9.0 ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (INCLUDING MITIGATION)

This chapter summarizes the environmental permits, issues and commitments, including mitigation commitments, that have been identified thus far as being applicable to the Red Alternative (Preferred). Conceptual mitigation identified in this section will be finalized as the project progresses and documented in the Final Environmental Impact Statement (EIS) and Record of Decision (ROD). Additional commitments may be added through coordination with Cooperating and Participating agencies and the public, and these would be finalized and documented in the Final EIS and ROD as applicable.

9.1 DESIGN COORDINATION REQUIREMENTS

The project will include a 10-foot shared-use path for bicyclists and pedestrians to cross the Inner Harbor. Design coordination with the Metropolitan Planning Organization (MPO) and the City of Corpus Christi is required with respect to the accommodation of bicycle and pedestrian facilities into the final design of the project, including any requirements for signage or striping.

Design coordination with the Regional Transportation Authority (RTA) is required with respect to the accommodation of bus routes or bus stops into the final design of the project, as needed, including any requirements for signage or striping.

Design coordination with the Union Pacific Railroad and the Port of Corpus Christi Authority is required with respect to the accommodation of rail crossings into the final design of the project.

Design coordination with the City of Corpus Christi's Storm Water Management Department is required with respect to the accommodation of existing storm sewer infrastructure into the final design of the project.

Design coordination with public and private utility owners is required with respect to the accommodation of existing overhead and underground utilities into the final design of the project. Utility relocations and adjustment would be accomplished with the minimum practicable disruption in service to customers.

9.2 DISPLACEMENTS

To ensure that decent, safe, and sanitary dwellings would be available to all displaced persons, the Texas Department of Transportation's (TxDOT) right of way acquisition and relocation assistance program (RAP) (see **Appendix L**) would be conducted in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (P.L. 91-646). Relocation resources would be made available to all eligible displaced residents, including tenants, without

discrimination, consistent with the requirements of the Civil Rights Act of 1964 and the Housing and Urban Development Act of 1974.

For those tenants qualifying for the U.S. Department of Housing and Urban Development's Annual Survey of Income Limits for the Public Housing and Section 8 Programs, considerations for Housing and Urban Development (HUD) Section 8 Existing Housing Certificates or Housing Vouchers will be offered through the TxDOT Rental Assistance program.

If comparable housing is not available at the time of right of way acquisition, TxDOT would provide the required housing or, if necessary, provide housing supplement payments in excess of the standard payment limits to ensure that decent, safe and sanitary dwellings are made available to all eligible persons displaced by the proposed project.

TxDOT would coordinate with the City of Corpus Christi's Neighborhood Services Department with respect to the accommodation of displaced residents of the North Side Manor Apartments, as well as residents of other apartment units displaced by the project, at The Palms on Leopard.

TxDOT would assist displaced business owners and tenants by reimbursing reasonable moving costs, personal property losses, expenses in finding a replacement, and expenses in reestablishing the business TxDOT would offer relocation counseling to employees of displaced businesses to minimize economic harm and provide information as to possible sources of funding and assistance from other local, state, and federal agencies.

TxDOT would work with the Workforce Solutions of the Coastal Bend to ensure that displaced employees are aware of offerings including career development information, job search resources, and training programs.

9.3 ENVIRONMENTAL JUSTICE

The proposed project would include goals for disadvantaged and historically underutilized businesses to participate in the construction, and TxDOT will require the contractor to comply with these goals as part of its administration of the construction contract.

In an effort to minimize the visual and aesthetic impacts of the proposed build alternatives on minority and low-income neighborhoods, future public involvement efforts will allow the public, including neighborhood residents, the opportunity to participate in the process regarding the aesthetics of the proposed project. Elements to be discussed could include aesthetic treatments, landscaping and lighting.

TxDOT and the Federal Highway Administration (FHWA) would provide financial support to grant funding programs already available through local non-profit community organizations and possibly the City of Corpus Christi. The funding could be allocated for initiatives that improve infrastructure in the

Northside community and provide more transportation options for residents. This could include additional bicycle and pedestrian improvements, ride sharing and similar goals.

TxDOT and FHWA would continue to work within the Partnership for Sustainable Communities with two of its Cooperating agencies, the Environmental Protection Agency (EPA) and HUD, as well as the City of Corpus Christi, the Port of Corpus Christi Authority and the Regional Transportation Authority to advance livability initiatives in the Northside community. Initiatives to pursue would include, but not be limited to:

- Improving Northside residential streets connecting to the SEA (Sports, Entertainment and Arts) District and the downtown area;
- Addition of street lights and other practicable aesthetic treatments within the Northside neighborhoods;
- Improvements to provide more transportation choices, including bicycle and pedestrian routes and transit;
- Providing preferential consideration for applicants to the proposed Palms at Leopard affordable housing development for persons displaced from the North Side Manor apartments as well as other displaced persons from the Northside community;
- Coordinating with HUD to identify opportunities to increase the availability of affordable housing in the community; and
- Promoting the use of disadvantaged and historically underutilized businesses in the construction of the project.

TxDOT and FHWA will pursue a relationship with Team-EJ (Environmental Justice), a working group created by the Partnership focused on the connections between environmental justice and sustainable communities.

TxDOT would work closely with the MPO regarding the application of available federal transportation funding for local projects to maximize the use of those funds for infrastructure improvements in minority and low-income communities affected by the proposed project.

9.4 CHILDREN'S HEALTH

Provisions will be included in project plans and specifications requiring contractors to make every reasonable effort to minimize construction air quality impacts through abatement measures such as limiting construction equipment idling and other emission limitation techniques, as appropriate.

The contractor would follow TxDOT's Standard Specifications, which would include provisions to protect the health and safety of persons in the proximity of construction and staging sites.

Lead and asbestos testing would be conducted prior to demolition to ensure that these materials are handled appropriately.

TxDOT would ensure that hazardous materials sites are avoided where practicable or sufficiently remediated so that the public would not be exposed to health risk.

9.5 AIR QUALITY IMPACTS

Particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate.

Construction-related Mobile Source Air Toxics (MSAT) emissions will be minimized through the use of low emission diesel fuel for non-road diesel construction equipment operated in Nueces County.

9.6 TRAFFIC NOISE IMPACTS

Two noise barriers are proposed for incorporation into the final design of the project, as presented in **Table 9.6-1**. TxDOT will hold public noise workshops with owners of property adjacent to the proposed barriers and allow the property owners to vote as to whether to construct the barrier.

Table 9.6-1 Noise Barrier Proposal

Barrier	Representative Receivers	Total No. Benefited	Length (feet)	Height (feet)	Total Cost	$/Benefited Receiver	Reasonable & Feasible
B	R72	9	524	13	$122,616	$13,624	Yes
D	R89-R91	18	1,368	15	$367,516	$20,418	Yes

Source: US 181 Harbor Bridge EIS Team 2013

Provisions would be included in the construction 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.

9.7 WATER RESOURCES IMPACTS

Construction of any of the build alternatives would require authorization under the Texas Commission on Environmental Quality (TCEQ) Construction General Permit (CGP), TXR150000 as a Large Construction Activity. The proposed project would be eligible for authorization under the CGP for discharges to impaired surface waters, if applicable at the time of construction, provided the project and associated activities are implemented, operated, and maintained in a manner that is consistent with the approved Total Maximum Daily Load (TMDL) and TMDL Implementation Plan for Nueces Bay, and if applicable, a TMDL for Corpus Christi Bay Beaches.

A Notice of Intent (NOI) to discharge storm water from a Large Construction Activity would be submitted to the TCEQ in order to obtain authorization to discharge under the CGP, and the NOI as well as a Construction Site Notice would be posted on the project site per CGP requirements. TxDOT and/or the

contractor would provide operators of MS4s that would receive storm water discharges a copy of the NOI prior to commencement of construction.

TxDOT and/or the contractor would prepare and implement a Storm Water Pollution Prevention Plan (SW3P) describing the measures to be used to minimize pollutants in construction storm water discharges. Temporary erosion and sediment control Best Management Practices (BMP) would be designed, put in place and maintained throughout the construction phase, as required by the CGP and by TxDOT Construction Specifications.

In order to maintain compliance with the Coastal Management Program (CMP), the project would require a consistency determination from the Texas General Land Office (GLO). This determination would be obtained and coordination would occur during the Section 404 and Coast Guard bridge permitting processes.

To ensure consistency with the CMP, construction and maintenance of the proposed project would comply with the following policies:

1. Pollution prevention procedures would be incorporated into the construction and maintenance of the proposed project to minimize pollutant loading to coastal waters from storm water runoff, erosion and sedimentation, and use of pesticides and herbicides for maintenance of the right of way.
2. The proposed project would, to the greatest extent practicable, avoid and otherwise minimize the potential for adverse effects from construction and maintenance of the bridge, additional roads, and other development associated with the project.
3. The proposed project would, to the greatest extent practicable, avoid and otherwise minimize the potential for adverse effects from direct release of pollutants from oil or hazardous substance spills, contaminated sediments or storm water runoff to CNRAs through the implementation of permanent BMPs to be determined during the final design phase.
4. Where practicable, the proposed project would be located in existing rights of way or previously disturbed areas to avoid or minimize adverse effects.
5. The proposed project would be located in an area where, to the greatest extent practicable, future expansion would not require development in coastal wetlands except where such construction is determined to be essential for evacuation in the case of a natural disaster.
6. Construction and maintenance of the proposed project would, to the greatest extent practicable, avoid the impoundment and draining of coastal wetlands. Where impoundment or draining cannot be avoided, compensatory mitigation would be implemented to mitigate adverse effects to the impounded or drained wetlands.
7. Construction of the proposed project would, to the greatest extent practicable, occur in areas and times selected to have the least adverse effects on recreational uses of CNRAs and on spawning or nesting seasons or seasonal migrations of terrestrial or aquatic species.

A bridge permit application packet would be prepared and submitted to the USCG to obtain a bridge permit for the construction of the proposed project.

During the construction and demolition phases of the proposed project, a regulated navigation area (RNA) would be established within the Inner Harbor to protect individuals and vessels from potential safety hazards and allow for safe and orderly movements through the area. Vessels would not be allowed to enter this area during certain times throughout these phases. Additionally, vessels would be required to proceed at a minimum safe speed in the RNA and would not be allowed to meet or pass.

The project would be designed for consistency with local National Flood Insurance Program (NFIP) standards, per 23 CFR 650.115. The project would be in accordance with current FHWA and TxDOT design policies and flooding attributable to an encroachment resulting from the project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Bridges in regulatory floodplains would be designed to accommodate a 100-year flood in accordance with Federal Emergency Management Agency (FEMA) and local floodplain ordinance criteria.

The City of Corpus Christi and Nueces County are participants in the NFIP, coordination with the local Floodplain Administrators is required.

9.8 WETLANDS AND WATERS OF THE U.S.

Coordination with the Galveston District of the U.S. Army Corps of Engineers (USACE) will be conducted, as needed, regarding Section 404 permit requirements, including a pre-construction notification and compensatory mitigation.

TxDOT specifications for revegetation, erosion/sedimentation control, and other restoration will be employed during and after the construction phase.

Compliance with the Texas Water Quality Certification will be accomplished by implementation of TCEQ-approved BMPs for erosion control, sediment control, and post-construction total suspended solids (TSS) control. The SW3P required for the proposed project and project design would include at least one BMP from the 401 Water Quality Certification Conditions for Nationwide Permits. These BMPs would address each of the following categories: 1) erosion control, 2) sedimentation control, and 3) post construction TSS control.

9.9 VEGETATION IMPACTS

Disturbed areas would be restored and reseeded according to the TxDOT specifications.

Impacts during construction or construction-staging activities would be avoided or minimized by limiting disturbance to only that which is necessary to construct the proposed project.

Care would be taken to prevent the introduction of invasive species during construction.

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 the FHWA Executive Memorandum on Environmentally and Economically Beneficial Landscape Practices.

9.10 WILDLIFE IMPACTS INCLUDING THREATENED AND ENDANGERED SPECIES

Construction phase activities for the proposed project would directly or indirectly affect most wildlife species present. The use of BMPs, careful vegetation clearing techniques, and replanting would minimize impacts to wildlife habitat within the proposed project area. Monitoring before and during construction activities would protect wildlife species, including nesting birds, from direct harm. Adjacent wildlife habitat would be protected from storm water runoff by implementing BMPs that would control erosion, post construction TSS, and sedimentation.

9.10.1 Threatened and Endangered Species

Potential habitat for eight federally-listed threatened or endangered species and one candidate species occurs within the project area for all of the alternatives; these species include the Atlantic hawksbill sea turtle (LE), Green sea turtle (LE), Kemp's Ridley sea turtle (LE), Leatherback sea turtle (LE), Loggerhead sea turtle (LT), West Indian manatee (LE), Whooping Crane (LE), Red Knot (C), and Piping Plover (LT).

To avoid and minimize impacts to protected sea turtles and the West Indian manatee, the following will be implemented during construction and demolition activities:

1. Training would be provided on avoiding potential impacts on the sea turtles and manatee for all personnel involved in construction or demolition of the bridge.
2. The training information would advise contractors and staff that sea turtles and manatees may be found in the Rincon Channel and Inner Harbor.
3. The training materials would include a poster and/or photographs in a book to be carried onsite to assist in identifying these species.
4. The training materials would instruct personnel not to feed or water the manatee
5. The training materials would include instructions to call the Corpus Christi Ecological Services Field Office (CCESFO) in the event a manatee is sighted in or near the project area.
6. Qualified biologists would monitor the presence of sea turtles and manatees during all phases of construction and demolition within open waters of the project area.
7. Before construction or demolition commences, a preliminary 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 sea turtle or manatee were to be observed within the appropriate impact zone, the biological monitor would instruct that construction or demolition activities cease until it could be determined that the animal had 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.

TxDOT and/or the contractor is required to avoid and minimize impacts to open water areas to the extent practicable, including the Inner Harbor, during construction and demolition of the proposed project. Regardless of the methods chosen to demolish the existing bridge, the contractor would not be authorized to intentionally discharge pieces of the existing bridge, however small, into the Inner Harbor. Incidental discharges shall be minimized to the extent practicable and measures to control these types of discharges would be developed and implemented during all phases of construction and demolition with the potential to impact aquatic habitats.

To prevent impacts to the Whooping Crane, Piping Plover and Red Knot the contractor is required to conduct pre-construction surveys within the Rincon Channel tidal flats. If one of the bird species is detected during pre-construction surveys, a USFWS approved biologist would monitor for presence of the birds during all phases of construction.

Potential habitat for seven state-listed threatened species occurs within the project area for all of the alternatives; these species include the Opossum pipefish, Peregrine Falcon, Reddish Egret, White-faced Ibis, White-tailed Hawk, Wood Stork, and Southern yellow bat. During construction, efforts would be made to avoid direct harm to individuals of state-listed or rare species; particularly those most vulnerable to earth moving and de-watering activities. Specific notes would be inserted into the construction plans that indicate the potential presence of these species and instruct the contractor to avoid impacting them. The contractor would be briefed on the species appearance and habitat preferences prior to construction and instructed to cease activities in the vicinity of the protected species, if encountered, for a sufficient amount of time to enable escape or relocation.

To avoid and minimize impacts to aquatic species, waterways would be spanned whenever practicable and appropriate BMPs put in place. When areas must be de-watered, the work site would be isolated to prevent fish and other aquatic species from moving into the construction zone and work activities conducted as quickly as possible to minimize the length of time that flow is modified or interrupted. Prompt and effective erosion control and re-vegetation and restoration of flow lines and grades would be employed to further minimize impacts. The contractor would return temporary work areas to pre-project conditions as soon as practicable.

9.10.2 Essential Fish Habitat

Coordination with NMFS regarding Essential Fish Habitat (EFH) consultation requirements will be addressed during the Section 404 permitting process.

9.10.3 Migratory Bird Treaty Act

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

- Removing or destroying active migratory bird nests (nests containing eggs and/or young) at any time of the year would be prohibited until the nests become inactive.
- If colonial nesting (for example, swallows) occurs on or in structures, nests would not be removed until all nests in the colony become inactive. A qualified wildlife biologist would be consulted to determine what constitutes a colony in the context of birds nesting on a bridge, culvert or other structure and to examine nests for eggs or young as needed.
- 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 or demolition.
- Inactive nests would be removed from the project area to minimize the potential for reuse by migratory birds.

When practicable, construction or demolition activities would be scheduled outside the typical nesting season (February to October), noting that the prohibitive provisions of the MBTA apply year-round.

9.10.4 Marine Mammal Protection Act

To avoid and minimize potential incidental harassment of marine mammals, the contractor will implement the following:

1. Qualified biologists will monitor the presence of marine mammals during all phases of construction and demolition within open waters of the project area, including the Inner Harbor.
2. Before construction or demolition 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 were to be observed within the appropriate impact zone, the biological monitor would instruct that construction activities cease until it could be determined that the animal had 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.

9.11 CULTURAL RESOURCES

9.11.1 Archeological Resources

If unanticipated archeological deposits are encountered during construction, work in the immediate area will cease, and TxDOT archeological staff will be contacted to initiate post-review discovery procedures under the provisions of the PA-TU and Memorandum of Understanding (MOU) between TxDOT and Texas Historical Commission (THC).

9.11.2 Historic Resources

TxDOT will develop educational materials in tandem with programmatic mitigation efforts for post-World War II bridges currently under development among TxDOT, the THC, FHWA and the Historic Bridge Foundation. The public education campaign would focus on the significance of the Harbor Bridge and the six adjacent concrete bridges. Elements to include would be:

- The Harbor Bridge's cantilevered tied-arch truss design, considered the pinnacle of Texas metal truss bridge construction;
- The early use of prestressed concrete beams as approach spans for the Harbor Bridge;
- The early use of neoprene pads as bearings for prestressed concrete beams, present on several of the NRHP-eligible concrete bridges;.
- The early example of a multi-level interchange, relating to the bridges at the US 181/I-37/SS 544 interchange south of the Harbor Bridge; and,
- Aspects of the careers of Robert L. Reed and James R. Graves, both identified as significant Texas Highway Department bridge engineers who were influential in the early development and use of prestressed concrete on Texas bridges.

9.12 SECTION 4(F)

The Red Alternative would require the use Section 4(f) properties, including the Harbor Bridge system, T.C. Ayers Park, and Lovenskiold Park. FHWA will make its Section 4(f) approval, under 23 CFR 774.3(a), as part of the Final EIS. Mitigation commitments for the use of Section 4(f) properties will be finalized following coordination with the City of Corpus Christi and the Texas Historical Commission (officials with jurisdiction).

9.13 HAZARDOUS MATERIALS

Any unanticipated hazardous materials and/or petroleum contamination encountered during construction will be handled according to applicable local, state, and federal regulations and TxDOT Standard Specifications and Guidelines for handling emergency discovery of hazardous materials.

Activities associated with the use and storage of hazardous materials during construction will be required to conform to TxDOT standards for spill containment and control strategies.

Asbestos issues during structure demolition will be addressed during right of way acquisition prior to construction and applicable asbestos inspections, specification, notification, license, accreditation, abatement, and disposal, would be in compliance with federal, state and local regulations.

Asbestos may also be encountered during demolition and/or renovation of existing bridge structures. The *Texas Department of State Health Services* (DSHS) *Notification Rules* (25 TAC 295.61) state that bridge structures must be inspected by a licensed asbestos inspector prior to demolition or renovation. If asbestos-containing materials above EPA thresholds would be disturbed during construction or

renovation, DSHS must be notified at least ten days prior to these activities using the *DSHS Asbestos Demolition/Renovation Notification Form*.

If oil/gas well-related contamination is encountered during construction, any necessary remediation will be conducted prior to continuation of construction activities. If a well is encountered and damaged during construction, the responsible party would be required to correct the damage and remediate contamination resulting from the damage.

If hazardous materials are unexpectedly encountered within the soil or groundwater during construction, appropriate assessment, remediation and management would be conducted in accordance with federal and state regulations.

9.14 ENERGY REQUIREMENTS

The contractor will consider implementing the following energy conservation measures during construction:

- Reusing and recycling of construction materials;
- Maximizing the use of local materials to reduce hauling;
- Carpooling of workers to and from the jobsite;
- Regular maintenance of equipment to ensure proper working order;
- Reducing energy consumption by turning off equipment and vehicles when not in use;
- Minimizing stops and delays by efficient routing of trucks to and from the jobsite and utilizing off-peak travel times to maximize fuel efficiency;
- Minimizing the need for artificial lighting by scheduling construction during daytime hours to the extent practicable; and
- Implementing maintenance of traffic plan in a manner that minimizes lengthy detours or delays for motorists.

9.15 CONSTRUCTION IMPACTS

Maintenance of traffic plans would be implemented to address user impacts including work-zone safety and traffic delays.

The contractor will be required to prepare a demolition plan acknowledging the commitment to avoidance and minimization of impacts noted in **Section 4.22** of the Draft EIS.

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