potentially serve as habitat for the five federally listed sea turtles; the federally listed West Indian manatee; and the SGCNs American eel, Gulf Saltmarsh snake, and Texas diamondbacked terrapin. Additionally, construction activities would potentially occur in the southernmost extent of the project area, which is adjacent to suitable habitat for the Piping Plover, Red Knot, Snowy Plover, Brown Pelican, and Peregrine Falcon. Additionally, the shoreline south of the project area could also potentially serve as nesting habitat for the five federally listed sea turtles discussed above. However, considering the limited and temporary nature of these potential impacts, construction-related impacts to wildlife that could occur within the GIWW would be minor. The proposed project would not result in potential impacts related to the operation or maintenance of the proposed facility.

**Past, Present, and Reasonably Foreseeable Future Actions**

The most substantial changes to Sargent Beach have occurred as a result of erosion, natural disasters, and dredging and expansion of the GIWW. According to a 2012 report by the USACE entitled *Erosion Control and Environmental Restoration Plan Development, Matagorda County, Texas*, Sargent Beach has experienced the greatest erosion rates of any area along the Texas coast: recession rates for this area have been estimated to average 25 feet per year (TxDOT 2015a).

Recession of most of the Texas shoreline is caused by a limited supply of sand. The supply of sand to the Sargent Beach region is severely limited, primarily due to its natural geologic setting, which results in limited sand sources; climate change, which results in changes in local precipitation and relative sea level rise; river diversion projects; construction of flood control structures; trapping at inlets; and construction of coastal structures and navigation projects (TxDOT 2015a). Given the historic and current trends and future projections regarding shoreline recession, continued erosion at Sargent Beach is considered to be reasonably foreseeable.

As of June 2015, no transportation or development projects are planned for the surrounding Sargent Beach area.

**Cumulative Effects to Biological Resources**

Considering the minimal nature of potential impacts related to the proposed project, cumulative effects to sensitive species that could occur within marsh vegetation or species that rely on marsh vegetation would not be substantial, even when combined with other past, present, and reasonably foreseeable future actions within the Biological RSA. Similarly, given the limited and temporary nature of the potential impacts of the proposed project, and considering the lack of future activities planned within the immediate area, cumulative impacts to sensitive species which could utilize the GIWW and nearby shoreline would not be substantial. None of the potential effects of the proposed project would be expected to contribute to a cumulative effect to the overall sustainability of any of these sensitive species or their habitats.
Most plans for halting shoreline recession are still in conceptual phases; however, these efforts could result in considerable benefits for Sargent Beach, including habitat for sensitive species. Any potential cumulative impacts to sensitive species and their habitats would likely be minimized as a result of the active wildlife management and conservation efforts already occurring throughout the area. A total of five percent of the entire Biological RSA is comprised of wildlife refuges and management areas, all of which provide aquatic, shoreline, marshland, and dry land habitat for various species. These areas could provide alternative suitable habitat for species that would be temporarily affected by the proposed project. Overall, potential cumulative impacts of the proposed project to biological resources related to erosion and shoreline recession would not be substantial.

While the proposed project would not result in substantial cumulative impacts to biological resources, mitigation measures exist that could further serve to avoid or minimize any minor cumulative impacts to these resources, particularly related to erosion and shoreline recession. Several studies have investigated potential solutions for slowing or stopping erosion at Sargent Beach, including construction of breakwaters (TxDOT 2015a) and implementation of beach nourishment (TxDOT 2015a). In addition, various regulations have implemented regulations to protect and preserve the Sargent Beach shoreline and the habitat it provides, including the General Land Office (GLO) Rules for Management of the Beach/Dune System (31 TAC §§ 15.1–15.11). Other efforts, including the Texas Coastal Management Program (CMP) and Coastal Erosion Planning and Response Act (CEPRA), outline goals and policies aimed at protecting the Texas coastal environment.

5.12 CONSTRUCTION IMPACTS SUMMARY

5.12.1 Noise Impacts—Construction Phase

Noise associated with the construction of the proposed project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

5.12.2 Air Quality Impacts—Construction Phase

The construction activity phase of this project may generate a temporary increase in air pollutant emissions. However, considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project would have any impact on air quality in the area.
5.12.3 Biological Impacts—Construction Phase

Temporary impacts to natural resources due to construction could result from the implementation of the proposed project and include disturbances to wildlife and vegetative communities. Implementation of one of the build alternatives would involve the removal of grasses and shrubs during the construction phase, affecting the natural, erosion-inhibiting ground cover and resulting in the loss of habitat for both resident and migratory species. Disturbed areas would be restored, reseeded, and recontoured as necessary according to TxDOT specifications, making these effects largely temporary.

Impacts to reptiles, marine mammals, or other wildlife could potentially occur for either build alternative during construction or demolition activities that extend into the open water. To minimize or avoid potential incidental harassment to these species, the following mitigation measures would be implemented:

1. Qualified biologists would monitor the presence of marine mammals or pelagic sea turtles during all phases of construction within open waters of the project area.

2. Before construction commences, a preliminary marine mammal impact zone would be established, delineated by a 50-foot radius from the work area if that impact zone would extend into the water. If any marine mammal is observed within the appropriate impact zone, the biological monitor would instruct that construction activities cease until it has been determined that the animal has moved beyond the impact zone radius, either through sighting or by waiting until enough time has elapsed (approximately 15 minutes) to assume that the animal has moved beyond the impact zone.

3. Contractors would be advised to cover any open trenches or excavation areas overnight and inspect these areas every morning to ensure no reptiles or other wildlife species have been trapped.

4. Contractors would be advised to inspect excavation areas for trapped wildlife prior to refilling.

5.12.4 No Build Alternative

As there would be no construction under the No Build Alternative, there would be no construction phase effects.

6.0 COMMENTS AND COORDINATION

Public involvement for the proposed project has included an open house, and a public meeting, held on September 26, 2013, and March 6, 2014, respectively. The open house held on September 26, 2013, collected comments and feedback from citizens regarding the preliminary design of the proposed project. Comments were collected and made public shortly after the meeting. The public meeting held on March 6, 2014, at Sargent VFW Hall included an open house and a formal presentation regarding the updates to the proposed project. A public hearing will be held to gather community comments and
input on the proposed project and the Environmental Assessment. Following the public hearing, a summary and analysis document will be prepared.

The conclusions of the investigations for archeological resources will be coordinated with the THC under the provisions of the 2005 Programmatic Agreement between FHWA, TxDOT, Texas State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings (PA-TU). The intensive survey would be conducted upon the selection of a build alternative and the purchase of right of way. Coordination for historic resources was completed on August 8, 2014.

As both proposed build alternatives are located within five miles of impaired assessment units and within the watershed of the impaired assessment units, coordination was completed with TCEQ on December 16, 2014.

The proposed project includes work within a FEMA-designated 100-year floodplain; therefore, coordination with the local Floodplain Administrator would be required.

A water well occurs within the vicinity of either build alternative. Further coordination with Matagorda County would be advisable once an alternative were selected to coordinate proper procedures in the event the well was to require relocation.

If a build alternative is selected, the existing bridge would be demolished after the completion of the construction of the build alternative. The Department of State Health Services must be notified using the asbestos program form 10 working days prior to the demolition of the bridge.

Alternative B would span the GIWW; therefore, no impacts to EFH would occur as a result of the construction of this alternative. Alternative C would include the placement of pilings into a portion of the GIWW, impacting EFH. Additionally, impacts to EFH could occur as a result of the demolition of the existing swing bridge. Coordination with NMFS was completed on December 9, 2014; NMFS did not provide recommendations related to construction activities. TPWD deferred to NMFS recommendations regarding avoidance and minimization measures for EFH. These BMPs would be applied to the protection of habitat for the American eel for both Alternatives B and C.

Preliminary bridge design indicates that Alternative B would be authorized under a USACE Section 404 Individual Permit; therefore, coordination under the FWCA would be required for this alternative. Alternative C would be authorized under a NWP 14 and, therefore, coordination under FWCA would not be required for this alternative. NMFS reviewed the impacts and recommended TxDOT develop and implement a compensatory wetland mitigation and restoration plan to compensate for all permanent impacts to mid and high marsh wetlands. NMFS would review this plan as part of the USACE permitting process.

The proposed build alternatives would not impact important remnant vegetation, stream channels, or isolated wetlands outside of the TxDOT right of way. However, a review of the Threshold Table Programmatic Agreement determined that vegetation within the vicinity of the proposed build alternatives falls into the MOU type of Tidal and Salt Marsh and Beaches, with both build alternatives
having a disturbance exceeding the threshold of 0.01 acre. Coordination with the TPWD was conducted and as a result of the December 8, 2014 coordination efforts, implementation of additional Vegetation BMPs would include notifying contractors to thoroughly clean equipment and vehicles used during project construction prior to mobilizing to the project area to prevent the spread of invasive, non-native species (see Appendix C).

7.0 PREFERRED ALTERNATIVE

Based on the analysis conducted for this Environmental Assessment, the effects of the two build alternatives are very similar. In the following categories, there is little or no difference in the impacts between Alternatives B and C: visual impacts, archeological resources, historic resources, floodplains, hazardous materials, air quality, traffic noise, and indirect and cumulative effects.

Differences among the build alternatives with respect to environmental impacts include resources in the following categories: community resources; vegetation; threatened and endangered species, wetlands and water quality. Alternative B would displace four residences and a vacant building, whereas Alternative C would displace one residence. Both Alternatives would displace the TxDOT bridge operations building. In terms of wetlands, Alternative B’s impacts would exceed 1/3 acre to tidal fringe wetlands requiring a Section 404 Individual Permit. For Alternative C, impacts would be less than 1/3 acre and the placement of temporary or permanent dredge or fill material into potentially jurisdictional waters of the U.S., including wetlands, would be authorized under NWP 14. Because the proposed permanent impacts for Alternative C would exceed 0.10 acre, and there would be a discharge into a special aquatic site, a PCN for NWP 14 would be required. In terms of vegetation based on field investigations, Alternative B would permanently affect 1.63 acres of marsh habitat, and Alternative C would permanently affect 2.68 acres of marsh habitat. Neither build alternative would have adverse effects to federally protected species; Alternative C would offer the additional protection of a vegetated buffer between the footprint of the proposed project and the beach habitat area important for the federally listed sea turtles and the Piping Plover. Alternative B would not have this vegetated buffer.

Given the differentiation among the build alternatives with respect to environmental impacts, and the fact that the No Build Alternative would not meet the purpose and need for the project, Alternative C is recommended as the Preferred Alternative.

8.0 PERMITS AND APPROVALS NEEDED

Bridge design indicates that Alternative C would be authorized under a USACE Section NWP 14 with a PCN.

Construction activities would require compliance with the State of Texas Water Quality Certification Program. Alternative C would impact less than 1,500 linear feet of stream and/or 3 acres of waters of the U.S. and would not affect rare or ecologically significant wetlands; therefore, Section 401 Tier I Certification would be required. A Tier I Checklist would be completed and submitted to the TCEQ and the USACE as part of the Section 404 permitting process.
Alternative C would include the replacement of a bridge over a navigable water of the U.S. as defined by 33 CFR 2.36; therefore, coordination with the USCG and a Bridge Permit would be required under the General Bridge Act.

TxDOT would comply with the requirements of the TCEQ’s Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit. A Stormwater Pollution Prevention Plan (SW3P) would be implemented, and a construction site notice would be posted at the construction site. A notice of intent (NOI) would be prepared and submitted to the TCEQ prior to construction and posted at the construction site.

The project area is located within Matagorda County, which is within the Texas CMP Boundary. TxDOT has reviewed this proposed action for consistency with the CMP goals and policies, and has determined that the proposed action is consistent with the applicable CMP goals and policies, and would not have a significant and adverse effect on the Coastal Natural Resource Areas (CNRA)s as detailed in 31 TAC Chapter 501.31.

9.0 COMMITMENTS

9.1 VEGETATION AND WILDLIFE HABITAT

Impacts to vegetation and wildlife habitat would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project. The removal of native vegetation, particularly mature native trees and shrubs, would be avoided to the greatest extent practicable. An approved seed mix would be used in the landscaping and revegetation of disturbed areas as detailed in the 2014 Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges manual for the Yoakum District.

Upon completion of earthwork operations, disturbed areas would be restored and reseeded in accordance with TxDOT’s Vegetation Management Guidelines and in compliance with the intent of Executive Order 13112 on Invasive Species and the FHWA Executive Memorandum on Environmentally and Economically Beneficial Landscape Practices.

Appropriate measures would be taken to avoid adverse impacts on migratory birds and would include the following:

- The removal or destruction of active migratory bird nests (nests containing eggs and/or young) at any time of the year would be prohibited until the nests become inactive, usually between October 1 and February 15.
- If colonial nesting (i.e. swallows) occurs on or in structures, nests would not be removed until all nests in the colony become inactive.
- Measures would be utilized, to the extent practicable, to prevent or discourage migratory birds from building nests within portions of the project area scheduled for immediate construction.
- Inactive nests would be removed from the project area to minimize the potential for reuse by migratory birds.
9.2 THREATENED AND ENDANGERED SPECIES

Potential habitat for four state-listed threatened bird species, the Peregrine Falcon, Reddish Egret, White-faced Ibis and Wood Stork was identified within the vicinity of the proposed build alternatives. Additionally, potential habitat for three bird SGCN, the Black Rail, Brown Pelican and Snowy Plover occurs in the vicinity of the proposed build alternatives. In accordance with the Best Management Practices Programmatic Agreement between the TxDOT and the TPWD, to avoid or minimize potential impacts to migratory birds as well as the state listed threatened and species of greatest conservation need mentioned above, the following bird BMPs would be implemented:

- The disturbance, destruction, or removal of active nests, including ground nesting birds, during the nesting season would be prohibited;
- The removal of unoccupied, inactive nests would be avoided as practicable;
- The establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair would be prevented;
- The collection, capture, relocation, or transportation of birds, eggs, young, or active nests without a permit would be prohibited; and
- In the event a state-listed species is identified within the project limits and removal of the species would be required, proper permits would be obtained or coordination with appropriate officials would be initiated to facilitate the removal of the species from the project area.

In addition to the species listed above, five other SGCN, the coastal gay-feather, the threeflower broomweed, the American eel, the Gulf saltmarsh snake and the Texas diamondbacked terrapin, could occur in the vicinity of the proposed build alternatives. Because there are no BMPs in the Programmatic Agreement for the coastal gay-feather, threeflower broomweed, saltmarsh snake and the Texas diamondbacked terrapin, qualified biologists would survey the proposed construction areas for threeflower broomweed prior to construction. TPWD would be notified should any of these plants be found within the direct path of construction and measures to protect those plant species found to be not within areas of construction would be implemented. Actions would be taken to avoid and minimize impacts to the natural environment as much as possible, which includes habitat for state listed species and SGCN. Impacts to EFH could occur as a result of the construction of the proposed project and the demolition of the existing swing bridge; therefore, coordination with the NMFS was conducted. No additional conservation measures were offered by NMFS to avoid additional impacts to EFH on this project. TPWD coordination deferred to NMFS recommendations regarding avoidance and minimizations measures for EFH. These BMPs would be applied to the protection of habitat for the American eel for both Alternatives B and C.

Effects to nesting sea turtles could potentially occur adjacent to the project area on the south side of the GIWW. Any lighting on the bridge structure or FM 457 south of the GIWW should be full cut-off or
shielded, with low wattage low-pressure sodium bulbs, and mounted close to the road surface. In addition, construction activities between dusk and daylight would be avoided during the active sea turtle nesting season. TxDOT would also install a turtle barrier, such as silt fencing, between the construction site and the natural vegetative buffer south of Canal Drive during sea turtle nesting season.

Impacts to marine mammals or sea turtles could potentially occur during construction or demolition activities that extend into the open water. To minimize and/or avoid potential incidental harassment with marine mammals or sea turtles, the following mitigation measures would be implemented:

1. Qualified biologists would monitor the presence of marine mammals or pelagic sea turtles during all phases of construction within open waters of the project area.

2. Before construction commences, a preliminary marine animal impact zone would be established, delineated by a 50-foot radius from the work area if that impact zone would extend into the water. If any marine mammal or sea turtle is observed within the appropriate impact zone, the biological monitor would instruct that construction activities cease until it has been determined that the animal has moved beyond the impact zone radius, either through sighting or by waiting until enough time has elapsed (approximately 15 minutes) to assume that the animal has moved beyond the impact zone.

USFWS concurrence for the proposed project is based on the design with no impacts occurring south of Canal Drive. If during construction project effects require impacts south of Canal Drive, re-initiation of Section 7 consultation would be necessary.

### 9.3 WATER QUALITY

Water quality BMPs would be implemented and include the following:

- Approved temporary vegetation
- Blankets/matting or mulch filter berms
- Vegetated filter strips
- Silt fence, sand bag and/or compost filter berms and socks

Because the total impacts for the proposed project would disturb more than one acre, the contractor would be required to comply with the TCEQ – TPDES General Permit for Construction Activity. The proposed project would disturb more than five acres; therefore, a NOI would be filed and posted on site and a SW3P would be in place during construction of proposed project. This SW3P would utilize the temporary control measures as outlined in TxDOT’s manual "Standard Specifications for the Construction of Highways, Streets, and Bridges."

The TPDES requirements would be met by implementing approved erosion controls, sediment controls, and post-construction total suspended solids controls. All temporary erosion controls, such as silt fences and rock berms, would be in compliance with TxDOT Standard Specifications and would be in place,
according to the construction plans, prior to commencement of construction related activities and inspected on a regular basis.

9.4 ARCHEOLOGICAL RESOURCES

In the unlikely event that significant cultural resources are discovered during construction of the proposed project, TxDOT would immediately initiate cultural resource discovery procedures. All work in the vicinity would immediately cease until a specialist from TxDOT and/or the THC could arrive on site and assess the discovery’s significance and the potential need for additional investigation (if necessary).

9.5 HAZARDOUS MATERIALS

Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable federal and state regulations per TxDOT Standard Specifications. Section 6.10 of the “General Provisions of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges,” which applies to all highway projects, includes guidelines addressing the contractor’s responsibilities regarding the discovery of hazardous materials.

Asbestos containing material has been identified and surveyed on the existing bridge. Prior to the demolition of the structure if a build alternative is selected, all asbestos containing material must be removed and the Department of State Health Services must be notified 10 working days prior to demolition.

9.6 CONSTRUCTION

The contractor would observe proper maintenance and idling of construction equipment to control emissions of particulate matter. The contractor would control the generation of dust by site watering.

The contractor would be advised during the pre-construction meeting to cover any open trenches or excavation areas overnight and inspect these areas every morning to ensure no reptiles or other wildlife species have been trapped. The contractors would also be advised to inspect excavation areas for trapped wildlife prior to refilling. Contractors will be provided with species information to be made aware of the potential for rare species to occur within the project area; they would be required to inform appropriate TxDOT personnel if the species is observed on the project site and would be informed to pay special attention during installation of any exclusion fencing to ensure no species are trapped within the project area.

The contractor would be advised to thoroughly clean equipment and vehicles used during project construction prior to mobilizing to the project area to prevent the spread of invasive, non-native species.

Disruptions would be minimized to the extent possible by the timely notification of affected residents and business owners through posted notices, personal contact, or other notification procedures. These procedures could include rerouting the traffic, barricading, using traffic cones, or any other measures deemed necessary and prudent by TxDOT and the construction contractor to comply with all local, state, and federal traffic and safety regulations.
During construction, procedures to minimize traffic congestion, noise, dust and risk to public safety should be specifically adapted to the circumstances of the proposed project.

Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.
REFERENCES


———. 2014b Draft Archeological Resources Background Study.


———. 2015b. Initial Site Assessment Form.


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APPENDIX A

FIGURES
Figure 1
Project Location
FM 457 Bridge Replacement
CSJ: 0605-01-060
FIGURE 2
ALTERNATIVES B & C TYPICAL SECTIONS
**CATEGORIES FOR STATEWIDE GROUPING**

Listed below are the categories of projects which can be grouped together and used to track projects statewide. Please refer to Appendix B for a list of projects which may be completed in the Victoria County Metropolitan Planning Area during the Fiscal Years of 2006, 2007 & 2008. Construction Costs are constrained statewide. Grouping projects by these categories provides an efficient and streamlined method of programming and implementing these projects.

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<td>5000-00-950</td>
<td>PE – Preliminary Engineering</td>
<td>Preliminary Engineering for any project that is not added capacity in a non-attainment area. Includes activities which do not involve or lead directly to construction such as planning and technical studies, grants for training and research programs.</td>
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<td>Right of Way Acquisition</td>
<td>Right of way acquisition for any project that is not added capacity in a non-attainment area. Includes relocation assistance, hardship acquisition and protective buying.</td>
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<td>Preventive Maintenance and Rehabilitation</td>
<td>Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoration and rehabilitation done with existing ROW. Also includes modernization of highway reconstruction, adding shoulders or adding auxiliary lanes (eg. parking, weaving, turning, climbing, non-added capacity)</td>
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<td>Bridge Replacement and Rehabilitation</td>
<td>Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges.</td>
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<td>5000-00-954</td>
<td>Railroad Grade Separations</td>
<td>Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity.</td>
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<td>5800-00-950</td>
<td>Safety</td>
<td>Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, railroad/highway crossing warning devices, fencing, intersection improvements (eg., turn lanes,) signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program and the Federal Railroad Signal Safety Program.</td>
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<td>Landscaping</td>
<td>Project consisting of typical right-of-way landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities.</td>
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<td>Intelligent Transportation Systems Deployment</td>
<td>Highway traffic operation improvement projects including the installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs.</td>
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### 0605-01-060

**District:** Yoakum  
**MPO:** Matagorda County  
**Project Listing:** FM 457  
**Letting FY:** 2016  
**Project Description:** REPLACE SWING BRIDGE  

#### Total Project Cost Information

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### 0241-02-051

**District:** Yoakum  
**MPO:** Matagorda County  
**Project Listing:** SH 60  
**Letting FY:** 2017  
**Project Description:** ACP OVERLAY  

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### 0313-21-047

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**MPO:** Matagorda County  
**Project Listing:** CR  
**Letting FY:** 2017  
**Project Description:** REPLACE BRIDGE AND APPROACHES  

#### Total Project Cost Information

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APPENDIX C

AGENCY COORDINATION
Mr. Carlos Swonke  
Texas Department of Transportation  
Environmental Affairs Division  
PO Drawer 15426  
Austin, Texas 78761-5426

Consultation Number 02ETCL00-2014-I-0068

August 7, 2014

Dear Mr. Swonke:

Thank you for your letter of July 11, 2014, requesting informal consultation for project CSJ: 0606-01-060, in which the Texas Department of Transportation (TxDOT) proposes to replace the FM 457 bridge over the Gulf Intracoastal Waterway (GIWW) in Matagorda County, Texas. TxDOT has submitted documentation to the U.S. Fish and Wildlife Service (Service) requesting concurrence that the proposed project “may affect, but is not likely to adversely affect” the Atlantic hawksbill sea turtle (Eretmochelys imbricata), the green sea turtle (Chelonia mydas), the Kemp’s Ridley sea turtle (Lepidochelys kempii), the leatherback sea turtle (Dermochelys coriacea), the loggerhead sea turtle (Caretta caretta), the piping plover (Charadrius melodus), or the West Indian manatee (Trichechus manatus), species listed pursuant to the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). The Service is also commenting under the authorities of the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) and Marine Mammal Protection Act of 1972 (16 U.S.C. 1361-1407).

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that the actions authorized, funded, or carried out by such agencies do not jeopardize the continued existence of any threatened or endangered species or adversely modify or destroy designated critical habitat of such species. The Federal Highway Administration (FHWA) assigned responsibility for all section 7 consultations associated with National Environmental Policy Act (NEPA) Categorical Exclusions to TxDOT in an MOU dated February 12, 2014, making TxDOT the Federal agency associated with this proposed project (23 U.S.C. 326). FHWA has also authorized TxDOT to act on their behalf for informal section 7 consultations associated with other types of NEPA evaluations.

The proposed project is to replace the existing FM 457 swing bridge crossing the GIWW with a new fixed-span bridge. The existing swing bridge consists of a 120-foot long metal pontoon
barge with two 12-foot wide travel lanes running down its length. The barge is operated by a bridge tender inside a control tower located adjacent to the road and GIWW. The barge is pulled to the side of the GIWW to allow boat traffic to cross the roads path. The new bridge would be located on the east side of FM 457 and the existing swing bridge location. TxDOT proposes to install spiral bridge approaches on the north and south sides of the GIWW. The proposed lane configuration would consist of two 12-foot wide travel lanes, with 10-foot shoulders. The maximum height of the bridge structure would be 92 feet. A small area of new right-of-way (ROW) would need to be purchased on the south side of the GIWW. Once construction of the new bridge is complete, the existing barge swing bridge and associated fender systems would be completely removed from the GIWW.

TxDOT and Service biologists visited the proposed project location on May 7, 2014. The proposed location of the spiral bridge approach ramp on the north side of the GIWW is an open lot owned by TxDOT. The swing bridge control tower sits on the southwest corner of the lot. San Bernard National Wildlife Refuge borders the project site to the north, but would not be affected by the proposed project. There is a previously excavated basin on the south side of the GIWW where the southern ramp would be placed. The southern bridge ramp will rejoin the existing FM 457 just north of its terminus at Canal Drive, the beach road that parallels the Gulf beach. There is an existing beach access point for vehicles just south of Canal Drive, which is not owned or maintained by TxDOT. Between Canal Drive and the sandy beach is an approximately 150-foot wide dune area, containing thick vegetation. No construction impacts would occur in the vegetated dune area or on the sandy beach south of Canal Drive.

Vegetation communities that would be affected by the project include; low marsh, high marsh, and back dune. Due to the potential presence of jurisdictional tidal fringe wetlands on the project site, we recommend that TxDOT contact the U.S. Army Corps of Engineers regarding the need for a section 404 wetland fill permit, as well as a section 10 Rivers and Harbors Act permit for the bridge crossing the GIWW.

Sea turtle nesting occurs between April and July on Texas beaches, although occasional nests have been documented in August and September. Even though there are no impacts proposed to the sandy beach, sea turtles could be affected by the proposed project if avoidance measures are not implemented. Adult and hatchling sea turtles can be disoriented by artificial lighting from roadways and residences. Any lighting on the bridge structure or FM 457 south of the GIWW should be full cut-off or shielded, with low wattage low-pressure sodium bulbs, and mounted close to the road surface. In addition, any construction occurring between dusk and daylight must be avoided during the active sea turtle nesting season. TxDOT has proposed to install a turtle barrier, such as silt fencing, between the construction site and the natural vegetative buffer south of Canal Drive during sea turtle nesting season.

The piping plover winters along coastal Texas beaches and wash-over flats between July and May. Piping plovers have been documented to occur along Sargent Beach, near the project area. Critical habitat has been designated for the piping plover, with the closest Unit being TX-58, located about 0.5 miles to the southwest. The areas that would be directly affected by this
project do not provide habitat for wintering plovers, but plovers could be disturbed by construction activities and noise if they are present in adjacent beach areas during construction. There are existing disturbances to piping plover wintering habitat near the project site from beach driving and recreational activities, therefore, disturbance to the piping plover from project construction should be minimal.

The vegetative communities located within the project area and adjacent to the beach may serve as important stopover habitat for migratory birds during their spring and fall migrations, as well as nesting habitat during the summer. TxDOT has proposed to avoid removing native vegetation, particularly trees and shrubs, to the maximum extent practicable. Also when practicable, construction and demolition activities would be scheduled between October and February, outside of the typical migratory bird nesting season. However, if vegetation clearing is necessary when migratory birds may be present, a TxDOT environmental specialist would survey for bird nesting activity before vegetation is removed. Impacts to vegetation would be limited to only that necessary for construction of the project and once the project is completed, disturbed areas would be restored and reseeded.

The West Indian manatee is a rare, but occasional, visitor to the Texas coast. Manatees rely on submerged aquatic vegetation (SAV) beds for food. These are normally located in shallow inland coastal waters. The GIWW may be used as a travel passage by manatees to reach the SAV beds. TxDOT has determined that even though the possibility of encountering a manatee during construction is unlikely, a biologist will monitor the GIWW for their presence during construction and demolition activities. If a manatee is observed, construction activities would cease until the animal has moved beyond the construction zone.

TxDOT has determined that potential adverse effects to sea turtles, wintering piping plovers, and the West Indian manatee would be insignificant or discountable. Based on the information provided, we concur with TxDOT’s conclusion that their proposed construction of a new FM 457 over the GIWW “may affect, but is not likely to adversely affect” these species. Therefore, no further endangered species consultation is required for this project unless: 1) the identified action is subsequently modified in a manner that causes an effect on listed species or designated critical habitat; 2) new information reveals the identified action may affect federally protected species or designated critical habitat in a manner or to an extent not previously considered; or 3) a new species is listed or critical habitat is designated under the Act that may be affected by the identified action. Our effect concurrence on this project is based on no project related impacts occurring south of Canal Drive. If during construction project effects become necessary south of Canal Drive that would represent new information and section 7 consultation should be reinitiated.
We appreciate your efforts to conserve this sensitive species. If you have any questions or comments, please contact Darren LeBlanc at 512-490-0057 (ext. 247) or 512-608-7591.

Sincerely,

Edith Erfling
Field Supervisor
Coastal Ecological Services Field Office

cc: Meghan Pawlowski, TxDOT ENV, Austin, TX (electronic)
    Alan Migl, TxDOT, Yoakum District (electronic)
MEMO
August 8, 2014

To: Administrative Record

District: Yoakum
County: Matagorda
CSJ#: 0605-01-060
Highway: FM 457
Project Limits: At Gulf Intercoastal Waterway
Let: April 2015
Project Description: Stipulation VI, Appendix 4, Bridge Replacement. New ROW needed.
No historic properties present.

From: Carolyn A. Nelson
Environmental Specialist IV

Subject: Internal review under the Programmatic Agreement (PA) among the Federal Highway Administration, Texas State Historic Preservation Officer, Advisory Council on Historic Preservation, and the Texas Department of Transportation (TxDOT); and the Memorandum of Understanding (MOU) between the Texas Historical Commission (THC) and the Texas Department of Transportation

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Introduction
The TxDOT Yoakum District has proposed the replacement of the Sargent Pontoon Swing Bridge (NBI#120900060501016) on FM 467 over the Gulf Intercoastal Waterway (GIWW). The replacement bridge would be a fixed-span, high clearance structure with spiral approaches on both ends. Two alternatives have been proposed that would maintain the current configuration of one lane in each direction with 10 foot outside shoulders and a maximum height of approximately 92 feet above ground level. On the south side of the GIWW, the spiral for Alternative B would be on the west side of FM 457 and require a total of 3.23 acres of new right of way (ROW), and Alternative C would be on the east side of FM 457 and require 2.573 acres of new ROW.

Efforts to Identify Historic Properties
The methodology used to identify listed and eligible properties located in the Area of Potential Effect (APE) included background research conducted at the Texas Historical Commission’s (THC) Texas Historic Sites Atlas to identify properties listed on the National Register of Historic Places (NRHP) and Recorded Texas Historic Landmarks (RTHL), as well as Official Texas Historical Markers (OTHM). Due to elevation changes and additional right of way (ROW) needs, the area of potential effect (APE) for this proposed project is 150 feet from the current and proposed new ROW. Per the attached survey reports, seven historic-age properties constructed before 1971 were found in the APE.

Intensive Level Survey Findings
In compliance with Section 110 of the National Historic Preservation Act and the Memorandum of Understanding between TxDOT and the Texas Historical Commission, TxDOT historians evaluated the bridge

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to establish its historical significance through the application of the NRHP Criteria for Evaluation. An intensive level survey for the bridge was conducted in October 2012. The pontoon barge span of the bridge was moved to its current location in 2010 from FM 2031 in Matagorda County. The survey evaluated the historic significance and integrity of the pontoon swing bridge because it is the last extant example of its type in Texas.

The intensive survey developed a methodology for identification and analysis of:
- character defining features of the pontoon barge swing bridge subtype,
- other extant and nonextant subtypes in Texas and nationally,
- the history of the Sargent Swing Bridge
- current bridge data
- the bridge’s local history

The intensive level survey revealed the bridge may have significance under Criterion C-Engineering. As a result, the character defining features of the bridge were identified and evaluated for National Register of Historic Places (NRHP) eligibility. Due to extensive changes to the bridge’s character defining features outside the historic period beyond 1971, TxDOT historians determine the Sargent Swing Bridge not eligible for listing to the NRHP under Criterion C (October 2012 report attached). The survey further determined the bridge was not eligible under Criteria A and B due to its lack of association with significant events or persons.

Because the bridge may have local significance, TxDOT consulted with the county historical commission (CHC). Consultation with the Matagorda Historical Commission acknowledged that this bridge is the last extant of this bridge sub-type, but revealed no local or regional historical significance. A copy of the letter, dated January 31, 2012 is attached. Therefore, this bridge is determined not eligible for listing in the NRHP under Criteria A or B at the local level of significance.

Reconnaissance Level Survey Findings
In July 2014, a reconnaissance level survey was conducted for the additional standing structures in the APE. One OTHM was identified to be in the proposed project area: Confederate Defenses at the Mouth of Caney Creek (1976) and was missing when the survey was conducted.

Six historic-age (pre-1971) structures were documented on the north side of the GIWW and determined to be not eligible for listing to the NRHP under Criteria A or B (July 2014 report attached) due to their lack of association with significant events or persons or under Criterion C because they do not embody distinctive characteristics of a type, period, or method of construction and do not represent the work of a master.

Conclusions
Pursuant to Stipulation VI “Undertakings with Potential to Affect Historic Resources” of the First Amended Programmatic Agreement for Transportation Undertakings (PA-TU) between FHWA, the Texas State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and the Texas Department of Transportation (TxDOT) and the Memorandum of Understanding (MOU), TxDOT Historians determine there are no historic properties in the APE and individual project coordination with SHPO is not required.

Approved by ___________________________ for TxDOT ___________________________

Lead Reviewer ___________________________ for TxDOT ___________________________

Attachments: Matagorda county CHC letter, Reconnaissance (July 2014) & Intensive level (October 2012 surveys.)
December 8, 2014

Ms. Sue Reilly
Transportation Assessment Liaison
Texas Parks and Wildlife Department (TPWD)
Wildlife Division – Wildlife Habitat Assessment Program
4200 Smith School Road
Austin, Texas 77844

Dear Ms. Reilly:

TxDOT Yoakum District submitted an email on September 3, 2014 requesting early project coordination for FM 457 in Matagorda County (CSJ 0605-01-060). TxDOT received a confirmation email from TPWD on September 3, 2014 and assigned the ID #33492 to the project.

In a coordination response email dated October 23, 2014, TPWD made several recommendations. Below is a brief description of the proposed work, TPWD recommendations, and TxDOT’s response to each recommendation.

Project Description
The proposed project will replace the existing, at-grade pontoon barge swing span and approach spans with a new fixed-span, high-clearance structure with spiral approaches. TxDOT is evaluating the feasibility of two Build Alternatives (both alternatives would maintain the current configuration of one lane in each direction with an added 10-foot outside shoulder and would reach a maximum height of approximately 92 feet above ground level; both would replace the movable swing bridge with a fixed concrete structure) and a No Build Alternative (proposed project would not be constructed).

TxDOT Commitments
- To minimize and/or avoid impacts to marine mammals, TxDOT will have onsite qualified biologists that will monitor for the presence of marine mammals during all phases of construction. The biological monitor will instruct all construction activities to cease until the marine mammal(s) move(s) beyond the 50-foot impact zone radius.
- The TxDOT-TPWD BMP PA - Bird BMPs will be implemented to avoid or minimize impacts to all birds protected by the Migratory Bird Treaty Act.
- TCEQ Section 401 Tier I Certification Water quality BMPs will address erosion control, post construction total suspended solids control, and sedimentation control.
- The proposed project will be in compliance with Executive Order 13112 on Invasive Species and Executive Memorandum on Beneficial Landscaping.

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Impacts to Vegetation/Wildlife Habitat

- According to the project documents, approximately 5.6 acres of additional ROW will be required for either of the Build Alternatives, and impacts, for both Build Alternatives, to the MOU EMST vegetation types Tidal and Salt Marsh, Beaches and Salt, Tidal Flats, and Riparian exceed the Western Gulf Coastal Plain Ecoregion thresholds defined in the Threshold Programmatic Agreement. Both Tidal and Salt Marsh and Beaches and Salt, Tidal Flats MOU vegetation types are considered to be very rare statewide or ecoregion wide and/or very important by TPWD plant community ecologists. TPWD recommends that TxDOT continue to coordinate with TPWD Coastal Fisheries Division staff for opportunities to either restore, create, or enhance habitat that will offset temporary and permanent impacts to native habitats. If adverse impacts to the rare vegetation types discussed above will not be offset by measures to comply with the Clean Water Act, please contact me, the Transportation Conservation Coordinator, so I can explore potential non-regulatory mitigation opportunities.

- TxDOT Response: TxDOT is aware of the importance of rare and/or important vegetation types such as Tidal and Salt Marsh, Beaches and Salt, Tidal Flats, and Riparian areas. TxDOT will continue to coordinate with TPWD Coastal Fisheries Division staff to explore opportunities to offset the temporary and permanent impacts associated with the proposed project.

- TPWD recommends incorporating the Vegetation BMPs in Section 2: Standard Recommendations of the TxDOT-TPWD BMP PA in order to promote conservation of state fish and wildlife resources. TPWD strongly encourages TxDOT to remove bermudagrass, bahiagrass, and weeping lovegrass seeds from the seed mix used to revegetate the project area due to the proximity to waterways, lands set aside for conservation, and critical habitat for the piping plover.

- TxDOT Response: TxDOT will incorporate the Vegetation BMP’s into the project EPIC sheet. The 2014 Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges manual has removed bermudagrass, bahiagrass, and weeping lovegrass from its permanent rural seed mix for the Yoakum District.

- Cogongrass (Imperata cylindrica) is a highly invasive, non-native species that can spread via seeds and rhizomes (http://www.cogongrass.org/). This species is known to infest roadside ditches and road ROW and can be spread by fill dirt and by hitchhiking on construction equipment. In order to proactively discourage infestations in Texas, TPWD recommends that TxDOT thoroughly clean equipment and vehicles (including radiators and air filters) that will be used during project construction prior to mobilizing to the project area.

- TxDOT Response: BMPs would be used to control and prevent the spread of invasive, non-native species such as notifying contractors to thoroughly clean equipment and vehicles used during project construction prior to mobilizing to the project area.
Federally Protected Species

- According to the Biological Evaluation Form, the proposed project may affect, but is not likely to adversely affect seven federally protected species, and the USFWS concurred with this finding in a letter to Carlos Swonke on August 7, 2014. USFWS recommended specific mitigation to avoid and/or minimize impacts to the federally protected species, and TPWD considers the USFWS recommended mitigation to be sufficient for the federally protected species and may also provide protections to other state fish and wildlife resources that may be impacted by the proposed project.

- TxDOT Response: TxDOT will follow the specific mitigation efforts recommended by the USFWS to avoid and/or minimize impacts to federally protected species.

State-listed Species and Species of Greatest Conservation Need (SGCN)

- State-listed species that may occur in the area of the proposed project include the peregrine falcon, reddish egret, white-faced ibis, and wood stork. There are known observations of the reddish egret (Sargent Beach), white-faced ibis (Sargent Beach and SBNWR), and wood stork (Dead Caney Creek Marsh) in the immediate vicinity of the proposed project area, so it will be imperative that TxDOT effectively implement the Bird BMPs to avoid and minimize impacts to these and other bird species that may occur in and adjacent to the proposed project area.

- TxDOT Response: TxDOT is committed to implementing the Bird BMPs outlined in Attachment 1 of the Programmatic Agreement between TxDOT and TPWD.

- Potential habitat for eight SGCN species may be impacted by the proposed project including black rail, brown pelican, snowy plover, coastal gay-feather, threeflower broomweed, gulf salt marsh snake, Texas diamondback terrapin, and American eel. Bird BMPs will be implemented to avoid and minimize potential impacts to the black rail (known observations from SBNWR), brown pelican (observations of this species were made during site visits to the proposed project area), and snowy plover. Specific BMPs were not provided in the BMP PA for the remaining species, so TPWD makes the following recommendations regarding those species:
  - Coastal gay-feather – flowers in the fall and occurs in coastal prairie grasslands of various types including salty Prairie on low-lying somewhat saline clay loams and upland prairie on nonsaline clayey to sandy loams. This species can be inconspicuous unless located in areas heavily grazed, recently burned, or in areas of relatively sparse vegetation dominated by shortgrass (Poole et al 2007).
  - Threeflower broomweed – flowers September to November and can be associated with coastal gay-feather. This species is most often encountered in sparse, low vegetation on a veneer of light-colored silt or fine sand over saline clay along drier upper margins of ecotone between salty prairies and tidal flats (Poole et al 2007).

- TPWD recommends that the area proposed for disturbance be surveyed for the above-listed rare plant species where suitable habitat is present. On-the-ground surveys should be performed by a qualified biologist familiar with the identification of rare Gulf Coastal Plain species. Surveys should
be conducted when the species are most detectable and identifiable (usually during their respective flowering periods), and disturbance of these species should be avoided during construction to the extent feasible. If these plants are found in the path of construction, TPWD should be contacted for further coordination and possible salvage of plants and/or seeds for seed banking. Plants not in the direct path of construction should be protected by markers or fencing and by instructing construction crews to avoid any harm.

- TxDOT Response: TxDOT hired qualified biologists to perform site surveys and document their findings. According to the biological report submitted to TxDOT, suitable habitat for the Coastal gay-feather and Threeflower broomweed occurs within the vicinity of the proposed build alternatives; however, no species were identified during the site surveys. TxDOT is committed to the conservation of these rare species and will have qualified biologists survey the proposed construction areas prior to construction. TxDOT will notify TPWD should any of these plants be found within the direct path of construction and/or implement measures to protect those plant species found to be not within the areas of construction.

- Gulf salt marsh snake – prefers brackish and saltwater estuaries, salt marshes and tidal mud flats, and this species mates in early spring and females give live birth to young in July and August. This is a nocturnal species that will use debris piles and crab burrows in mud or sand as cover.

- Texas diamondback terrapin – only turtle found in estuaries, tidal creeks, and saltwater marshes where the salinity comes close to that of the ocean. Mating season is in the spring, and females come ashore to dig a tear-shaped nest in the sand above the high-tide line. This species may dig into the mud to hibernate over cold winter months. During the day, terrapins spend most of their time in the water or basking on mud flats or other resting areas, and at night they bury themselves in mud.

- TPWD recommends avoiding or minimizing activities that would remove or alter suitable gulf salt marsh snake and Texas diamondback terrapin habitat in the project area.

- TxDOT Response: TxDOT is committed to avoiding and minimizing impacts to the natural environment as much as possible. This includes, but is not limited to, habitat for state threatened and species of greatest conservation need.

- TPWD recommends that qualified biologists become permitted in order to facilitate safe removal and legal handling of state-listed species from areas of potential impact. Please contact wpoffice@tpwd.texas.gov or visit the Wildlife Diversity Permits: Scientific Permit for Research website for more information.

- TxDOT Response: In the event a state-listed species is identified within the project limits and removal of the species would be
required, TxDOT would obtain the proper permits or contact appropriate officials to facilitate the removal of the species from the project area.

- TPWD recommends that TxDOT utilize qualified biologists, such as those being used to monitor for marine mammals, to monitor for the above-listed rare reptile species within the project area. If either species is detected within the construction area, TPWD recommends that TxDOT allow the species to safely leave the project area before resuming construction activities.

- TxDOT Response: TxDOT is committed to the conservation and protection of these rare species; however, budget constraints may prevent TxDOT from having a qualified biologist monitor the project site for the duration of the project. TxDOT would provide species specific information to the contractor during the project pre-construction meeting. The contractor would be made aware of the potential for these rare species to occur within the project area, to not harm the species, and to inform appropriate TxDOT personnel should the species be identified on the project site.

- TPWD recommends that a qualified biologist perform pre-construction on-the-ground surveys of the proposed project area prior to the installation of exclusion fence. Allow the above-listed rare reptile species, and any other wildlife species, to safely leave the construction area prior to installation of exclusion fence. Install exclusion fence, such as metal flashing or drift fence material, around the entire area to be potentially disturbed. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated. Qualified biologists should survey the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact. If wildlife are located within the exclusion area, provide safe egress opportunities prior to initiation of construction activities. Contractors should use caution when accessing construction material piles since these areas can provide cover for reptile and other wildlife species. Do not kill, harm, or harass any snake, or other wildlife species encountered during any phase of construction of the proposed project.

- TxDOT Response: Exclusion fencing would be utilized to deter wildlife species from entering the project area. As mentioned in the previous comment, budget constraints may prevent TxDOT from having a qualified biologist monitor the project site for the duration of the project. TxDOT would provide species specific information to the contractor during the project pre-construction meeting. The contractor would be made aware of the potential for these rare species to occur within the project area, to not harm the species, and to inform appropriate TxDOT personnel should the species be identified.
on the project site. TxDOT would also inform the contractor to pay special attention during installation of any exclusion fencing to ensure no species are trapped within the project area.

- TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no reptiles or other wildlife species have been trapped. Also, inspect excavation areas for trapped wildlife prior to refilling.

- **TxDOT Response:** TxDOT will commit to this recommendation and ensure the contractor is aware of this commitment.

- TPWD recommends turbidity curtains be placed around the project area that is in water to contain turbidity, exclude terrapins and other marine species from entering the project site, and to protect adjacent sensitive habitats (such as tidal marsh) from construction impacts. Daily inspections should occur of turbidity curtains for potential wildlife entanglement and/or application failure.

- **TxDOT Response:** The GIWW is a navigable water way that is subject to heavy vessel traffic (both commercial and private). The project area has high ambient turbidity without significant natural resources such as oyster beds or seagrass that would be vulnerable to construction induced turbidity impacts. Existing sensitive habitats (tidal marsh) in the area are accustomed to growing in turbid waters due to heavy vessel traffic. This section of the GIWW has an estimated average traffic volume of 55-60 tows/day transporting an average of 126,000 tons/day of Petroleum products, chemicals, and manufactured goods through that area. It is not feasible to place turbidity curtains across the GIWW during the construction period and stop this important economic activity. Further, turbidity curtains in tidal areas behave like a sail catching the tidal currents. Effective management of the turbidity curtains requires frequent monitoring of current conditions in order to prevent the curtains from becoming a risk to wildlife and adjacent human activities in the area. Given these factors, TxDOT is not implementing turbidity curtains for this project and will rely on implementation of water quality management BMPs to effectively control potential turbidity impacts.

- The mesh found in many erosion control blankets or mats pose an entanglement hazard to snakes. To reduce potential impacts to snakes, TPWD recommends that TxDOT utilize erosion stabilization materials and seed/mulch stabilization materials that avoid entanglement hazards to snakes. If blankets must be utilized, then TxDOT should avoid mats that contain plastic mesh matting and look into bio-degradable, non-petroleum based, loosely woven, natural fiber matting for which the mesh design allows the threads to move so the opening can expand.

- **TxDOT Response:** Preliminary plans for the proposed project do not include the use of erosion control blankets or mats. However, if
necessary, TxDOT would consider using bio-degradable, non-petroleum based, loosely woven, natural fiber matting.

- American eel – very uncommon in Texas coastal waters. This species undergoes metamorphoses throughout its life, which include hatching from eggs in the Sargasso Sea, to larvae drifting in the Gulf Stream for years, and to reaching maturity in freshwater and estuarine habitats. According to TPWD Coastal Fisheries’ biologists, this species is not common; however the project area does include preferred habitat.

  - TPWD recommends that TxDOT implement the avoidance and minimization measures provided during consultation with the National Marine Fisheries Service (NMFS) for protection of Essential Fish Habitat located in the project area for the benefit of the American eel as well. Also, the use of turbidity curtains around any portion of the project area in water will assist in excluding this species from areas of impact.

  - TxDOT Response: TxDOT is currently awaiting results of consultation with the National Marine Fisheries Service for protection of Essential Fish Habitat. TxDOT will review any avoidance and minimization measures recommended by the NMFS for incorporation into the project plans. TxDOT does not propose the use of turbidity curtains for the reasons already stated above.

Please confirm that TxDOT’s commitments are correctly identified above and respond to indicate whether TxDOT will commit to implementing the additional recommendations provided. Again, thank you for coordinating with TPWD regarding your project.

TxDOT Response: TxDOT confirms its commitment to the above responses to the TPWD recommendations listed above.

If you have any questions, please feel free to give me a call at 361-293-4424 or email at alan.migl@txdot.gov.

Sincerely,

Alan Migl
Yoakum District
Environmental Coordinator

cc: Meghan Pawlowski
Environmental Affairs Division
Texas Department of Transportation
Good afternoon, Alan,

I really appreciate the thoroughness of your response to TPWD’s recommendations to assist TxDOT in avoiding and minimizing impacts to our State’s natural resources. Your responses will assist me in any future project reviews I undertake for your District and along the GIWW. I also appreciate your patience in navigating my very first review of a TxDOT project.

With that being said, TPWD appreciates TxDOT’s commitment to implement the recommendations discussed in the attached document. Based on that commitment and a review of the documentation and project description, and provided that the project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect fish and wildlife.

I look forward to working with you on future projects within the Yoakum District.

Sincerely,

Laura Zebehazy
Transportation Conservation Coordinator
TPWD – Wildlife Habitat Assessment Program
Phone: (512)389-4638

Please see the attached response letter to the TPWD recommendations for the proposed FM 457 Swing Bridge replacement project in Matagorda County (CSJ 0605-01-060). The TPWD Project ID is # 33492.

Thank you,

alan

Alan Migl
Environmental Specialist
TxDOT – Yoakum District
361-293-4424
To: Alan Migl  
Subject: CSJ 0605-01-060 - FM 457 Swing Bridge Replacement: TPWD early coordination response

Good afternoon, Alan,

Thank you for coordinating the FM 457 Swing Bridge Replacement project in Matagorda County (CSJ 0605-01-060) with TPWD. TPWD would like to offer the following information, comments, and recommendations to avoid or minimize impacts to fish and wildlife resources.

**Project Description**
The proposed project will replace the existing, at-grade pontoon barge swing span and approach spans with a new fixed-span, high-clearance structure with spiral approaches. TxDOT is evaluating the feasibility of two Build Alternatives (both alternatives would maintain the current configuration of one lane in each direction with an added 10-foot outside shoulder and would reach a maximum height of approximately 92 feet above ground level; both would replace movable swing bridge with fixed concrete structure) and a No Build Alternative (proposed project would not be constructed).

**TxDOT Commitments**
- To minimize and/or avoid impacts to marine mammals, TxDOT will have onsite qualified biologists that will monitor for the presence of marine mammals during all phases of construction. The biological monitor will instruct all construction activities to cease until the marine mammal(s) move(s) beyond the 50-foot impact zone radius.
- The TxDOT-TPWD BMP PA - Bird BMPs will be implemented to avoid or minimize impacts to all birds protected by the Migratory Bird Treaty Act.
- TCEQ Section 401 Tier I Certification Water quality BMPs will address erosion control, post construction total suspended solids control, and sedimentation control.
- The proposed project will be in compliance with Executive Order 13112 on Invasive Species and Executive Memorandum on Beneficial Landscaping.

**Impacts to Vegetation/Wildlife Habitat**
- According to the project documents, approximately 5.6 acres of additional ROW will be required for either of the Build Alternatives, and that impacts, for both Build Alternatives, to the MOU EMST vegetation types **Tidal and Salt Marsh, Beaches and Salt, Tidal Flats**, and **Riparian** exceed the Western Gulf Coastal Plain Ecoregion thresholds defined in the Threshold Programmatic Agreement. Both Tidal and Salt Marsh and Beaches and Salt, Tidal Flats MOU vegetation types are considered to be very rare statewide or ecoregion wide and/or very important by TPWD plant community ecologists. TPWD recommends that TxDOT continue to coordinate with TPWD Coastal Fisheries Division staff for opportunities to either restore, create, or enhance habitat that will offset temporary and permanent impacts to native habitats. If adverse impacts to the rare vegetation types discussed above will not be offset by measures to comply with the Clean Water Act, please contact me, the Transportation Conservation Coordinator, so I can explore potential non-regulatory mitigation opportunities.
- TPWD recommends incorporating the Vegetation BMPs in Section 2: Standard Recommendations of the TxDOT-TPWD BMP PA in order to promote conservation of state fish and wildlife resources. TPWD strongly encourages TxDOT to remove bermudagrass, bahiagrass, and weeping lovegrass seeds from the seed mix used to revegetate the project area due to the proximity to waterways, lands set aside for conservation, and critical habitat for the piping plover.
- Cogongrass (**Imperata cylindrica**) is a highly invasive, non-native species that can spread via seeds and rhizomes ([http://www.cogongrass.org/](http://www.cogongrass.org/)). This species is known to infest roadside ditches and road ROW and can be spread by fill dirt and by hitchhiking on construction equipment. In order to proactively discourage infestations in Texas, TPWD recommends that TxDOT thoroughly clean equipment and vehicles (including radiators and air filters) that will be used during project construction prior to mobilizing to the project area.

**Federally Protected Species**
According to the Biological Evaluation Form, the proposed project may affect, but is not likely to adversely affect seven federally protected species, and the USFWS concurred with this finding in a letter to Carlos Swonke on August 7, 2014. USFWS recommended specific mitigation to avoid and/or minimize impacts to the federally protected species, and TPWD considers the USFWS recommended mitigation to be sufficient for the federally protected species and may also provide protections to other state fish and wildlife resources that may be impacted by the proposed project.

**State-listed Species and Species of Greatest Conservation Need (SGCN)**
- State-listed species that may occur in the area of the proposed project include the peregrine falcon, reddish egret, white-faced ibis, and wood stork. There are known observations of the reddish egret (Sargent Beach), white-faced ibis (Sargent Beach and SBNWR), and wood stork (Dead Caney Creek Marsh) in the immediate vicinity of the proposed project area, so it will be imperative that TxDOT effectively implement the Bird BMPs to avoid and minimize impacts to these and other bird species that may occur in and adjacent to the proposed project area.
- Potential habitat for eight SGCN species may be impacted by the proposed project including black rail, brown pelican, snowy plover, coastal gay-feather, threeflower broomweed, gulf salt marsh snake, Texas diamondback terrapin, and American eel. Bird BMPs will be implemented to avoid and minimize potential impacts to the black rail (known observations from SBNWR), brown pelican (observations of this species were made during site visits to the proposed project area), and snowy plover. Specific BMPs were not provided in the BMP PA for the remaining species, so TPWD makes the following recommendations regarding those species:
  - **Coastal gay-feather** – flowers in the fall and occurs in coastal prairie grasslands of various types including salty prairie on low-lying somewhat saline clay loams and upland prairie on nonsaline clayey to sandy loams. This species can be inconspicuous unless located in areas heavily grazed, recently burned, or in areas of relatively sparse vegetation dominated by shortgrass (Poole et al 2007).
  - **Threeflower broomweed** – flowers September to November and can be associated with coastal gay-feather. This species is most often encountered in sparse, low vegetation on a veneer of light-colored silt or fine sand over saline clay along drier upper margins of ecotone between salty prairies and tidal flats (Poole et al 2007).
    - TPWD recommends that the area proposed for disturbance be surveyed for the above-listed rare plant species where suitable habitat is present. On-the-ground surveys should be performed by a qualified biologist familiar with the identification of rare Gulf Coastal Plain species. Surveys should be conducted when the species are most detectable and identifiable (usually during their respective flowering periods), and disturbance of these species should be avoided during construction to the extent feasible. If these plants are found in the path of construction, TPWD should be contacted for further coordination and possible salvage of plants and/or seeds for seed banking. Plants not in the direct path of construction should be protected by markers or fencing and by instructing construction crews to avoid any harm.
  - **Gulf salt marsh snake** – prefers brackish and saltwater estuaries, salt marshes and tidal mud flats, and this species mates in early spring and females give birth to young in July and August. This is a nocturnal species that will use debris piles and crab burrows in mud or sand as cover.
  - **Texas diamondback terrapin** – only turtle found in estuaries, tidal creeks, and saltwater marshes where the salinity comes close to that of the ocean. Mating season is in the spring, and females come ashore to dig a tear-shaped nest in the sand above the high-tide line. This species may dig into the mud to hibernate over cold winter months. During the day, terrapins spend most of their time in the water or basking on mud flats or other resting areas, and at night they bury themselves in mud.
    - TPWD recommends avoiding or minimizing activities that would remove or alter suitable gulf salt marsh snake and Texas diamondback terrapin habitat in the project area.
    - TPWD recommends that qualified biologists become permitted in order to facilitate safe removal and legal handling of state-listed species from area of potential impact. Please
contact wpooffice@tpwd.texas.gov or visit the Wildlife Diversity Permits: Scientific Permit for Research website for more information.

- TPWD recommends that TxDOT utilize qualified biologists, such as those being used to monitor for marine mammals, to monitor for the above-listed rare reptile species within the project area. If either species is detected within the construction area, TPWD recommends that TxDOT allow the species to safely leave the project area before resuming construction activities.

- TPWD recommends that a qualified biologist perform pre-construction on-the-ground surveys of the proposed project area prior to the installation of exclusion fence. Allow the above-listed rare reptile species, and any other wildlife species, to safely leave the construction area prior to installation of exclusion fence. Install exclusion fence, such as metal flashing or drift fence material, around the entire area to be potentially disturbed. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated. Qualified biologists should survey the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact. If wildlife are located within the exclusion area, provide safe egress opportunities prior to initiation of construction activities. Contractors should use caution when accessing construction material piles since these areas can provide cover for reptile and other wildlife species. Do not kill, harm, or harass any snake, or other wildlife species encountered during any phase of construction of the proposed project.

- TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no reptiles or other wildlife species have been trapped. Also, inspect excavation areas for trapped wildlife prior to refilling.

- TPWD recommends turbidity curtains be placed around the project area that is in water to contain turbidity, exclude terrapins and other marine species from entering the project site, and to protect adjacent sensitive habitats (such as tidal marsh) from construction impacts. Daily inspections should occur of turbidity curtains for potential wildlife entanglement and/or application failure.

- The mesh found in many erosion control blankets or mats pose an entanglement hazard to snakes. To reduce potential impacts to snakes, TPWD recommends that TxDOT utilize erosion stabilization materials and seed/mulch stabilization materials that avoid entanglement hazards to snakes. If blankets must be utilized, then TxDOT should avoid mats that contain plastic mesh matting and look into bio-degradable, non-petroleum based, loosely woven, natural fiber matting for which the mesh design allows the threads to move so the opening can expand.

  - American eel – very uncommon in Texas coastal waters. This species undergoes metamorphoses throughout its life, which include hatching from eggs in the Sargasso Sea, to larvae drifting in the Gulf Stream for years, and to reaching maturity in freshwater and estuarine habitats. According to TPWD Coastal Fisheries’ biologists, this species is not common; however the project area does include preferred habitat.

- TPWD recommends that TxDOT implement the avoidance and minimization measures provided during consultation with the National Marine Fisheries Service (NMFS) for protection of Essential Fish Habitat located in the project area for the benefit of the American eel as well. Also, the use of turbidity curtains around any portion of the project area in water will assist in excluding this species from areas of impact.

Please confirm that TxDOT’s commitments are correctly identified above and respond to indicate whether TxDOT will commit to implementing the additional recommendations provided. Again, thank you for coordinating with TPWD regarding your project.
Sincerely,

Laura Zebehazy
Transportation Conservation Coordinator

Wildlife Division – Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744
Phone: (512)389-4638

Join us Jan. 14, 2015 as we celebrate 10 years of transportation transformation in Texas.
EFH consultation with NMFS has been completed.

Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424

From: Heather Young - NOAA Federal [mailto:heather.young@noaa.gov]
Sent: Tuesday, December 09, 2014 11:54 AM
To: Alan Migl
Subject: Re: FM 457 Swingbridge Replacement Coordination

Alan,

NMFS HCD has reviewed the draft Environmental Assessment and the Biological Resources Survey Report, both of which are dated August 2014. Any new pilings and bridge supports placed with open water for the new bridge would constitute a minor adverse impact to in Essential Fish Habitat (EFH) through placement of fill. However, removal of pilings and supports from the open water EFH within the Gulf Intracoastal Waterway during demolition and removal of the existing Matagorda Swing Bridge will be adequate to offset these impacts. Construction activities within the GIWW (pile driving, placement of footings, removal of piles and supports) will also result in some increased turbidity from sediment disturbance, but these impacts would be localized and temporary. Therefore, given the minor nature of the work within EFH as described, NMFS does not have any EFH conservation recommendations to provide, and no further EFH consultation is needed for this action.

The two alternatives alignments for the new bridge would also result in impacts to mid to high tidal saltmarsh. Based on our review of the description and photos of the wetlands provided, we would not classify these wetlands EFH. However, such transitional wetlands do provide often overlooked valuable support functions essential to the health of the adjacent estuaries. These functions include: (1) providing a physically recognizable
structure and substrate for refuge and attachment above and below the sediment surface; (2) binding sediments; (3) preventing erosion; (4) collecting organic and inorganic material; (5) providing nutrients and detrital matter to the estuary, and (6) improving water quality by removing pollutants and excess nutrients and sediments prior to entering bay waters. Mid to high saltmarsh wetlands also provide habitat to invertebrates and crustaceans that form the base of the estuarine food chain and provide habitat to small mammals and wading birds. Placement of fill in these wetlands will require authorization by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. NMFS HCD reviews such actions and provides recommendations to minimize and offset project impacts to estuarine resources pursuant to review under the Fish and Wildlife Coordination Act. NMFS HCD recommends that TXDOT develop and implement a compensatory wetland mitigation plan to compensate for all permanent impacts to mid to high marsh wetlands. TXDOT should also develop and implement a restoration plan for all temporarily impacted wetlands disturbed during construction to ensure these areas are fully restored to pre-existing conditions. We will review TXDOT’s wetland mitigation and restoration plans as they are developed.

Thank you for coordinating with our office.

Heather

On Tue, Nov 4, 2014 at 4:49 PM, Alan Migl <Alan.Migl@txdot.gov> wrote:

Ms. Young,

I just wanted to touch base with you to see if you have had a chance to review the EA which I sent you regarding TxDOT’s proposed FM 457 swing bridge replacement with a fixed high bridge. The EA mentioned the possibility of impacting Essential Fish Habitat. One build alternative would require the placement of columns within a small inlet adjacent to the GIWW and include dolphins to protect these columns from a barge strike. Please advise if there is any additional information you may need in determining whether or not the proposed project would impact EFH. I appreciate your assistance on this project.

Thanks,
alan

Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424
Join us Jan. 14, 2015 as we celebrate 10 years of transportation transformation in Texas.

Texas Transportation Forum, Jan. 14-16, 2015

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Heather Young
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Habitat Conservation Division, Southeast Region

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www.nmfs.noaa.gov

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Texas Transportation Forum, Jan. 14-16, 2015
FW: FM 457 TCEQ Coordination

Alan Migl <Alan.Migl@txdot.gov>  
Tue, Dec 16, 2014 at 1:29 PM

To: "Elyse Schmitt (egreenberg@hicksenv.com)" <egreenberg@hicksenv.com>, "Jason Buntz (jbuntz@hicksenv.com)" <jbuntz@hicksenv.com>

Fyi...TCEQ has no comments.

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Alan Migl
Environmental Specialist
TxDOT - Yoakum District
361-293-4424

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From: NEPA [mailto:NEPA@tceq.texas.gov]
Sent: Tuesday, December 16, 2014 12:59 PM
To: Alan Migl; NEPA
Cc: Barbara Grahmann; Meghan Pawlowski
Subject: RE: FM 457 TCEQ Coordination

The Texas Commission on Environmental Quality (TCEQ) received the Texas Department of Transportation’s (TxDOT) request for environmental review of the following project: FM 457 TCEQ Coordination

In accordance with the Memorandum of Understanding between TxDOT and TCEQ regarding environmental reviews, which is codified in Chapter 43, Subchapter I of the Texas Administrative Code (TAC) and 30 TAC § 7.119, TCEQ is responding to your request for review.

TCEQ does not have any comments.

TxDOT will still need to follow all other applicable laws related to this project, including applying for applicable permits.

If you have any questions, please feel free to contact Elizabeth McKeef er, NEPA Coordinator, at (512) 239-2997 or NEPA@tceq.texas.gov.
Sent: Monday, December 15, 2014 11:45 AM  
To: NEPA  
Cc: Alan Migl; Barbara Grahmann; Meghan Pawlowski  
Subject: FM 457 TCEQ Coordination

TxDOT would like to request that coordination for FM 457 in Matagorda County, CSJ 0605-01-060, be initiated upon the receipt of this e-mail. The following document is attached for your review and approval.

- Final Water Resources Technical Report

The proposed project consists of replacing the existing, at-grade, pontoon barge swing span and approach spans with a new fixed-span, high-clearance structure with spiral approaches. The proposed project would require new right-of-way. The existing bridge would be removed after completion of the proposed project. The project is scheduled to let in July 2016.

The project triggers coordination with TCEQ since the project is located within five miles of an impaired assessment unit and within the watershed of the impaired assessment unit. TxDOT is preparing an environmental assessment (EA) document for the proposed project. The draft EA is available for review upon request. If you have any questions or need more information regarding this project please contact me.

Thank you,

Alan Migl

Alan Migl  
Environmental Specialist  
TxDOT - Yoakum District  
361-293-4424

Give the Gift of a Sober Ride this Holiday Season.
March 11, 2015

Section 106/Antiquities Code of Texas: Archeological Review (Permit #6911)
FM 457 at GIWW: Proposed Bridge Replacement
Yoakum District; Matagorda County (0605-01-060)

Ms. Patricia A. Mercado-Allinger
Division Director/State Archeologist
Archeology Division
Texas Historical Commission
PO Box 12276
Austin, TX 78711-2276

Dear Ms. Mercado-Allinger:

The proposed project will be undertaken with Federal funding. In accordance with Section 106 (and the First Amended Programmatic Agreement among the Texas Department of Transportation [TxDOT], the Texas State Historical Preservation Officer [TSHPO], the Federal Highway Administration [FHWA], and the Advisory Council on Historic Preservation) and the Antiquities Code of Texas (and the Memorandum of Understanding between the Texas Historical Commission [THC] and TxDOT), this letter continues consultation for the proposed undertaking.

The following proposed project would replace an existing bridge in TxDOT’s Yoakum District. The proposed project would replace the existing pontoon barge swing bridge on Farm-to-Market Road (FM) 457 at the Gulf Intracoastal Waterway in Matagorda County, Texas. The proposed project would replace the existing 232-foot long, 24-foot wide swing bridge with a proposed 700-foot long, 25-foot wide bridge on approximately the same location. The proposed project would also replace the existing approaches to the north and south with looped ramps. The proposed project is approximately 3,094-feet in length with an existing right-of-way (ROW) width of approximately 48-ft. Approximately 4.09 acres of new ROW would be acquired south of the intracoastal canal. TxDOT owns the 3.17 acre parcel on the north side of the canal. The area of potential effect (APE) is defined as the project length, the existing and proposed ROW, and the depth of impact (approximately 40-ft in depth).

TRC Environmental Corporation (TRC) archeologists are scheduled to conduct an intensive survey on behalf of TxDOT for this proposed project under the above referenced antiquities permit. However, due to denial of right-of-entry at this time to the following parcels, the archeological inventory is unable to proceed any further beyond the current logistical planning:

Parcel #18: Ricky Carder – Legal Description: Holiday Beach, Block 8(Replat) & Reserve, Acres 2.485; Legal Description: Holiday Beach, Block 8(Replat) & Reserve, Lot 15

Parcel #19 (North side): Laurette Veres – Legal Description: Property #44627, Sargent Beach S/D, PT Tract L, (Lots 1-5 Less 80'), Acres 0.492

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Parcel #19 (Middle): Matagorda County WCID #2 – Legal Description: Property #44628, Sargent Beach S/D, Tract L, (S 80' Lots 1-5), Acres 0.229

Parcel #19 (South): USACE – Legal Description: Sargent Beach S/D, PT Tract B Acres 0.73

Parcel #28: Wanda Ruth Staley – Legal Description: Property #38446, Holiday Beach, Block 8(Replat) & Reserve, Lot 33.

Based on the above information, TxDOT requests permission to defer the archeological inventory and allow the NEPA process to continue. TxDOT understands that once the parcels in question or access to these parcels has been acquired, we will be obligated to complete the inventory and all coordination needed under Section 106 and the Antiquities Code. TxDOT understands that no construction may commence for this proposed project until the inventory and coordination is completed. If you have no objections to the above request and find it acceptable, please sign below to indicate your concurrence.

Thank you for your consideration in this matter. If you have any questions or further need of assistance, please contact Allen Betis of the TxDOT Archeological Studies Program at (512) 416-2747.

Sincerely,

Allen C. Betis Jr.
Archeological Studies Program
Environmental Affairs Division

Attachment
cc w/o attachments: Paul Matchen, TRC - Austin
Alan Migl, Yoakum District Office
ACB PA File

Concurrence by:
for Mark S. Wolfe, State Historic Preservation Officer

Date: 3-12-15