ENVIRONMENTAL ASSESSMENT

DALLAS HORSESHOE PROJECT
IH 30 and IH 35E

CSJs: 0196-03-205, 0442-02-118, 0442-02-132,
1068-04-099, 1068-04-116, 0009-11-226

DALLAS COUNTY, TEXAS

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(As a Cooperating Agency)

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The Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT) propose improvements to Interstate Highway (IH) 30 and IH 35E near downtown Dallas in Dallas County, Texas, a distance of approximately 5 miles. The proposed improvements collectively referred to as the "Dallas Horseshoe Project," include the replacement of the IH 30 and IH 35E bridge structures that cross the Trinity River. The IH 30 and IH 35E bridges were constructed over half a century ago and are therefore nearing the end of their service life. The design standards for freeway and interstates have changed since the facilities were built. The existing facilities do not meet current design standards for ramp acceleration or deceleration lengths, spacing of interchanges and ramps, vertical clearances, horizontal clearances, and sight distances.

The proposed improvements are consistent with the financially constrained Metropolitan Transportation Plan (MTP) *Mobility 2035: The Metropolitan Transportation Plan for North Central Texas* (refer to **Appendix E: Supplemental Data**). The proposed operational improvements along IH 30 in the Canyon are necessary to maintain a balance between mobility, access, operational, and safety needs. These improvements are consistent with MTP policy FT3-007.[1] The Dallas Horseshoe Project is a breakout project of "Project Pegasus," an 11-mile long project. Project Pegasus received a Finding of No Significant Impact (FONSI) from FHWA in 2005 (refer to *Mobility 2030-2009 Amendment*, included in **Appendix E: Supplemental Data**). If constructed, the Dallas Horseshoe Project would be developed using the design-build delivery method of construction.

This Environmental Assessment (EA) examines the social, economic, and environmental impacts for the proposed construction of the Dallas Horseshoe Project.

In this EA, two alternatives were analyzed: the No-Build Alternative and the Build Alternative. The No-Build Alternative represents the case in which the proposed project would not be constructed. The Build Alternative or "proposed project" would allow replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway and the reconstruction of sections of the IH 30/IH 35E interchange, locally known as the "Mixmaster," and associated roadways, frontage roads, ramps, direct connectors, and collector distributor roads. The Build Alternative would include bicycle and pedestrian facilities.

The proposed project would traverse the Dallas Floodway, which is a public works project within the U.S. Army Corp of Engineers (USACE) jurisdiction; therefore, USACE review and approval of the Section 408 application would be required.

[1] MTP FT3-007 policy states that "Additional and improved interchanges, frontage roads, and auxiliary lanes should be considered and implemented, as appropriate, on all freeway/tollway facilities in order to accommodate a balance between mobility, access, operational, and safety needs." (http://www.nctcog.org/trans/mtp/2035/AppendixE-MobilityOptions.pdf)

A copy of MTP Policy FT3-007 available for review in **Appendix E: Supplemental Data**.

The proposed project would require the acquisition of right-of-way (ROW), a permanent easement from the City of Dallas, and 15 displacements including: 2 single family residences, 7 commercial establishments (4 occupied and 3 vacant), and 6 billboards.

The proposed project would not affect, separate, or isolate any distinct neighborhoods, ethnic groups or other specific groups as the IH 30 and IH 35E facilities are existing interstate highways. Based on the environmental justice analysis, the focus area for potential environmental justice impacts appears to be the general area associated with CT 41, BG 1 (*Census 2000* geography) and CT 41, BG 2, Block 2018 (*Census 2010 geography*). These census geographies represent the Trinity Bottoms Neighborhood and the census data reflect a predominantly low-income and minority population. Residential displacements, along with traffic noise impacts, are anticipated for the residents of the Trinity Bottoms Neighborhood who live immediately east of IH 35E between Sabine Street and Comal Street. However, this neighborhood is also anticipated to be benefitted by the proposed project through the construction of sidewalks and shared-use bike lanes. When considering the totality of effects of this project, the overall benefits provided for all adjacent communities, including low-income and minority populations, outweigh the specific concerns related to impacts associated with the Trinity Bottoms Neighborhood. Over the long term, the residents of all communities adjacent to the proposed project, the non-driving public, and users of the IH 30 and IH 35E facilities would benefit from the proposed Dallas Horseshoe Project as a result of improved mobility in the area resulting from improved safety, traffic operations, air quality, and management of traffic congestion. A public hearing was conducted during the summer of 2012; the public hearing provided the public with an opportunity to further learn about the proposed project and communicate any questions, concerns, or general input with TxDOT staff related to anticipated impacts.

It is anticipated that the access to public facilities such as the Coombs Creek Trail and to the planned East Levee Trinity Trail would be improved with the proposed bicycle and pedestrian improvements. Access to public facilities or services would be enhanced after the completion of the proposed project.

In accordance with the Dallas Horseshoe Project Research Design, the area of potential effects (APE) was defined as 150 ft on either side of the existing or proposed ROW, and the Survey Study Area was defined as 1,300 ft on either side of the existing or proposed ROW. A reconnaissance survey of the proposed project limits identified 72 historic-age (pre-1967) resources/features within the Dallas Horseshoe Project APE that were not documented in the 2004 Project Pegasus Historic Resources Survey Report (HRSR) due to different delineation of the APE or historic-age dates. The Criteria of Effect and Criteria of Adverse Effect were applied to the listed and eligible resources within the APE, and no adverse effects on the historical associations, architectural and engineering features, or integrity of the properties identified as historically significant are anticipated. Per June 2012 coordination with the Texas Historical Commission (THC), the proposed project will have no adverse effects on historic properties/districts.

The existing interim IH 35E high occupancy vehicle (HOV) crossover structure located between the Houston Street and Jefferson Boulevard viaducts south of the Mixmaster

allows traffic from the central business district to access the southbound IH 35E HOV facility during evening operation. This interim HOV crossover structure is proposed to be removed as part of the proposed Dallas Horseshoe Project. To comply with THC coordination letter dated September 24, 1996, the Houston Street Viaduct's southern railing would be restored to its previous appearance by "in-kind replica. An existing staircase connected to the northern railing of the Houston Street Viaduct, located south of the Mixmaster, would be removed to allow the construction of a proposed four-lane collector distributor road (IH 35E southbound/IH 30 eastbound). The Houston Street Viaduct railing would be replaced with an in-kind replica. Jefferson Boulevard would also be restored to its original condition.

The need for an intensive archeological survey was determined through analysis of geotechnical core samples. No historic properties as defined under 36 Code of Federal Regulations (C.F.R.) 60.4, 13 Texas Antiquities Code (TAC) 26.5(6), 13 TAC 26.5(32), and 13 TAC 26.8 were identified during the geotechnical core sample analysis within the proposed project. Based on the geotechnical core sample analysis, no further work is warranted. No consultation with the THC/ Texas State Historic Preservation Officer (TSHPO) is required. In the event that 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. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

The proposed project is located in Dallas County, which is part of the Environmental Protection Agency (EPA) designated nine county serious nonattainment area for the 8-hour standard for the pollutant ozone; therefore, the transportation conformity rule applies. The proposed project is included in and consistent with the *Mobility 2035* and the 2011-2014 Transportation Improvement Program (TIP), as amended. The U.S. Department of Transportation (FHWA/Federal Transit Administration) found the MTP and the TIP to conform to the State Implementation Plan on July 14, 2011. Since approval of Project Pegasus schematic was obtained, design revisions were proposed to improve constructability and traffic operations during and after construction. The revisions involve the southern part of the IH 30 and IH 35E interchange; the terminus of the IH 30 HOV/managed lane; and operational improvements along IH 30 in the Canyon. In May 2012, the North central Texas council of Government (NCTCOG) prepared a technical memorandum to determine whether or not the changes affected the *Mobility 2035* air quality conformity determination. It was concluded that these design changes, would not conflict with any of the assumptions or policies included in *Mobility 2035*. Therefore, NCTCOG concluded, and the FHWA concurred, that the proposed design revisions would not affect the *Mobility 2035* conformity determination.

A traffic air quality analysis indicates that concentrations of carbon monoxide for the estimated time of completion (2017) or the out-year (2035) are not expected to exceed national standards at any time. A quantitative analysis of the mass of air toxic emissions [i.e., mobile source air toxics (MSATs)] in the travel study area containing the proposed project was completed for 2012 and 2035. The MSAT analysis indicates that a decrease

in emissions can be expected for both the Build and No-Build Alternatives for the Build year 2035 versus the 2012 base year.

During the construction phase of this project, temporary increases in air pollutant emissions may occur from construction activities. Potential impacts of particulate matter emissions would 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.

An assessment of impacts to the potential habitat of threatened and endangered species and species of concern along the proposed project was performed in accordance with federal and state regulations. After reviewing habitat requirements and conducting field visits in December 2011, it was determined that the proposed project would have no effect on any federally-listed threatened or endangered species, their habitat, or designated habitat. Based on the January 2012 mussel presence/absence survey, it was determined that the proposed project could have an impact on one state-listed (threatened) species. The Texas pigtoe (*Fusconaia askewi*) was found in the Trinity River at IH 35E. This species was not documented by TPWD to occur in Dallas County. Appropriate measures would be taken to prevent demolition and construction materials from falling into the Trinity River. Any temporary or permanent fill, or work occurring directly in this water, would require prior coordination with TxDOT. No adverse impacts are anticipated for the other state-listed species.

Approximately 0.86 acre of riparian woodland habitat and 16 large trees could be removed as a result of the construction of the proposed project. A total of 0.40 acre of waters of the U.S., including wetlands, would be permanently impacted by the proposed project. Of this amount, 0.20 acre of impacts would occur within the Dallas Levees to two streams and five wetlands. For these permanent impacts, a 0.20 acre wetland would be created at the southern section of the hydraulic swale at IH 30. The remaining permanent impacts would result from re-aligning the Historic Trinity River Channel which serves as a drainage feature delivering water to the Able Pump Station. Because the re-aligned channel would continue to function as a drainage feature and would not result in the loss of aquatic function, additional mitigation for the impacts to this water of the U.S. would not be required. The proposed project would also result in approximately 14.40 acres of temporary impacts to waters of the U.S., including wetlands during construction. Mitigation to potential impacts to waters of the U.S., including wetlands, would occur through the Section 404/10 process in conjunction with the Section 408 approval process.

The proposed project would involve bridge construction in or over the Trinity River; a navigable water of the U.S. Federal law prohibits the construction of any bridge across navigable waters of the U.S. unless first authorized by the U.S. Coast Guard (USCG). The USCG approves the location and clearances of bridges through the issuance of bridge permits or permit amendments, under the authority of the General Bridge Act of 1946, Section 9 of the Rivers and Harbors Act of 1899, and other statutes. A USCG permit is required for new construction, reconstruction or modification of a bridge or causeway over waters of the U.S. Therefore, TxDOT coordinated with FHWA who has the responsibility under 23 U.S.C. 144(h) to determine if a waterway is navigable under the Surface

Transportation Authorization Act (STAA) and whether a USCG permit is required for the proposed bridge construction. The Trinity River at the IH 30 and IH 35E bridges meets the requirements for exemption from USCG bridge permit requirements as the Trinity River is not susceptible to use in its existing condition or by reasonable improvement as a means to transport interstate or foreign trade or goods. In addition, the affected waterway is non-tidal and is not subjected to navigation or shipping of any kind. Therefore, pursuant to 23 U.S.C. 144(h), the proposed bridge would qualify for an exemption from the requirements imposed under 33 U.S.C. 401 and 525(b), and the lighting and signal requirements imposed under 33 C.F.R. 118.40(b). Per coordination with the USCG, the Proposed Action is exempt from USCG lighting requirements.

The proposed project crosses the Federal Emergency Management Agency designated 100-year floodplain. The proposed project would be in compliance with 23 C.F.R. 650 regarding location and hydraulic design of highway encroachments within the floodplains. The hydraulic design for the project would be in accordance with current FHWA and TxDOT design policies. The hydraulic design practices for the proposed project would be in accordance with current TxDOT and FHWA design policies and standards. The proposed project would demonstrate that it satisfies the Trinity River Environmental Impact Statement (TREIS) Record of Decision (ROD) criteria for no increase in water surface elevations or valley storage for the 100-year and less than five percent valley storage loss for the Standard Project Flood (SPF). Because of the total number of bridge columns placed within the Dallas Floodway, a hydraulic swale would be constructed to offset potential impacts to a rise in the water surface elevation.

North of Riverfront Boulevard at IH 35E, Sump Ponds 2 and 3 of the Able Pump Station would have fill material placed within the north portion of the existing ponds to provide an adequate road base for construction of a proposed ramp and a collector distributor road. This fill material, in addition to new bridge substructure, would reduce the current storage capacity of the existing sump ponds. To compensate for this reduction in storage capacity, both Ponds 2 and 3 would be modified in accordance with an approach agreed upon between representatives of TxDOT and City of Dallas during an Able Pump Station coordination meeting held in February 2012. The location of the Able Pump Station is shown in **Appendix D: Constraints Maps, Sheet 10 of 12**.

Although the proposed project is within the Trinity River Corridor Development Regulatory Zone, a Corridor Development Certificate (CDC) may not be required because a CDC hydraulic review for the proposed project would be performed by USACE under the Section 408 approval process. Coordination with the local Floodplain Administrator would be required.

The runoff from the proposed project would discharge directly to the Upper Trinity River (Segment 0805), which is listed as threatened/impaired water body. To minimize adverse effects to water quality during construction, the proposed project would utilize temporary erosion and sedimentation control practices (i.e., soil retention blankets or sod, silt fences, and grassy swales). A Storm Water Pollution Prevention Plan would be implemented.

Results of the traffic noise analysis indicate that the proposed project would result in a traffic noise impact. However, no traffic noise abatement measure would be both feasible and reasonable; therefore, no abatement measures are proposed for the proposed project.

A review of hazardous materials regulatory databases was conducted to determine if any known sites might affect the proposed project. Based on this review 7 sites are categorized as high risk and 12 sites are characterized as low risk. In addition to the regulatory databases, previous environmental reports containing soil analytical data for Dallas Floodway projects were reviewed. The constituents of concern are primarily arsenic, chromium, lead, manganese, mercury; nickel, selenium, and zinc; and, in one case, barium. The plans and specifications for the project would include a notice to contractors informing them of the heavy metals known at this time. Additional investigation and assessment of the high risk sites are recommended to identify if construction activities at those locations may encounter contaminants.

The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials (ACM) and lead based paint (LBP) testing would be performed on the existing bridge structures. It is recommended that ACM and LBP testing be performed on the building structures to be removed dependent upon the age of the individual structure.

Construction activities would require temporary lane, local ramp, and cross street closures, including the closure of a portion of the IH 35E HOV lane. In order to minimize construction impacts due to HOV closure, the closure would be limited to the section of the HOV between the Houston Street Viaduct and Marsalis Avenue, a distance of approximately 3 miles. This approach would allow continued operation of the HOV lane from US 67 to Marsalis Avenue during the construction phase of the proposed project, estimated to last 4 years. Detours would be provided within and around the Mixmaster in order to minimize impacts resulting from road closures. Regardless, access to businesses and residences would be maintained at all times.

Several heliports are located in proximity to the proposed project. Because the project would involve the construction of high mast illumination, signing, and bridges that could be an obstruction to air navigation, a Notice of Proposed Construction or Alteration (Form 7460-1) would be filed with the Federal Aviation Administration to obtain airway-highway clearance.

Indirect impacts associated with the proposed project were investigated within a study area, or area of influence. In terms of traffic operations, the improvements associated with the Dallas Horseshoe Project are expected to manage congestion along regional and local transportation systems and are also anticipated to substantially improve access to opposite sides of the Trinity River for a variety of travel modes that are congruent with the City of Dallas's planning goals of redeveloping the area into a higher density and intensity, mixed-use, pedestrian-friendly environment. The potential for nine notable features located within the area of influence to be adversely impacted is unlikely as a result of the proposed project. These notable features include: La Bajada neighborhood, East Kessler

Park Neighborhood [National register of historic Places (NRHP) Historic District], Dallas Floodway, Lake Cliff Neighborhood (NRHP Historic District), Trinity Bottoms Neighborhood, Cedars Neighborhood, Dallas CBD, Sports Arena TIF District, and Design District. Improved access and multi-modal mobility are anticipated to benefit and support the planned transition of much of the area of influence to a higher density, mixed-use, more intense, urban environment as suggested by the *Trinity River Corridor Comprehensive Land Use Plan*, which proposes for the value of future land uses adjacent to the Trinity River Floodway to rely heavily on the conversion of the floodway to an environmental and recreational amenity.

Cumulative impacts were analyzed in terms of the specific resource being affected. The resource considered in this cumulative impacts analysis is air quality because the proposed project is located in serious non-attainment area for ozone. No cumulative impacts on air quality are anticipated because the cumulative impact of reasonably foreseeable future growth and urbanization on air quality within this area would be minimized by enforcement of federal and state regulations, including the EPA and the Texas Commission on Environmental Quality, which are mandated to ensure that such growth and urbanization would not prevent attainment with the 8-hour ozone standard or threaten the maintenance of the other air quality standards.

1.0 INTRODUCTION

The Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT) propose improvements to Interstate Highway (IH) 30 and IH 35E near downtown Dallas in Dallas County, Texas, a distance of approximately 5 miles. The proposed improvements collectively referred to as the "Dallas Horseshoe Project," include the replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway.[2] The proposed project encompasses the reconstruction of sections of the IH 30/IH 35E interchange, locally known as the "Mixmaster," to include general purpose lanes, collector distributor roads, access ramps, and direct connection ramps.[3,4] Other improvements include the extension of the existing reversible high occupancy vehicle (HOV) lanes along IH 35E. In addition, the proposed facility would improve the frontage roads and accommodate pedestrian and bicycle facilities throughout.[5]

Improvements along IH 30 extend from Sylvan Avenue to west of IH 45; and along IH 35E, from 8th Street to IH 30. The Project Location Map in **Appendix A: Exhibit 1** illustrates the project limits and associated TxDOT Control Section Job numbers (CSJs), *Mobility 2035: The Metropolitan Transportation Plan for North Central Texas* (*Mobility 2035*) reference numbers, and cost information for the Dallas Horseshoe Project.

Before the Dallas Horseshoe Project was initiated, solutions for congestion along IH 30, IH 35E, and the Mixmaster near downtown Dallas were extensively studied. The Trinity Parkway Corridor Major Transportation Investment Study (MTIS) was conducted from 1996 to 1998 and studied the Canyon, the Mixmaster, and the portion of IH 35E from the Mixmaster to State Highway (SH) 183 known as the "Lower Stemmons" Freeway.[6] The MTIS evaluated different travel modes, over 40 improvement alternatives, and included conceptual engineering, traffic analysis, preliminary environmental studies and an extensive public and agency involvement program. The MTIS recommended over $1 billion in multi-

[2] The Dallas Floodway is defined as the system of two separate federally-authorized levees along the Trinity River, the East and West Levees. In accordance with the *USACE Final Intensive Engineering Inventory and Analysis of the Dallas Floodway, Dallas, Texas (November 2010),* the Dallas Floodway extends from the Loop 12 crossings of the West and Elm Forks of the Trinity River to the existing Atchison, Topeka & Santa Fe Railroad Bridge.

[3] Collector distributor roads are defined as one-way roads parallel to the mainlanes that provide access to or from more than one ramp. Collector distributor roads collect traffic from on-ramps or mainlanes, and distribute traffic to off-ramps or back to the mainlanes. Collector distributor roads are controlled access facilities that cannot be accessed from local streets.

[4] The general limits of the Mixmaster are IH 30 from Riverfront Boulevard to west of IH 45, and IH 35E from Riverfront Boulevard to Commerce Street.

[5] HOV is currently defined by the North Central Texas Council of Governments as a vehicle with two or more occupants and is commonly referred to as "2+." However, Mobility 2035 identifies and recommends a need to begin the transition to a managed lane system, while at the same time reviewing current policies regarding a possible shift in the occupancy definition from "2+" to three or more occupants "3+." Managed lanes are defined by FHWA as highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions. The "reversible" terminology in "reversible managed lanes" refers to lanes usable only by inbound traffic during the morning rush and by outbound traffic during the evening rush.

[6] The "Canyon" is defined as the depressed portion of IH 30 between Hotel Street and IH 45.

modal transportation improvements, including the improvements to IH 30 and IH 35E that were the focus of Project Pegasus.

Project Pegasus proposed the reconstruction of IH 30 from Sylvan Avenue on the west to IH 45, IH 35E from 8th Street to Empire Central Drive, and SH 183 from IH 35E to Empire Central. Project Pegasus encompassed all cross streets and associated direct connections and access ramps, including IH 30 interchanges with IH 45, and IH 35E; and the IH 35E interchanges with Spur 366 (Woodall Rodgers Freeway), Dallas North Tollway (DNT), and SH 183. In addition to the freeway improvements, Project Pegasus proposed improvements to HOV lanes, Intelligent Transportation Systems (ITS), and bicycle and pedestrian improvements for streets crossing the freeways. The total length of Project Pegasus was approximately 11 miles. Project Pegasus received a Finding of No Significant Impact (FONSI) from FHWA in 2005.

Since the Project Pegasus FONSI was obtained, sections of the depressed portion of IH 30, the Canyon, and Lower Stemmons, were deferred from the financially constrained Metropolitan Transportation Plan (MTP), *Mobility 2035*. In September 2011, Proposition 12 funding became available for the design and construction of a portion of Project Pegasus, now known as the Dallas Horseshoe Project. The Dallas Horseshoe Project is a breakout of Project Pegasus (refer to *Mobility 2030-2009 Amendment* included in **Appendix E: Supplemental Data**) and focuses primarily on the replacement of the IH 30 and IH 35E bridge structures, which are in need of replacement because of their deteriorating condition. Since approval of Project Pegasus schematic was obtained, design revisions were proposed to improve constructability and traffic operations during and after construction. The revisions involve the southern part of the IH 30 and IH 35E interchange; the terminus of the IH 30 HOV/managed lane; and operational improvements along IH 30 in the Canyon. In May 2012, NCTCOG prepared a technical memorandum to determine whether or not the changes affected the *Mobility 2035* air quality conformity determination. It was concluded that these design changes, would not conflict with any of the assumptions or policies included in *Mobility 2035*.

The Dallas Horseshoe Project traverses and requires alterations to the Dallas Floodway, and as such, these alterations require U.S. Army Corps of Engineers (USACE) approval under 33 United States Code (U.S.C.) Section 408. FHWA requested that USACE participate as a cooperating agency on this project due to their legal jurisdiction of the Dallas Floodway and to maximize interagency coordination. USACE accepted FHWA's request to become a cooperating agency, and the specifics regarding USACE's role and jurisdiction for this project are detailed in **Section 1.1, USACE Coordination and Section 408 Requirements**.

State legislation enabling the expedited development of this project was passed during the 82nd Texas Legislature's Regular Session. Senate Bill (SB) 1402 provided TxDOT the ability to use the design-build method for the design, construction, financing, expansion, extension, related capital maintenance, rehabilitation, alteration, or repair of a transportation project. Design-build is a project delivery method by which an entity contracts with a single entity to provide both design and construction services for the construction, rehabilitation, alteration, or repair of a facility.

This EA examines the social, economic, and environmental impacts for the proposed construction of the Dallas Horseshoe Project. Because this EA investigates and documents potential impacts to resources that may be affected by the proposed project, study areas were assigned based on the resources' geographic locations and corresponding scale of potential impacts. As a result, there is more than one study area for the proposed project.

1.1 USACE Coordination and Section 408 Requirements

The Dallas Floodway is a public works project within USACE Fort Worth District Civil Works jurisdiction. USACE is responsible for ensuring the integrity and primary function of the public works project is maintained at all times.

The Dallas Horseshoe Project traverses and requires alterations to the Dallas Floodway, and as such, these alterations require USACE approval. The authority for USACE approval of alterations to public works projects operated and maintained by non-federal sponsors is 33 U.S.C. Section 408, hereafter referred to as Section 408.

In accordance with Section 408 requirements, any alteration of a USACE Public Works project requires USACE review and approval to ensure that the alteration does not adversely impact USACE Public Works (i.e., Dallas Floodway). In accordance with 33 Code of Federal Regulations (C.F.R.) Section 230, Procedures for Implementing NEPA (Engineering Regulation 200-2-2), a National Environmental Policy Act (NEPA) document must be prepared to address the impacts to the environment as a result of the action. The USACE will act as a cooperating agency throughout the NEPA process to assess the direct and cumulative impacts to the Dallas Floodway from these proposed actions on the human and natural environment.

In response to severe flooding in the mid-1940s, U.S. Congress authorized the flood control project termed the "Dallas Floodway Project" in 1945 and again in 1950. USACE completed the authorized Dallas Floodway Project in 1958, which included major improvements to the East and West Levees for the purpose of containing the Standard Project Flood (SPF). Levee modifications included fattening the landside slopes, shifting the levee footprints toward the riverside, increasing the levee crest width to approximately 16 ft, and included an additional 4 ft of freeboard (levee height). Under the regulatory control of USACE, the City of Dallas plans, operates, and maintains the Dallas Floodway. The East and West Levees protect approximately 8,098 acres of essential infrastructure, commercial, industrial, and residential interests including a portion of downtown Dallas and West Dallas. Additional information and documentation that satisfies Section 408 requirements is included in **Appendix B: Section 408 Environmental Compliance Information**.

Cooperating Agency Status

In October 2011 FHWA, in cooperation with TxDOT, requested that USACE participate as a cooperating agency on this project due to their legal jurisdiction of the Dallas Floodway. FHWA requested the following activities to maximize interagency coordination:

- Conducting coordination meetings;
- Consulting with USACE on any relevant technical studies required for the project;
- Participating in joint field reviews;
- Sharing project information, including study results;
- Encouraging USACE to express their views on subjects within their jurisdiction or expertise; and
- Including information in the project development documents that cooperating agencies need in order to discharge their NEPA responsibilities and other requirements regarding jurisdictional approvals, permits licenses and/or clearances.

In December 2011, USACE formally accepted status as a cooperating agency and stated that USACE jurisdiction would focus on those activities pertaining to Section 408 issues and Sections 404 and 10 processes.

The letter from FHWA requesting USACE participation as a cooperating agency and USACE response letter are available for review in **Appendix F: Agency Coordination**.

2.0 EXISTING FACILITY

2.1 Description of Existing Facility

The existing facility is composed of two major interstates, a major interchange, bridge structures, ramps, frontage roads, collector distributor roads, direct connectors, HOV lanes, and cross streets that form a complex configuration. For purposes of discussing the existing configuration, facility descriptions have been broken out as follows: IH 30, IH 35E, Mixmaster, Beckley Avenue, Riverfront Boulevard, Colorado Boulevard and bridge structures. Under each facility a general description is provided, followed by more detailed information including configuration (i.e., number of lanes, shoulder width, median type and width), existing right-of-way (ROW) width, functional classification, and posted speed limit. Because there is not a single typical section to describe the existing facility, typical sections were developed at the most representative locations such as the crossing of the Dallas Floodway, within the Mixmaster, and at cross streets. **Appendix C** contains existing typical sections for:

- IH 30 at the Dallas Floodway;
- IH 35E at the Dallas Floodway;
- Mixmaster at Houston Street Viaduct;
- Beckley Avenue;
- Riverfront Boulevard; and
- Colorado Boulevard.

IH 30
IH 30 is a major east-west bound facility with discontinuous frontage roads. IH 30 between Sylvan Avenue and west of IH 45 is a six to eight-lane facility (three to four lanes in each direction), with 11- to 12-foot (ft) wide lanes, and variable shoulder width from 4 to 10 feet

(ft). The IH 30 mainlanes are primarily separated by 2-ft wide concrete traffic barriers (CTBs).

The IH 30 section between Beckley Avenue and IH 35E, is a six-lane facility (three lanes in each direction). Approximately 1,200 ft west of Beckley Avenue, an existing IH 30 one-lane westbound HOV/managed lane begins. The length of the HOV/managed lane within the existing facility project limits is 1,285 ft. The IH 30 HOV/managed lane continues west for approximately 26 miles and ends near Collins Street in Arlington, Texas.

East of Beckley Avenue, IH 30 crosses the Dallas Floodway. As depicted in **Appendix C, Sheet 1 of 4,** IH 30 is six-lane facility (three lanes in each direction), with 12 ft wide mainlanes and 2- to 6-ft wide shoulders, within an overall pavement width of approximately 89 ft and existing ROW of 200 ft. The IH 30 east and westbound mainlanes are separated by a CTB. Although the existing IH 30 section that crosses the Dallas Floodway is composed of two separate bridge structures, the IH 30 east and westbound mainlanes are separated by one railing between Beckley Avenue and the East Levee, for a distance of approximately 0.45 mile.

East of the levee, the IH 30 east and westbound mainlanes physically separate. While the eastbound IH 30 mainlanes continue into the Mixmaster, a two-lane direct connector (left exit with 12-ft wide lanes) allows access to northbound IH 35E, and a one-lane exit ramp (with a 12 ft wide lane) allows access to Riverfront Boulevard.

IH 30 is functionally classified as a “freeway” and the existing posted speed limit is 55 miles per hour (mph). Existing ROW within the project limits varies between approximately 200 ft and 420 ft.

IH 35E

IH 35E is a major north-south facility with discontinuous frontage roads and a 12-ft wide one-lane reversible HOV lane. North of Colorado Boulevard, where the IH 35E bridge begins to cross the Dallas Floodway, the IH 35E mainlanes split. Within this section, the IH 35E northbound mainlanes consist of five 11-ft wide lanes that include an 11-ft wide reversible HOV lane, 1- and 3-ft wide shoulders along the HOV lane, and a 6-ft wide shoulder along the outside mainlane. A CTB separates the mainlanes from the HOV lane. The IH 35E southbound mainlanes consist of four 11-ft wide lanes with 4- and 5-ft wide shoulders. The existing typical section for IH 35E at the Dallas Floodway as described is included in **Appendix C, Sheet 1 of 4.**

Traveling north on IH 35E, the reversible HOV lane can be accessed just south of US 67 in Dallas, Texas. To travel south along the IH 35E HOV lane, vehicles can access it from the Houston Street Viaduct, Jefferson Street Viaduct, or from the IH 35E southbound mainlane within the Mixmaster. The length of the reversible HOV lane within the existing facility project limits is approximately 1.3 miles. The IH 35E HOV lane ends at US 67 to the south and is approximately 6 miles long.

After crossing the Dallas Floodway, vehicles traveling north on IH 35E enter the Mixmaster where traffic may either continue on IH 35E, access the IH 30 eastbound or westbound mainlanes, or take the Downtown/Griffin Street exit.

IH 35E is functionally classified as a "freeway" and the existing posted speed limit is 60 mph. Existing ROW within the project limits varies between approximately 230 ft to 920 ft.

Mixmaster

The Mixmaster at the Houston Street Viaduct consists of eight 11- and 12-ft wide IH 30 lanes (four lanes in each direction) with 1- to 10-ft wide shoulders. A frontage road consisting of 11-ft wide lanes provides access to Reunion Boulevard. Additionally, the Mixmaster consists of four 12-ft wide IH 35E lanes (two in each direction) with 1- to 10-ft wide shoulders and a 12-ft wide reversible HOV lane with 1- to 4-ft wide shoulders. A CTB separates the reversible HOV from the IH 35E mainlanes. The reversible HOV lane ends just west of the Houston Street Viaduct. The typical section for the Mixmaster as described is included in **Appendix C, Sheet 1 of 4.**

A two-lane direct connector, with 11-ft wide lanes and 6-ft wide shoulders, collects traffic from the IH 30 eastbound mainlanes to the IH 35E northbound mainlanes. Vehicles traveling east on IH 30 can either continue on IH 30 or exit the highway. Between the Mixmaster and IH 45, IH 30 becomes a six-lane (three lanes in each direction), 12-ft wide facility.

Neither IH 30 nor the IH 35E existing facilities include pedestrian sidewalks or bicycle facilities.

Beckley Avenue

Beckley Avenue, which crosses IH 30 as an underpass facility, is a six-lane facility (three lanes in each direction), with 11-ft wide lanes and an 18-ft wide U-turn lane. The north and southbound lanes are separated by a variable width raised concrete median. The existing ROW width is approximately 120 ft. The sidewalks along Beckley Avenue are discontinuous. The roadway does not include bicycle lanes. Beckley Avenue is classified as a minor arterial and the existing posted speed limit is 35 mph. The existing typical section for Beckley Avenue as described is included in **Appendix C, Sheet 3 of 4.**

Riverfront Boulevard

Riverfront Boulevard, which crosses IH 30 and IH 35E as an underpass facility, is a six-lane facility (three lanes in each direction), with 11-ft wide lanes. The north and southbound lanes are separated by a concrete raised median of variable width. Riverfront Boulevard currently carries the traffic traveling from IH 30 eastbound to the IH 35E southbound directions and from IH 35E northbound to the IH 30 westbound direction. Riverfront Boulevard provides no sidewalks or bicycle facilities. Riverfront Boulevard was constructed within a variable ROW. Riverfront Boulevard is classified as a principal arterial and the existing posted speed limit is 35 mph. The existing typical section for Riverfront Boulevard as described is included in **Appendix C, Sheet 3 of 4.**

Colorado Boulevard
Colorado Boulevard, which crosses IH 35E as an underpass facility, is a four-lane facility (two lanes in each direction), connected to a half cloverleaf interchange. The existing lanes are 12 ft wide are within a variable ROW. The east and westbound lanes are undivided. The existing Colorado Boulevard provides discontinuous sidewalks and no bicycle facilities. Colorado Boulevard is classified as a collector and the posted speed limit is 30 mph. The existing typical section for Colorado Boulevard as described is included in **Appendix C, Sheet 3 of 4.**

Bridge Structures
Within the Dallas Floodway, the IH 30 and IH 35E crossings consist of four structures in total (two structures each) which are described as follows:

- IH 30 eastbound bridge: 33 continuous spans, approximately 2,055 ft long, composed of 30 steel stringers and 3 steel plate girder main spans;
- IH 30 westbound bridge: 33 continuous spans, approximately 2,017 ft long, composed of 30 steel stringers and 3 steel plate girder main spans;
- IH 35E northbound bridge: consists of 46 spans, approximately 2,322 ft long, composed of 43 simple concrete approach spans and 3 steel plate girder main spans; and
- IH 35E southbound bridge consists of 46 spans, approximately 2,574 ft long, composed of 43 steel I-beam approach spans and 3 steel plate girder main spans.

The existing facility encompasses approximately 252 acres of ROW. Stormwater collected from IH 30 and IH 35E is primarily conveyed through a curb and gutter drainage system within the boundaries of the City of Dallas municipal separate storm sewer system (MS4). Along the IH 30 and IH 35E bridge structures stormwater discharges directly into the Dallas Floodway.

2.2 Traffic Projections

According to data obtained from the TxDOT's Transportation Planning and Programming (TP&P) Division, the average daily traffic (ADT) for IH 30 and IH 35E ranges from 155,960 to 216,860 vehicles per day (vpd) in 2012 and is projected to range from 170,520 to 237,090 vpd in 2017 and from 223,900 to 310,200 vpd in 2035. **Table 2-1** details the traffic projections within the project limits. Traffic within the project limits is projected to increase approximately 43 to 44 percent by the year 2035.

Table 2-1: Existing and Projected Average Daily Traffic

Traffic Analysis Area	ADT (in vehicles per day)			
	2012	2017	2035	Percent Increase: from 2012 to 2035
IH 30 East of IH 35E	162,670	177,840	233,400	43
IH 30 West of IH 35E	155,960	170,520	223,900	44
IH 35E North of IH 30	204,850	223,960	294,700	44
IH 35E South of IH 30	216,860	237,090	310,200	43

Source: TxDOT TP&P Division (December 2011).
Notes: The years 2012 and 2017 ADT was estimated by using the December 2011 TP&P traffic numbers and applying a growth factor of 1.8%. The Year 2017 is assumed to be time of completion (ETC) or opening year.

3.0 PROPOSED ACTION

3.1 Comparison of Existing and Proposed Facility

TxDOT proposes the replacement of the IH 30 and IH 35E bridges crossing the Dallas Floodway and improvements associated with the Mixmaster, approaches, direct connectors, ramps, reversible managed lanes, collector distributor roads, and frontage roads within the project limits.

In order to further facilitate reader understanding of the existing and proposed facilities, graphical depictions are available in **Appendix A: Exhibits 2 and 3 (Existing and Proposed Facilities)**. These graphical representations of the elements listed in **Table 3-1** have been developed to illustrate the configurations of the existing facility as well as the proposed facility if it were constructed as described under the Build Alternative. It should be noted that in order to simplify the graphical representations of the existing and proposed facilities, **Table 3-1** and **Exhibits 2** and **3** do not include all proposed improvements but highlight what are considered to be the facilities' main components (i.e., widening, frontage road improvements, extension and widening of HOV lanes, new collector distributors, new ramps, and new pedestrian and bicycle facilities). A detailed summary of the proposed access modifications is included in **Table 6-1** and the design schematic can be reviewed for a comprehensive listing of all existing and proposed design components.

The design schematic encompassing the proposed improvements is available for inspection at the TxDOT Dallas District Office, 4777 E. Highway 80, Mesquite, Texas 75150-6643.

Table 3-1: Comparison of Existing and Proposed Facilities

Roadway Segment	Existing	Proposed
IH 30 between Sylvan Ave. and Beckley Ave.	• WB IH 30 one-way HOV/M lane begins; • IH 30 mainlanes: Six to eight lanes; and • Two-lane frontage roads.	• Proposed EB IH 30 HOV/M lane exit to extend the morning operation of the IH 30 HOV/M lane; • Widen IH 30 to eight mainlanes (four in each direction); • A portion would have three-lane frontage roads; • 14-ft wide lane for shared-use of bicycles and vehicles along the EBFR and WBFR; • 14-ft wide lane for shared-use of bicycles and vehicles along Beckley Ave.; • Sidewalks along IH 30 EBFR and WBFR; • Sidewalks along both sides of Beckley Ave.; and • Sidewalks and 14-ft shared-use lane for bikes and vehicles along both sides of Riverfront Blvd.
IH 30 between Beckley Ave. and the Mixmaster	• Two bridge structures; • Six mainlanes (three in each direction); • No frontage roads; and • Ramp to Riverfront Blvd.	• Replace two existing structures with four new bridge structures; • IH 30 EB direction bridge: five mainlanes; • IH 30 WB direction bridge: five mainlanes and a non-barrier separated transition lane for the proposed Commerce St. to IH 30 westbound mainlane direct connector lane; • IH 30 EBFR bridge: two lanes and a bicycle facility; • IH 30 WBFR bridge: two lanes and a pedestrian facility; and • Connection to Future Coombs Creek Trail Extension.
IH 30 between the Mixmaster and west of IH 45	• Six mainlanes (three in each direction); • IH 345/IH 45/Ervay St. direct connector; • Lamar entrance ramp to IH 30 WB CD road; • IH 30 WB CD road; • Closed exit ramp from IH 30 WB mainlanes to IH 30 WB CD; and • Closed entrance ramp from IH 30 WB CD to IH 30 mainlane.	• Proposed WB slip ramp from the existing IH 345/IH 45/Ervay St. direct connector to the IH 30 WB CD road; • Reopen closed exit ramp between Akard St. and Ervay St. as a two lane exit ramp from IH 30 WB mainlanes to IH 30 WB CD; • Add auxiliary lane to IH 30 WB CD road between Akard St. and Hotel St.; • Close Lamar St. entrance ramp to the IH 30 WB CD road; and • Entrance ramp from IH 30 WB CD to IH 30 WB mainlanes.
IH 35E between 8th St. and the Mixmaster	• Two bridge structures; • IH 35E NB mainlanes: five lanes (including one reversible HOV lane);	• Replace existing structures with four new bridge structures; • IH 35E NB direction bridge: three

Roadway Segment	Existing	Proposed
	• IH 35E SB mainlanes: four lanes; • Discontinuous frontage road; • Existing Colorado Blvd. underpass with half cloverleaf interchange; and • Entrance ramp from IH 35E NBFR to IH 35E NBML.	mainlanes; two reversible HOV lanes, five CD lanes (to distribute traffic to Riverfront Blvd., IH 30, or IH 35E); • IH 35E SB direction bridge: four mainlanes, four CD lanes (to collect traffic from Riverfront Blvd., IH 30, and IH 35E); • 6-ft sidewalks along the outside of each CD road; • Replace half cloverleaf to provide direct connection from IH 35E NBFR; • Flip existing entrance ramp from 8th St. to an exit ramp to Colorado Blvd.; • NB and SB bypass ramps over Colorado Blvd. from FR to the CD roads; • Sidewalks and 14-ft wide outside lane for shared-use of bicycles and vehicles along NBFR and; • 14-ft wide lane for shared-use of bicycles and vehicles along both sides of Colorado Blvd.; and • 6-ft sidewalks along each side of Colorado Blvd.
Mixmaster at the Houston St. Viaduct	• IH 30 and IH 35E mainlanes: eight lanes (four in each direction); • Two lane direct connector (collects traffic from the IH 30 EB mainlanes and distributes to the IH 35E NB mainlanes); • One-lane reversible HOV lane; • The HOV lane ends just west of the Houston St. Viaduct. • HOV access to Houston St. and Jefferson St. Viaduct.	• One-lane direct connector from IH 30 WB CD road to IH 35E SB; • Four CD lanes (IH 30 EB/IH 35E SB); • One-lane direct connector from IH 35E NB to IH 30 WB; • Two CD lanes (IH 35E NB); • Two-lane frontage road for IH 35E NB; • IH 35E NB mainlanes: three lanes; • IH 35E SB mainlanes: three lanes; • IH 30 EB mainlanes: two lanes; • IH 30 WB mainlanes: three lanes; • Two-lane reversible HOV; • Removal of reversible one-lane HOV lane connection to Houston St. and Jefferson St. Viaducts; and • Extension of the reversible HOV lane to Reunion Blvd.

Source: Design Schematic and Typical Sections (February 2012).
IH 345 is 1.8 miles long spur off IH 45 in Dallas. The road provides connection between the IH 45 interchange and the US 75 at Woodall Rodgers Freeway. The road is signed as US 75, however; exit numbering is continued from the IH 45 exit numbering system.
NB=Northbound, SB=Southbound, EB= Eastbound, WB= Westbound, CD=Collector distributor, HOV/M=HOV/Managed, EBFR=Eastbound frontage roads, WBFR=westbound frontage roads.
Slip ramp: a slip ramp is a short connector ramp that is generally situated between the mainlane and adjacent frontage road. Slip ramps allow motorists to "slip" from one roadway to another.

3.2 Right-of-Way

Approximately 17.3 acres of additional ROW would be required for the proposed project resulting in the displacement of 2 single family housing units, 6 billboards, 4 existing commercial establishments, and 3 vacant commercial establishments for a total of 15 displacements. It is anticipated that approximately 66 parcels would be associated with proposed ROW acquisitions for the proposed project.

Of the 17.3 acres of additional ROW acreage, approximately 3.0 acres have already been acquired under Project Pegasus and are currently part of TxDOT's existing ROW. The 3.0 acres of ROW were acquired from 17 parcels along IH 30 by TxDOT (ROW CSJ: 1068-04-139). **Table 3-2** lists the parcels that have been wholly or partially acquired by TxDOT by the parcel identification number illustrated on the **Constraints Maps** in **Appendix D** and provides information regarding the proposed ROW acreage, previous land use classification, and date of acquisition per parcel. The parcels listed in **Table 3-2** are associated with ROW acquisition that was initiated by the approval of Project Pegasus in 2005.

Table 3-2: Acquired Right-of-Way

Parcel Identification Number	Approximate ROW Acreage Acquired	Previous Land Use Classification	Date of Acquisition
1	0.0057	Undeveloped	05/10/2010
2	0.073	Commercial	11/06/2009
3	0.0192	Commercial	07/23/2009
4	0.0172	Undeveloped	06/16/2010
5	0.1878	Commercial	08/27/2009
7	0.0907	Commercial	06/16/2010
8	0.0659	Commercial	07/29/2009
11	0.0698	Commercial	05/28/2010
12	0.0491	Commercial	06/21/2010
14	0.0771	Commercial	03/10/2010
16	0.4616	Commercial	10/14/2010
17	0.1139	Commercial	10/05/2009
18	0.8449	Commercial	10/07/2010
19	0.3198	Commercial	08/03/2009
20	0.3976	Commercial	09/20/2010
21	0.2213	Commercial	03/24/2011
28	0.0016	Commercial	02/04/2010
Total	**3.0162 (or approx. 3.0)**		

Source: TxDOT, Plans of Proposed Right of Way Project, ROW CSJ: 1068-04-139 (2007).

In addition, the proposed project would traverse approximately 53.7 acres of land located within the Dallas Floodway. The land, which is within a floodplain area, is owned by the City of Dallas and under USACE and Federal Emergency Management Agency (FEMA) jurisdiction. TxDOT would acquire a permanent easement from the City of Dallas for the section of the project crossing the Dallas Floodway.

It has been determined that drainage easements would not be required. Temporary construction easements may be required; however, their location has not been determined at this stage of project development.

A preliminary utility inventory indicates that water lines, sanitary sewer lines, communication lines, fiber optic trunk, and Oncor overhead distribution/transmission lines are located within the project limits. Potential conflicts with the project include water lines, sanitary sewer lines, fiber optic trunk, and utilities. While it is anticipated that it may be necessary to relocate some of the existing utilities (i.e., Oncor transmission towers, distribution poles and distribution lines), the existing utilities are not expected to pose substantial problems to the construction, operation, or maintenance of the proposed facility.

Detailed information on the utility lines would be evaluated during the design phase of the project in order to identify the need to integrate the proposed improvements and utility systems into the design plans. Utilities would be either adjusted or relocated during construction of the proposed project in accordance with standard TxDOT procedures.

4.0 PROJECT FUNDING

According to the 2011-2014 TIP, as amended pages, the total project cost for the Dallas Horseshoe Project is $820,284,987 million which has been divided into preliminary engineering, right-of-way, construction and construction engineering phases. The total project cost information for the Dallas Horseshoe Project is listed in **Table 4-1**. The project estimate shown includes the construction of an aesthetically pleasing bridge structure. The proposed project would be funded by federal, state, and regional (RTR) sources under the following funding categories: 3-Urban Area (Non-TMA) Corridor Projects, 6-Structures, 10-Supplmental Transportation Projects, and 12(S)-Strategic Priority.

Table 4-1: Project Cost Information

CSJ No./Limits	Total Project Cost
0196-03-205/IH 35E at IH 30	$284,935,000
0442-02-118/IH 35E at Trinity River, Northbound and Southbound Approaches	$112,035,000
0442-02-132/IH 35E from North and South of the Trinity River to 8th St.	$80,885,000
1068-04-099/IH 30 at Beckley Ave., at the Trinity River, and at Riverfront Blvd.	$44,500,000
1068-04-116/IH 30 from East of Sylvan Ave. to IH 35E	$173,435,000
0009-11-226/IH 30 from IH 35E Interchange to west of the IH 45 Interchange	$124,494,987
Total	**$820,284,987**

Source: 2011-2014 TIP (February 2012 Quarterly Revisions).

The letting year, or date the project would begin construction, is estimated to be 2013. Assuming 4 years of construction, the estimated time of completion (ETC) would be 2017. If constructed, the Dallas Horseshoe Project would be developed using the design-build delivery method of construction.

5.0 NEED AND PURPOSE

5.1 Need for the Project

Before the Dallas Horseshoe Project was initiated, Project Pegasus studied and evaluated numerous alternatives to meet the need and purpose. According to the Project Pegasus Final EA, the existing IH 30 and IH 35E facilities were acknowledged to be increasingly unable to safely and efficiently accommodate traffic. Because the facilities were designed and constructed over 50 years ago with only minor improvements since original construction, the condition of the existing facilities was identified to be unsatisfactory. The purpose of Project Pegasus was to improve safety and traffic operations and manage congestion along IH 30, IH 35E, and at sections of the Mixmaster. Nevertheless, it should be noted that the existing IH 30 and IH 35 bridges are currently not a hazard as they are considered safe for vehicular traffic traversing the Dallas Floodway.

Although the project limits have been modified since the need and purpose statement was previously approved, the primary purposes of the Dallas Horseshoe Project remain to be to improve safety, improve traffic operations, and manage traffic congestion along IH 30, IH 35E and at the Mixmaster. However, the Dallas Horseshoe Project serves another important purpose, to replace the aging and deteriorating IH 30 and IH 35E bridges over the Dallas Floodway. The need to replace the IH 30 and IH 35E bridges centers on the existing bridges' deficiencies and their regional importance.

Safety

The IH 30 bridge and IH 35E bridge were constructed over 50 years ago and are therefore nearing the end of their service life. Under the Texas Bridge Inspection Program, on-system bridges are inspected every two years. TxDOT develops bridge inspection records which include the ratings and evaluations to address the following bridge components: deck, superstructures, substructures, culverts, channels, approaches, and miscellaneous (i.e., signs, illumination). FHWA uses certain criteria to determine whether a bridge is classified as "deficient." Under the criteria, a bridge is determined as deficient if is classified as "structurally deficient" and/or "functionally obsolete." A structurally deficient bridge is one not able to carry the truck loads expected of the highway/road system of which the bridge is part. A functionally obsolete bridge is one in which the deck width, vertical clearance, or waterway is not adequate to accommodate the traffic demand on the bridge or the volume of water under the bridge. For a deficient-classified bridge, a sufficiency rating helps determine if a bridge is eligible for rehabilitation or replacement.

The sufficiency rating of a bridge is a single numerical representation of the sufficiency of the bridge that ranges from 0 to 100. In calculating the rating, consideration is given to the structural adequacy and safety, serviceability and functional obsolescence, and essentiality of traffic service. The sufficiency rating serves as a basis for establishing eligibility for replacement or rehabilitation of deficient-classified bridges. If the bridge is deficient and the rating is less than 50, the bridge is eligible for replacement or rehabilitation using federal funding. If the bridge is deficient and the rating is between 50 and 80, the bridge is eligible for rehabilitation only unless replacement can be justified by economic analysis. For ratings higher than 80, the bridge is not eligible for remedy. For specific definitions of sufficiency

ratings, see the TxDOT *Bridge Inspection Manual at:* http://onlinemanuals.txdot.gov/txdotmanuals/ins/bridge_programming.htm

Table 5-1 includes the condition for the IH 30 and IH 35E bridge components, deficiency classification and sufficiency ratings according to the TxDOT bridge inspection records and the bridge inventory and inspection files.

Table 5-1: IH 30 and IH 35E Bridge Conditions, Deficiency Classifications, and Sufficiency Ratings

Component	IH 30 Eastbound	IH 30 Westbound	IH 35E Northbound	IH 35E Southbound
Deck	Fair	Fair	Fair	Satisfactory
Superstructure	Satisfactory	Satisfactory	Fair	Satisfactory
Substructure	Satisfactory	Fair	Poor	Fair
Channel	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Approaches	Satisfactory	Satisfactory	Satisfactory	Good
Miscellaneous	Very Good	Very Good	Good	Good
Deficiency Classification	Functionally Obsolete	Functionally Obsolete	Structurally Deficient	Functionally Obsolete
Sufficiency Rating	63	54	46	51

Source: TxDOT Bridge Inspection Records (May 2010, August 2010 and TxDOT Bridge Inventory and Inspection Files (May 2012).
Poor Condition = deterioration significantly affects structural capacity
Fair Condition = minor deterioration of structural elements (extensive)
Satisfactory Condition = minor deterioration of structural elements (limited)
Good Condition = some minor problems
Very Good Condition = no problem noted
N/A = not applicable
Deficiency Classification=structurally deficient or functionally obsolete

As indicated on **Table 5-1**, most of the IH 30 bridge components are in "satisfactory condition" or as defined by TxDOT, exhibit minor deterioration of structural elements (to a limited extent). The records also indicate that the deck is in "fair" condition because of minor deterioration of structural elements qualified to be "extensive." According to the May 2012 TxDOT Bridge Inventory and Inspection files, the IH 30 bridges are functionally obsolete. The sufficiency ratings of the IH 30 eastbound and westbound bridges are 63 and 54 respectively. The IH 35E bridge exhibits "satisfactory, fair, and good condition ratings, while the IH 35E northbound substructure is in "poor condition" which indicates that deterioration significantly affects structural capacity. The May 2012 TxDOT Bridge Inventory and Inspection files, indicate that the IH 35 northbound bridge is structurally deficient and that the IH 35 southbound bridge is functionally obsolete. The sufficiency ratings are 46 and 51, respectively. Both IH 30 and IH 35E bridges were determined to be deficient.
In general, the IH 30 and IH 35E bridge decks have widespread spalling and delamination with exposed rebar. [7,8] The decks have previously undergone full-depth repair along many

[7] Spalling is a result of water entering brick, concrete, or natural stone and forcing the surface to peel, pop out or flake off. This is because there is moisture in the concrete. Eventually, spalling can cause crumbling and destruction of a structure.
[8] Delamination refers to the process of splitting apart into layers.

locations; bridge rails are generally in satisfactory condition; however, there is also exposed rebar, spalling and delamination; and some sections of steel pipe rails have widespread rust or are missing. A summary of the specifics reported in the Bridge Inspection Records and the Bridge Inventory and Inspection files have been included in **Appendix E**. Photographs corresponding to the bridge inspection records are located in **Appendix G, pages G-3** through **G-7.**

Traffic Operations

Designed in the 1950s, the IH 30 and IH 35E facilities were built between 1958 and 1962. Since the 1950s, travel patterns have changed. While more than 100,000 people work in downtown Dallas, it is no longer the primary destination from IH 30 and IH 35E. IH 30 and IH 35E are mostly utilized by travelers to bypass downtown Dallas. According to the TxDOT *IH 30 and IH 35E Reconstruction Interstate Access Justification (IAJ) Report* (August 2003) the following traffic operations problems were identified for Project Pegasus, which includes the Dallas Horseshoe Project limits:

- The existing layout of the main travel lanes, frontage roads, ramps, and surface streets in the area do not properly provide for traffic demands;
- There are forced lane changes, abrupt and unexpected merges, short weaves, and quick exits;
- The Mixmaster does not include direct connections from eastbound IH 30 to southbound IH 35E and northbound IH 35E to westbound IH 30 (i.e., currently, traffic utilizes Riverfront Boulevard to access westbound IH 30 from northbound IH 35E and to access southbound IH 35E from eastbound IH 30);
- The existing facilities do not optimize connections with other travel modes such as HOV lanes, light rail, or commuter rail; and
- The current design does not provide for alternative routes after crashes or incidents.

Additionally, the design standards for freeway and interstates have changed since the facilities were built. The existing facilities do not meet current design standards for ramp acceleration or deceleration lengths, spacing of interchanges and ramps, vertical clearances, horizontal clearances, and sight distances.

Congestion can best be described in terms of level of service (LOS) and travel speeds along a roadway. The LOS is a qualitative measure of describing operational conditions within a traffic stream or at an intersection, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The LOS terms are designated from A through F (A being the best and F the worst) and cover the entire range of traffic operations that may occur. An IAJ Report for the Dallas Horseshoe Project was submitted for FHWA review in May 2012. The report stated that the proposed project would improve operating conditions as indicated by a reduction in the number of segments that operate at LOS E or LOS F. Additionally, those segments that do operate at those levels under the Build conditions have geometric restrictions that are expected to be resolved by the design year of 2035. The IAJ Report concludes that the proposed project is not expected to have an adverse impact to the safe and efficient operation of the IH 30 and IH 35E facilities.

High traffic volumes along IH 30 and IH 35E combined with complex lane movements contribute to numerous traffic crashes. The current facility does not provide alternative routes for use after crashes due to the layout of ramps and frontage roads that prevents traffic from efficiently detouring. **Table 5-2** contains the number of crashes per type as reported by the TxDOT Crash Records Information System (CRIS) for years 2009 and 2010.

Table 5-2: Number of Crashes within Proposed Project Limits (2009 and 2010)

Roadway Segment	2009	2010	Most Common Types of Crashes
IH 30 from Sylvan Ave. to IH 35E			Same direction vehicles both going straight-sideswipe
Fatal Crashes	0	1	
Incapacitating Crashes	1	3	
Non-Incapacitating Crashes	9	13	
Possible Injury Crashes	24	24	
Non-Injury Crashes	81	73	
	115	**114**	
IH 30 from West of IH 35E to West of IH 45 (Includes the Mixmaster and the Canyon)			Same direction vehicles both going straight-sideswipe
Fatal Crashes	0	1	
Incapacitating Crashes	2	3	
Non-Incapacitating Crashes	31	44	
Possible Injury Crashes	66	56	
Non-Injury Crashes	180	198	
	279	**302**	
IH 35E from South of IH 30 to South of Commerce St. (Includes the Mixmaster)			Same direction vehicles both going straight-rear end
Fatal Crashes	1	2	
Incapacitating Crashes	2	4	
Non-Incapacitating Crashes	20	26	
Possible Injury Crashes	72	62	
Non-Injury Crashes	101	125	
	196	**219**	
IH 35E from 8th St. to South of IH 30			Same direction vehicles both going straight-rear end
Fatal Crashes	1	0	
Incapacitating Crashes	1	1	
Non-Incapacitating Crashes	14	16	
Possible Injury Crashes	17	44	
Non-Injury Crashes	59	86	
	92	**147**	
Sub-Total	**682**	**782**	
Total	**1,464**		

Source: TxDOT CRIS.

Analysis of the data indicates that the total number of crashes reported in 2009 and 2010 were 682 and 782, respectively. This represents an overall increase of approximately 15 percent from 2009 to 2010. The analysis also indicates that the most common types of

crashes reported were those involving same direction vehicles going straight (sideswipes and rear end) in both 2009 and 2010 and can be attributed to a congested system. Sideswipe crashes are typically the result of lane changes related to exit and entrance ramps. When the distance between access points is substandard, the number of all crashes increases. Rear end crashes are typically the result of sudden stops because of reduced speed due to congestion, sudden lane changes, or avoidance maneuvers.

The total number of crashes over the two-year analysis period was 1,464. There have also been numerous overturned vehicles, predominately heavy trucks and load spills in the Mixmaster area that are caused by the sharp degree of horizontal alignment and the need to change lanes to stay on the same roadway system.

Crash rates, or the number of crashes per 100,000,000 vehicle miles traveled (100M VMT), for the roadway segments within the project limits are listed in **Table 5-3.** The crash rates were calculated for comparison to statewide crash rates reported by TxDOT. According to TxDOT, the statewide traffic crash rates for urban interstates in 100M VMT for years 2009 and 2010 are 99.27 and 97.34, respectively.[9]

Table 5-3: Crash Rates for 2009 and 2010

Roadway Segment	Project Limits Crash Rate (Crashes per 100M VMT)		Texas Urban Interstate Statewide Crash Rate (Crashes per 100M VMT)	
	2009	2010	2009	2010
IH 30 from Sylvan Ave. to West of IH 35E	325.48	285.11	99.27	97.34
IH 30 from West of IH 35E to West of IH 45 (Includes the Mixmaster and the Canyon)	635.35	768.25		
IH 35E from South of IH 30 to South of Commerce St. (Includes the Mixmaster)	596.80	663.75		
IH 35E from 8th St. to South of IH 30	241.96	399.42		

Source: Study Team, February 2012.

The crash analysis indicates that when compared to statewide crash rates, the 2009 crash rates within the project limits are almost two and a half times higher along IH 35E from 8th Street to south of IH 30, and six times higher along IH 30 from west of IH 35E to west of IH 45. The same analysis also indicates that when compared to statewide crash rates, the 2010 crash rates within the project limits are at least three times higher along IH 30 from Sylvan Avenue to west of IH 35E, and almost eight times higher along IH 30 from west of IH 35E to west of IH 45. All crash rates within project limits exceeded the statewide crash rates

[9] The traffic data and statewide crash rates for urban interstates used in the analysis were obtained from the following TxDOT websites: http://www.dot.state.tx.us/travel/traffic_maps/default.htm; http://www.dot.state.tx.us/txdot_library/drivers_vehicles/publications/crash_statistics/2009.htm; and http://www.dot.state.tx.us/txdot_library/drivers_vehicles/publications/crash_statistics/default.htm

in 2009 and 2010 and indicate a need for safety improvements along IH 30 and IH 35E.

Traffic Congestion

The traffic capacity constraints of existing streets and alternate north/south facilities near downtown Dallas and limitations on the availability of ROW for major capacity improvements have created and would continue to intensify congestion. Congestion within the Dallas Horseshoe Project limits slows travel miles along other facilities feeding into downtown, such as IH 30, IH 35E, IH 45, Woodall Rodgers Freeway, DNT, and US 75. No major capacity improvements have been implemented since IH 30 and IH 35E were originally constructed. However, several interim bottleneck removal projects, which have provided some minor relief in traffic, have been implemented. As detailed in **Section 2.2 Traffic Projections**, traffic within the project limits is projected to increase approximately 43 to 44 percent by the year 2035. The proposed project would help manage congestion by improving traffic operations along IH 30, IH 35E, and at the Mixmaster.

In May 2012, TxDOT submitted an IAJ Report for the Dallas Horseshoe Project including the analysis of the peak hour operations using the Highway Capacity Software (HCS) Basic Freeway, Ramp, and Weave analysis modules. The modules are based on methodologies set forth in the Highway Capacity Manual. The analysis used the year 2000 version (HCS+) for consistency with previous analyses performed for Project Pegasus. The analysis used distances between ramp gores and acceleration and deceleration lengths based on the existing system and the proposed Build alternative. For input into the origin and destination locations utilized in the weave analysis, TxDOT coordinated with the North Central Texas Council of Governments (NCTCOG) to develop traffic patterns within each weave section. A summary of the results of the LOS analysis for the AM and PM peak periods for year 2035 Build and No-Build scenarios are tabulated in **Table 5-4**.

Table 5-4: Level of Service Summary for Year 2035

AM Peak Period								
Analysis Type	**Number of Roadway Segments at LOS C or Better**		**Number of Roadway Segments at LOS D**		**Number of Roadway Segments at LOS E**		**Number of Roadway Segments at LOS F**	
	2035 Build	**2035 No-Build**	**2035 Build**	**2035 No-Build**	**2035 Build**	**2035 No-Build**	**2035 Build**	**2035 No-Build**
Freeways	59	45	15	16	5	3	8	14
Ramps - Merge	6	4	2	1	0	1	0	4
Ramps- Diverge	8	5	4	2	0	2	4	6
Weave	4	0	0	1	3	2	1	3
Totals	**78**	**54**	**21**	**20**	**8**	**8**	**12**	**27**
% Total Number of Roadway Segments per Scenario*	**66**	**50**	**17**	**18**	**7**	**7**	**10**	**25**
PM Peak Period								
Analysis Type	**Number of Roadway Segments at LOS C or Better**		**Number of Roadway Segments at LOS D**		**Number of Roadway Segments at LOS E**		**Number of Roadway Segments at LOS F**	
	2035 Build	**2035 No-Build**	**2035 Build**	**2035 No-Build**	**2035 Build**	**2035 No-Build**	**2035 Build**	**2035 No-Build**
Freeways	53	45	20	13	9	8	5	12
Ramps - Merge	6	3	0	4	2	0	0	3
Ramps- Diverge	10	4	2	3	1	4	1	4
Weave	2	0	3	0	0	2	3	4
Totals	**71**	**52**	**25**	**20**	**12**	**14**	**9**	**23**
% Total Number of Roadway Segments per Scenario*	**61**	**48**	**21**	**18**	**10**	**13**	**8**	**21**

Source: TxDOT Dallas Horseshoe Project Interstate Access Justification Report (May 2012).

***The percent of total segments per scenario was based on the total number of segments for the Build and No-Build scenarios (i.e., 119 and 109 for the AM peak period and 117 and 109 in the PM peak period).*

As indicated in **Table 5-4**, during the AM peak period, there would be a higher percentage of roadway segments operating at LOS C or better under the Build scenario (66 percent) when compared to the No-Build scenario (50 percent); and a lower percentage of roadway segments operating at LOS F under the Build scenario (10 percent) when compared to the No-Build scenario (25 percent). During the PM peak period, there would also be a higher percentage of roadway segments operating at LOS C or better under the Build scenario (61 percent) when compared to the No-Build scenario (48 percent); and a lower percentage of roadway segments operating at LOS F under the Build scenario (8 percent) when compared to the No-Build scenario (21 percent). For a list of specific roadway segments and corresponding LOS, please refer to the May 2012 IAJ Report.

The Build scenario would improve operations and safety compared to the No-Build scenario primarily due to its addition of travel lanes, reduction of weaving on the mainlanes, and redesign of roadway elements to meet current design standards. However, the constraints adjacent to the proposed project would not allow desirable design standards to be used in

all cases. Therefore, design exceptions for the Dallas Horseshoe Project have been requested and are currently under review by FHWA and TxDOT.

Although not a mandate for the proposed project, legislation enabling the expedited development of this project was passed during the 82nd Texas Legislature's Regular Session. SB 1402 provides TxDOT the ability to use the design-build method for the design, construction, financing, expansion, extension, related capital maintenance, rehabilitation, alteration, or repair of a transportation project. As required by SB 1402, a Request for Qualifications was issued for this project on December 9, 2011.

5.2 Purpose of the Proposed Project

The purpose of the proposed project is to improve safety by replacing aging and deteriorating bridge structures and by providing a highway facility that would meet current design and safety standards. The proposed project would manage congestion by improving traffic operations along IH 30, IH 35E, and at the Mixmaster. The proposed project would improve mobility and access by allowing the extension of the morning operations of the existing IH 30 HOV/managed lane, providing continuous frontage roads, widening and extending the IH 35E HOV lane, and reducing weaving through the construction of direct connectors and collector distributor roads. The proposed operational improvements along IH 30 in the Canyon are necessary to maintain a balance between mobility, access, operational, and safety needs. These operational improvements are consistent with MTP Policy FT3-007. A copy of this policy is available for review in **Appendix E: Supplemental Data**.

The proposed project would meet the following objectives:

- Modifying sections of the Mixmaster, IH 30 and IH 35E facilities;
- Additional or continuous HOV lanes;
- Constructing bicycle and pedestrian facilities;
- Maximizing the traffic capacity of IH 30 and IH 35E with improvements that minimize the need for additional ROW;
- Improving the operational and safety conditions of the freeways through the application of current FHWA and TxDOT design standards;
- Improving traffic operations by including direct connections from eastbound IH 30 to southbound IH 35E and northbound IH 35E to westbound IH 30;
- Improving connections between IH 30 and IH 35E and other existing and proposed roadways, and with other travel modes and facilities;
- Decreasing traffic congestion and reducing travel times;
- Enhancing access to the central business district (CBD) and other major employment areas and activity centers in downtown Dallas;
- Integrating urban design elements to reflect the character and location of the surrounding communities; and
- Developing a technically and financially feasible solution.

6.0 ALTERNATIVES

6.1 Alternatives Development History (Project Pegasus)

Proposed improvements to IH 30 and IH 35E were originally part of the Trinity Parkway Corridor MTIS. The study evaluated numerous travel modes, considered over 40 improvement alternatives, and produced preliminary designs, traffic, hydraulic, and environmental analyses. The MTIS recommended the following improvements:

- Modification to the Mixmaster, especially the IH 30 and IH 35E facilities;
- Extension of Woodall Rodgers Freeway;
- Additional or continuous HOV lanes;
- Construction of a new location parkway route;
- Construction of a light rail line;
- Construction of bicycle and pedestrian facilities;
- Installation of ITS; and
- Development of Employer Trip Reduction programs

The public involvement process for the MTIS, which followed TxDOT's and FHWA's environmental policies and procedures, included extensive public and agency involvement. In 1998, the MTIS recommendation was approved by the City of Dallas, Dallas County, Dallas Area Rapid Transit (DART), NCTCOG, and endorsed by USACE.

The MTIS provided the initial concepts for the reconstruction of IH 30 and IH 35E which focused mainly on congestion relief along the IH 30 Canyon and the Mixmaster, without replacing the existing bridge structures and pavement.

During the preliminary stages of design for Project Pegasus, the initial MTIS concepts were refined to address updated traffic projections for year 2026. Additionally, taking into consideration that the existing bridges across the Dallas Floodway would be over 50 years old and approaching the end of its useful life, the need to improve the existing bridges to meet current design standards was identified. The majority of the other bridges are also nearing the end of their respective service lives but need to be totally reconstructed due to the proposed major geometric changes throughout the Mixmaster. The existing pavement would consequently need to be replaced as a result of the major geometric revisions. Furthermore, the concept of HOV lanes was expanded to a HOV/managed lane concept to allow maximum flexibility in management and operations in the future.

During the Project Pegasus evaluation of alternatives process, alternatives (including the No-Build Alternative) were analyzed and further defined. The process served to eliminate alternatives that did not adequately meet the need and purpose of the project, and to identify alternatives that best balanced design standards, traffic safety, transportation needs, costs, and social, economic, and environmental concerns. Criteria for evaluation of each alternative were derived from project objectives, federal and state transportation guidelines, natural and social sciences, and from interested and affected members of the public and relevant federal, state, regional, county, and city agencies. During the development of the design for Project Pegasus, 32 presentations, 6 public meetings, and 1

public hearing were held. This was in addition to over 100 presentations and 8 public meetings conducted during the MTIS.

The reasonable alternatives for Project Pegasus were refined through a Value Engineering (VE) Study. The VE Study, conducted in March 2003, was attended by representatives from TxDOT, FHWA, City of Dallas, Dallas County, NTTA, NCTCOG, and the Texas Transportation Institute.

An Engineering Study was held on February 8-9, 2012 for the Dallas Horseshoe Project to supplement the previously completed VE Study for the Project Pegasus. Attendees of the Engineering Study discussed current design concepts; reviewed connectivity, traffic operations and access; document design and operational constraints; and generated additional suggestions for improved performance. The overall goal was to create a common level of understanding of the Dallas Horseshoe Project and document the status for future reference. Detailed discussions for the proposed project consisted of project constraints, design concepts, progress reports on traffic volumes and LOS analysis, design exceptions list, review of sidewalk and bike trail logical termini, the identification of risk items, an update on the status of the Section 408 analysis, traffic control constraints, the review of the connection of Commerce Street to IH 30 westbound, and a review of potential Alternative Technical Concepts (ATC's). Attendees included representatives from TxDOT, FHWA, City of Dallas, NCTCOG, and USACE.

Weekly meetings have been held throughout the project development process to discuss and identity potential issues and the status of the Dallas Horseshoe Project design, environmental document, utilities, and agency coordination. Participants in the weekly meetings have included TxDOT, City of Dallas, NCTCOG, DART, and local utility companies. Additionally, monthly agency coordination meetings are held to discuss progress, schedule, and technical requirements and content of the EA, schematic, Project Management Plan, Financial Plan and Section 408. Participants in the monthly agency coordination meetings include TxDOT, FHWA, USACE, City of Dallas, and NCTCOG.

6.2 No-Build Alternative

The No-Build Alternative represents the case in which the proposed project would not be constructed. Under this alternative, the existing IH 30 and IH 35E bridge structures, which currently exhibit deterioration of structural elements, would not be replaced. The deterioration of the bridges would continue over time requiring more frequent bridge repairs and associated bridge closures.

There are various costs associated with the implementation of the No-Build Alternative. The maintenance of the existing system becomes higher the longer the improvements and/or reconstruction are postponed. Additionally, vehicle operating costs are increased as motorists continue to utilize under-designed and inadequate facilities. There are also intangible costs associated with the effects to emergency vehicles and longer corresponding response times as well as bridge inspections and safety issues.

The No-Build Alternative would allow the IH 30 and IH 35E bridges to remain in their existing condition, which is not considered viable because it would not meet the need and purpose of the proposed project. The operational improvements and reconstruction of sections of the Mixmaster would not occur. In summary, there would be no improvements to the general purpose lanes, managed lanes, direct connectors, ramps, collector distributor roads, frontage roads, or pedestrian/bicycle facilities. Design deficiencies of the existing facility would remain, and the overall local mobility would continue to be impaired. The IH 30 and IH 35E bridges would continue to deteriorate.

The No-Build Alternative is carried forward throughout the document as a baseline comparison to the Build Alternative.

6.3 Build Alternative

The Build Alternative would allow replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway and improvements to sections of the Mixmaster and associated roadways, frontage roads, ramps, direct connectors, and collector distributor roads.

Additional ROW would be required under the Build Alternative which would result in displacements. The proposed project would extend from Sylvan Avenue to west of IH 45 along IH 30 and from 8th Street to IH 30 along IH 35E for approximately 5 miles as depicted in **Appendix A: Exhibit 1 - Project Location Map**.

For purposes of discussing the proposed configuration, facility descriptions have been broken out as follows: bridge replacements, Mixmaster and cross street improvements, access improvements, and bicycle/pedestrian accommodations. Under each facility a general description is provided, followed by more detailed information including configuration (i.e., number of lanes, shoulder width, median type and width), ROW width, functional classification, and posted speed limit. Because there is not a single typical section to describe the proposed facility, typical sections were developed for the most representative locations such as the crossings of the Dallas Floodway, within the Mixmaster, and at cross streets. **Appendix C** contains proposed typical sections for:

- IH 30 at the Dallas Floodway;
- IH 35E at the Dallas Floodway;
- Mixmaster at Houston Street Viaduct;
- Beckley Avenue;
- Riverfront Boulevard;
- Colorado Boulevard; and
- Frontage Roads.

As previously mentioned, the description of the proposed improvements include what is considered to be the facilities' main elements of improvement (i.e., mainlanes, continuous frontage roads, extension and widening of HOV lanes, new collector distributors, new ramps, and new pedestrian and bicycle facilities). For a complete depiction of the existing and proposed facilities including ramping changes please refer to the design schematic.

Bridge Replacements

The IH 30 eastbound and westbound bridge structures would be replaced with four new bridge structures. Each mainlane bridge would consist of five 12-ft wide lanes with 10-ft wide shoulders. Each frontage road bridge would include two 12-ft wide lanes with 4-ft wide inside and 8-ft wide outside shoulders. The new frontage road bridges would also include an integrated 18-ft facility for pedestrian or bicycle use. The proposed IH 30 frontage road bridges would include steel spans over the Dallas Floodway. The frontage road and bicycle/pedestrian facility bridges would be integrated as one structure. The IH 30 westbound mainlane bridge would include a non-barrier separated transition lane for the proposed Commerce Street to IH 30 westbound mainlane direct connector lane to allow adequate distance for traffic to merge to IH 30.

The proposed IH 30 bridges would be constructed approximately 40 ft above the floodplain with a minimum clearance of 16.5 ft over cross streets and 7 ft over the top of a future levee maintenance road that would be completed by others. The proposed design speed for the mainlanes and the frontage roads is 60 mph and 40 mph, respectively. The proposed improvements would occur within a variable proposed ROW ranging from approximately 248 ft (east of the Mixmaster) to 605 ft (west of the Mixmaster, at the Trinity River floodplain). The proposed typical section for IH 30 at the Dallas Floodway as described above is presented in **Appendix C, Sheet 2** of **4**.

The IH 35E bridge structures would be replaced with four new bridge structures. The IH 35E northbound bridges would consist of:

- Three 12-ft wide mainlanes;
- Two 10-ft wide shoulders;
- Two 12-ft wide reversible managed lanes with a 4-ft wide inside shoulder, separated from the mainlanes by a 10-ft wide outside shoulder and a CTB;
- Five 12-ft wide collector distributor lanes with 4- and 8-ft wide shoulders; and
- One 6-ft wide sidewalk along the outside of the collector distributor road.

The IH 35E southbound bridges would consist of:

- Four 12-ft wide mainlanes with 10-ft wide shoulders;
- Four 12-ft wide collector distributor lanes with 4- and 8-ft wide shoulders; and
- One 6-ft wide sidewalk along the outside of the collector distributor road.

The northbound collector distributor roads would distribute traffic to Riverfront Boulevard, IH 30, or IH 35E, while the southbound collector distributor road would collect traffic from Riverfront Boulevard, IH 30, and IH 35E. The proposed IH 35E bridge would be constructed approximately 40 ft above the floodplain with a minimum clearance of 16.5 ft over the cross streets and 7 ft over the top of a future levee maintenance road that would be completed by others. The proposed design speed for the IH 35E facility is 60 mph. The design speed for the collector distributor roads is 35 to 40 mph. The proposed improvements would occur within a variable proposed ROW ranging from approximately 323 ft (south of Colorado Boulevard) to 1,036 ft (just north of the East Levee). The

proposed typical section for IH 35E at the Dallas Floodway is presented in **Appendix C, Sheet 2** of **4**.

The proposed bridges would generally consist of cast-in-place concrete single or multiple column bents supporting prestressed concrete I-girder and/or steel welded plate I-girder superstructures as determined by the design-build contractor. Longer steel spans would be specified for the section of the proposed IH 30 and IH 35E bridges across the Dallas Floodway from the top of the west bank at the future Trinity River channel to the top of the east bank at the existing Trinity River Channel.[10]

Mixmaster/Cross Street Improvements

The Mixmaster would be updated to meet current design standards. The proposed project would improve access and reduce weaving through the construction of direct connectors, slip ramps, and collector distributor roads. The proposed design would include:

- A 14-ft wide direct connector with 4- and 8-ft wide shoulders to carry traffic from IH 30 westbound collector distributor to IH 35E southbound;
- Four 12-ft wide collector distributor lanes with 4- and 8-ft wide shoulders (IH 30 eastbound to IH 35E southbound);
- Three 12-ft wide mainlanes (IH 35E southbound), with 10-ft wide shoulders;
- Two 12-ft wide mainlanes (IH 30 eastbound), with 10-ft wide shoulders;
- Three 12-ft wide mainlanes (IH 30 westbound), with 10-ft wide shoulders;
- Two 12-ft wide reversible HOV lanes, with 4- and 10-ft wide shoulders;
- Three 12-ft wide mainlanes (IH 35E northbound), with 10-ft wide shoulders;
- One 14-ft wide direct connector, with 4- and 8-ft wide shoulders to carry traffic from IH 35E northbound to IH 30 westbound;
- Two 12-ft wide collector distributor lanes (IH 35E northbound), with 4- and 8-ft wide shoulders;
- Two lane frontage road [one 12-ft wide lane and one 14-ft wide lane (shared-use for bikes and vehicles) and a 6-ft wide sidewalk;
- The existing HOV lane within the Mixmaster would be widened from one to two lanes and extended approximately 1,900 ft north to Reunion Boulevard; and
- Removal of the existing interim IH 35E HOV crossover structure located between the Houston Street and Jefferson Boulevard viaducts south of the Mixmaster and removal of the existing staircase connected to the northern railing of the Houston Street Viaduct, located south of the Mixmaster.
- A 14-ft wide direct connector with 4- and 10-ft wide shoulders to carry traffic from Commerce Street to IH 30 westbound.

The proposed improvements would be constructed within a variable ROW. The proposed mainlane design speed within the interchange is 60 mph. The proposed typical section for the Mixmaster at the Houston Street Viaduct as described above is presented in **Appendix C, Sheet 2 of 4**.

[10] The City of Dallas plans to realign the Trinity River as part of the Dallas Vision Plan.

In addition to the above described interchange improvements, the following operational improvements are proposed for IH 30 in the Canyon:

- Proposed westbound slip ramp from the existing westbound IH 345/IH 45/Ervay Street ramp to the IH 30 westbound collector distributor road to accommodate the IH 345/IH 45 westbound traffic heading to IH 35E;
- Reopen the currently closed IH 30 westbound one-lane exit ramp located between Akard Street and Ervay Street as a two-lane exit ramp. This ramp would accommodate the IH 30 westbound traffic heading to IH 35E;
- Add an auxiliary lane along the IH 30 westbound collector distributor roads between Akard Street and Hotel Street;
- Close the entrance ramp to the IH 30 westbound collector distributor at Lamar Street; and
- Add a slip ramp from the existing IH 30 westbound collector distributor road to the IH 30 westbound mainlanes underneath Hotel Street.

Beckley Avenue

In order to accommodate the proposed improvements along IH 30, minor construction improvements at Beckley Avenue would be necessary. The proposed construction at Beckley Avenue would be limited to the reconstruction of the existing U-turn lane, transitional pavement for the slip ramps tying into the existing pavement, minor median improvements to accommodate the slip ramps, the addition of proposed 6-ft wide sidewalks on both sides of the street, and an outside 14-ft wide shared-use lane to accommodate bicycle traffic. The limits of construction along Beckley Avenue are from approximately 320 ft north of IH 30 to approximately 580 ft south of IH 30. The shared-use lane would be extended on both sides of the street to intersect with the Coombs Creek Trail Extension. All proposed improvements to Beckley Avenue would meet the design speed of 35 mph and occur within the existing ROW, which maintains the existing six-lane section with a center turn lane. In addition, the intersection at Beckley Avenue would accommodate future improvements planned by the City of Dallas consisting of six through lanes, a center turn lane, and 4-ft wide on-street outer bike lanes separated by a 3-ft wide buffer zone from the through lanes on each side.

Riverfront Boulevard

The proposed improvements at Riverfront Boulevard consist of full reconstruction of the northbound and southbound lanes. In order to tie the slip ramps into the cross-street and obtain 7 ft of clearance over the top of a future levee maintenance road that would be completed by others, the southbound lanes would be reconstructed to reverse the cross-slope.[11] In order to accommodate bridge columns within the median, the northbound lanes would also be reconstructed. The proposed improvements along Riverfront Boulevard would include a 5.5-ft wide sidewalks and outside 14-ft wide shared-use lanes for bikes and vehicles. The limits of construction along Riverfront Boulevard are from approximately 579 ft north of IH 30 to approximately 543 ft south of IH 30. All proposed improvements to Riverfront Boulevard would meet the design speed of 40 mph and occur within the existing ROW, which maintains the existing six-lane section with a center turn lane.

[11] The 7 ft clearance would be in addition to 3.2 ft above the SPF elevation for the levees.

The proposed intersection improvements at Riverfront Boulevard would accommodate future improvements planned by the City of Dallas consisting of six through lanes, 13-ft wide center median, and 6.5-ft wide off-street outside bike lanes separated by a 5-ft wide landscape zone from the back of curb on each side, and 5.5-ft wide sidewalks.

Colorado Boulevard

The proposed improvements along Colorado Boulevard include the replacement of the half cloverleaf interchange and the realignment of Colorado Boulevard with full reconstruction. The proposed Colorado Boulevard would consist of four through lanes (two in each direction, 11-ft inside and 14-ft outside) and two 11-ft wide left turn lanes (one in each direction). Colorado Boulevard would be undivided (i.e., there would be no physical separation between the travel lanes). The 14-ft wide outside lane would be for shared-use of bicycles and vehicles. The proposed 6-ft wide sidewalks along both sides of the street would provide for a direct connection to the proposed sidewalks along the IH 35E bridges across the Dallas Floodway.

The proposed realignment which reduces the skew of the intersection would extend from Jefferson Boulevard on the west to Eads Avenue on the east for approximately 870 ft. The limits of construction along Colorado Boulevard are from approximately 745 ft west of IH 35E to approximately 385 ft east of IH 35E. The improvements to Colorado Boulevard would occur within the existing ROW. The proposed design speed is 30 mph.

Along IH 35E from 8th Street to Colorado Boulevard, transitional elements are proposed to facilitate increased operations and provide for direct access. Along the IH 35E northbound mainlanes, the existing 8th Street entrance ramp has been flipped to an exit ramp to provide for direct access to Colorado Boulevard where the Methodist Dallas Medical Center is located. In the southbound direction along IH 35E, the existing Colorado Boulevard entrance ramp would be removed to provide for an auxiliary lane between the proposed southbound collector distributor entrance ramp and the existing exit ramp to Jefferson Boulevard.

The proposed typical sections for Beckley Avenue, Riverfront Boulevard and Colorado Boulevard as described above are presented in **Appendix C, Sheet 3 of 4**. The typical sections for future improvements (by others) can be found on the same sheet.

Access Improvements

The proposed project would improve access resulting in the modification of the current travel patterns. The requirements to meet current design standards for ramp acceleration or deceleration lengths, spacing of interchanges and ramps, vertical clearances, horizontal clearances, and sight distances would require the relocation or elimination of some ramps.

Other access improvements include extended limits of frontage roads along IH 30, a two-lane IH 35E HOV lane extending to Reunion Boulevard, construction of direct connectors and collector distributor roads, removal of direct access to the IH 35E HOV lane from/to the Houston Street and Jefferson Street viaducts, and extension of the morning operations of the existing IH 30 HOV/managed lane by adding an exit ramp to the IH 30 eastbound

mainlane. Other proposed changes in access include those resulting from the closure of the Lamar Street entrance ramp and reopening of the IH 30 westbound slip ramp located between Akard Street and Ervay Street. **Table 6-1** lists the proposed ramp modifications along with a brief explanation on how access would be modified because of the proposed project.

Table 6-1: Proposed Access Modifications

Ramp Description	Existing	Proposed	Proposed Change in Access	Comments
IH 30 EB mainlanes				
IH 30 EB mainlane to Beckley Ave. and Sylvan Ave.	Exit	Exit	None	
Sylvan Ave. to IH 30 EB mainlanes	Entrance	Entrance	None	
IH 30 EB mainlanes to IH 35E NB and Commerce St.	Exit	Exit	New connection	Currently, only the IH 30 EB mainlanes have a direct connection to IH 35E NB mainlanes. This ramp would provide a direct connection to both IH 35E NB and SB mainlanes. Currently access to IH 35E SB is through Riverfront Blvd.
IH 30 EB mainlanes to Riverfront Blvd.	Exit	N/A	Relocated – Access would be shifted	Traffic bound for Riverfront Blvd. would exit at the existing Beckley Ave. ramp and access the proposed IH 30 EB frontage road which would provide access to Riverfront Blvd.
IH 30 EB to downtown Dallas (Lamar St., Griffin St., and Cadiz St.)	Exit	Exit	Relocated – Access would be shifted 3,000 ft to the west	
IH 30 WB mainlanes				
IH 30 WB mainlanes to St. Paul and Ervay St.	Exit	Exit	None	Left exit.
IH 45/345 WB Direct Connection to St. Paul and Ervay St.	Exit	Exit	New ramp from St. Paul St. and Ervay St.	Would allow traffic from IH 45/IH 345 bound for IH 35E NB and SB mainlanes direct access to the IH 30 WB CD.
IH 45/345 WB direct connection to IH 30 WB mainlanes	Entrance	Entrance	None	
IH 30 WB mainlanes to IH 30 WB CD	N/A	Exit	New Ramp/ Relocated - For IH 35E SB, access would be shifted 3,500 ft west. For IH 35E NB, access would be shifted 5,700 ft to the west.	This new ramp would provide access to the direct connections to the IH 35E mainlanes and downtown Dallas. Additionally, this ramp would provide access to Memorial Dr., Reunion Blvd., and Commerce St.
IH 35E NB mainlanes to IH 30 WB mainlanes	N/A	Entrance	New Ramp	
IH 30 WB to Riverfront Blvd.	Exit	N/A	Eliminated	IH 30 WB traffic would need to access Riverfront Blvd. via the IH 35E NB frontage road to Reunion Blvd., or via the IH 35E SB CD to Colorado Blvd. to IH 35E NB CD, or exit to Ervay St. to Cadiz St.

Ramp Description	Existing	Proposed	Proposed Change in Access	Comments
IH 35E SB mainlanes to IH 30 WB mainlanes	Entrance	Entrance	None	
IH 30 WB mainlanes to Reunion Blvd. and Commerce St. (left exit)	Exit	N/A	Relocated	Would provide access to Reunion Blvd. and Commerce St. from the IH 30 WB mainlanes, traffic would exit to the IH 30 WB CD.
WB Commerce St. To SB IH 35E and IH 30 WB mainlanes	Entrance	Entrance	None	To maintain the existing access to SB IH 35E, the ramp would provide direct access from westbound Commerce St. to IH 30 westbound mainlane.
IH 30 WB CD to IH 30 WB mainlanes	Entrance	Entrance	Relocated - Access would be shifted 1,000 to the west	
Riverfront Blvd. to IH 30 WB mainlanes	Entrance	Entrance	Relocated	Traffic bound for IH 30 WB would enter this ramp to the frontage road.
IH 30 WB to Sylvan Ave. (1)	Exit	Exit	None	This ramp would also provide access to Beckley Ave. via a U-turn at Sylvan Ave.
IH 30 WB to Sylvan Ave. (2)	Exit	N/A	Relocated	Combined with other IH 30 WB to Sylvan Ave. (1). This is a duplicate ramp.
Beckley Ave. to IH 30 WB mainlanes	N/A	Entrance	New Ramp	
IH 30 Managed Lane				
IH 30 EB HOV/Managed lane to IH 30 EB mainlanes	N/A	Exit	New Ramp	Would allow for a 5-mile extension of the existing IH 30 HOV/Managed lane in the morning direction
IH 30 WB HOV managed lane	Entrance	Entrance	None	
IH 35E NB mainlanes				
8th St. to IH 35E NB mainlanes	Entrance	Entrance	Relocated – Access would be shifted 4,100 ft to the north	Access would be provided to IH 35E mainlanes via IH 35E NB CD
Fleming Pl./IH 35E NB frontage road to IH 35E NB mainlanes	Entrance	Entrance	Relocated – Access would be shifted 4,300 ft to the north	Access would be provided to IH 35E mainlanes via IH 35E NB CD
Colorado Blvd. to IH 35E NB mainlanes	Entrance	Entrance	Relocated – Access would be shifted 3,500 ft to the north (from the IH 35E NB CD)	Access would be provided to IH 35E mainlanes via IH 35E NB CD.
IH 35E NB mainlanes to Colorado Blvd.	Exit	Exit	Relocated - Access would be shifted 3,000 ft to the south	Direct access provided to Colorado Blvd. via slip ramp instead of loop ramp.
IH 35E NB mainlanes to IH 35E NB CD	Exit	Exit	Relocated - Access would be shifted 1,800 ft to the south	This ramp and connection from the IH 35E mainlanes to the IH 35E NB CD would provide access to Riverfront Blvd., IH 30 EB and IH 30 WB mainlanes, and to IH 30 EB CD (downtown Dallas).
IH 35E NB CD to IH 35E NB mainlanes	N/A	Entrance	New ramp	Would allow access from 8th St., Fleming Pl., and Colorado Blvd. to IH 35E NB mainlanes.
IH 35E NB mainlanes to IH 30 WB mainlanes	N/A	Exit	New ramp	Currently, traffic must exit IH 35E at Riverfront Blvd. and travel along Riverfront Blvd. to IH 30.

Ramp Description	Existing	Proposed	Proposed Change in Access	Comments
IH 35E NB to Reunion Blvd. and Commerce St.	Exit	Exit	None	
IH 35E NB mainlanes to Reunion Blvd. and Commerce St. (left exit)	Exit	Exit	Would be relocated to right exit from IH 35E NB	The existing condition has duplicate ramps for this movement.
IH 30 EB mainlanes to IH 35E NB mainlanes	Entrance	Entrance	None	
West Commerce St. to IH 35E NB mainlanes	Entrance	Entrance	None	
IH 35E HOV				
IH 35E NB HOV to downtown Dallas	Exit (AM)/ Entrance (PM)	Exit (AM)/ Entrance (PM)	Relocated - Access would be shifted 1,900 ft to the north	IH 35E NB HOV access to downtown Dallas would be changed to Reunion Blvd. from Houston and Jefferson St. viaducts.
IH 35E HOV to IH 35E NB mainlanes	Entrance (AM only)	Entrance (AM only)	Relocated - Ramp would be shifted 1,900 ft to the north	
IH 35E SB mainlanes to IH 35E SB HOV	Entrance (PM only	Entrance (PM only)	Relocated - Ramp would be shifted 1,900 ft to the north	
IH 35E SB Mainlanes				
IH 35E SB mainlanes to West Commerce St.	Exit	Exit	None	
East Commerce St. to IH 35E SB mainlanes	Entrance	Entrance	None	While this ramp would not be modified, the proposed design would change the ramp from IH 35E SB to IH 30 WB to a right exit. This configuration would not allow traffic from the east Commerce St. ramp to exit to IH 30 WB due to a proposed CTB along the gore of the exit ramp to IH 30 WB to mitigate for the limited downstream spacing across four lanes of traffic to the exit ramp.
IH 35E SB mainlanes to IH 30 WB mainlanes	Exit	Exit	Relocated – Would change from left exit to right exit	
Reunion Blvd. to IH 35E SB mainlanes	Entrance	N/A	Relocated – Access would be shifted 6,000 ft to the south	Design would include a ramp from Reunion Blvd. to the IH 35E SB CD to access IH 35E SB mainlanes.
IH 35E SB mainlanes to IH 30 WB mainlanes and downtown Dallas	Exit	Exit	Relocated – Access would be shifted 1,200 ft to the south	Would also provide access to IH 35E SB CD, Riverfront Blvd., and Colorado Blvd.
IH 35E SB mainlanes to Riverfront Blvd.	Exit	N/A	Relocated – Access would be shifted 1,900 ft to the north	Design would include a ramp from IH 35E SB CD to Riverfront Blvd.
Riverfront Blvd. to IH 35 SB mainlanes	Entrance	N/A	Relocated – Access would be shifted 3,700 ft to the south.	Design would include a ramp from Riverfront Blvd. to the IH 35E SB CD to access IH 35E SB mainlanes.
IH 30 WB CD to IH 35E mainlanes	Entrance	Entrance	None	
IH 35E SB CD to IH 35E SB mainlanes	N/A	Entrance	New Ramp	Would allow access from Reunion Blvd.

Ramp Description	Existing	Proposed	Proposed Change in Access	Comments
IH 35E SB to Colorado Blvd.	Exit	Exit	Relocated – Access would be shifted 5,200 ft to the north	Proposed design would include a ramp from the IH 35E SB CD to Colorado Blvd.
IH 35E SB mainlanes to Fleming Pl. and 8th St.	Exit	Exit	None	

Source: NCTCOG and Design Schematic (February 2012).
Notes: N/A= non-applicable, NB=northbound, SB=southbound, EB=eastbound, WB=westbound, FR=frontage road, CD=collector distributor road, AM=morning, PM=afternoon.

During development of the design schematic, maintaining access and mobility to the Methodist Dallas Medical Center which is located at 1441 N. Beckley Avenue was taken into consideration. The proposed improvements to Colorado Boulevard would include replacement of the half cloverleaf interchange and realignment of Colorado Avenue. The access modifications at these locations would not diminish access to the Methodist Dallas Medical Center. The overall purpose to improve safety and operational improvements that constitutes the Build Alternative would help improve access and mobility to and from the hospital.

Bicycle/Pedestrian Improvements

The U.S. Department of Transportation's Policy Statement on Bicycle and Pedestrian Accommodation (March 2010) provides guidance on incorporating pedestrian and bicycling facilities into transportation projects. The policy guidance encourages local planning authorities to implement planning and incorporate design features to facilitate increased pedestrian and bicycling activity. The proposed project would incorporate bicycle and pedestrian improvements in the Dallas Horseshoe Project where geometrically feasible.

To accommodate pedestrian travel along Riverfront Boulevard, Beckley Avenue, Colorado Boulevard, and the proposed frontage roads, the Dallas Horseshoe Project would include sidewalks. The proposed sidewalks would meet Americans with Disabilities Act (ADA) design criteria. The cross streets and frontage roads would also accommodate a 14-ft wide shared-use outside on-street lane (for bicycles and vehicles). See **Appendix C, Sheet 3 and 4 of 4** for the proposed cross streets and frontage road typical sections.

Along IH 30, between Beckley Avenue and Riverfront Boulevard, the proposed project would include a two-way, 14- to 18-ft wide bicycle facility along the eastbound frontage road bridge and a two-way, 8- to 18-ft wide pedestrian facility along the westbound frontage road bridge. These facilities would provide flexibility for the City of Dallas to accommodate for the future bicycles and/or pedestrian facilities planned for the area. The exhibit displaying the IH 30 Tie-Ins to Bicycle Facilities planned by the City of Dallas is available in **Appendix E: Supplemental Data**. The City of Dallas would be responsible for providing 18-ft wide approaches to the eastbound and westbound frontage roads under a separate future project. Both facilities would provide direct connectivity to the future Coombs Creek Trail Extension, Planned Trinity Levee Trails/Connections, Planned Reunion Overlook and Planned Riverfront Boulevard Cycle Tracks. In order to accommodate for the connectivity to the future Coombs Creek Trail Extension, the proposed project would include a 12-ft wide pedestrian/bicycle connector from IH 30 to Beckley Avenue.

Between Colorado Avenue and Riverfront Boulevard, the bridges along IH 35E would accommodate a 6-ft wide sidewalk along the outside of the collector distributor roads. The proposed design would also allow for future bicycle and pedestrian improvements by others along Riverfront Boulevard and Beckley Avenue. **Appendix C, Sheet 3 of 4,** also depicts the typical sections of future improvements (by others) at cross streets.

The locations of the proposed bicycle and pedestrian improvements are illustrated on **Exhibit 4** in **Appendix A** and in the IH 30 Tie-Ins to Bicycle Facilities exhibit **Appendix E: Supplemental Data**. **Exhibit 4** illustrates the proposed project's connectivity to networks that are existing, planned, or under analysis associated with the *2011 Dallas Bike Plan* (June 2011) and the *City of Dallas Trail Network Master Plan* (March 2005).

The design schematic encompassing the proposed improvements would be available for inspection at the TxDOT Dallas District Office, 4777 E. Highway 80, Mesquite, Texas 75150-6643.

6.4 Other

Aesthetics and Landscape
In addition to these improvements, technical guidelines would be developed to include urban design details for aesthetics and opportunities for more refined structural form and architectural enhancements. Further details of the Urban Design Technical Guidelines are provided in **Section 8.3 Aesthetic Considerations**.

HOV/Managed Lanes Concepts
As mentioned previously, the proposed improvements include the extension and widening of two existing HOV/managed lanes. The basic occupancy definition for HOV is currently defined as a vehicle with two or more occupants and is commonly referred to as "2+." This has been the operational definition for an HOV in the region since 1992 when the first interim HOV facility opened to traffic. Since then, many interim HOV lanes have opened on other facilities throughout the region as a way to make some level of immediate-action improvement until a more permanent solution could be designed and funded.

The HOV system was the first phase of growing and developing a regional framework of facilities which are actively managed throughout the day to maximize mobility benefits and offer more reliable and consistent travel time expectations. The current interim HOV system will begin to transition into a fully managed network over the next few years. The managed facility concept, referred to as a Managed Lane System, broadens the usage and eligibility definition for these lanes in such a way as to allow congestion to be fully managed using operational techniques based on, but not limited to, number of occupants, time of day, level of congestion, vehicle type, pricing, or other criteria.

The current regional long-range transportation plan, *Mobility 2035*, identifies and recommends a need to begin the transition to a managed lane system, while at the same time reviewing current policies regarding a possible shift in the occupancy definition from 2+ to three or more occupants (3+), and also reviewing the need for additional management

techniques which might include dynamic pricing. This is currently being studied with the desire that these changes begin as early as mid- to late 2013, to coincide with the opening of the region's first permanent managed lanes as part of the LBJ Express project. The implementation of this change could shift to ensure the completion of appropriate technical analyses, environmental documentation, operational studies, and public notification and involvement.

The Regional Transportation Council (RTC) serves as the transportation policy-making board for North Central Texas and is responsible for developing policies with regard to the delivery, development, and operation of the transportation system including current HOV lanes and the future integrated Managed Lane system. The current managed lane policy, also known as "Business Terms for TxDOT-Sponsored Managed Lane Facilities," was adopted by the RTC on May 11, 2006. The policy can be found at http://www.nctcog.org/trans/committees/rtc/index.asp. This policy is subject to modification by the RTC; however, this would only occur after an opportunity for public input and comment on any changes to the policy. The managed lanes operate according to the regional policy in place at the time the facility opens to traffic.

6.5 Logical Termini

Although the Dallas Horseshoe Project is a breakout of a larger project and an independent project of its own accord for which a separate EA and preliminary design were prepared, the proposed project contains segments (IH 30 and IH 35E) of independent utility which are reasonable expenditures even if no additional transportation improvements in the area are made and do not restrict the consideration of alternatives for other reasonably foreseeable projects including those in the *Mobility 2035 MTP* (i.e. Trinity Parkway).

The logical termini for the IH 30 section of the Dallas Horseshoe Project, which is an east-west facility, consists of Sylvan Avenue to the west and IH 45 to the east. The logical termini for the IH 35E section, which is a north-south facility, consists of 8th Street to the south and IH 30 to the north. The IH 30 and IH 35E facilities are considered major traffic generators.

Along IH 30, the construction limits and EA account for transitions into the existing roadways and extend from approximately 780 ft west of Sylvan Avenue to approximately 0.5 mile west of IH 45. The construction limits along IH 35E extend from approximately 8th Street to approximately 175 ft south of Commerce Street.

7.0 SURROUNDING AREA

The proposed project is located within the City of Dallas, southwest from downtown. The surrounding terrain is generally level to gently rolling with elevations ranging from approximately 450 to 500 ft above mean sea level (msl). The general soil types in the area are clays, loams, and some sandy soils on stream terraces.

The area surrounding the proposed project is urbanized with industrial, manufacturing, commercial, mixed-use, entertainment and residential developments. The downtown area is a major employment and activity destination in which the surrounding roadways

of IH 30, IH 35E, DNT, Woodall Rodgers Freeway, US 75, IH 45, and IH 30 are highly utilized by local and commuting travelers. The Dallas Floodway and its levees traverse the proposed project. The Trinity River flows in a southeasterly direction on the west side of the City of Dallas.

On the east side of the levees, closer to downtown, the area consists primarily of industrial, manufacturing, and commercial establishments. Urban in-fill and warehouse conversions between the east side of the levees and IH 35E has created residential opportunities in the form of townhomes and apartments among the design district's commercial land uses. On the west side of the levees, the area consists primarily of commercial, institutional, public/recreational facilities, and residential neighborhoods located adjacent to IH 30 and IH 35E. These areas contain typical maintained landscape vegetation associated with urban areas.

Within the limits of the Dallas Floodway, the FEMA 100-year floodplain is vegetated primarily by herbaceous species with some stands of woody vegetation along the Trinity River bank and isolated trees within in the floodplain. The area is maintained by mowing. Wetlands are present and scattered throughout the floodplain. The floodplain is utilized by migratory birds and local terrestrial wildlife. The Historic Trinity River Channel is located east of the East Levee. Linear sumps are located outside the levees that flow to pump stations and the water is then pumped into the levees and flows to the Trinity River.

Appendix G includes representative photographs of the surrounding area.

8.0 SPECIFIC AREAS OF ENVIRONMENTAL CONCERN

This EA was prepared in accordance with applicable guidance/regulatory criteria (i.e., statutes, regulations, Executive Orders) and included under each resource section. The status of the established impact analysis criteria and their applicability are discussed appropriately throughout the EA (i.e., Executive Order 12898 is addressed under **Section 8.1.4. Environmental Justice**). The existing environment and potential environmental impacts resulting from the No-Build and Build Alternative are discussed in each section. In general, environmental consequences can be considered temporary or permanent in nature. Permanent impacts are those anticipated to last indefinitely. Temporary impacts consist of those that would result from construction activities (i.e., clearing, grading, excavation, hauling, access) anticipated to last for some period of time but that would eventually revert to pre-construction conditions.

As mentioned earlier, study areas for this EA were determined based on the resources' geographic locations and corresponding scale of potential impacts. For example, the study area for direct impacts to natural resources such as water resources and biological resources is defined by the areas that may be potentially impacted or the areas of disturbance associated with construction activities.

The study areas utilized in the Indirect and Cumulative Impacts sections can be found in **Sections 9.0. Indirect Impacts Analysis** and **Section 10.0, Cumulative Impacts Analysis**.

8.1 Socio-economic Impacts

8.1.1 Regional and Community Growth

According to the U.S. Census Bureau's *Census 2010,* the DFW Metroplex is the fourth largest metropolitan area in the U.S. Between 2000 and 2010, the U.S. Census Bureau estimates the DFW Metroplex added over 1.1 million residents, equating to a growth rate of approximately 22 percent. Such growth has pushed the DFW Metroplex ahead of 35 states with respect to total population, and between 2000 and 2010, the DFW Metroplex was the second fastest growing metropolitan area in the U.S. *Census 2010* also reveals continued growth in Dallas County and the City of Dallas during the same time period. From 2000 to 2010, Dallas County gained 149,240 new residents, and the City of Dallas gained 9,236 new residents, equating to growth rates of approximately 7 percent and 1 percent, respectively.

Vigorous economic growth also characterizes the DFW Metroplex relative to other metropolitan regions in the U.S. According to the U.S. Bureau of Economic Analysis, from 2001-2009, the DFW Metroplex experienced a 42 percent increase in economic output as measured by Gross Domestic Product (GDP). This compares to an approximate 38 percent growth rate during the same time period for all metropolitan regions of the U.S. as a whole. Total employment in the DFW Metroplex increased approximately 17 percent from 2001-2008, while total employment increased approximately 10 percent for all metropolitan regions in the U.S. during the same time period. The DFW Metroplex has 26 percent of the state's population, 28 percent of the state's total employment, and generates 31 percent of the state's total economic output as measured by GDP (U.S. Bureau of Economic Analysis, 2011).

Household population projections generated by the NCTCOG, a regional planning agency for the DFW Metroplex and the DFW Metropolitan Planning Organization (MPO), indicate dramatic growth will likely occur in the DFW Metropolitan Planning Area (MPA) through the year 2040. The NCTCOG's *North Central Texas 2040 Demographic Forecast* projects Dallas County to grow to a household population of 3,265,190 residents by 2040, an increase of 897,051 persons and an approximate increase of 38 percent from its 2010 Census-documented population. The 12-county NCTCOG forecast area, which represents the DFW MPA and differs slightly from the counties comprising the DFW Metroplex as designated by the U.S. Census Bureau, is projected to grow to a household population of 10,543,336 residents by 2040.

Household population projections generated by the NCTCOG's *2040 Demographic Forecast* for North Central Texas also reveal robust growth for specific forecast market areas which are traversed by the Dallas Horseshoe Project. The boundaries of four 2040 Demographic Forecast Market Areas which contain the Dallas Horseshoe Project are

illustrated in **Appendix E: 2040 Demographic Forecast Market Areas**. According to the NCTCOG, the four forecast market areas (1, 8, 21, and 28) are projected to experience increases in household population ranging from approximately 13.3 to 650.6 percent, and the NCTCOG MPA is expected to increase 82.5 percent. Employment projections provided by the NCTCOG for the four forecast market areas indicate strong growth in employment; from 2005 to 2040, employment is projected to increase within a range of approximately 28.0 to 96.3 percent, while employment within the NCTCOG MPA is expected to increase approximately 82.3 percent. **Table 8-1** summarizes population and employment growth for the four forecast market areas traversed by the Dallas Horseshoe Project in addition to the 12-county NCTCOG forecast area.

Table 8-1: Population and Employment Trends, 2000 - 2040

2040 Demographic Forecast Market Area	Household Population				Employment			
	2005*	2035	2040	Percent Change: 2005 to 2040	2005	2035	2040	Percent Change: 2005 to 2040
1	3,172	21,175	23,808	650.6	118,052	148,739	151,136	28.0
8	20,403	45,220	49,822	144.2	80,221	102,015	104,490	30.3
21	82,831	109,549	114,803	38.6	37,288	68,155	73,207	96.3
28	101,429	112,939	114,912	13.3	44,223	73,507	77,794	75.9
NCTCOG 12-County MPA	5,777,272	9,833,378	10,543,336	82.5	3,624,051	6,177,016	6,606,515	82.3

Source: NCTCOG, 2040 Demographic Forecast. http://www.nctcog.org.
**Population totals for 2005 are taken from the NCTCOG demographic forecast and are not representative of the Census 2000- or 2010-documented populations for the given geographic areas.*

No-Build Impact
Because traffic mobility or safety concerns would not be improved under the No-Build Alternative, access and mobility of people and goods would continue to be limited.

Build Impact
Extensive coordination occurred between the City of Dallas and the NCTCOG regarding future developments along the Dallas Horseshoe Project limits. The proposed project has taken into consideration the predicted 2040 demographics and developments tracked and monitored by the NCTCOG for the Dallas-Fort Worth (DFW) Metroplex.

8.1.2 Community Cohesion

No-Build Impact
Under the No-Build Alternative for the Dallas Horseshoe Project, a change in community cohesion is not anticipated for adjacent residential areas within Oak Cliff or downtown Dallas.

Build Impact
Community cohesion is a term that refers to an aggregate quality of a residential area. Cohesion is a social attribute that indicates a sense of community, common responsibility, and social interaction within a limited geographic area. It is the degree to which residents

have a sense of belonging to their neighborhood or community or a strong attachment to neighbors, groups, and institutions as a continual association over time.

Several residential communities with varying socio-economic characteristics are located near the proposed project. These residential communities, some of which are specific neighborhoods within a larger residential district, include:

- East Kessler Park Neighborhood (associated with the North Oak Cliff Neighborhood District);
- Lake Cliff Neighborhood (associated with the North Oak Cliff Neighborhood District);
- Trinity Bottoms Neighborhood (associated with the South Oak Cliff Neighborhood District);
- La Bajada Neighborhood;
- Design District;
- Cedars Neighborhood; and
- Various neighborhoods within the Dallas CBD.

The boundaries of these residential communities are illustrated on **Appendix A: Exhibit 9**. As reflected in **Appendix A: Exhibit 9**, the IH 30 and IH 35E facilities currently serve as boundaries to the East Kessler Park, Trinity Bottoms, Cedars, and Dallas CBD Neighborhoods. No residential community is currently separated or divided by either IH 30 or IH 35E. Communities with residences located adjacent to IH 30 or IH 35E include the East Kessler Park and Trinity Bottoms Neighborhoods.

Negative impacts to residential communities associated with the Dallas Horseshoe Project could be attributed to residential displacements, increases in traffic noise, changes in aesthetics, changes in access to the IH 30 and IH 35E facilities (i.e. ramp modifications), and/or temporary construction impacts. One residential community anticipated to be directly impacted is the Trinity Bottoms Neighborhood. This neighborhood would be impacted by the proposed project in the form of two residential displacements and traffic noise impacts (**Appendix D: Constraints Maps, Sheet 8 of 12**). Residents of communities not located directly adjacent to either IH 30 or IH 35E may experience negative impacts associated with changes in accessing the IH 30 or IH 35E facilities, temporary construction impacts, or personal displeasure with the aesthetics of the improved facilities.

Positive impacts to residential communities would include improved mobility resulting from improved safety, traffic operations, air quality, and management of traffic congestion; changes in access (i.e. ramp modifications or proposed bicycle and pedestrian improvements); provision of connectivity to the future Coombs Creek Trail Extension and the planned Trinity River Trail; and changes in aesthetics. All neighborhoods, specifically the East Kessler Park and Trinity Bottoms Neighborhoods, would be provided with opportunities to access proposed bicycle and pedestrian facilities which offer multi-modal choices for accessing other community amenities, places of employment, entertainment venues, or other similar destinations (**Appendix A: Exhibit 4 – Bicycle/Pedestrian Improvements**). Individuals associated with the communities listed above who utilize IH 30

and IH 35E would benefit from the improved safety associated with the replacement of aging and deteriorating IH 30 and IH 35E bridge structures. The management of congestion due to improvements in traffic operations along IH 30, IH 35E, and at the Mixmaster would also benefit those who travel along IH 30 or IH 35E.

The proposed improvements would not affect, separate, or isolate any distinct neighborhoods, ethnic groups or other specific groups as the IH 30 and IH 35E facilities are existing interstate highways. Specific direct impacts with implications for community cohesion are discussed in **Section 8.1.6 ROW Acquisition, Easements, Displacements, and Relocations; Section 8.3 Aesthetic Considerations; Section 8.5 Air Quality; Section 8.8 Traffic Noise; and Section 8.10 Construction Impacts**. Details related to access and bicycle/pedestrian improvements are provided in **Section 6.3 Build Alternative**.

As described in **Section 12.0 Public Involvement,** TxDOT has and continues to facilitate communication with the general public, adjacent property owners, business owners, residents, the City of Dallas, and other public agencies with interests along IH 30 and IH 35E. No concerns regarding community cohesion were documented through the public involvement efforts associated with Project Pegasus. A public hearing was conducted for the Dallas Horseshoe Project in the summer of 2012.

8.1.3 Limited English Proficiency (LEP) Populations

No-Build Impact

Under the No-Build Alternative for the Dallas Horseshoe Project, LEP individuals would be afforded the opportunity to participate in the decision-making process.

Build Impact

Executive Order (EO) 13166 on LEP calls for all agencies to ensure that their federally conducted programs and activities are meaningfully accessible to LEP individuals. The US DOT defines LEP persons as individuals with a primary or home language other than English who must, due to limited fluency in English, communicate in that primary or home language if the individuals are to have an equal opportunity to participate effectively in or benefit from any aid, service, or benefit provided by the transportation provider or other US DOT recipient.

Census block group data was obtained from the U.S. Census Bureau *2005-2009 American Community Survey (ACS) 5-Year Estimates* database. According to the information, the "Ability to Speak English," for the population five years and older indicates approximately 23.9 percent of the population within the 11 census block groups along the proposed project limits speaks English "Well," "Not Well," or "Not at All." Nine of the 11 census block groups adjacent to the Dallas Horseshoe Project limits contain LEP populations according to the *2005-2009 ACS*; LEP populations among the 11 census block groups ranged from approximately 0.0 to 81.9 percent. CT 20 BG 5 contains 81.9 percent LEP population. The next largest LEP population per census block group is 80.9 percent (CT 20 BG 6). Specific LEP languages and respective percentages represented in the LEP study area are the following: Spanish (37.4

percent), Other Indo-European (0.9 percent), Asian and Pacific Islander (0.4 percent), and Other (0.3 percent). **Table 8-2** summarizes the LEP population for the study area and **Exhibit 5 - 2000 Census Geography** in **Appendix A** illustrates the census block group boundaries.

Table 8-2: Percentage LEP Population

Census Tract	Census Block Group	Total Population 5 Years and Older	Total Number Who Speak English "Well," "Not Well," or "Not at All"	% LEP
CT 20	1	951	0	0.0
	2	1,512	868	57.4
	5	2,926	2,399	81.9
	6	346	280	80.9
CT 32.01	1	1,704	44	2.5
CT 33	1	1,174	550	46.8
	2	1,368	78	5.7
CT 41	1	260	0	0.0
CT 42.01	1	793	14	1.7
CT 43	1	516	340	65.8
CT 100	3	9,826	554	5.6
LEP Study Area Total		**21,376**	**5,127**	**23.9**

Source: U. S. Census Bureau. 2005-2009 American Community Survey 5-Year Estimates, Table B16004.
Note: Census geographies are commensurate with *Census 2000.*

As described in **Section 12.0 Public Involvement**, past public involvement activities related to the proposed project followed TxDOT's and FHWA's policies and procedures. The public involvement program for Project Pegasus included 32 presentations, 6 public meetings, and a public hearing. Spanish language newspaper notices for the project's public meetings and provision of Spanish interpreters were utilized during the Project Pegasus public involvement activities. In addition, public information packets (written in English) were distributed to all businesses along the Project Pegasus corridor by project representatives capable of providing Spanish translations for anyone needing assistance.

A field reconnaissance (windshield survey) along the Dallas Horseshoe Project limits indicated that English and Spanish were two languages used for building signage or other forms of posted information and advertisement within the proposed project limits. A public hearing was held for the proposed project in the summer of 2012. During the preparation for the public hearing, reasonable steps, such as the publication of Bilingual announcements in local papers that inform the public of the opportunity to request an interpreter (for language or other special communication needs) to be present at the public hearing were taken to ensure that such persons had meaningful access to the programs, services, and information that TxDOT provides.

8.1.4 Environmental Justice

No-Build Impact

Under the No-Build Alternative for the Dallas Horseshoe Project, no adverse impacts to environmental justice populations are anticipated. However, because the IH 30 and IH 35E facilities were designed and constructed over 50 years ago with only minor improvements

since original construction, the condition of the existing facilities would continue to be unsatisfactory for all adjacent and user populations, including environmental justice populations. Safety and traffic operations would not be improved, and congestion along IH 30, IH 35E, and at the Mixmaster would continue to increase through time.

Build Impact

Definition of Environmental Justice Populations

EO 12898 entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires each Federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." FHWA has identified three fundamental principles of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

FHWA Order 6640.23 defines a minority as a person who is:

- Black (having origins in any of the black racial groups of Africa);
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
- American Indian and Alaska Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

EO 12898 further defines a minority population as any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FHWA program, policy, or activity.

Low-income is defined as a household income at or below the Department of Health and Human Services (DHHS) poverty guidelines. The poverty guidelines are provided by the DHHS. In 2012, the DHHS poverty guideline for a four person family is $23,050.

Adverse effects are defined in FHWA Order as the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or

disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion; isolation, exclusion, or separation of minority or low-income individuals within a given community from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.

Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that:

1. Are predominately borne by a minority population and/or a low-income population; or
2. Would be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-minority population and/or non-low-income population.

The potential effects of the proposed Dallas Horseshoe Project have been evaluated in accordance with the requirements of EO 12898. Population data at the census block (*Census 2010*) and census block group levels (*2005-2009 ACS 5-Year Estimates)* from the U.S. Census Bureau were used in this socioeconomic analysis. Census block data provides information at the lowest scale available for race and ethnicity analysis; census block group data provides information at the lowest scale available for household income and poverty population analyses. **Exhibits 5 - 2000 Census Geography** and **6 - 2010 Census Geography** in **Appendix A** illustrate the census geography boundaries from *Census 2000* and *2010* used in this analysis.

Definition of Low-Income and Minority Population Study Areas

The study areas for the low-income and minority population analyses differ due to the availability of census data. The area traversed by the proposed Dallas Horseshoe Project lies within 11 census block groups associated with the *2005-2009 ACS 5-Year Estimates* and 131 census blocks associated with the *2010 Census*. The 11 census block groups comprise the direct impacts study area for household income and poverty populations, and are referred to as the "low-income population study area." The 131 census blocks traversed by the proposed project comprise the "minority population study area."

Income Characteristics

Due to the lack of income data at the census block level available from the *2005-2009 ACS 5-Year Estimates*, the census block groups containing the project footprint were used for this part of the analysis. These 11 census block groups comprise the low-income population study area for the household income and poverty analysis.

Median household income and poverty status for the low-income population study area are listed in **Table 8-3** and depicted in **Exhibit 5 - 2000 Census Geography** in **Appendix A**. Median household income of census block groups comprising the project area ranged from $12,448 to $126,250 according to the *2005-2009 ACS 5-Year Estimates*.

Table 8-3: Median Household Income and Poverty Status

Census Tract	Census Block Group	Number of Households	Median Household Income	2012 DHHS Poverty Guideline
CT 20	1	568	$57,838	$23,050
	2	403	$12,448	
	5	812	$28,350	
	6	166	$21,500	
CT 32.01	1	928	$56,154	
CT 33	1	606	$26,613	
	2	515	$58,843	
CT 41	1	132	$20,600	
CT 42.01	1	346	$126,250	
CT 43	1	183	$38,550	
CT 100	3	57	$92,841	
LEP Study Area Total			**N/A**	

Source: U. S. Census Bureau. 2005-2009 American Community Survey 5-Year Estimates, Tables B19001 and B19013.
Note: Census geographies are commensurate with Census 2000.

As shown in **Table 8-3** there is variation in the rate of median household income among the census block groups that comprise the low-income population study area. Three of the 11 census block groups contain median household incomes below the 2012 poverty guideline of $23,050 (CT 20, BG 2; CT 20, BG 6; CT 41, BG 1). Windshield surveys did result in the identification of a low-income neighborhood east of IH 35E and south of the Trinity River Corridor within CT 41, BG 1 (Trinity Bottoms Neighborhood). This census block group contains two single family residences and six billboards anticipated to be displaced (**Appendix A: Exhibit 5**).

Minority Characteristics

For purposes of the analysis, an environmental justice population is present when the total minority population percentage within the proposed project limits or individual census blocks exceeds 50 percent. Data from *Census 2010* for the 131 census blocks that are traversed by or are immediately adjacent to the proposed project has been used in this analysis. **Table 8-4** contains the percent minority population for each populated census block in the minority population study area. Only 12 of the 131 census blocks are populated according to *Census 2010*.

Table 8-4: Percent Minority Population Data

Census Tract	Census Block Group	Census Block	Total Pop.	Not Hispanic or Latino						Hispanic or Latino of Any Race	Total Minority Pop.
				Black or African American	American Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or More Races		
Comparison Census Block Groups											
CT 20	2	--	774	27.2%	0.7%	0.0%	0.0%	0.1%	1.2%	57.7%	87.2%
CT 20	3	--	709	6.4%	0.2%	0.1%	0.0%	0.0%	0.5%	89.2%	96.7%
CT 41	2	--	474	48.7%	0.4%	0.0%	0.0%	0.0%	0.2%	49.1%	98.5%
CT 42.01	1	--	728	1.2%	1.0%	1.2%	0.0%	0.0%	0.1%	13.1%	16.8%
CT 100	1	--	9,658	46.5%	<0.0%	0.6%	<0.0%	<0.0%	0.2%	18.0%	65.6%
Study Area											
CT 20	2	2024	1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	3	3016	8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
		3019	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
CT 41	2	2003	16	87.5%	6.3%	0.0%	0.0%	0.0%	0.0%	6.3%	100.0%
		2018	44	43.2%	0.0%	0.0%	0.0%	0.0%	0.0%	56.8%	100.0%
		2019	3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
		2032	2	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
CT 42.01	1	1004	2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%
CT 100	1	1226	2,214	41.6%	0.2%	0.3%	0.0%	0.0%	0.0%	17.4%	59.5%
		1242	2	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%
		1247	1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		1268	1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Total Minority Population Study Area			**2,299**	**41.8%**	**0.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**18.5%**	**60.9%**

Source: U.S. Census Bureau. Census 2010 Redistricting Data (Public Law 94-171) Summary File, Table P2.
** Population percentages are rounded to the nearest tenth of a percent.*

The 131 census blocks comprising the minority direct impacts study area have a total population of 2,299. Overall, minorities account for approximately 60.9 percent of the minority population study area which indicates the presence of an environmental justice population. The 12 census blocks which are populated exhibit minority percentages that range from 0.0 to 100.0 percent. Of the 12 census blocks that are populated within the minority population study area, 10 exhibit a minority population exceeding 50 percent. Nine census blocks contain 100.00 percent minority population. The three populated census blocks which contain anticipated displacements include CT 41, BG 2, Blocks 2018 and 2019, and CT 100, BG 1, Block 1242 (**Appendix A: Exhibit 6**).

The comparison census block groups indicate the immediate area encompassing the proposed project is populated largely by minority populations. The minority percentages of the comparison census block groups range from 16.8 to 98.5 percent; four of the five comparison census block groups exhibit minority populations which exceed 50 percent.

HOV/Managed Lanes and Environmental Justice

As described in **Section 6.4**, the current interim HOV system will begin to transition into a fully managed network over the next few years. The managed facility concept, referred to as a Managed Lane System, would include operational management through various techniques including pricing. With respect to assessing potential impacts to environmental justice populations related to pricing, the implementation of the future integrated Managed Lane system would take place after the completion of appropriate technical analyses, environmental documentation, operational studies, and public notification and involvement.

Summary of Environmental Justice Impacts

Based on the analyses provided above, the focus area for potential environmental justice impacts appears to be the general area associated with CT 41, BG 1 (*Census 2000* geography) and CT 41, BG 2, Block 2018 (*Census 2010 geography*). These census geographies represent the Trinity Bottoms Neighborhood and the census data reflect a predominantly low-income and minority population. Residential displacements, along with traffic noise impacts, are anticipated for the residents of the Trinity Bottoms Neighborhood who live immediately east of IH 35E between Sabine Street and Comal Street. However, this neighborhood is also anticipated to be benefitted by the proposed project through the construction of sidewalks and shared-use bike lanes along the northbound IH 35E frontage road, construction of 14-ft wide outside shared-use lanes for (bikes and vehicles) and sidewalks along both sides of Colorado Boulevard, and the proposed realignment of Colorado Boulevard to reduce the skew of the Colorado Boulevard/IH 35E intersection (**Appendix A: Exhibit 3**).

Because the census data provided in **Tables 8-3** and **8-4** indicate environmental justice populations comprise a majority of the population residing adjacent to the proposed project limits, the proposed project's effect to the environmental justice populations residing in the Trinity Bottoms Neighborhood does not appear to be disproportionately high and adverse. No minority or low-income community institutions would be damaged during the displacement of commercial establishments, and acquisition and relocation assistance would be in accordance with the TxDOT Right-of-Way Acquisition and Relocation Assistance Program. The TxDOT Relocation Office would provide assistance to all individuals, families, businesses, and non-profit organizations displaced as a result of the proposed improvements. As described in **Section 8.1.6 ROW Acquisition, Easements, Displacements, and Relocations**, assistance would be provided should the local existing housing market be insufficient for relocation. Additionally, the TxDOT Relocation Office would provide assistance to the displaced businesses and non-profit organization to aid in their satisfactory relocation with a minimum of delay and loss in earnings.

When considering the totality of effects of this project, the overall benefits provided for all adjacent communities, including low-income and minority populations, outweigh the specific concerns about environmental justice within the Trinity Bottoms Neighborhood. Over the long term, the residents of all communities adjacent to the proposed project, the non-driving public, and users of the IH 30 and IH 35E facilities would benefit from the proposed Dallas Horseshoe Project as a result of improved mobility in the area resulting from improved safety, traffic operations, air quality, and management of traffic congestion. Because the condition of the existing facilities would continue to be

unsatisfactory for all adjacent and user populations under the No-Build Alternative, the proposed improvements are intended to bring the IH 30 and IH 35E facilities to a satisfactory level for all populations, including environmental justice populations. No concerns regarding environmental justice were documented through the public involvement efforts associated with Project Pegasus. A public hearing was conducted for the Dallas Horseshoe Project during the summer of 2012. There does not appear to be an unfair distribution of benefits or adverse impacts, nor any disproportionately high and adverse impacts on minority or low-income populations associated with the proposed project.

8.1.5 Public Facilities and Services

No-Build Impact
Under the No-Build Alternative for the Dallas Horseshoe Project, additional ROW and access changes would not be required; therefore, no impacts to public facilities or services are anticipated.

Build Impact
The proposed project would not impact public facilities or services located along the project limits within the City of Dallas. The proposed improvements would not prohibit access to or use of any public facility or service, including the Methodist Dallas Medical Center which is located at 1441 N. Beckley Avenue. It is anticipated that the access to these facilities and services would be enhanced after the completion of the proposed project.

8.1.6 ROW Acquisition, Easements, Displacements, and Relocations

No-Build Impact
Under the No-Build Alternative for the Dallas Horseshoe Project, additional ROW would not be acquired; therefore, no ROW acquisitions, easements, permanent agreements, or displacements would be required. The ROW that was acquired along IH 30 by TxDOT (approximately 3.0 acres) would ultimately be treated as surplus ROW and sold. The proceeds from the surplus ROW sale would be credited to the Transportation Fund.

Build Impact
The Build Alternative would require the acquisition of ROW, a permanent easement, and an estimated 15 displacements.

It has been determined that drainage easements would not be required. Temporary construction easements may be required; however, their location has not been determined at this stage of project development.

Methodology
For the purpose of this assessment, a structure that was anticipated to be intersected or clipped by the proposed ROW was determined to be displaced, as well as properties with anticipated loss of substantial parking. An unknown description indicates a commercial structure lacking identification which would classify it as a particular type of business establishment.

Summary of Displacements
A summary of the anticipated displacements are listed in **Table 8-5**.

Table 8-5: Summary of Potential Displacements

Type of Displacement	Number of Displacements
Residential	**2**
Single Family Housing Units	2
Commercial	**7**
Occupied	4
Vacant	3
Billboards	**6**
Total	**15**

Source: Design Schematic and field observations (February 2012).

The total number of displacements is based on the individual business or residence. No places of worship or public facilities would be displaced within the project limits. The displacement information presented is based upon the proposed ROW line as depicted in **Appendix D: Constraints Maps**.

Residential Displacements
Two single family housing units are anticipated to be displaced along IH 35E on the south side of the Dallas Floodway. The two housing units (labeled as D4 and D6 in **Appendix D: Constraints Maps, Sheet 8 of 12**) are located within the boundaries of the Golden Seeds, Inc. neighborhood association. Because of the limited number of potentially displaced households, information regarding race, ethnicity, income, or other demographic details was not researched to protect the privacy of those affected. The current market values of the potentially displaced single family homes were identified and range from approximately $18,000 to $23,000 (Dallas Central Appraisal District). The square footage of the two homes ranges from approximately 700 to 900 ft^2. The current market values and square footage ranges were used to identify the number of available homes within the same ZIP code (75203). As of March 2012, five homes ranging from $15,000 to $25,000 and 900 to 1,500 ft^2 were listed on a Dallas local Multiple Listing Service (MLS) website (http://www.dfwsearchhomes.com). Based on this current available market data, comparable housing in cost and size appears to be available for the potential residential displacements.

As mandated by the Uniform Relocation Assistance and Real Properties Acquisitions Act (URARPAA), as amended in 1987, residential replacement structures must be located in the same type of neighborhood and be equally accessible to public services and places of employment. TxDOT would complete a survey of the housing market and provide housing supplements to displaced residents, if necessary. Additionally, TxDOT would relocate residents up to 50 miles.

Housing of Last Resort

Assistance would be provided should the local existing housing market be insufficient for relocation. This assistance could apply to the potential residential displacees given the lower than average value of the potentially displaced homes.

Commercial/Billboard Displacements

A total of seven commercial establishments and six billboards are anticipated to be displaced by the proposed project. Three of the seven commercial establishments are vacant, confirmed by a windshield survey conducted in December 2011. **Table 8-6** lists the potential commercial displacements and provides information related to business type, occupancy status, estimated number of employees, approximate value of property, and existing zoning and land use descriptions. The Constraints Map ID Number corresponds to locations identified on **Appendix D: Constraints Maps**.

Table 8-6: Commercial/Billboard Displacements

Constraints Map ID/Sheet No.	Business/ Billboard Name/ Address	Business Type	Occupancy Status	Estimated Number of Employees	Approx. Value of Property	Existing Zoning*/ Land Use
D1/4 and 10	424 S. Riverfront Blvd.	Unknown	Occupied	Unknown	$98,780	PD 784/ Commercial
D2/4 and 10	434 S. Riverfront Blvd.	--	Vacant	--	$1,456,350	
D3/4 and10	Airgas 430 S. Riverfront Blvd.	Welding Supplies	Occupied	5 to 9	$27,690	
D5/8	1011 Sabine St.	Clear Channel Billboard	In Use	--	$2,180	PD 571, Subdistrict 2/ Commercial
D7/8	1013 Dodd St.	CBS Billboards	In Use	--	$2,980	
D8/3, 11 and 12	ATW Bail Bonds 378 S. Riverfront Blvd.	Bail Bonds	Occupied	1 to 4	$232,000	PD 784 / Commercial
D9/3, 11 and 12	SPCA of Texas (Dealey Animal Care Center) 362 S. Riverfront Blvd.	Non-Profit Animal Shelter	Occupied	20 to 49	$478,430	
D10/11 and, 12	350 S. Riverfront Blvd.	--	Vacant/For Lease	--	$121,130	
D11/11 and 12	212 Reunion Blvd. (Formerly Texas Bail Bonds)	--	Vacant	--	$249,590	
D12/9 and 10	106 Dearborn St.	Clear Channel Billboard	In Use	--	$443,500	PD 784 / Commercial
D13 and D14/4, 5, 10, and 12	538 S. Riverfront Blvd.	CBS Billboard	In Use	--	$982,000	PD 784 / Commercial
D15/4, 11, and 12	106 Dearborn St.	Clear Channel Billboard	In Use	--	$443,500	PD 784 / Commercial
			Total	Range of 26 to 62+	$4,538,130	

Sources: Field observations (December 2011), www.manta.com (accessed December 2011 for estimated number of employees), Dallas Central Appraisal District (accessed December 2011 for address confirmation and approximate property values, City of Dallas Zoning Website http://gis.dallascityhall.com/zoningweb/ (accessed December 2011 for zoning confirmation).

**PD 784 is the Trinity River Corridor Special Purpose District and PD 571, Subdistrict 2 is a separate Special Purpose District containing both residential and commercial land uses.*

As of March 2012, available MLS information (www.showcase.com) indicated commensurate relocation sites with facilities of similar approximate square footage (ranging from approximately 1,500 to 6,000 ft^2) are available for displacements D1, D2, D8, D9, D10, and D11 within the same ZIP code (75207). The facility associated with displacement D3 is large (over 93,000 ft^2) and a commensurate industrial facility is not available within the same ZIP code (75207); however, 14 facilities ranging from 90,000 to 100,000 ft^2 are available for lease within the City of Dallas as of March 2012. Displacements D5, D7, D12, D13, D14, and D15 (billboards) are likely able to seek leasing agreements along the future IH 35E ROW post-construction and remain in the same general area.

As shown in **Table 8-6**, approximately 26 to 62 employees could be impacted by the displacement of commercial establishments. If the businesses are able to relocate within the immediate vicinity or community and remain viable, any potential employment effects would be temporary. A higher degree of impact could occur if the businesses cannot relocate or must do so outside of the general vicinity of their current location. It is possible that some commercial entities may not be able to relocate within the immediate vicinity of their present location or current service areas due to the availability of commercial real estate, undeveloped parcels, or required zoning. However, the available commercial real estate within ZIP code 75207 (in addition to the City of Dallas) indicates relocation of the four operating commercial displacements should be achievable within the immediate community.

Uniform Relocation Assistance and Real Properties Acquisitions Act
TxDOT would be responsible for the ROW acquisitions. Acquisition and relocation assistance would be in accordance with the TxDOT Right-of-Way Acquisition and Relocation Assistance Program. Consistent with the USDOT policy, as mandated by the URARPAA, as amended in 1987, TxDOT would provide relocation resources (including any applicable special provisions or programs) to all displaced persons without discrimination. The available structures must also be open to persons regardless of race, color, religion, or nationality and be within the financial means of those individuals affected. All property owners from whom property is needed are entitled to receive just compensation for their land and property. Just compensation is based upon the fair market value of the property. TxDOT also provides through its Relocation Assistance Program, payment and services to aid in movement to a new location.

Relocation assistance is available to all individuals, families, businesses, farmers, and non-profit organizations displaced as a result of a state highway project or other transportation project. Thus assistance applies to tenants as well as owners occupying the real property needed for the project. Residential replacement structures must be located in the same type of neighborhood and be equally accessible to public services and places of employment. As stated previously, assistance would be provided should the local existing housing market be insufficient for relocation. TxDOT would complete a survey of the housing market and provide housing supplements to displaced residents, if necessary. Additionally, TxDOT would relocate businesses and residents up to 50 miles. The TxDOT Relocation Office would also provide assistance to displaced businesses and non-profit organizations to aid in their satisfactory relocation with a minimum of delay and loss in

earnings. The proposed project would proceed to construction only when all displaced residents have been provided the opportunity to be relocated to adequate replacement sites. No special relocation considerations or measures to resolve relocation concerns have been identified to date.

8.2 Section 4(f) and 6(f) Properties

Section 4(f)
Four parks and one trail are located adjacent to the proposed project. No existing trails were identified which currently intersect with either IH 30 or IH 35E; however, trails that would connect with the bicycle and pedestrian facilities that are proposed along IH 30 and IH 35E have been included.

Kessler Parkway Park
Kessler Parkway Park is an approximately 22 acre linear park located parallel to IH 30 (on the south) and west of the Dallas Floodway. The limits of the park are roughly located between Sylvan Avenue and Beckley Avenue (**Appendix D: Constraints Maps, Sheets 1 and 2 of 12**).

Trinity River Greenbelt Park
The Trinity River Greenbelt Park is an urban open space park of approximately 3,652 acres. The designated primary use of the Trinity River Greenbelt Park is floodplain and flood control, with secondary use as park and open space. The City of Dallas purchased the Trinity River Greenbelt Park for parks and open space, including transportation improvements. The deed records of the City of Dallas' acquisition of the Trinity River Greenbelt Park include a conveyance for transportation purposes. Both IH 30 and IH 35E traverse the Trinity River Greenbelt Park (**Appendix D: Constraints Maps, Sheets 2, 3, 4, and 9 of 12**).

Coombs Creek Trail
The Coombs Creek Trail, located in north Oak Cliff adjacent to Coombs Creek, provides a connection to the proposed Trinity Levee Trail from Kessler Parkway and Stevens Park Golf Course. Phase I of Coombs Creek Trail traverses the limits of Kessler Parkway and parallels the south side of IH 30. Sidewalk connections are proposed to connect the Coombs Creek Trail to IH 30 along Beckley Avenue. The proposed bicycle and pedestrian facilities along IH 30 would potentially connect to this trail network (specifically the Coombs Creek Trail and proposed Trinity Levee Trail near or at Beckley Avenue (**Appendix D: Constraints Maps, Sheets 1, 2, and 3 of 12**).

Reunion Arena Park
Reunion Arena Park contains the Reunion Tower landmark that provides a viewing platform overlooking the Dallas skyline. The park is comprised of approximately 2.4 acres. Reunion Arena Park is located east of IH 35E at Reunion Boulevard and Sports Street (**Appendix D: Constraints Maps, Sheet 11 and 12 of 12**).

Old City Park

Old City Park contains the Dallas Heritage Village, which is an approximately 13 acre recreated Victorian age town located at 1515 South Harwood Street. The park is an accredited history museum; the mission of Dallas Heritage Village is to collect, preserve, and teach the history of Dallas and North Central Texas. The museum uses its collections of historic buildings and furnishings, representing the period of 1840-1910, to sponsor research, publications and exhibits, and to present educational programs and special events for diverse audiences of children, families, and adults. The City of Dallas owns the park land and the buildings, and a non-profit organization called the Dallas County Heritage Society runs the museum through a long term management agreement with the City of Dallas, Office of Cultural Affairs and the Parks and Recreation Department (**Appendix D: Constraints Maps, Sheet 7 of 12**).

Section 6(f)

When parkland has been acquired or developed with funds provided by the Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 4601-4 to 4601-11), and this land is required for highway ROW, a Section 6(f) evaluation process must be followed. Section 6(f) of the LWCF Act is concerned with transportation projects that propose impacts or the permanent conversion of outdoor recreational property that was acquired or developed with LWCF Act grant assistance, which is administered by the Texas Parks and Wildlife Department (TPWD) through the Texas Recreation Park Account.

Coordination with TPWD to identify any LWCF funded parkland within the proposed project limits occurred in March 2012. The coordination indicates that one Section 6(f) property is located within the Trinity River Green Belt Park. The property, identified by TPWD as LWCF Project No. 48-000134, is located near Loop 12 and Spur 482 (Storey Lane) approximately 6.3 miles northwest of the Dallas Horseshoe Project. Copies of the TPWD coordination letters, including a map displaying the location of the LWCF property are available in **Appendix F**.

No-Build Impact

Under the No-Build Alternative, the proposed project would not be constructed; therefore, no impacts to Section 4(f) or 6(f) properties are anticipated.

Build Impact

Section 4(f)

Recreational Areas, Wildlife and Waterfowl Refuge Lands

Construction impacts to publicly owned land from a public park (Trinity River Greenbelt Park) are anticipated as a result of the IH 30 and IH 35E bridge replacements; however, because House Bill (H.R.) 4899 (Supplemental Appropriations Act, 2010; 111th Congress) exempts resources in the "vicinity of the Dallas Floodway" (i.e., area located within the toe slopes of the levees) from Section 4(f) requirements, a Section 4(f) Evaluation would not be required for the Trinity River Greenbelt Park. H.R. 4899 is legislation regarding applicability of Section 4(f) Evaluation for projects in the vicinity of the Dallas Floodway. Additionally, the proposed Dallas Horseshoe Project would not require the use of recreational areas, wildlife

and waterfowl refuge lands outside of the vicinity of the Dallas Floodway. Therefore, no Section 4(f) Evaluations would be required.

Historic Sites of National, State, or Local Significance Lands

Outside of the Dallas Floodway, the removal of the existing interim IH 35E HOV crossover structure located between the Houston Street and Jefferson Boulevard viaducts south of the Mixmaster would allow for the restoration of the Houston Street Viaduct southern railing to be restored to its previous appearance by "in-kind replica." The replacement of the railing would comply with a mitigation plan set forth in a THC coordination letter dated September 24, 1996. In addition, the removal of a staircase located along the northern railing of the Houston Street Viaduct south of the Mixmaster would also result of the replacement of railing with "in-kind replica."

The proposed project traverses various historic components of the Dallas Floodway, including levees, overbank, main diversion channel, and several culverts and sumps. In accordance with the Supplemental Appropriations Act 2010, Section 405.(b), FHWA is exempt from the requirements of Section 4(f) of the U.S. DOT Act of 1966 for any highway project to be constructed "in the vicinity of the Dallas Floodway." TxDOT requested and received FHWA confirmation on June 15, 2012 that the Section 4(f) exemption applies to the Dallas Floodway components, as well as to any other historic resources included in the Horseshoe area of potential effect (APE) that falls "within the zone of impacts (i.e., flood risk) for which the levees protect from a 100-year flood event." For further information on potential impacts to cultural resources please refer to **Section 8.4**.

Besides the historic resources impacts and associated mitigation already identified (i.e., Houston Street Viaduct), the proposed project is not anticipated to impact any other historic sites of national, state, or local significance; therefore, no Section 4(f) Evaluations are anticipated.

Section 6(f)

Based on the coordination TPWD to identify any LWCF funded parkland within the proposed project, the proposed project would not affect any Section 6(f) funded property; therefore, a Section 6(f) Evaluation would not be required.

8.3 Aesthetic Considerations

The visual environment for the Dallas Floodway component of the aesthetics and visual resources includes marshes, riparian trees lining the river channel, scattered water features, open herbaceous meadows of mostly native turf grasses, and isolated pockets of woody vegetation, all of which are bound by earthen, grass-covered berm levees rising approximately 30 ft above the ground elevation of the Dallas Floodway. Several transportation and utility infrastructure crossings are also dominantly visible within the Dallas Floodway. In addition, several stormwater outfalls and other drainage structures are located throughout the Dallas Floodway and contribute to the visual environment. The Trinity River, usually confined to its channel, is itself also an attribute of the visual environment within the floodway.

A number of views prevail within the Dallas Floodway looking outside the floodway. In far western areas the landside of the West Levee along the West Fork of the Trinity River and Mountain Creek, areas of small single-family residences with a few pockets of industrial areas are visible. In the far northern areas the East Levee along the Elm Fork, vast expanses of industrial structures and supporting infrastructure are visible. In areas within the Dallas Floodway where both the East and West Levees parallel each other running east-west, industrial structures and supporting infrastructure dominate the view to the north, while single-family residential neighborhoods and interspersed neighborhood-scale institutional structures dominate the view to the south. In areas within the floodway where both the East and West Levees parallel each other running northwest-southeast, there are expansive and striking views of Dallas's CBD as well as the North Oak Cliff area. Background views of tall, modern office towers and bulky lower-rise structures are visible from many locations within the Dallas Floodway with the levees in the middleground. Areas further downstream between the East and West Levees just south of Dallas's CBD provide dominant views of utility and transportation infrastructure as well as small, single-family residential structures.

On the landsides of the East and West Levees of the Dallas Floodway System from the first tier of development adjacent to the levees' landsides looking toward the Dallas Floodway, in most cases, the raised, grass-covered, earthen berm of the levees is the most dominant visible element. Topping the berms are intermittent views of utility and roadway bridge crossings. In some cases, dense and high-rise development, where it exists, is visible from one side of the Trinity River floodplain to the other as well as thick woody vegetation, where it exists, in the middleground between the levees. Interspersed pump stations associated with the City of Dallas's interior drainage system are also visible looking toward the levees from the landsides.

No-Build Impact

Under the No-Build Alternative for the Dallas Horseshoe Project, no impacts to aesthetics are anticipated.

Build Impact

Section 136 of the Federal Aid Highway Act of 1970 (Public Law [P.L.] 91-605) requires consideration of aesthetic values in the highway planning process. Urban Design Technical Guidelines being developed for the Dallas Horseshoe Project include urban design details for aesthetics and opportunities for structural form and architectural enhancements. The purpose of the guideline document is to guide the design-build contractor in the development of the overall structural form and aesthetic enhancements of the Dallas Horseshoe Project. These guidelines outline specific technical direction on project elements in terms of form, shape, dimension, color palette, and architectural character to guide final design by the design-build contractor. The guidelines define elements of the vehicular and pedestrian bridges, columns, caps, ramps, direct connectors, walls, traffic barriers, sidewalks and approaches, directional signage, roadway lighting, under-bridge treatments, and aesthetic lighting.

8.4 Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act (NHPA) of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the Texas Historical Commission (THC)/Texas State Historic Preservation Officer (TSHPO) and/or federally-recognized tribes to determine the project's effects on cultural resources. Review and coordination of this project followed approved procedures for compliance with federal and state laws.

8.4.1 Historic Properties

No-Build Impact

Under the No-Build Alternative, the improvements to the Dallas Horseshoe Project would not occur; therefore, no impacts to historical properties are anticipated.

Build Impact

The Secretary of the Interior's guidelines for NRHP eligibility prescribes a criterion of 50-year old historic resources for consideration for inclusion in the NRHP. The 2005 Programmatic Agreement for Transportation Undertakings (PA-TU) among FHWA, the TSHPO, the Advisory Council on Historic Preservation (ACHP), and TxDOT also calls for a 50-year cutoff date for historic-age. However, a 45-year cutoff (45 years prior to the letting date or the year the construction is estimated to begin) is suggested in the guidelines provided in the September 8, 2006, draft of *Historic Resources Section 106 Review and NEPA Guide* published by TxDOT-Environmental Affairs Division (ENV) in order to allow for unforeseen delays in letting. Accordingly, the term "historic-age resource," as it is used in this analysis, refers to any buildings, structures, objects, or potential historic districts that are, or would be, 45 years of age or older at the time of project letting for construction. Because the projected letting date for this proposed project was programmed for 2012, the year 1967 was the cutoff date used for determining which resources met the historic-age criteria.

In November and December 2004, TxDOT and TSHPO conducted Section 106 coordination for 42 resources identified and documented in a Historic Resources Survey Report (HRSR) as part of Project Pegasus. **Appendix E** includes the list of those resources and the final NRHP determinations of NRHP Eligibility and Effects per Section 106 coordination which concluded in December 2004. A copy of this correspondence is included in **Appendix F** of this document. As part of the Section 106 coordination process for Project Pegasus, it was determined by TSHPO that no proposed ROW would be required from any of the NRHP listed or eligible properties. The historic associations and integrity of the properties would also remain intact for the current project because the contexts of the properties have long included highway traffic.

In accordance with the Dallas Horseshoe Project Research Design (approved by ENV on October 21, 2011), the area of potential effects (APE) was defined as 150 ft on either side

of the existing or proposed ROW, and the Survey Study Area (SSA) was defined as 1,300 ft on either side of the existing or proposed ROW. There are multiple historic resources that have been previously documented within the APE and the SSA that have either been listed in the NRHP or determined NRHP Eligible. **Table 8-7** below lists previously documented historic resources and identifies the historic resources that are located within the APE.

Table 8-7: Previously Identified Historic Properties Located within the APE

2004 Project Pegasus ID	Name of Property	Address/Location
9	Dealey Plaza Historic District	Bounded by Pacific Avenue, Market Street, Jackson Street and Dallas ROW
15	Houston Street Viaduct	Houston Street across the Dallas Floodway
Properties Determined to be Eligible for the NRHP through Coordination with THC		
2004 Project Pegasus ID/ Other	**Name of Property**	**Address of Property**
14	Kessler Park Historic District (Second Extension)	Bounded by Dallas-Fort Worth Turnpike, Sylvan Avenue, Zang Boulevard and Jefferson Boulevard
22	Kovandovitch House	523 Eads Street
24	Cadiz Street Pump Station	Cadiz Street at Hotel Street
37	Dallas Farmer's Market	IH 30, Harwood Street and Pearl Street
39	Weisfeld Center	902 Browder Street
2011 Coordination	Dallas Floodway	The Dallas Floodway extends from the Loop 12 crossings of the West and Elm Forks of the Trinity River to the Existing Atchison, Topeka, and Santa Fe Railroad Bridge.

Sources: THC Historic Sites Atlas (accessed December 2011) and Project Pegasus HRSR (2004).
Note: A copy of the December 2011 THC Letter on Section 106 Determination of Eligibility for the Dallas Floodway is available for review in Appendix F.

A reconnaissance survey of the proposed project limits identified 72 additional historic-age (pre-1967) resources within the APE that were not documented in the 2004 Project Pegasus HRSR due to a different delineation of the APE or historic-age dates. **Table 8-8** summarizes the property types documented in the Draft Dallas Horseshoe Project HRSR.

Table 8-8: Property Types within the Dallas Horseshoe Project APE

Property Type	Number of Properties	Number of Resources/Features
Commercial	30	39 Resources
Industrial/Manufacturing	10	13 Resources
Residential	1	1 Resource
Flood Control	1	17 Features
Social Services	1	2 Resources
Total	**43**	**72**

Source: Dallas Horseshoe Project HRSR (June 2012).

In addition, 22 properties identified in the 2004 Project Pegasus HRSR remain within the APE of the current project. Based on field research, no additional project area was found to have sufficient integrity, cohesion or significance to qualify as an NRHP-eligible historic district, besides those identified in the 2004 Project Pegasus HRSR. Based on the Draft Dallas Horseshoe Project HRSR, the following properties are determined to be eligible to the NRHP:

- Resource A, 712 Fort Worth Avenue, Alamo Plaza Hotel Court Sign, c. 1959
- Resource C, 620 Yorktown Street
- Resources I 1-3, 1727 N. Beckley Avenue
- Resources M 1-7, 9-10, varied resources of the Dallas Floodway (levees, overbank, sumps, culverts, main diversion channel)

In regard to the four IH 30 and IH 35E steel stringer/steel plate girder main span bridges to be replaced, they are exempt from NRHP eligibility as interstate resources. These c. 1957 structures are not included in the Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System, which was published in the Federal Register on December 19, 2006.

The Criteria of Effect and Criteria of Adverse Effect were applied to the listed and eligible resources within the APE, and no adverse effects on the historical associations, architectural and engineering features, or integrity of the properties identified as historically significant are anticipated.

Two of the proposed construction activities associated with the Houston Street Viaduct will restore its historic appearance. Removal of the interim IH 35E crossover structure would delete this 1996 addition directly attached to the viaduct, fulfilling the terms of the September 24, 1996 Mitigation Agreement signed at the time of the crossover installation. In addition, a non-historic metal stairway would be removed with an ensuing in-kind replacement of the historic rail taken out at the time of the stairway's construction. These activities would enhance the Houston Street Viaduct, and would have no adverse effect.

As previously mentioned, the proposed project traverses various historic components of the Dallas Floodway, including levees, overbank, main diversion channel, and several culverts and sumps. In accordance with the Supplemental Appropriations Act, 2010, Section 405. (b), FHWA is exempt from the requirements of Section 4(f) of the U.S. DOT Act of 1966 for any highway project to be constructed "in the vicinity of the Dallas Floodway." TxDOT requested and received FHWA confirmation on June 15, 2012 that the Section 4(f) exemption applies to the Dallas Floodway components, as well as to any other historic resource included in the Dallas Horseshoe APE that falls "within the zone of impact (i.e. flood risk) for which the levees protect from a 100-year flood event."

Pursuant to Stipulation VI "Undertakings with Potential to Cause Effects" of the PA-TU among FHWA, TSHPO, ACHP, TxDOT and the Memorandum of Understanding (MOU), TxDOT Historians have determined and THC concurred that no historic resources would be adversely impacted within the proposed project's APE. The THC concurrence letter reflecting this conclusion is available in **Appendix F**.

8.4.2 Archeological Resources

No-Build Impact

Under the No-Build Alternative, the proposed improvements would not occur; therefore, no impacts to archeological sites would occur.

Build Impact

Based on the geotechnical core sample analysis performed for the proposed project and consultation results, no further work is warranted. Per coordination with TxDOT-ENV on December 22, 2011, the need for an intensive survey was determined through analysis of geotechnical core samples. Prior to analysis of the geotechnical core samples, the proposed project was superimposed on a series of historic maps to determine its association with the historic bluff or terrace edge. Based on the data overlay, it was assumed that the Dallas Horseshoe Project is located within what has always been known as the floodplain of the Trinity River. Analysis of the core samples would be used to confirm this assumption. In total, 12 geotechnical core samples (B-29, B-31, P-14, P-19, B-L-1, B-L-2, B&W-P-5, B&W-11, W-10, W-L-2, W-L-3, W-L-4) were identified for geoarcheological analysis. Of these 12, six were considered "historic" samples (previously collected) and were not available for geoarcheological analysis, though the geotechnical logs were available for review. Two additional cores, P-29A and B-28, were also available for analysis for a total of 14 core samples or logs reviewed.

On February 13 and 22, 2012, a Geo-Marine, Inc. Principal Investigator observed the collection of five (B-29A, B-28, B-31, P-19 and P-14) of the six cores as part of this investigation. Each sample was taken at 1- to 2-ft intervals and placed in plastic bags for geoarcheological analysis. The results of this analysis are presented in detail below. Photographs documenting the drilling process and each sample collected (minimal depths 10 ft to maximum depths of 25 ft) were taken. The samples were then boxed and sent to the drillers' warehouse until February 29, 2012, when they were closely examined.

The proximity of the six 2009 and six 2012 geotechnical core samples to old meanders of the Trinity River and considerable distance from the historic structures visible on historic maps and aerial images suggests a low probability for the presence of intact cultural materials. The deposits encountered in the six 2012 core samples confirmed that these areas are in a low-lying setting within a dynamic depositional environment that would not have been attractive for occupations in the past. Intact archeological materials are more likely to be present on the terraces to the northeast, outside of the proposed project area. No historic properties as defined under 36 C.F.R. 60.4, 13 Texas Antiquities Code (TAC) 26.5(6), 13 TAC 26.5(32), and 13 TAC 26.8 were identified during the geotechnical core sample analysis within the proposed project.

TxDOT archeologists completed their review of this project on March 29, 2012 and determined that the project will have no effect on archeological sites or cemeteries that would be afforded further consideration under cultural resource laws. No consultation with the THC/TSHPO was required. In addition, no public controversy exists regarding the project's potential impacts on archeological sites or cemeteries. The no effect determination memo signed by TxDOT is included in **Appendix F**.

In the event that 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. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

8.5 Air Quality

Approximately 70 percent of the DFW region's air pollution originates from mobile sources such as cars, trucks, airplanes, construction equipment, and lawn equipment. The majority of pollutants emitted from motor vehicles include volatile organic compounds (VOCs), nitrogen oxides, carbon monoxide (CO), and particulate matter. According to NCTCOG, emissions in the DFW area consist of approximately 33 percent of VOC emissions and 50 percent of NOx emissions that cause ozone pollution are produced by on-road mobile sources which include cars, trucks, buses, motorcycles, and other registered vehicles. Other sources of volatile organic compound emissions include non-road engines (24 percent), point sources (5 percent), and area sources (38 percent). Sources of nitrogen oxides include non-road (36 percent), point sources (5 percent), and area sources (9 percent).

The Proposed Project is located in Dallas County, which is part of the EPA's designated nine county serious nonattainment area for the 8-hour standard for the pollutant ozone.

No-Build Impact

The No-Build Alternative would not conform to local transportation plans and programs. It would be inconsistent with the financially constrained *Mobility 2035* which contains specific projects, programs, and policies intended to improve mobility, access, and air quality in the DFW region.

Build Impact

Areas determined by the Environmental Protection Agency (EPA) to exceed National Ambient Air Quality Standards (NAAQS) are designated as nonattainment areas. The NAAQS include: ozone, CO, sulfur dioxide, nitrogen dioxide, lead, and particulate matter ($PM_{2.5}$ and PM_{10}). A State Implementation Plan (SIP) is a collection of requirements that delineates how a state would reduce emissions to attain the NAAQS. This SIP must be approved by EPA. For nonattainment areas, the 1990 Clean Air Act Amendments (CAAA) required the MPO and state transportation departments to demonstrate that transportation plans, programs, and projects funded under Title 23 U.S.C. or the Federal Transit Act conform to state or federal implementation plans. Under the federal CAAA, all transportation projects that are subject to FHWA approval must first be found to conform with the EPA approved SIP.

The Dallas Horseshoe Project is located in Dallas County, which is part of the EPA's designated nine county serious nonattainment area for the 8-hour standard for the pollutant ozone; therefore, the transportation conformity rule applies. All projects in the NCTCOG's TIP that are proposed for federal or state funds were initiated in a manner consistent with federal guidelines in Section 450, of Title 23 C.F.R. and Section 613.200, Subpart B, of Title 49 C.F.R. Energy, environment, air quality, cost, and mobility considerations are addressed in the programming of the TIP. The proposed project is included in and consistent with the area's financially constrained long-range MTP (*Mobility 2035*) and the 2011-2014 TIP, as amended. The USDOT [FHWA/Federal Transit Administration (FTA)] found the MTP and the TIP to conform to the SIP on July 14, 2011. Copies of the following MTP and TIP supporting documentation is included in **Appendix E: *Mobility 2035* Proposed Recommendations: Corridor Fact Sheet 8, *Mobility 2035* Corridor Fact Sheet Summary,** and **2011-2014 STIP**.

Since approval of Project Pegasus schematic was obtained, design revisions were proposed to improve constructability and traffic operations during and after construction. The revisions involve the southern part of the IH 30 and IH 35E interchange; the terminus of the IH 30 HOV/managed lane; and operational improvements along IH 30 in the Canyon. In May 2012, NCTCOG prepared a technical memorandum to determine whether or not the changes affected the *Mobility 2035* air quality conformity determination. It was concluded that these design changes, would not conflict with any of the assumptions or policies included in *Mobility 2035*. Therefore, NCTCOG concluded, and the FHWA concurred, that the proposed design revisions would not affect the *Mobility 2035* conformity determination.

According to TP&P Division traffic data, and as shown in **Table 2-1**, the ADT at IH 30, east of IH 35E, is projected to range from 170,520 to 237,090 vpd in 2017 (ETC) and from 223,900 to 310,200 vpd in 2035; therefore, a TAQA is required. This project would add single occupancy vehicle (SOV) capacity; therefore, a Congestion Management Process (CMP) analysis is also required.

Topography and meteorology of the area in which the project is located would not seriously restrict dispersion of the air pollutants. Carbon monoxide concentrations for the proposed project were modeled at sensitive receptors along the ROW line using CALINE3 and

MOBILE6.2 and factoring in adverse meteorological conditions in accordance with the TxDOT 2006 Air Quality Guidelines (rev. 2011). Local concentrations of CO are not expected to exceed national standards at any time. The results of the analysis are summarized in **Table 8-9.**

Table 8-9: Carbon Monoxide Concentrations

Year	Location Description	1-HR CO (ppm)*	1-HR % NAAQS	8-HR CO (ppm)*	8-HR % NAAQS
2017	Mixmaster between Houston St. Viaduct and Jefferson St. Viaduct	4.80	13.71	2.96	32.89
2035		5.00	14.29	3.08	34.22

**The NAAQS for CO is 35 ppm for 1-hour and 9 ppm for 8-hours. Analysis includes a 1-hour background concentration of 3.7 ppm and an 8-hour background concentration of 2.3 ppm.*

For a complete listing of the CO concentrations modeled, refer to **Appendix E: Air Receiver Locations and CO Concentrations**.

Congestion Management Process

The CMP is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The project was developed from NCTCOG's operational CMP, which meets all requirements of 23 C.F.R. 500.109. The CMP was adopted by the NCTCOG in April 2007.

The region commits to operational improvements and travel demand reduction strategies at two levels of implementation: program level and project level. Program level commitments are inventoried in the regional CMP, which was adopted by NCTCOG; they are included in the financially constrained MTP, and future resources are reserved for their implementation.

The CMP element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) that details type of strategy, implementing responsibilities, schedules, and expected costs. At the project's programming stage, travel demand reduction strategies and commitments will be added to the regional TIP or included in the construction plans. The regional TIP provides for programming of these projects at the appropriate time with respect to the SOV facility implementation and project-specific elements.

Committed congestion reduction strategies and operational improvements within the proposed project limits consist of the individual projects listed in **Table 8-10**.

Table 8-10: Congestion Management Process Strategies

Operational Improvements within the Proposed Project Limits		
Location	**Type**	**Implementation Date**
Colorado Blvd. at Sylvan Ave./Tyler St.	ITS	2011
Beckley Ave. at IH 30	ITS	2011
Reunion Blvd. at IH 35E	ITS	2011
Riverfront Blvd. at Reunion Blvd.	ITS	2011
Riverfront Blvd. from Cadiz St. to Continental Ave.	Addition of lanes	2011
Commerce St. at Justice Center	ITS	2011
Industrial at Justice Center	ITS	2011
Cadiz St. at Riverfront Blvd.	ITS	2011
Cadiz at Griffin St.	ITS	2011
Griffin St. at Memorial Dr.	ITS	2011
Canton St. at Griffin St.	ITS	2011
Akard St. at Canton St.	ITS	2011
Ervay St. at Griffin St. WB	ITS	2011
US 75 at E.R.L. Thornton	ITS	2011
IH 35E from US 67 to south of 8th St.	HOV	2012

Source: NCTCOG, http://nctcog.org/, Transportation Improvement Program Information System (TIPINS) (February 2012).
WB=Westbound

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and NCTCOG will continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMP, and the MTP. The congestion reduction strategies considered for this project would help alleviate congestion in the SOV study boundary, but would not eliminate it.

Therefore, the proposed project is justified. The CMP analysis for added SOV capacity projects in the Transportation Management Area is on file and available for review at NCTCOG.

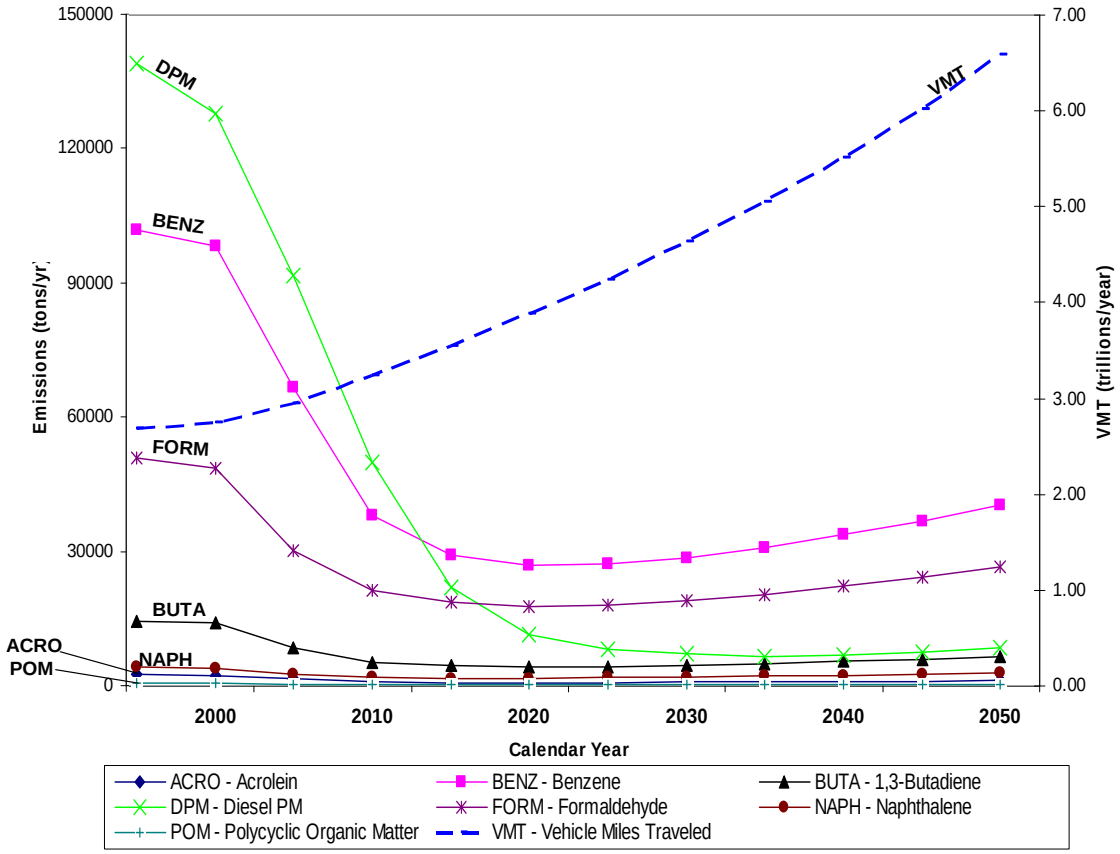
Mobile Source Air Toxics (MSATs) Background

Controlling air toxic emissions became a national priority with the passage of the CAAA of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are *acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (DPM), formaldehyde, naphthalene,*

and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity VMT increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in **Graph 8-1** and **Table 8-11**.

Graph 8-1: National MSAT Emission Trends 1999 – 2050 for Vehicles Operating on Roadways Using EPA's MOBILE6.2 Model



*Source: **Table 8-11** below.*
Notes:
(1) Annual emissions of polycyclic organic matter was projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Table 8-11: National MSAT Emissions and Percent Reduction for 1999-2050 for Vehicles Operating on Roadways Using EPA's MOBILE6.2 Model

Pollutant/VMT	Pollutant Emissions (tons) and Vehicle-Miles Traveled (VMT) by Calendar Year							Reduction
	1999	2000	2010	2020	2030	2040	2050	1999 to 2050
Acrolein	2570	2430	1000	775	824	970	1160	-55%
Benzene	102000	98400	38000	27000	28700	33900	40500	-60%
1,3-Butadiene	14400	14100	5410	4360	4630	5460	6520	-55%
DPM	139000	128000	50000	11400	7080	7070	8440	-94%
Formaldehyde	50900	48800	21400	17800	19000	22400	26800	-47%
Naphthalene	4150	4030	1990	1780	2030	2400	2870	-31%
Polycyclic Organic Matter	561	541	259	233	265	313	373	-33%
Trillions VMT	2.69	2.75	3.24	3.88	4.63	5.51	6.58	145%

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the NEPA. FHWA, EPA, the Health Effects Institute (HEI), and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. FHWA will continue to monitor the developing research in this emerging field.

Project Specific MSAT Assessment

Numerous technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT health effects of this project (see "*Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis"* at the end of this section for more information). In Chapter 3 of its Regulatory Impact Analysis (RIA) for the 2007 MSAT rules, EPA states that there are a number of additional significant uncertainties associated with the air quality, exposure and risk modeling. The modeling also has certain key limitations such as the results are most accurate for large geographic areas, exposure modeling does not fully reflect variation among individuals, and non-inhalation exposure pathways and indoor sources are not taken into account. Chapter 3 of the RIA is found at: http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm

However, it is possible to quantitatively assess the "relative" levels of future MSAT emissions for the Build and No-Build Alternatives. Although a quantitative assessment cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The quantitative assessment presented below is derived in part from a study conducted by FHWA titled *A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives* found at:

www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm

Project Specific MSAT Information
For the proposed project, the amount of MSATs emitted would be proportional to the VMT assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build scenario is higher than that for the No-Build scenario, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. Refer to **Table 8-12** for the scenarios' VMT (including the No-Build scenario). This increase in VMT would lead to higher MSAT emissions for the Build scenario along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for DPM, which decreases as speed increases. The extent to which these speed-related emissions decreases would offset VMT- related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models. Because the estimated VMT under each of the scenarios is nearly the same, varying by less than 10 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various scenarios. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Quantitative MSAT Analysis
The EPA's highway vehicle emission factor model, MOBILE is a program that provides average in-use fleet emission factors for criteria pollutants [CO and nitrogen oxides (NO_X)] and also provides emission factors for VOCs. These emission factors can be estimated for any year between 1952 and 2050 and under various conditions affecting in-use emission levels. The output from the model is in the form of emissions factors expressed as grams of pollutant per VMT in grams per mile (g/mi).

A quantitative analysis of the mass of air toxic emissions in the travel study area containing the proposed project was completed using the latest version of the EPA's mobile emission factor model (MOBILE6.2). The MOBILE6.2 emission factors are consistent with those used to develop the SIP and conformity determination for the DFW region. These factors do not yet reflect the EPA Final Rules (F.R.) on Control of Hazardous Air Pollutants from Mobile Sources [72 F.R. 8427, February 26, 2007) under Title 40 C.F.R. Parts 59, 80, 85 and 86 that when implemented, will significantly reduce emissions of benzene and other MSATs. The rule became effective on April 27, 2007.

The MSAT study area for the quantitative analysis is composed of the model area located within the NCTCOG MPA. The MSAT model area is composed of the affected transportation network determined by the plus or minus 5 percent change in traffic threshold for the proposed project. The affected transportation network and MSAT emissions were

provided by NCTCOG. The plus or minus 5 percent threshold and other modeling parameters (i.e., scenario years) were determined per coordination among FHWA, TxDOT, and NCTCOG on November 16, 2011.

Because the 2012 base year scenario represents the existing condition, the model area for 2012 is composed of those links determined to change plus or minus 5 percent or greater in 2035 and which currently exist in the 2012 network. The resulting model area for scenario year 2035 includes those links determined to change plus or minus 5 percent or greater in 2035 as depicted in **Appendix A: Exhibit 7**. The parameters used to characterize the travel activity utilized in the analysis included directional speeds and traffic volumes for the AM peak period, PM peak period and off-peak period.

For the purpose of this analysis three scenarios were modeled:

- "Base" or existing condition (2012);
- "Build 2035" scenario; and
- "No-Build 2035" scenario

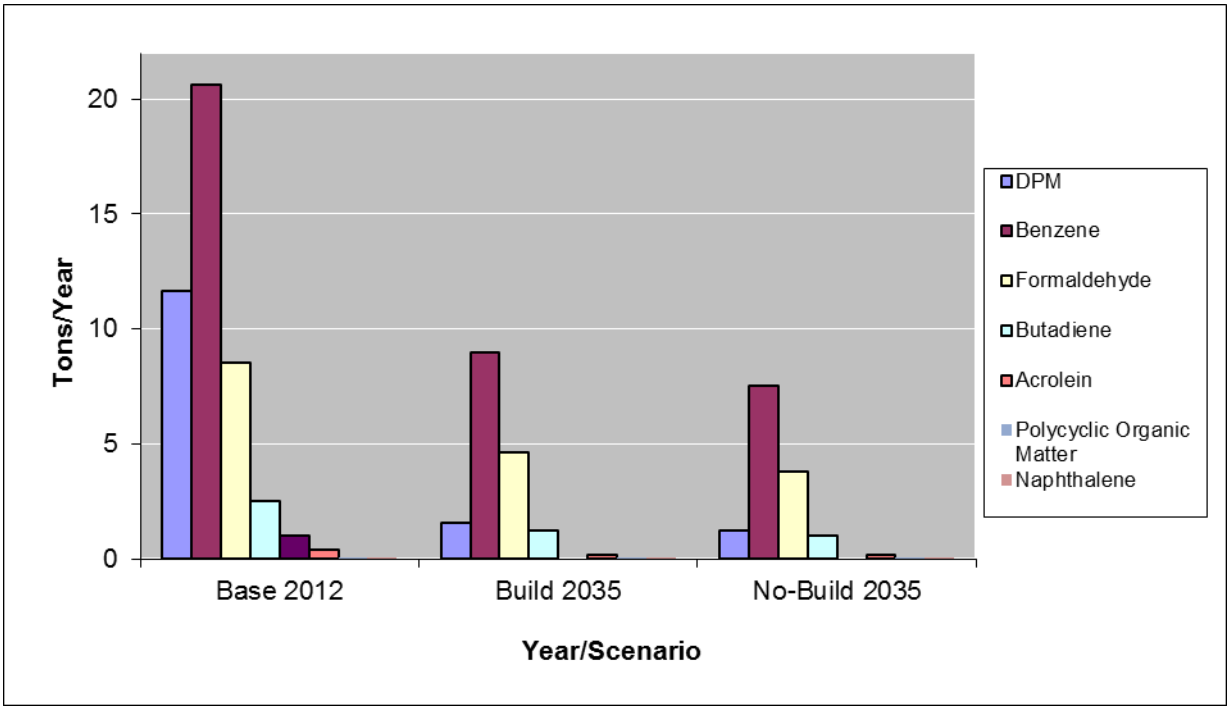
Total Emission of MSATs for the Build and No-Build Scenarios
Specific data from the MSAT study area of the NCTCOG Regional Transportation Model were used to determine the mass of MSAT emissions associated with the Build (proposed project), and No-Build scenarios. In addition, the base or existing conditions mass of MSATs was also modeled. The total mass of MSAT emissions in the year 2012 (base) was higher than either the Build or No-Build scenarios in the year 2035. This is reflective of the overall national trend in MSATs as previously described. The mass of emissions associated with the base scenario and Build year are shown in **Table 8-12** and graphically represented in **Graph 8-2**.

Table 8-12: Mass of MSAT Emissions in Tons/Year and Percent Reduction Compared to the 2012 Base Scenario

Scenario	Associated Annual VMT	Benzene	Percent Reduction of Benzene Compared to 2012	Butadiene	Percent Reduction of Butadiene Compared to 2012	Formaldehyde	Percent Reduction of Formaldehyde Compared to 2012	Acrolein	Percent Reduction of Acrolein Compared to 2012	DPM	Percent Reduction of DPM Compared to 2012	Polycyclic Organic Matter	Percent Reduction of Polycyclic Organic Matter Compared to 2012	Naphthalene	Percent Reduction of Naphthalene Compared to 2012	Total (tons/year)	Percent Reduction of the Total MSAT Compared to 2012
Base 2012	1,772,655,547	20.636	---	2.534	---	8.508	---	0.384	---	11.650	---	0.012	---	0.068	---	43.792	---
Build 2035	1,941,824,638	8.991	56%	1.210	52%	4.610	46%	0.200	48%	1.563	87%	0.008	33%	0.053	22%	16.635	62%
No-Build 2035	1,612,908,253	7.517	64%	1.009	60%	3.794	55%	0.165	57%	1.252	89%	0.006	50%	0.043	37%	13.787	69%

Source: EPA MOBILE 6.2 Model and Study Team, December 2011.

Graph 8-2: Total Mass of MSAT Emissions in Tons/Year

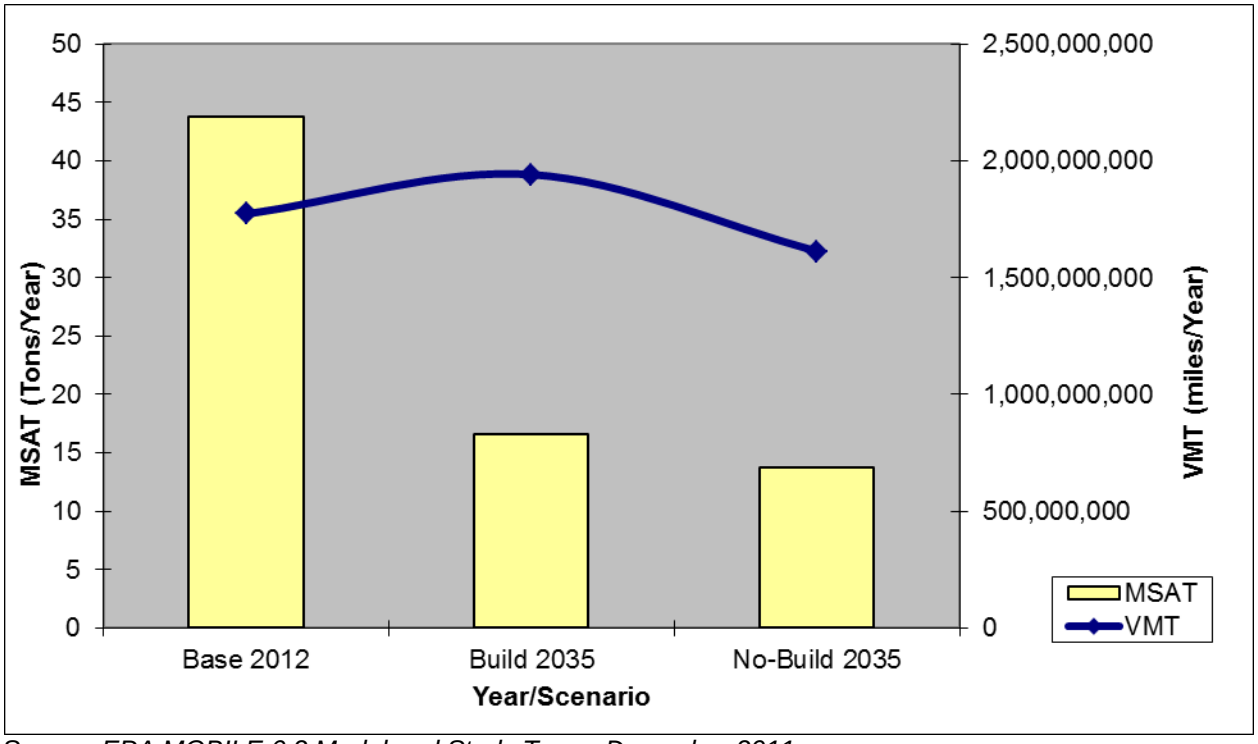


Source: EPA MOBILE 6.2 Model and Study Team, December 2011.

The MSAT analysis indicates that a decrease in emissions can be expected for both the Build and No-Build scenarios for the Build year 2035 versus the 2012 base year. Emissions of total MSAT are predicted to decrease by 62 percent in 2035 for the Build scenario when compared with 2012 levels. If emissions are plotted over time, a decreasing level of MSAT emissions can be seen on **Graph 8-3**; however, overall VMT continues to rise.

Of the seven priority MSAT compounds, benzene, formaldehyde, and DPM contribute the most to the emissions total (**Table 8-12** and **Graph 8-3**). In future years a decline in benzene and formaldehyde is anticipated (56 percent reduction for benzene and 46 percent reduction for formaldehyde) from 2012 to 2035, under the Build scenario. An even larger reduction in DPM emissions is predicted (87 percent decrease from 2012 to 2035, under the Build scenario).

Graph 8-3: Dallas Horseshoe Project Links VMT over Time per Scenario



Source: EPA MOBILE 6.2 Model and Study Team, December 2011.

The estimated emission levels are for all MSATs evaluated and are based on the projected total VMT. The reasons for these dramatic improvements are twofold, a change in vehicle fuels, both gasoline and diesel fuel, and a change in emission standards that both light-duty and heavy-duty on-highway motor vehicles must meet. The EPA predicts substantial future air emission reductions as the agency's new light-duty and heavy-duty on-highway fuel and vehicle rules come into effect (Tier 2, light-duty vehicle standard, Heavy-Duty Diesel Vehicle and (HDDV) standards and low sulfur diesel fuel, and the EPA's proposed Off-Road Diesel Engine and Fuel Standard). These projected air emission reductions will be realized even with the predicted continued growth in VMT.[12]

Discussion of Modeling Results

Although the VMT for the proposed project Build scenario would increase approximately 10 percent by 2035 when compared to 2012, total MSAT emission for the same scenario would decrease an estimated 62 percent by 2035. In 2035, total MSAT loads for the Build scenario is 2.85 tons/year higher than the No-Build scenario.

[12] See EPA's Tier II RIA (EPA, 1999). *Regulatory Impact Analysis Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements*. Engine Programs and Compliance Division, Office of Mobile Sources. Publication No. (EPA420-R-99-24 023) and EPA's HDDV RIA; Regulatory Impact Analysis (U.S. EPA. 2001). Final Rule for Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17229. March 29, 2001).

The additional travel lanes contemplated as part of the Build scenario would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under this scenario there may be localized areas where ambient concentrations of MSAT could be higher under the Build scenario than the No-Build scenario. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built at the Mixmaster and along IH 30 and IH 35E under the Build scenario. However, the magnitude and the duration of these potential increases compared to the No-Build scenario cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

In summary, when a highway is widened, the localized level of MSAT emissions for the Build scenario could be higher relative to the No-Build scenario, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from homes, schools, and businesses. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be lower in the future.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the CAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/ncea/iris/index.html). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the HEI. Two HEI studies are summarized in Appendix D of FHWA's 2009 *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*, which can be found at the following address: (http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/100109guidmem.cfm). This appendix also discusses a variety of FHWA research initiatives related to air toxics. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and

irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's MOVES model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates DPM emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in a National Cooperative Highway Research Program (NCHRP) study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at 10 sites across the country - 3 where intensive monitoring was conducted plus an additional 7 with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with NAAQS for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for DPM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://wwwcf.fhwa.dot.gov/exit.cfm?link=http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of DPM in ambient settings. There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to

protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, crash rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

In this document, a quantitative MSAT assessment has been provided relative to the various alternatives of MSAT emissions and has acknowledged that the Build scenario may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

Air Quality Construction Emissions Reduction Strategies

During the construction phase of this project, temporary increases in air pollutant emissions may occur from construction activities. The primary construction-related emissions are particulate matter (fugitive dust) from site preparation. These emissions are temporary in nature (only occurring during actual construction); it is not possible to reasonably estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of 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.

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 will have any significant impact on air quality in the area.

Summary

The ability to discern differences in MSAT emissions among transportation alternatives is difficult given the uncertainties associated with forecasting travel activity and air emissions 23 years or more into the future. The main analytical tool for predicting emissions from on-road motor vehicles is the EPA's MOBILE6.2 model. The MOBILE6.2 model is regional in scope and has limited applicability to a project-level analysis. However, the effects of a major transportation project extend beyond its corridor and an evaluation within the context of a model area can be accomplished.

When evaluating the future options for improving a transportation corridor, the major mitigating factor in reducing MSAT emissions is the implementation of the EPA's new motor vehicle emission control standards. Decreases in MSAT emissions will be realized from the base year for a planned project and its design year some 23 years in the future. Accounting for anticipated increases in VMT and varying degrees of efficiency of vehicle operation, total MSAT emissions are predicted to decline approximately 62 percent from 2012 to 2035. While benzene and formaldehyde emissions are predicted to decline 56 and 46 percent respectively, emissions of DPM are predicted to decline 87 percent.

The MSATs from mobile sources, especially benzene, have dropped dramatically since 1995, and are expected to continue dropping. The introduction of reformulated gasoline has led to a substantial part of this improvement. In addition, Tier 2 automobiles introduced in model year 2004 will continue to help reduce MSATs. Diesel exhaust emissions have been falling since the early 1990s with the passage of the CAA Amendment. The CAA Amendment provided for improvement in diesel fuel through reductions in sulfur and other diesel fuel improvements. In addition, the EPA has further reduced the sulfur level in diesel fuel, effective in 2006. The EPA also has called for dramatic reductions in NO_X emissions, and particulate matter from on-road and off-road diesel engines. MSAT emissions related to the proposed project are not expected to increase overall air toxics levels in the study area in the future years investigated. MSAT emissions decreases from the base year are substantial even with the associated increase in VMT in the travel study area.

8.6 Biological Resources

The study area for biological resources encompasses the areas that could incur temporary and permanent impacts resulting from the construction of the proposed project. The study area includes the existing and proposed ROW.

8.6.1 Threatened and Endangered Species

No-Build Impact

Under the No-Build Alternative, additional ROW would not be acquired and altered by construction activities; therefore, no impacts and/or no effect to threatened/endangered species or wildlife habitat would be anticipated.

Build Impact

The limits for this proposed project are situated within the Dallas USGS topographic quadrangle map as depicted in **Appendix A: Exhibit 8 – FEMA Floodplain and USGS Quadrangle Map**. The proposed project crosses over the Dallas Floodway which is routinely maintained by mowing and selective removal of woody vegetation. Outside of the levees within the proposed project limits, the area exhibits urban development of various types, such as commercial, industrial, and residential development, with some isolated pockets of undeveloped land.

The Endangered Species Act (ESA) affords protection for federally-listed threatened and endangered species and, where designated, critical habitat for these species. The U.S. Fish and Wildlife Service (USFWS) maintains a list of federally threatened and endangered species of potential occurrence for each Texas county. TPWD maintains a list of threatened and endangered species (both state and federally-listed) and state species of concern for each Texas county. TPWD also maintains special species lists through the Texas Natural Diversity Database (TXNDD) by county. The TXNDD is a geo-referenced database of documented sightings of rare, threatened and endangered species of Texas maintained by TPWD. Data were obtained from TPWD on February 9, 2012 and reviewed on February 10, 2012. The TXNDD review met all the requirements of the TxDOT-TPWD Memorandum of Agreement (MOA) for sharing and maintaining TXNDD information. The search radius was 10 miles from the proposed project limits. There are three known element occurrences of state or federally-listed species or managed areas within 10 miles, but no known element occurrences recorded within 1.5 miles of the proposed project limits. **Table 8-13** provides the USFWS and TPWD threatened, endangered, and species of concern for Dallas County and the TXNDD element occurrences within 10 miles of the proposed project. The TXNDD is a potential presence database that cannot be interpreted as presence/absence data. The TXNDD database search is available for review in **Appendix E**.

Table 8-13: Federal, State, Listed Threatened/Endangered Species, Texas Parks and Wildlife Department's Species of Concern, Dallas County, and Texas Natural Diversity Database Results

Species	Federal Status	State Status	Description of Habitat	Habitat Present	Species Effect/ Impact	Justification
BIRDS						
American Peregrine Falcon *Falco peregrinus anatum*	DL*	T	Year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.	Yes	No effect./ No impact.	Potential migrant through the project area, but any use would be considered incidental.
Arctic Peregrine Falcon *Falco peregrinus tundrius*	DL*		Migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.	Yes	No effect./ No impact.	Potential migrant through the project area, but any use would be considered incidental.
Bald Eagle *Haliaeetus leucocephalus*	DL*	T	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds.	Yes	No effect./ No impact.	Potential migrant through the project area, but any use would be considered incidental.
Black-capped Vireo *Vireo atricapilla*	E	E	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer.	No	No effect./ No impact.	No suitable habitat containing oak-juniper woodlands were observed within the proposed project limits.

Golden-cheeked Warbler *Dendroica chrysoparia*	E	E	Juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	No	No effect./ No impact.	No suitable habitat containing juniper-oak or ashe juniper woodlands were observed within the proposed project limits.
Henslow's Sparrow *Ammodramus henslowii*	—		Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking.	No	No impact.	Suitable habitat containing bunch grasses, vines, and brambles were not observed within the proposed project limits.
Least Tern *Sterna antillarum*	E	E	Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also known to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred ft of the colony.	No	No effect./ No impact.	No suitable habitat containing sand or gravel bars are present within the proposed project limits.
Peregrine Falcon *Falco peregrinus*	DL*	T	Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (*F. p. anatum*) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, *F.p. tundrius* is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	Yes	No effect./ No impact.	Potential migrant through the project area, but any use would be considered incidental.
Piping Plover *Charadrius melodus*	E, T	T	Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats.	No	No effect./ No impact.	No suitable open areas with sandy beaches present within the proposed project limits.
Sprague's Pipit *Anthus spragueii*	C*		Only in Texas during migration and winter, mid-September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.	No	No effect./ No impact.	No suitable habitat containing upland prairies or coastal grasslands present within the proposed project limits.

Western Burrowing Owl *Athene cunicularia hypugaea*	—	—	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows.	No	No impact.	No suitable habitat containing preferred nesting or roosting areas, such as abandoned burrows, were observed within the proposed project limits.
White-faced Ibis *Plegadis chihi*	—	T	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	Yes	May impact.	Suitable foraging and nesting areas were observed within the proposed project limits.
Whooping Crane *Grus americana*	E, EXPN	E	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	Yes	No effect./ No impact.	Potential migrant through the project area, but any use would be considered incidental.
Wood Stork *Mycteria americana*	—	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e., active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	Yes	May impact.	Suitable foraging and nesting areas were observed within the proposed project limits.
INSECTS						
Black lordithon rove beetle *Lordithon niger*	—	—	Historically known from Texas. Known to inhabit old growth northern hardwood or mixed coniferous forest.	No	No impact.	No suitable habitat present such as old growth hardwood or mixed coniferous forest within the proposed project limits.
MAMMALS						
Cave myotis bat *Myotis velifer*	—	—	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.	Yes	May impact.	Suitable habitat may be present at bridges located within the proposed project limits.

Plains spotted skunk *Spilogale putorius interrupta*	—	—	Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	No	No impact.	No preferred suitable habitat is present within the proposed project limits.
MOLLUSKS						
Fawnsfoot *Truncilla donaciformis*	—	—	Small and large rivers especially on sand, mud, rocky mud, and sand and gravel, also silt and cobble bottoms in still to swiftly flowing waters; Red (historic), Cypress (historic), Sabine (historic), Neches, Trinity, and San Jacinto River basins.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.
Little spectaclecase *Villosa lienosa*	—	—	Creeks, rivers, and reservoirs, sandy substrates in slight to moderate current, usually along the banks in slower currents; east Texas, Cypress through San Jacinto River basins.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.
Louisiana pigtoe *Pleurobema riddellii*	____	T	Streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.
Texas heelsplitter *Potamilus amphichaenus*		T	Quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.
Wabash pigtoe *Fusconaia flava*	—	—	Creeks to large rivers on mud, sand, and gravel from all habitats except deep shifting sands; found in moderate to swift current velocities; east Texas River basins, Red through San Jacinto River basins; elsewhere occurs in reservoirs and lakes with no flow.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.
REPTILES						
Alligator snapping turtle *Macrochelys temminckii*	—	T	Perennial water bodies; deep water of rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near deep running water; sometimes enters brackish coastal waters; usually in water with mud bottom and abundant aquatic vegetation; may migrate several miles along rivers; active March-October; breeds April-October.	Yes	May impact	Suitable habitat may be present within the proposed project limits at the Trinity River.
Texas garter snake *Thamnophis sirtalis annectens*	—	—	Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August.	Yes	May impact.	Suitable habitat may be present within the proposed project limits at the Trinity River.

Texas horned lizard *Phrynosoma cornutum*	—	T	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September.	No	No impact.	No suitable habitat containing open areas that are dry with scattered vegetation were found within the proposed project limits.
Timber/ Canebrake rattlesnake *Crotalus horridus*	—	T	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e., grapevines or palmetto.	Yes	May impact.	Suitable habitat is present within the proposed project limits at the Trinity River and other small water bodies.
PLANTS						
Glen Rose yucca *Yucca necopina*	—	—	Texas endemic; grasslands on sandy soils and limestone outcrops; flowering April-June.	No	No impact.	No suitable habitat present such as grasslands on sandy soils within the proposed project limits.
Warnock's coral-root *Hexalectris warnockii*	—	—	In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years.	No	No impact.	No suitable habitat present such as oak-juniper woodlands or narrow terraces within the proposed project limits.
TPWD TXNDD Results	1439 – Rookery Federal/State Status--None. Within 10 miles, but not within 1.5 miles of the proposed project limits. 2952 – Rookery Federal/State Status--None. Within 10 miles, but not within 1.5 miles of the proposed project limits. 432 - Texas garter snake (*Thamnophis sirtalis annectens*) Federal/State Status--None. Within 10 miles, but not within 1.5 miles of the proposed project limits.				No impact.	

E – State or Federal Listed Endangered
T – State or Federal Listed Threatened
C – Federal Candidate for Listing
DL – Federally Delisted
EXPN - Experimental population, non-essential
"–" – No designation occurring within identified county
"blank" – Rare, but with no regulatory listing status
"- -" – No determination of effect or impact required because species lacks federal and/or state listing status
"*" – TPWD T&E species list indicates species could be present in identified county; however, USFWS T&E species list does not indicate a listing status for the species in the county.
Note: For federal candidate species or species in the post-delisting monitoring period, the species was evaluated as if it were listed, but no consultation is required.
Sources: U.S. Fish & Wildlife Service (November 1, 2011), Texas Parks & Wildlife Department, Wildlife Division, Diversity and Habitat Assessment Programs, County Lists of Texas Special Species (August 17, 2011), and Field Visit (December 1 and 8, 2011).

The federally-listed threatened or endangered species known to occur in Dallas County include the endangered whooping crane, interior least tern, black-capped vireo, golden-cheeked warbler and the threatened piping plover. These are all avian species that are considered migratory and as such, are also protected under the Migratory Bird Treaty Act (MBTA). Some specimens may be local residents year round but the species in general do migrate, such as the whooping crane, interior least tern, black-capped vireo, and the piping plover. The *USFWS Existing Habitat Conditions Planning Aid Report for the Dallas Floodway Project (April 2010)* and field reconnaissance were utilized to determine the presence of suitable habitat within the proposed project limits for the listed species in Dallas County.

Suitable habitat for the interior least tern (federally-listed) is not currently present within the project limits. Ground disturbance related to construction activities at and near the levees may incidentally create areas that are attractive to interior least terns for use as potential nesting sites. The species breeding season extends from May through August. Because construction would be on-going during the breeding season, large areas (greater than one acre) cleared to bare soil and left idle for more than one week would be surveyed prior to resuming construction activities. Should interior least terns happen to utilize any of the project areas during construction activities, the USFWS should be notified to discuss alternative development plans or the need for consultation under Section 7 of the ESA. Because this section of the Trinity River is not typically utilized during nesting season and there are established nesting areas in the Dallas area, no effects to the species are anticipated to occur as a result of the construction of the proposed project.

Potential habitat may be present within the proposed project limits for the state-listed species: white-faced ibis, wood stork, Louisiana pigtoe, Texas heelsplitter, alligator snapping turtle, and timber canebrake rattlesnake. Potential habitat was also observed for the following state Species of Concern: fawnsfoot, little spectaclecase, Wabash pigtoe, Texas garter snake, and cave myotis bat.

Suitable habitat for the state-listed white-faced ibis and wood stork may be present within the floodplain and wetlands within the proposed project limits. Due to the abundance of available habitat within the Dallas Floodway, the permanent and temporary impacts to

wetlands occurring within the proposed project would not adversely impact these species. No adverse effects to these species are anticipated to occur as a result of construction activities.

Suitable habitat may be present for the alligator snapping turtle at the Trinity River within the proposed project limits. Minimal permanent and temporary impacts to the river would occur. Due to the abundance of available habitat within the Dallas Floodway, no adverse impacts to this species are anticipated to occur as a result of construction activities.

Suitable habitat may be present within the proposed project limits for the timber canebrake rattlesnake and the Texas garter snake, both state-listed threatened species. The riparian areas are frequently maintained by mowing. Due to the abundance of available habitat within the Dallas Floodway, the permanent and temporary impacts to the riparian areas within the proposed project limits would not adversely impact these species. No adverse impacts to these species are anticipated to occur as a result of construction activities.

The cave myotis bat is listed as a species of concern by the state of Texas. This species roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned cliff swallow nests. Suitable roosting habitat may be present at bridges located within the proposed project limits. No individuals of the species were observed during the site visit. Due to the abundance of available habitat within the Dallas Floodway, no adverse impacts to this species are anticipated to occur as a result of construction activities.

A presence/absence survey was performed for the state-listed mussel species and a draft report (*Habitat Assessment and Presence/Absence Survey for Protected Mollusks in the Trinity River at IH 30 and IH 35E, City of Dallas, Dallas County*) was submitted on January 17, 2012 to TxDOT. Scientists performed a Phase I habitat survey and a Phase II presence/absence survey for state-listed mussel species at the IH 30 and IH 35E crossings of the Trinity River. In both survey areas, the primary species collected were yellow sandshell (*Lampsilis teres*) and Western pimpleback (*Quadrula mortoni*). The state-listed (threatened) Texas pigtoe (*Fusconaia askewi*) was found at IH 35E. This species was not documented by TPWD to occur in Dallas County. All individuals were found during underwater surveys, none were found on the banks or in the shallow areas. Other mussel species included fragile papershell (*Leptodea fragilis*), southern mapleleaf (*Quadrula apiculata*), giant floater (*Anodonta grandis*), threehorn wartyback (*Obliquaria reflexa*), bleufer (Potamilus purpuratus), pistolgrip (*Quadrula verrucosa*), deertoe (*Truncilla truncata*) and threeridge (*Amblema plicata*). The report stated that additional sampling at each site would likely yield more species at both sites, including state-listed rare species for Dallas County. One specimen collected may have been a Wabash pigtoe; however, the identification remains undetermined as genetic testing would be needed to verify the species.

Direct impacts to the mussel species could occur if a section of the existing bridge were to fall into the Trinity River during demolition. Increased turbidity and sedimentation during bridge construction could pose a threat to survival of the mussel species in the Trinity River. Appropriate measures would be taken to prevent demolition and construction materials from

falling into the Trinity River. Any temporary or permanent fill, or work occurring directly in this water body, would require prior coordination with TxDOT. Mitigation for the construction impacts would require the relocation of mussels to an approved location outside of the project area and monitoring of the relocated mussels. A monitoring plan would be prepared and submitted to TxDOT for approval to document the survival rate of relocated mussels throughout the approved monitoring period. Approved BMPs would be installed, inspected, and maintained as detailed in the construction documents.

Coordination with TPWD was completed on May 1, 2012. TPWD recommendations include relocating the state listed mussels because of anticipated turbidity and sedimentation threats during construction and the use of BMPs to minimize impacts on mussels as well as fish species which are the mussel larval host. TPWD also recommended replacement trees and riparian vegetation for impacts associated with the proposed project through direct plantings or in-lieu mitigation. The TPWD coordination letter is available for review in **Appendix F**.

The mussels would be relocated and monitored to document survival rates. The riparian vegetation impacts would be mitigated as part of the Section 404/408 permitting/approval process and non-regulatory mitigation is not proposed. There are seven large trees located within the footprint of the proposed roadway that would be removed. There are nine trees located within the construction area that may require removal. Efforts to protect the trees during construction would occur as it may be possible to preserve trees located near the edge of the construction areas. Compensatory mitigation for impacts to the large trees is not proposed. **Section 8.6.3** provides more details on the impacts to vegetation.

8.6.2 Migratory Bird Treaty Act

No-Build Impact
Under the No-Build Alternative, no impacts to migratory birds would be anticipated.

Build Impact
The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 and October 1, per the Environmental Permits, Issues, and Commitments (EPIC) plans. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

8.6.3 Vegetation and Wildlife Habitat

No-Build Impact
Under the No-Build Alternative, no impacts to vegetation or wildlife would be anticipated.

Build Impact

The proposed project is located in the Blackland Prairie region. According to TPWD's The Vegetation Types of Texas, the project is located in the Urban (Type 46) vegetation type. Urban or industrial areas are delineated by city limits.

The USFWS has recently assessed existing habitat types within the Dallas Floodway. The *USFWS Existing Habitat Conditions Planning Aid Report for the Dallas Floodway Project* (April 2010) assessed vegetation and wildlife habitat types within the Dallas Floodway; therefore, field reconnaissance was conducted on December 1 and 8, 2011 to 1) verify the habitat types listed in the report and 2) identify habitat types outside the limits of the Dallas Floodway.

The habitat type found outside the limits of the Dallas Floodway matches the "Urban" vegetative type with commercial and residential development and some isolated pockets of undeveloped land.

The Dallas Floodway does not match the "Urban" vegetative type but rather contains several habitat types and includes aquatic, grassland, and urban habitats.

Aquatic

Aquatic habitat is comprised of vegetation associated with the Trinity River, the Historic Trinity River Channel, Coombs Creek, linear sumps and herbaceous wetlands. The primary feature is the Trinity River. Most vegetation associated with these areas is either aquatic vegetation or along the fringes of the aquatic feature. This habitat type provides food and cover for fish, reptiles, resident and migratory birds, small mammals, invertebrates, and the predators that feed on the other species. These areas provide important nesting and foraging habitat for wading birds and waterfowl.

Vegetation observed along the Trinity River included black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), cedar elm (*Ulmus crassifolia*), box elder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), pecan (*Carya illinoinensis*), and various grasses and other herbaceous species. Herbaceous wetlands are dominated by non-woody vegetation that may include sedges (*Carex spp.*), spike-rushes (*Eleocharis spp.*), rushes (*Juncus spp.*), smartweed (*Polygonum spp.*), balloonvine (*Cardiospermum halicacabum*), black willow, and Roosevelt weed (*Baccharis neglecta*).

Grassland

The grasslands within the proposed project limits are routinely maintained by mowing several times each year. Grasslands provide open space, a food source, and cover for escape and nesting by means of tall grass, scattered brush piles and shrubs for a variety of animals. The grasslands within the proposed project limits may generally be characterized as "managed" because these areas are routinely mowed. They are comprised of short native and introduced grasses and forbs, and occasional scattered trees. Grass species observed within the proposed project limits include switchgrass (*Panicum virgatum*), Johnson grass (*Sorghum halepense*), Bermuda grass (*Cynodon dactylon*), buffalograss

(*Bouteloua dactyloides*) and dallisgrass (*Paspalum dilatatum*). Forb species observed include giant ragweed (*Ambrosia trifida*), cocklebur (*Xanthium strumarium*), common yarrow (*Achillea millefolium*), Texas thistle (*Cirsium texanum*), and balloonvine.

Urban

Urban areas contain maintained trees, shrubs, and grasses associated with buildings, roads, parking lots, and other aspects of urban development. These areas provide minimal habitat for wildlife; however, certain species that have adapted more readily to co-exist with an urban environment can utilize some of these vegetated urban areas for foraging and habitat. Vegetation observed included live oak (*Quercus virginiana*), red oak (*Quercus texana*), sugar hackberry (*Celtis laevigata*), chinaberry (*Melia azedarach*), Bermuda grass, dallisgrass, and various forbes.

Representative habitat types and associated acreages present within the existing and proposed construction area limits are displayed in **Table 8-14**.

Table 8-14: Habitat Types within the Proposed Project Limits

Habitat Type	Existing ROW Area (acres)	Proposed Construction Area (acres)*	Total
Aquatic Habitat	5.6	15.1	20.7
Grassland	26.8	36.9	63.7
Urban	88.9	18.7	107.6
Total	121.3	70.7	192.0

Source: Study Team, February 2012.
**Includes proposed ROW and permanent easement acreage.*

In accordance with the TxDOT – TPWD MOA, unusual features to be identified within the proposed project limits could include:

- Unmaintained vegetation;
- Trees or shrubs along a fenceline (ROW) adjacent to a field;
- Riparian vegetation;
- Trees that are unusually larger than other trees in the area; and
- Unusual stands or islands (isolated) of vegetation.

Based on the field surveys conducted on December 1 and 8, 2011, 16 large trees are located within the Dallas Floodway and along Beckley Avenue within the proposed project limits. **Table 8-15** contains the locations, type, and size of the large trees and representative photographs can be found in **Appendix G, pages G-8** through **G-10**.

Table 8-15: Individual Large Trees within the Proposed Project Limits

Location	Type	Quantity	Approximate DBH (in inches)	Approximate Height (range in ft)	Constraints Map Sheet No.
South of IH 30 and West of Beckley Avenue	Pecan	1	24	30-40	2
	Sugar hackberry	2	20 and 22		
	American elm	2	20 and 22		
North of IH 30 and West of the East Levee	Cottonwood	1	36	35-40	4
Between the northbound and southbound lanes of IH 35E immediately north of the East Levee.	Pecan	2	26 and 30	30-40	9
	Cottonwood	5	>20		
Southbound IH 35E (either side of the roadway)	Cottonwood	2	40 and 44	35-40	9
Northbound IH 35E (near the proposed ROW line)	Cottonwood	1	>20	35-40	9
Total		**16**			

Source: Study Team, December 2011.
DBH=diameter at breast height.

Riparian vegetation is associated with the Trinity River and wetland features within the existing and proposed ROW. A narrow riparian woodland corridor is located on either side of the Trinity River at IH 30 as depicted on the **Constraints Map** in **Appendix D, Sheet 4**. The riparian woodland corridor is situated on the top of the river bank down to the water's edge and is approximately 0.86 acre in size. The dominant woody species within the riparian area is black willow, green ash, and American elm. The trees range in height from approximately 10 to 30 ft and contain a DBH from 1 to 18 inches. The average DBH is approximately 5 inches and the percent canopy cover is approximately 65 percent. Other dominant species includes giant ragweed, balloon vine, Bermuda grass, and Johnson grass. Because the area is maintained, the riparian woodlands are not able to expand further into the Dallas Floodway. Approximately 0.86 acre of riparian woodland habitat could be removed as a result of the construction of the proposed project.

It is unknown at this time the total number of large trees and the riparian woodland acreage that would be impacted by the proposed construction activities. There are seven large trees located within the footprint of the proposed roadway that would be removed. The remaining nine trees are located within the construction area and efforts to protect the trees during construction would occur as it may be possible to preserve those located near the edge of the construction areas. Additionally, the unusual vegetation disturbed by construction activities would be reseeded/revegetated; therefore, compensatory mitigation for impacts to the unusual vegetation features is not proposed.

According to an MOA between TxDOT and TPWD, special habitat features are classified as:

(a) Bottomland hardwoods;
(b) Caves;
(c) Cliffs and bluffs;
(d) Native prairies (particularly those with climax species of native grasses and forbs);
(e) Ponds;
(f) Seeps or springs;
(g) Snags or groups of snags;
(h) Water bodies; and
(i) Existing bridges with known or easily observed bird or bat colonies.

The special habitat features (waterbodies) present within the proposed project limits consist of the water and wetland features. Swallow nests were observed under the existing IH 30 and IH 35E bridge structures.

In accordance with Provision (4)(A)(ii) of the MOU and the MOA between TxDOT and TPWD, habitats given consideration for non-regulatory mitigation during project planning include the following:

1. Habitat for federal candidate species (impacted by the project) if mitigation would assist in the prevention of the listing of the species;
2. Rare vegetation series (S1, S2, or S3) that also locally provide habitat for a state-listed species;
3. All vegetation communities listed as S1 or S2, regardless of whether or not the series in question provide habitat for state-listed species;
4. Bottomland hardwoods, native prairies and riparian sites; and,
5. Any other habitat feature considered locally important that the TxDOT District chooses to consider.

Riparian vegetation associated with the water and wetland features are located within the Dallas Floodway. The proposed project would permanently impact approximately 0.40 acre of waters of the U.S., including wetlands, and would temporarily impact approximately 14.40 acres during construction of the proposed project. These areas would require mitigation through the Section 404/10 process which would occur in conjunction with the Section 408 approval process. After construction is completed, the areas of bare ground resulting from the construction activity would be reseeded/revegetated. Because the permanent impacts would be mitigated for as part of the Section 404/408 permitting process and areas with temporary impacts would be reseeded/revegetated, non-regulatory mitigation is not proposed.

Coordination with the TPWD would be required due to impacts to riparian vegetation, the presence of a state-listed threatened species, and mitigation for potential impacts to the species.

Wildlife
There is little habitat for wildlife species beyond the limits of the Dallas Floodway due to urban development.

The Dallas Floodway does contain a diverse amount of wildlife habitat. Mammalian species like the coyote (*Canis latrans*), opossum (*Didelphis virginiana*) and the raccoon (*Procyon lotor*) are better able to adapt to urban development and continue to utilize the available habitat. Numerous amphibian and reptilian species would also utilize the different wildlife habitats. The species would include various snakes, turtles, lizards, and frogs native to north-central Texas. Various waterfowl species utilize the aquatic habitat. The riparian woodlands and large trees would provide habitat for raptors and other migratory species. The grassy fields and nearby emergent wetlands still serve as foraging areas for many local species and migratory avian species.

Wildlife species observed during field reconnaissance include the coyote, mallard duck (*Anas platyrhynchos*), American kestrel (*Falco sparverius*), turkey vulture (*Cathartes aura*), American crow (*Corvus barchyrhynchos*), killdeer (*Charadrius vociferous*), and mourning dove (*Zenaida macroura*). Several swallow nests were observed under the IH 30 and IH 35E bridge structures.

No long-term impacts to wildlife populations are anticipated as a result of the proposed project. In areas temporarily impacted, wildlife species would likely re-colonize the available habitat areas after construction. If active bird nests are encountered during the construction of the proposed project, the nests would be avoided. Due to the abundance of similar habitat adjacent to the proposed project within the Dallas Floodway, the impacts to wildlife, including migratory birds, would be considered minor.

8.6.4 Invasive Species and Beneficial Landscaping Practices

No-Build Impact
Under the No-Build Alternative, no impacts to existing vegetation resulting in an increase of invasive species would be anticipated.

Build Impact
Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time. In accordance with EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT approved seeding specifications that is in compliance with EO 13112 would be done where possible. Moreover, abutting turf grasses within the ROW would re-establish throughout the project limits. Soil disturbance would be minimized to ensure that invasive species would not establish in the ROW.

8.6.5 Topography and Soils

No-Build Impact
Under the No-Build Alternative, additional ROW would not be acquired; therefore, no impacts to topography or soils would be anticipated.

Build Impact
According to the Dallas USGS topographic quadrangle, the elevations in the project study area are relatively consistent at approximately 450 ft above msl. According to the Natural Resource Conservation Service's (NRCSs) Soil Survey of Dallas County, Texas (1980), there are three general soil types within the study area. The Eddy-Stephen-Austin is very shallow to moderately deep and gently sloping to moderately steep loamy and clayey soils on uplands. The Trinity-Frio is deep, nearly level clayey soils on floodplains. The Silawa-Silstid-Bastsil is deep, nearly level to sloping loamy and sandy soils on stream terraces.

Farmland Protection Policy Act
The proposed project is located within an urbanized area and there are no prime farmland soils located within the proposed ROW. The proposed project is exempt from the requirements of the Farmland Protection Policy Act and requires no coordination with the NRCS.

8.7 Water Resources

The study area for water resources encompasses the areas that could incur temporary and permanent impacts resulting from the construction of the proposed project. The study area includes the existing and proposed ROW limits.

8.7.1 Lakes, Rivers, and Streams

No-Build Impact
Under the No-Build Alternative, no impacts to lakes, rivers, and streams are anticipated.

Build Impact
There are three named waterways located within the proposed project limits. These are the Trinity River, the Historic Trinity River Channel, and Coombs Creek. These are depicted on **Appendix A: Exhibit 8 – FEMA Floodplain and USGS Quadrangle Map**. The Trinity River is a man-made channel that re-routed the hydraulic conveyance from the natural channel to the present-day alignment and location. The Historic Trinity River Channel is located east of the East Levee and flows under IH 30 and IH 35E. Coombs Creek is located south of IH 30 and parallels the roadway from Sylvan Avenue east toward Beckley Avenue. One linear sump traverses the proposed project limits under IH 30 on the protected side of the West Levee.

The Trinity River and the Historic Trinity River Channel are considered navigable waterways. This project includes bridge construction in or over a navigable water of the U.S. under Section 10 of the Rivers and Harbors Act of 1899. The Section 404/10 activity

would be covered under Regional General Permit 12 (RGP-12), *Modifications and Alterations of Corps of Engineers Projects*.

Under the authority of the General Bridge Act of 1946, Section 9 of the Rivers and Harbors Act of 1899, and other statutes, Federal law prohibits the construction of any bridge across navigable waters of the U.S. unless first authorized by the USCG. The USCG approves the location and clearances of bridges through the issuance of bridge permits or permit amendments. A USCG permit is required for new construction, reconstruction or modification of a bridge or causeway over waters of the U.S. Therefore, TxDOT coordinated with FHWA who has the responsibility under 23 U.S.C. 144(h) to determine if a waterway is navigable under the Surface Transportation Authorization Act (STAA) and whether a USCG permit is required for the proposed bridge construction. The Trinity River at the IH 30 and IH 35E bridges meets the requirements for exemption from USCG bridge permit requirements as the Trinity River is not susceptible to use in its existing condition or by reasonable improvement as a means to transport interstate of foreign trade or goods. In addition, the affected waterway is non-tidal and is not subjected to navigation or shipping of any kind. Therefore, pursuant to 23 U.S.C. 144(h), the proposed bridge would qualify for an exemption from the requirements imposed under 33 U.S.C. 401 and 525(b), and the lighting and signal requirements imposed under 33 C.F.R. 118.40(b). Per coordination with the USCG, the Proposed Action is exempt from USCG lighting requirements. The USCG STAA concurrence letter, dated April 11, 2012, is available in **Appendix F**.

8.7.2 Waters of the U.S., including Wetlands

No-Build Impact
Under the No-Build Alternative, no impacts to waters of the U.S., including wetlands, are anticipated.

Build Impact
Pursuant to EO 11990 (Protection of Wetlands), Section 404 of the CWA, and Section 10 of the Rivers and Harbors Act of 1899, an investigation was conducted to identify jurisdictional and potential jurisdictional waters of the U.S., including wetlands, within the proposed project limits. According to USACE, the federal agency having authority over waters of the U.S., wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

A majority of the waters of the U.S., including wetlands within the project limits are inside the Dallas Floodway which has been studied extensively. The USACE approved *Jurisdictional Determination for the Dallas Trinity River Floodway,* USACE Project Number SWF-2011-00049 [USACE Approved Jurisdictional Determination (J.D.)], identified jurisdictional features within an area beginning at the southern limits of the levees north to just south of Irving Boulevard. The USACE Approved J.D. is valid until March 24, 2016.

There are seven wetland features and three water features from the USACE Approved J.D. located within the limits of the proposed project. The seven wetland features total

approximately 14.17 acres and the three water features total approximately 9.18 acres. Of the three water features, one feature (linear sump) is considered non-jurisdictional in the USACE Approved J.D.

Waters of the U.S., including wetlands beyond the limits of the USACE Approved J.D. were identified, characterized, and delineated in order to evaluate the potentially jurisdictional status of the features within the proposed project limits. National Wetland Inventory (NWI) maps, Geographic Information Systems (GIS) data, and field observations were utilized to determine the potentially jurisdictional status.

One potential water of the U.S. (Coombs Creek) is located within the proposed project limits. The feature was delineated and the total acreage of the feature was determined. The stream data form for this feature is available in **Appendix E**.

The proposed project limits within the Dallas Floodway include the areas necessary to construct the proposed project. Construction staging areas, stockpiling areas, etc. could be located by the contractor outside of the Dallas Floodway and outside of the proposed project limits in upland areas. These areas would be selected by the design-build contractor who would be responsible for any impacts. Therefore, water and wetland features beyond the proposed ROW were not included in these calculations. The delineated waters and wetlands are further described in **Table 8-16** and their locations are included on the **Constraints Maps** in **Appendix D**.

The permanent impacts to waters of the U.S., including wetlands within the Dallas Floodway would result from the placement of bridge columns, bridge footings, overhead sign bases, and relocation of one Oncor transmission tower within the delineated boundaries of the features. The relocation of this Oncor transmission tower would occur near the West Levee as a result of the IH 35E bridge replacement. The existing Oncor transmission tower would need to be relocated approximately 180 ft to the west of its existing location. One 9.5 ft column would replace the existing transmission tower. Refer to **Attachment 1, Sheet 5 of 6, of Appendix B: Section 408 Environmental Compliance Information** for the location of this existing and proposed Oncor transmission tower. It is anticipated that construction activities would consist of clearing the immediate area of vegetation, as needed, to allow for the drilling of each column or footing. The detailed construction method would be determined by the design-build contractor. The total area of the bridge features in each of the jurisdictional features was calculated and is shown in **Table 8-16**.

Permanent impacts to the Historic Trinity River Channel would occur as a result of modifications to Able Pump Station Sump Ponds 2 and 3. Anticipated impacts would result from the placement of fill material within the limits of the ordinary high water mark to provide an adequate road base for construction of a proposed ramp and a collector distributor road. Other impacts would result from the reconstruction of the existing culvert discharging into Pond 2, the removal and replacement of the existing interconnecting culvert between Ponds 2 and 3, and the modification of the upstream headwalls for the two interconnecting culverts between Ponds 1 and 2. Permanent impacts would result from fill material,

reconstruction/modification of three existing culverts and installation of the new interconnecting culvert between Ponds 2 and 3. The removal of existing culverts and construction of new bridge substructure would result in temporary impacts. Some segments of the Historic Trinity River Channel would be re-aligned to allow the stream to flow through the new culverts and the modified limits of Ponds 2 and 3.

Table 8-16: Waters of the U.S. within the Proposed Project Limits

Area	Feature ID (Approved JD Report)	Feature Name	Delineated Acres and/or Linear ft	Water of the U.S.? (Yes/No)	Existing Structure (Approximate number and size of columns)	Proposed Work or Structure	Approximate Permanent Impacts (Acres/ Linear ft)	Approximate Temporary Impacts (Acres/ Linear ft)	Proposed Permit	Constraints Map Sheet No.
IH 30	24	Trinity River	2.00/ 612	Yes	Bridge and 15 – 30 inch columns)	Bridge (2 – 5 ft by 12 ft footing)	0.01/ 12	0.00/ 0	RGP-12	2-4
	53	Emergent Wetland	0.27/ N/A	Yes	None	None	0.00/ N/A	0.27/ N/A	RGP-12	2
	54	Emergent Wetland	3.41/ N/A	Yes	Bridge (27 – 36 inch columns)	Bridge (21 – 5 ft by 8 ft footings and 2 – 6 ft by 12 ft footings)	0.02/ N/A	3.39/ N/A	RGP-12	4
	55	Historic Trinity River Channel	0.85/ 546	Yes	Bridge (3 – 30 inch columns)	Bridge (2 – 5 ft by 8 ft footings)	0.01/ 16	0.00/ 0	RGP-12	4 & 11
	56	Emergent Wetland	0.27/ N/A	Yes	None	None	0.00/ N/A	0.27/ N/A	RGP-12	2
	72	Linear Sump	0.96/ 430	No	N/A	N/A	N/A	N/A	N/A	2
	85	Emergent Wetland	1.49/ N/A	Yes	Bridge (24 – 36 inch columns)	Bridge (5 – 5 ft by 8 ft footings and1 – 5 ft by 12 ft footing)	0.01/ N/A	1.48/ N/A	RGP-12	2
	*S-1	Coombs Creek	0.02 21	Yes	Concrete Drainage Channel	None	0.00/ 0	0.00/ 0	None	1
IH 35E	24	Trinity River	4.88/ 882	Yes	Bridge (1 – 90 ft by 20 ft footing and 6 – 14 ft by 4 ft footings)	Bridge (10 – 8 ft columns)	0.01/ 80	0.25/ 50	RGP-12	9
	65	Emergent Wetland	3.23/ N/A	Yes	Bridge (5 – 14 ft by 4 ft and 14 – 30 inch columns)	Bridge (15 – 8 ft columns) Oncor Tower (1 – 9.5 ft column)	0.03/ N/A	3.20/ N/A	RGP-12	10

	66	Emergent Wetland	4.15/ N/A	Yes	Bridge 4 – 14 ft by 4 ft and 22 – 30 inch columns)	Bridge (20 – 8 ft columns)	0.02/ N/A	4.13/ N/A	RGP-12	10
	67	Emergent Wetland	1.35/ N/A	Yes	Bridge (1 – 14 ft by 4 ft column)	Bridge (6 – 8 ft columns)	0.01/ N/A	1.34/ N/A	RGP-12	10
	79	Historic Trinity River Channel	0.47/ 1,536	Yes	Culvert	Culvert and Fill Material	0.28/ 801	0.02/ 259	RGP-12	5 & 10
TOTALS			23.35/ 4,027				0.40/ 909	14.35/ 309		

**S-1 (Coombs Creek) was not located within the limits of USACE Approved J.D. and is considered potentially jurisdictional.*

As shown in **Table 8-16,** it is estimated that approximately 0.31 acre of jurisdictional waters (909 linear ft) and approximately 0.09 acre of jurisdictional wetlands would be permanently impacted by the proposed project. As shown in **Table 8-16**, all anticipated permanent and temporary impacts affect features within the Dallas Floodway that were determined to be jurisdictional in the USACE Approved J.D.

Temporary impacts to the waters of the U.S., including wetlands, would result from temporary fills needed to construct the proposed project. A temporary crossing of the Trinity River to facilitate the movement of materials from the east to the west side of the river may occur. The proposed crossing, if utilized is not anticipated to exceed 50 ft in width and would allow for the continuous flow of the Trinity River. Wetlands may be temporarily filled to allow for construction of the proposed project or mats may be utilized to minimize soil disturbance to the extent possible. In areas where temporary fills are needed, the affected areas would be returned to their pre-existing contours. The approximate acreage and linear ft of temporary impacts to jurisdictional and potentially jurisdictional features are included in **Table 8-16**.

Because the permanent and temporary impacts are limited to jurisdictional features within the Dallas Floodway as identified in the USACE approved J.D., Section 404 permanent and temporary impacts would be addressed during the Section 408 approval process. The placement of temporary or permanent dredge or fill material in waters of the U.S., including wetlands, would be authorized by Regional General Permit 12 (RGP-12), *Modifications and Alterations of Corps of Engineers Projects*. RGP-12 authorizes the discharge of dredged or fill material into waters of the U.S., including wetlands, and work in or affecting navigable waters of the U.S. associated with modifications and alterations to USACE projects that receive USACE approval under Section 408 and that meet all the General Conditions of RGP-12. A Preconstruction Notification would not be required, because the proposed project does not contain pitcher plant bogs, bald cypress-tupelo swamps, or the area of Caddo Lake in Texas designated as a “Wetland of International Importance.” Any temporary crossings would be coordinated with USACE and would meet the General Conditions of RGP-12. State of Texas water quality certification, issued on January 21, 2010, is provided through the conditions of RGP-12 for projects that result in a loss of less than 0.5 acre of waters of the U.S.

RGP-12 states that adverse impacts to waters of the U.S., including wetlands, shall be avoided and minimized to the extent practicable through the use of alternatives that have less adverse impact on the aquatic environment. Complete avoidance of the jurisdictional features would only occur if the proposed project was not constructed. Permanent fill impacts would be a result of the placement of bridge columns, bridge footings, and overhead sign bases within the boundaries of the waters of the U.S. Temporary impacts due to the placement of fill within the waters of the U.S. would be restored to preconstruction elevations and revegetated with native vegetation after construction is complete.

Mitigation is proposed for the permanent impacts to two streams (Features 24 and 55) and five wetlands (Features 54, 65, 66, 67, and 85) within the Dallas Levees. Mitigation is also proposed for the culvert extension located south of IH 30 at Feature 79 (0.09 acre and 175

linear ft). Compensatory mitigation is proposed for the permanent impacts to the two streams and five wetlands totaling 0.11 acre (283 linear ft) and for the proposed culvert extension totaling 0.09 acre. The proposed wetland mitigation site would be approximately 0.20 acre in size and would be located within the Dallas Floodway at the southern portion of the hydraulic swale at IH 30. A berm would separate the wetland mitigation area from the remaining portion of the hydraulic swale. The mitigation site would be contoured using multiple elevation gradients to a maximum depth of 2 ft and would be vegetated with appropriate wetland herbaceous species.

The remaining section of Feature 79 (0.19 acre and 626 linear ft) at IH 30 would be re-aligned to allow the stream to flow through the new culverts and the modified limits of Ponds 2 and 3. Feature 79 (Historic Trinity River Channel) was separated by the creation of the levees and is currently functioning as part of the interior drainage system. This section of the Historic Trinity River Channel serves as a drainage feature delivering water to the Able Pump Station. The area is routinely maintained by mowing and only contains herbaceous vegetation. The re-aligned channel would continue to function as a drainage feature. The proposed modification to Feature 79 at the Able Sump Pond 2 and 3 locations would not result in the loss of aquatic function. Therefore, no additional mitigation would be required for these impacts to waters of the U.S.

Section 404/10 mitigation options considered were the purchase of mitigation bank credits and on-site mitigation. On-site mitigation was determined to be most appropriate for the proposed project because it would occur within the same area as the impacted features and provide benefits such as increasing wildlife habitat, water storage, water filtration, and improving water quality. In addition, the proposed mitigation site would be protected as it would be within the Dallas Floodway, which the City of Dallas plans, operates and maintains and is under regulatory control of the USACE. Concerning hydrology, the proposed mitigation site would be suitable because of its location adjacent to the Trinity River. Typically the Trinity River rises above its flood stage of 30 ft several times a year resulting in inundation of the proposed mitigation area. It was determined in coordination with USACE Fort Worth Regulatory staff that appropriate mitigation would be to construct the wetland within the limits of the already proposed hydraulic swale at IH 30. It is anticipated that once the site becomes established, it would function as a higher quality wetland than those anticipated to be impacted by the proposed project.

If additional jurisdictional impacts are identified after the proposed project is let for construction due to the construction contractor's elected construction methodologies or activities, the contractor would be responsible for obtaining the appropriate Section 404 permit from the USACE.

8.7.3 Floodplains

In December 2007, USACE performed a periodic inspection of the Dallas Floodway. In the report, USACE documented numerous potential deficiencies based on its visual inspection for each of the four levees within the Dallas Floodway resulting in an overall system rating of "Unacceptable." As a result of the overall "Unacceptable" rating received in March 2009, USACE withdrew its letter of support for continued certification of the Dallas Floodway for

the 100-year FEMA accreditation. Shortly after this withdrawal of support, FEMA began the de-accreditation process of the Dallas Floodway. FEMA is currently seeking alternative methodology for remapping areas behind levees that are not certified (i.e., the Dallas Floodway 100-year FIRM). The City of Dallas is currently performing additional investigations, including the design of the proposed modifications, and working with FEMA in an effort to regain accreditation. Although the Dallas Floodway is not currently accredited by FEMA, for purposes of assessing potential impacts to the floodplains, it is assumed that the current FIRMs are still valid because no new maps have been released.

FIRM numbers 48113C0340J (Effective Date August 23, 2001) and 48113C0345J (Effective Date August 23, 2001) for Dallas County, Texas were reviewed to determine flood zones within the proposed project limits. The flood zones within the limits of the proposed project are designated as special flood hazard areas inundated by the 100-year flood, Zone A, no base flood elevations determined; Zone AE, base flood elevations determined; Zone X500, areas of the 500-year flood; and Other areas are designated as Zone X, areas determined to be outside the 500-year floodplain. Dallas County and the City of Dallas are participants in the National Flood Insurance Program (NFIP). The project is located within a FEMA designated 100-year floodplain.

No-Build Impact

Under the No-Build Alternative, no impacts to floodplains are anticipated

Build Impact

The hydraulic design for this project would be in accordance with current FHWA and TxDOT design policies. The proposed project would be in compliance with 23 C.F.R. 650 regarding location and hydraulic design of highway encroachments within the floodplains. The proposed project would comply with EO 11988 which requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. 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 project 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 design-build contractor will coordinate with the local floodplain administrator, county floodplain administrator, and state NFIP coordinator as specified in the technical provisions and in the EPIC plans. The design-build contractor will provide all information and technical data needed to file a Letter of Map Revision (LOMR) with FEMA. This coordination would take place before construction begins.

The Trinity River Environmental Impact Statement (TREIS) Record of Decision (ROD) criteria applies because the Dallas Horseshoe Project would be constructed over and within the Trinity River floodplain. The TREIS ROD criteria states that proposed projects would need to demonstrate, individually and cumulatively, that there is no increase in water surface elevations or valley storage for the 100-year and less than five percent valley storage loss for the SPF event. Valley storage is defined as the water volume that occupies the floodplain during the passing of the flood event and is a measure of the floodplain

capacity. Valley storage change is necessary to determine if a loss of valley storage would occur due to implementation of a project, and to quantify the magnitude of the change.

The proposed project would demonstrate that it satisfies the TREIS ROD criteria for water surface elevation, valley storage, and erosive water velocities for both the 100-year and SPF events. A Hydraulic and Hydrology Technical Report has been developed and will be included in the Section 408 submittal. The report determined that due to the total number of bridge columns to be placed within the Dallas Floodway, a hydraulic swale would be constructed to offset potential impacts to a rise in the water surface elevation. The hydraulic swale would be located at IH 30 between the East Levee and the Trinity River. It would be approximately 600 ft long, 100 ft wide, and 2 ft deep. The southern portion of the hydraulic swale would be utilized for wetland mitigation. The location of the hydraulic swale is shown on **Appendix D**, **Sheet 4**.

North of Riverfront Boulevard at IH 35E, Sump Ponds 2 and 3 of the Able Pump Station would have fill material placed within the north portion of the existing ponds to provide an adequate road base for construction of a proposed ramp and a collector distributor road. This fill material, in addition to new bridge substructure, would reduce the current storage capacity of the existing sump ponds. To compensate for this reduction in storage capacity, both Ponds 2 and 3 would be modified in accordance with an approach agreed upon between representatives of TxDOT and City of Dallas during an Able Pump Station coordination meeting held in February 2012.

Material would be excavated between the southern limits of the existing ponds and Riverfront Boulevard and along the western edge of Pond 2, to compensate for the loss of storage capacity. The excavation would ensure that the existing total storage capacity of Sump Ponds 2 and 3 would be maintained. Due to the construction of the proposed collector-distributor, the existing culvert under IH 35E that discharges into Pond 2 would be reconstructed under the proposed pavement to the new northern edge of the ponds. The existing culvert interconnecting Ponds 2 and 3 would be removed and a new culvert constructed to accommodate new bridge substructures and the required flow capacity established by the City of Dallas for the new Able Pump Station design.

The existing two culverts under Riverfront Boulevard that interconnect Pond 1 to Pond 2 may also be modified. The existing upstream headwalls for these culverts in Pond 2 may be relocated or modified to accommodate the revised limits of Pond 2. The existing culverts under Riverfront Boulevard will be replaced during a separate project planned by the City of Dallas and Dallas County to reconstruct Riverfront Boulevard from Continental Avenue to Cadiz Street. The existing culvert under Cadiz Street that interconnects Able Sump Pond 3 to Pond 4 will be replaced under a separate project planned by the City of Dallas to reconstruct Cadiz Street from South Lamar Street to Riverfront Boulevard.

Because the proposed project is within the Trinity River Corridor Development Regulatory Zone, a Corridor Development Certificate (CDC) process would apply. However, per coordination with the City of Dallas in January 2012, it is anticipated that the CDC application would not be needed because a CDC hydraulic review for the proposed project would be performed by USACE under the Section 408 approval process. Final

determination of applicability is contingent upon USACE approval of hydraulic analysis performed as part of the Section 408 approval process. Documentation of the January 2012 correspondence is included in **Appendix F**.

8.7.4 Water Quality

No-Build Impact
Under the No-Build Alternative, no impacts to water quality would be anticipated.

Build Impact
The Section 401 Water Quality Certification requirements would be met by following the Standard Provisions in Appendix D of RGP-12. These provisions provide for the protection of surface water quality during all phases of work authorized by RGP-12.

Impaired Waters
During construction of the proposed project, there could be direct impacts to water quality within the proposed project limits. The runoff from proposed improvements would discharge directly to the Upper Trinity River (Segment 0805), which is listed as threatened/impaired for bacteria, dioxin in edible tissue, and polychlorinated biphenyls (PCBs) in edible tissue in the 2010 CWA Section 303(d) list. Therefore, coordination with Texas Commission on Environmental Quality (TCEQ) would be required.

Municipal Separate Storm Sewer System (MS4)
This project is located within the boundaries of the Phase I City of Dallas MS4, and would comply with the applicable MS4 requirements. The proposed project is also within the boundaries of TxDOT's MS4 Phase I permit and would comply with the applicable MS4 requirements.

Stormwater
To minimize adverse effects to water quality during construction, the proposed project would utilize temporary erosion and sedimentation control practices (i.e., temporary vegetation, mulch, sod, silt fences, rock berms, grassy swales, and vegetation-lined ditches) from the TxDOT's manual "Standard Specifications for the Construction of Highways, Streets, and Bridges." Where appropriate, these temporary erosion and sedimentation control structures would be in place prior to the initiation of construction and would be maintained throughout the duration of the construction. Clearing of vegetation would be limited and/or phased in order to maintain a natural water quality buffer and minimize the amount of erodible earth exposed at any one time. Upon completion of the earthwork operations, disturbed areas would be restored and reseeded according to the TxDOT's specifications for "Seeding for Erosion Control."

Texas Pollutant Discharge Elimination System (TPDES)
This project would include five or more acres of earth disturbance. TxDOT would comply with TCEQ's TPDES Construction General Permit (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) and a Notice of Termination (NOT) would be required.

8.8 Traffic Noise

The Proposed Project is located within an urban setting, adjacent to parks, industrial, manufacturing, commercial, and residential properties. The predominant noise sources for the study area consist of vehicular traffic traveling the existing transportation network and air traffic. The existing transportation network noise sources near the study area include Beckley Avenue, IH 30, IH 35E, Houston Street Viaduct, Jefferson Boulevard Viaduct, Riverfront Boulevard, Colorado Boulevard, and Eads Avenue. Existing air traffic noise is related to the Dallas Love Field Airport and DFW International Airport, located approximately 4 and 10 miles from the proposed project, respectively. Other contributors to the local noise environment within the noise study area include the Dallas Floodway System pumps, construction equipment performing O&M activities, and/or trash screens. Background noise levels near the study area were modeled in December 2011. The existing noise levels for representative land use areas are included in **Table 8-18**.

No-Build Impact
Under the No-Build Alternative, no traffic noise impacts are anticipated to occur.

Build Impact
This analysis was accomplished in accordance with TxDOT's FHWA approved 2011 *Guidelines for Analysis and Abatement of Roadway Traffic Noise*.

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)."

Also, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as "Leq."

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise;
- Determination of existing noise levels;
- Prediction of future noise levels;
- Identification of possible noise impacts; and
- Consideration and evaluation of measures to reduce noise impacts.

FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur (see **Table 8-17**).

Table 8-17: Noise Abatement Criteria

Activity Category	FHWA dB(A) Leq	TxDOT dB(A) Leq	Description of Land Use Activity Areas
A	57 (exterior)	56 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	66 (exterior)	Residential.
C	67 (exterior)	66 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	51 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	71 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	**--**	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	**--**	Undeveloped lands that are not permitted.

A noise impact occurs when either the absolute or relative criterion is met:

Absolute criterion: the predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as 1 dB(A) below the FHWA NAC. For example: a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dB(A) or above.

Relative criterion: the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. "Substantially exceeds" is defined as more than 10 dB(A). For example: a noise impact would occur at a Category B residence if the existing level is 54 dB(A) and the predicted level is 65 dB(A) [11 dB(A) increase].

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area.

FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles;

highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise.

Existing and predicted traffic noise levels were modeled at receiver locations (**Table 8-18** and **Appendix D: Constraints Maps, Sheets 1, 3, 8 and 9**) that represent the land use activity areas adjacent to the proposed project that might be impacted by traffic noise and potentially benefit from feasible and reasonable noise abatement.

Table 8-18: Traffic Noise Levels [dB(A) Leq]

Receiver	NAC Category	NAC dB(A) Leq	Existing	Predicted (2035)	Change (+/-)	Noise Impact
R1- Residence	B	67	61	63	+2	No
R2- Residence	B	67	60	62	+2	No
R3- Residence	B	67	60	62	+2	No
R4- Residence	B	67	59	60	+1	No
R5- Residence	B	67	64	64	0	No
R6- Residence	B	67	63	64	+1	No
R7- Residence	B	67	63	65	+2	No
R8- Residence	B	67	62	64	+2	No
R9- Residence	B	67	64	65	+1	No
R10- Residence	B	67	63	65	+2	No
R11- Residence	B	67	64	65	+1	No
R12- Residence	B	67	62	64	+2	No
R13- Residence	B	67	61	63	+2	No
R14- Residence	B	67	60	62	+2	No
R15- Residence	B	67	58	59	+1	No
R16- Residence	B	67	58	59	+1	No
R17- Residence	B	67	58	59	+1	No
R18- Residence	B	67	58	59	+1	No
R19- Residence	B	67	59	59	0	No
R20- Residence	B	67	58	59	+1	No
R21- Residence	B	67	58	59	+1	No
R22- Residence	B	67	58	58	0	No
R23- Residence	B	67	57	58	+1	No
R24- Residence	B	67	57	57	0	No
R25- Residence	B	67	57	57	0	No
R26-Coombs Creek Trail	C	67	59	60	+1	No
R27-Commbs Creek Trail	C	67	63	64	+1	No
R28-Coombs Creek Trail	C	67	61	63	+2	No
R29-U.S. Post Office Building	D	52	44	45	+1	No
R30-Motel	E	71	69	71	+2	Yes
R31-Automotive Business	F	--	72	75	+3	--
R32-Kirby's Kreative Learning Center (Daycare Building)	D	52	51	52	+1	Yes
R33-Dallas County Juvenile Substance Abuse Unit	D	52	47	48	+1	No
R34-Residence	B	67	71	72	+1	Yes
R35-Trinity Levee Trail	C	67	68	67	-1	Yes

Source: Study Team, April 2012.

As indicated in **Table 8-18**, the proposed project would result in a traffic noise impact and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of traffic noise barriers.

Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at greater than 50 percent of impacted, first row receivers by at least 5 dB(A); and to be "reasonable," it must not exceed the cost-effectiveness criterion of $25,000 for each receiver that would benefit by a reduction of at least 5 dB(A) and the abatement measure must be able to reduce the noise level of at least one impacted, first row receiver by at least 7 dB(A).

Traffic management: control devices could be used to reduce the speed of the traffic; however, the minor benefit of 1 dB(A) per 5 mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments: any alteration of the existing alignment would displace existing businesses and residences, require additional ROW and not be cost effective/reasonable.

Buffer zone: the acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.

Traffic Noise barriers: this is the most commonly used noise abatement measure. Traffic noise barriers were evaluated for each impacted receiver locations with the following results:

R30: This receiver represents a motel with driveways facing the roadway. Gaps in a traffic noise barrier placed along TxDOT's ROW would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A). A traffic noise barrier along the mainlanes would not restrict views and access by potential customers and may achieve the minimum feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A) at the motel; however, it would exceed the reasonable, cost-effectiveness criterion of $25,000.

R32: This receiver represents a daycare facility adjacent to the IH 35E northbound frontage road. A traffic noise barrier along the IH 35E northbound mainlanes would achieve the minimum feasible reduction of 5 dB(A) and the noise reduction design goal of 7 dB(A) at the daycare; however, it would exceed the reasonable, cost-effectiveness criterion of $25,000.

R34: This receiver represents eight single family residences adjacent to the IH 35E northbound frontage road. A traffic noise barrier along the mainlanes would achieve the minimum feasible reduction of 5 dB(A) and the noise reduction design goal of 7 dB(A) for at least one of the residences; however, it would exceed the reasonable, cost-effectiveness criterion of $25,000.

R35: This receiver represents the Trinity Levee Trail that extends along the West Levee and runs underneath the IH 35E bridge. A traffic noise barrier would not be feasible and

reasonable because the trail is adjacent to the bridge section of IH 35E proposed to be at higher elevation than the trail. The barrier would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A).

None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.

To avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2035) noise impact contours shown in **Table 8-19**.

Table 8-19: Traffic Noise Contours [dB(A) Leq)

Land use	Impact Contour	Distance from ROW
NAC Categories B&C	66	100 ft
NAC Category E	71	32 ft

Source: Study Team, December 2011.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. Although construction normally occurs during daylight hours when occasional loud noises are more tolerable, nighttime construction would be substantial for the proposed project because it involves a major interchange and two major highways. Nighttime construction would be utilized in order to help minimize disturbance to vehicular traffic. 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 (i.e., reduced nighttime construction near residential areas) and proper maintenance of muffler systems.

A copy of this traffic noise analysis would be available to local officials. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

8.9 Hazardous Materials

The study area for hazardous materials encompasses the sites included in the environmental regulatory database report and other historical reports that could pose a risk to the construction of the proposed project.

No-Build Impact

Under the No-Build Alternative, no impacts to hazardous waste/substance are anticipated.

Build Impact

Visual Survey

A visual survey of the proposed project limits was conducted for evidence of hazardous substances and/or contamination on December 1 and 8, 2011. This survey included a visual observation of properties located along and immediately outside the proposed project limits to identify the release or threatened release of petroleum products or other hazardous substances.

Environmental Regulatory Records Review

A review of environmental regulatory databases was conducted for the proposed project limits to determine if any known sites producing, storing, and/or disposing of toxic or hazardous materials might affect the proposed project. These databases were obtained directly from government sources and are typically updated on a quarterly basis. This environmental regulatory records review assessment (radius report) was conducted in accordance with the American Society for Testing and Materials (ASTM) Practice E1527-05, with exceptions to accommodate the particular situations and needs of TxDOT roadway projects. The regulatory database lists reviewed are presented in **Appendix E: Hazardous Materials Regulatory Database Summary.**

The ASTM radius search of the proposed project limits was reviewed. The database search identified 388 sites and provided the locations of 386 sites. The sites identified from the federal databases consisted of:

- 2 Aerometric Information Retrieval System/Air Facility (AIRSAFS) sites;
- 1 EPA Docket Data (DOCKETS) site;
- 4 Emergency Response Notification (ERNSTX) sites;
- 20 Facility Registry System (FRSTX) sites;
- 1 Integrated Compliance Information System (ICIS) site;
- 2 Resource Conservation and Recovery Act-Generator Facilities (RCRAG06) site;
- 21 Brownfields Management System (BF) sites;
- 11 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites;
- 8 No Further Remedial Action Planned (NFRAP) sites;
- 1 No Longer Regulated RCRA Non-Corracts TSD Facilities (NLRRCRAT) site;
- 1 National Priority List (NPL) site; and
- 1 Record of Decision (ROD) site.

The sites identified from the state databases consisted of:

- 2 Groundwater Contamination Cases (GWCC) sites;
- 1 Notice of Violations (NOV) site;
- 2 SPILLS Listing (SPILLS) sites;
- 45 Industrial Hazardous Waste (IHW) sites;
- 69 Petroleum Storage Tanks (TXPST) sites;
- 12 Affected Property Assessment Reports (APAR) sites;
- 2 Brownfields Site Assessments (BSA) sites;
- 1 Closed and Abandoned Landfill Inventory (CALF) site;

- 6 Innocent Owner/Operator Database (IOP) sites;
- 79 Leaking Petroleum Storage Tanks (TXLPST) sites;
- 3 Municipal Solid Waste Landfill (MSWLF) sites;
- 71 Tier II Chemical Reporting (TIER II) sites; and
- 22 Texas Voluntary Cleanup Program (TXVCP) sites (two of which were unlocatable);

Based on distance, topographic gradient, historical information, database information, and property impacts the seven sites listed in **Table 8-20** are categorized as high risk. Sites considered likely to be contaminated and within the proposed ROW are categorized as "high risk". Examples of high risk sites include landfills and LPST sites. Sites are categorized as "low risk" if available information indicates that some potential for contamination exists, but the site is not likely to pose a contamination problem during construction. The 12 sites characterized as low risk are listed in **Table 8-21**. The locations of the high and low risk sites are shown on **Appendix D: Constraints Maps**.

Table 8-20: High Risk Sites

Site[1]	Site Name/ Site Information	Database Listing	Regulatory Status	Gradient and Anticipated Property Impact	Constraints Maps Sheet No.
1	Southwest Industrial Gases, Inc. 538 South Industrial Blvd. Dallas, TX 75207	SPILLS, TIER II, FRSTX, ICIS, IHW	SPILLS (ID# 94947) – Unknown amount of acetylene spilled on 7/25/07 that entered a stormwater drainage to the Trinity River. Incident closed. SPILLS (ID# 95138) – Unknown amount of acetylene spilled on 7/30/07 and did not enter a water body. Incident open. TIER II (ID# 4VVPQX002SAN) – Storage of acetone and acetylene gas at the site. FRSTX (ID# 110005162402) – SIC codes 5199, 9999, 2759, 1541, 4911, and 2813. ICIS (ID# 2022044197) – Cited for violating CWA 301 NPDES for discharge without a permit. IHW (ID# 35732) – Not a hazardous waste generator. Registration was inactivated because no activity was reported in 1994, 1995, and 1996.	The site is at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired.	4 and 10
3	Oak Cliff Bus Facility 1200 E Jefferson Blvd. Dallas, TX 75203	LPST, PST, TIER II, ERNSTX, FRSTX, IHW	LPST (ID# 108257) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0031304) – Twelve tanks removed from ground in May 2000 and two tanks temporarily out of use, empty, since September 2006. Tier II (ID# 2WF2KX008CG2) – Site contains multiple locations with above ground tanks containing gasoline, diesel, and oil. It passed all validation checks. ERNS (ID# 2144339360 and 333721933) - . A 75.8 gallon hydraulic oil spill occurred in 1996 that was contained, but it did reach water. A 300 gallon engine oil spill occurred in 2000 that was contained and did not reach water. FRSTX (ID# 110000901784) – SIC codes 4226 and 4111 and NAICS codes 485113 and 485999. IHW (EPA ID# TXD981902752) – Conditionally exempt small quantity generator for multiple wastes.	The site is above-grade and adjacent to the existing ROW. No additional ROW required at this site.	8
11	Dairy Mart 3 1802 Sylvan Ave Dallas, TX 75208	PST, FRSTX, LPST	PST (ID# 0069156) – Two 12,000 gallon gasoline tanks removed from ground on 12/23/10. FRSTX (ID#11003442278) – No data provided. LPST (ID#118314) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (3) Monitoring.	The site is at-grade. A portion of the property along the south boundary of the parcel has been acquired.	1
12	Burden Brothers 2020 N Beckley Ave Dallas, TX 75208	PST, LPST	PST (ID# 0034648) – Three tanks (5,000 and 2,000 gallon gasoline and 1,000 gallon used oil) were removed from the ground on 6/11/99. LPST (ID# 116536) – (4.0) Assessment incomplete, no apparent receptors impacted, (6P) Final concurrence pending documentation of well plugging.	The site is at-grade and adjacent to the existing ROW. No additional ROW needed at this location.	2

Site[1]	Site Name/ Site Information	Database Listing	Regulatory Status	Gradient and Anticipated Property Impact	Constraints Maps Sheet No.
13	Texaco/ Gateway 25/ Star Enterprises 424 IH 35E Dallas, TX 75203	LPST, PST, FRSTX, IHW	LPST (ID# 096762) – (2A) Groundwater other than drinking water aquifer, site characterization incomplete, (6A) Final concurrence issued, case closed. PST (ID# 0013420) – Five tanks (three 10,000 gallon gasoline and one 10,000 diesel) were removed from the ground on 6/11/08. One 12,000 gallon gasoline tank is still in use. FRSTX (ID# 110005119996) – No data reported. IHW (ID# TXD987994118) – Registration was inactivated. It was a conditionally exempt small quantity generator for non-industrial and/or municipal waste.	The site is above-grade and adjacent to the existing ROW. No additional ROW required at this site.	8
15	NTTA Maintenance Facility 405 S Industrial Blvd. Dallas, TX 75207	GWCC, IHW, LPST, PST, VCP, FRSTX, APAR	GWCC (ID# 1960) – Entity entered VCP due to groundwater and soil contaminated with VOCs, SVOCs, metals, and chlorinated solvents. IHW (ID# TXD988040572) – Conditionally exempt small quantity generator for non-industrial and/or municipal waste. LPST (ID# 104064) – (4A) Soil contamination only, requires full site assessment and remedial action plan (RAP), (6A) Final concurrence issued, case closed. PST (ID# 0028237) – One 12,000 gallon gasoline tank and one 6,000 gallon diesel tank removed from the ground on 4/7/04. VCP (ID# 1960) – Soils and groundwater affected by VOCs, SVOCs, metals, and chlorinated solvents. FRSTX (ID# 110005137486) – NAICS code 48411 for local general freight trucking. APAR (ID# 1960) – APAR received on 9/18/06. No remediation reported and no contamination reported.	The site is at-grade and within the existing ROW. No additional ROW needed at this location.	4 and 11
62	712 Fort Worth Ave. Dallas, TX 75208	VCP and APAR	VCP (ID# 2232) – Soils and groundwater affected by VOCs, heavy metals, and chlorinated solvents. APAR (ID# 2232) – Status is investigation and the APAR was received on 12/22/10.	Site is located slightly above-grade of the existing ROW.	1

[1] Site corresponds to the Map ID # listed in database reports (October 12, 2011 and February 15, 2012).

Site 1 (Southwest Industrial Gases, Inc.) is located within the proposed ROW and Site 15 (NTTA Maintenance Facility) is located within the existing ROW. Both sites are at-grade with the proposed project. It is anticipated that the entire parcel of Site 1 would be acquired. Both sites would be physically impacted by the proposed construction activities of the proposed project. The proposed construction activities at these sites would consist of grading, excavation, and drilling of piers for bridge supports. Sites 1 and Site 15 are considered to pose a high risk to the construction of the proposed project due to the construction activities to occur at the site and the recorded incidences of contaminant releases and storage of chemical materials on the sites.

Site 3 (Oak Cliff Bus Facility) is located above-grade and adjacent to the existing ROW. The site would not be physically impacted by the proposed construction activities of the proposed project. No construction activities would occur along the southbound frontage road adjacent to the site. Construction activities would occur along the mainlanes and would consist of grading and minimal excavation. Site 3 is considered to pose a high risk to the construction of the proposed project due to its location above grade of the proposed project and the possibility that contamination may have extended into the proposed construction area.

Site 11 (Dairy Mart 3) is located at-grade and a portion of the property along the south boundary of the parcel has been acquired. The structure and the underground storage tanks at the site have been removed. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 11 is considered high risk as it is currently in the monitoring stage for the LPST and the southern limit of the parcel would be physically impacted by the proposed construction activities.

Site 12 (Burden Brothers) is located at-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project. Five bridge bents are located immediately north of the site and bridge piers for the bents would be drilled and constructed at these locations. There is a slight slope from IH 30 to drainage sumps to the east and south of the site. Site 3 was determined to pose a high risk to the construction of the proposed project due to the close proximity of the drilling of the bridge piers and the possibility that contamination may have extended into the proposed construction area.

Site 13 (Texaco/Gateway 25/Star Enterprises) is located above-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project. A proposed exit ramp would be constructed along the mainlanes adjacent to Site 13. The site is located approximately 10 ft higher than the mainlanes where construction activities would occur. Construction activities would consist of grading and minimal excavation. Site 13 is considered to pose a high risk due to its elevation above the mainlanes and the possibility that contamination may have extended into the proposed construction area.

Site 62 is located at-grade and a portion of the property along the south boundary of the parcel has been acquired. The site has been cleared of most of the structures. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 62 is considered high risk as the APAR status is still in the investigation stage and the southern limit of the parcel would be physically impacted by the proposed construction activities.

Table 8-21: Low Risk Sites

Site[1]	Site Name/ Site Information	Database Listing	Regulatory Status	Gradient and Anticipated Property Impact	Constraints Maps Sheet No.
2	Hardfacing Specialty Co. 430 S. Industrial Blvd. Dallas, TX 75207	FRSTX, IHW	FRSTX (ID# 110005052824) – No data provided. IHW (TCEQ ID# 021146) – Registration inactivated because facility was registered prior to 1994 and no waste reported in 1994, 1995, and 1996. In RCRAINFO program. Inactive generator.	The site is at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired.	4 and 10
4	National Linen Service/ Angelica Textile 620 Yorktown St. Dallas, TX 75208	LPST, PST, TIER II, AIRSAFS, FRSTX	PST (ID# 0041439) – Three tanks (10,000 and 4,000 gallon gasoline and one 4,000 gallon diesel) removed from ground on 6/1/1992. Tier II (ID# 48N2MJ002F0X, 5KDABW0024RS, and 70QS6W002V42) – Chemicals stored at site includes sulfuric acid, hydrogen dioxide, sodium hydroxide, and poly(oxy-1,2-ethanediyl,alphs-(nonylphenyl)-omega-hydroxy. AIRSAFS (ID# 481136E173) – Classification is potential uncontrolled emissions and pollutant is tetrachlorethylene (perchloroethylene). FRSTX (ID# 110001876863) – SIC code is 7216, drycleaning plants, except rug cleaning. LPST (ID# 104591) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed.	The site is at-grade. It is anticipated that a portion of the property along the south boundary of the parcel would be acquired.	1
5	Morrison Automotive 317 S RL Thornton Fwy. Dallas, TX 75203	PST, LPST	PST (ID# 0071394) – Five tanks removed from ground on 12/20/1998. Three gasoline (two 1,000 gallon and one 4,000 gallon) tanks, one 1,000 gallon kerosene tank, and one 4,000 gallon tank storing unknown substance, LPST (ID# 114458) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed.	The site is at-grade and adjacent to the existing ROW. No additional ROW required at this site.	8
6	Millet the Printer 1000 S. Ervay Street Dallas, TX 75201	RCRAG06 and IHW	RCRAG06 (ID# TXD988003968) – Small quantity generator that contains ignitable waste, corrosive waste, silver, 1,4-dichlorobenzene, and various non-halogenated solvents. IHW (ID# 80661) – Small quantity generator that contains waste solvent, contaminated rags, waste ink, spent solvents, spent fixer, plant trash, empty metal drums, scrap metal, scrap film, and waste oil.	The site is above-grade and adjacent to the existing ROW. No additional ROW would be required at this site.	7
8	RSR Corporation Westmorland Rd. and Singleton Rd. Dallas, TX 75115	NPL, RODS, CERCLIS	NPL (EPA ID#:TXD079348397) - The site encompasses a 13.8 square mile area. It was a lead smelter plant. Soils and groundwater contaminated with lead, antimony, cadmium, and arsenic at the site and within the area. RODS (ID# TXD079348397) – ROD date was 5/9/95 and status is on Final NPL. CERCLIS (ID# TXD079348397) – Currently on Final NPL.	The southern limits of the RSR Corporation affected area extends into the proposed project limits on IH 30 west of the Trinity River.	1 and 2

Site[1]	Site Name/ Site Information	Database Listing	Regulatory Status	Gradient and Anticipated Property Impact	Constraints Maps Sheet No.
10	United States Postal Service 402 DFW Turnpike Dallas, TX 75260	LPST, PST, AIRSAFS, ERNSTX, FRSTX, IHW	LPST (ID# 103928) - (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0043460) – Four diesel tanks, one gasoline tank, three used oil tanks, and one tank of unknown substance removed from ground on 7/21/94. AIRSAFS (ID# 481136E367) – Classification is potential uncontrolled emissions less than 100 tons per year. ERNS (ID# 3078623857) – A 30 gallon oil/fuel spill that did not reach water. FRSTX (ID# 110037847783 and 110005025999) – SIC code is 4311 which includes all U.S. Postal Service establishments. IHW (ID# TX9180000300) – Conditionally exempt small quantity generator for non-industrial and/or municipal waste.	The site is at-grade and adjacent to existing ROW. No additional ROW required at this site.	1
14	In & Out Store/ Buy Low Discount 1005 S. Industrial Blvd. Dallas, TX 75207	PST, FRSTX, NOV	PST (ID# 0076098) - Two 15,000 gallon gasoline tanks are in use. FRSTX (ID# 110033400763) – No data reported. NOV (ID# RN103993085) - Minor waste violation issued for failure to maintain records in 2006.	The site is at-grade and adjacent to the existing ROW. No additional ROW needed at this location.	5 and 10
16	Alford Refrigerated Warehouses 318 Cadiz St Dallas, TX 75207	PST, VCP, BF, CERCLIS, DOCKETS, ERNSTX, FRSTX, LPST	Five USTs (gasoline, new oil, used oil) removed 1991. New oil UST leak reported 1991; case closed. Site currently active in VCP (investigation phase) due to soil/groundwater contamination with VOCs, SVOCs, metals, solvents, and TPH.	The site is at-grade and approximately 500 ft from the existing ROW. No additional ROW required at this site.	5 and 6
17	Fuel City II 801 S. Industrial Blvd. Dallas, TX 75207	FRSTX and PST	FRSTX (ID# 110033969212) – No date reported. PST (ID# 0074362) – One 20,000 gallon diesel tank, one 20,000 gallon gasoline tank, and one 12,000 gallon gasoline tank in use.	The site is at-grade and additional ROW would occur at the north east corner of the property.	5 and 10
32	Kwik Stop 339 S. Industrial Blvd. Dallas, TX 75207	LPST, PST, and IOP	LPST (ID# 113865) - (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0024714) – Three 10,000 gallon gasoline tanks are in use. IOP (ID# 706) – Groundwater affected by VOCs. Certificate issued 2/19/08.	The site is at-grade and adjacent to the existing ROW. No additional ROW required at this site.	4 and 11
35	Burnett Field SW Corner of Colorado Blvd. and Jefferson Blvd. Dallas, TX	VCP and APAR	VCP (ID# 1873) – Soils and groundwater affected by VOCs, SVOCs, metals, and TPH. APAR (ID# 1873) – Status is active and the APAR was received on 10/16/07.	The site is above-grade and adjacent to the proposed improvements. No additional ROW required at this site.	8

Site[1]	Site Name/ Site Information	Database Listing	Regulatory Status	Gradient and Anticipated Property Impact	Constraints Maps Sheet No.
52	Former Texas Delivery Service 840 S. Lamar Dallas, TX 75202	LPST, PST, and VCP	LPST (ID# 112803) – (4.2) No groundwater impact, no apparent threats or impacts to receptors, (6A) Final concurrence issued, case closed. LPST (ID# 097002) (4A) Soil contamination only, requires full site assessment and remedial action plan (RAP), (6A) Final concurrence issued, case closed. PST (ID# 0057966) – Eleven tanks storing unknown substance were removed from the ground in July and August of 1990. VCP (ID# 2118) – Soils and groundwater affected by VOCs, metals, and TPH.	Site is located above-grade and approximately 150 ft from the existing ROW.	6

[1] *Site corresponds to Map ID # listed in the database reports (October 12, 2011 and February 15, 2012).*

Site 2 (Hardfacing Specialty Company) is located at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired. The site would be physically impacted by the construction activities of the proposed project. The proposed construction activities at this site would consist of grading, excavation, and drilling of piers for bridge supports. Site 2 is considered to pose a low risk to the construction of the proposed project from available database information; however, there is a possibility that contamination is present at the site and could be encountered during construction.

Site 4 (National Linen Service/Angelica Textile) is located at-grade and adjacent to the proposed project. The building on the site is located approximately 600 ft north of the proposed ROW. From the building to approximately 350 ft from the proposed ROW is a paved area for employee parking and truck parking. From the paved area at the site south to the proposed project is a vegetated area containing trees and herbaceous vegetation. No signs of stress to the vegetation resulting from potential contamination were observed. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. The proposed edge of pavement would be located approximately eight ft closer to the site. Site 4 is considered to pose a low risk to the construction of the proposed project due to the construction activities at this location and the distance the proposed project is from the facilities at this site.

Site 5 (Morrison Automotive) is located at-grade and adjacent to the existing ROW on the west side of IH 35E. No additional ROW would be required at this site. The topography in the area gently slopes to the north and east, toward IH 35E. No construction activities are proposed immediately adjacent to the site. Proposed construction activities would occur along Fleming Place on the east side of IH 35E, approximately 350 ft from the site, and along the northbound frontage road. Site 5 is considered to pose a low risk to the construction of the proposed project due to its proximity to the proposed construction areas; however, there is a possibility that contamination is present at the site and could be encountered during construction.

Site 6 (Millet the Printer) is located above-grade and adjacent to the existing ROW on the north side of IH 30 at Saint Paul Street. No additional ROW would be required at this site.

The site is located approximately 75 ft north of proposed improvements to IH 30. No signs of stress to the vegetation resulting from potential contamination were observed between the site and the existing roadway. Minimal excavation would near the site for the improvements to IH 30. The existing pavement would be removed, the area graded, and repaved. Site 6 is considered to pose a low risk to the construction of the proposed project due to the chemical materials at this location and the distance the proposed construction is from this site.

Site 8 (RSR Corporation) is located at Westmoreland Road and Singleton Boulevard and encompasses a 13.6 square mile area. The south limit of the site extends into the proposed project limits on IH 30 west of the Trinity River. Remediation activities have already occurred to assess and clean up a portion of the contaminated Murmur Corporation Site 3/RSR Corporation superfund site. One form of transport for the contamination from this site was through the air. The prevailing south and southwest winds would carry contaminants from the smeltering plant. The proposed project is located along the southern boundary of the site. This site is not located within, or immediately adjacent to, the proposed project; however, the boundary of the affected area does extend into the proposed project limits. Site 8 is considered low risk due to its location in relation to the proposed project and the possibility that contamination has extended into the proposed project limits.

Site 10 (Dallas United States Postal Service) is located adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Loading docks and parking for semi-trailers are located immediately adjacent to the existing ROW. On the north side of the building there is a service area and parking for fleet vehicles. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 10 would not be physically impacted by the proposed construction activities; however, a possibility exists that contamination could have extended into the proposed construction area.

Site 14 (In & Out Store/ Buy Low Discount) is located at-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Adjacent to this site, the proposed project would improve the exit ramp as it intersects with Riverfront Boulevard. The proposed improvements would follow the same general alignment as the existing roadway. Minimal grading/excavation would be needed at this location. The PSTs at this site are located near the southeast corner of the parcel, approximately 150 to 200 ft away from the proposed edge of pavement. The topography in this area gently slopes away from the proposed project limits toward the east. Site 14 is considered to pose a low risk to the construction of the proposed project due to the proposed construction activities adjacent to the site, the location of the PSTs, and the topography of the area.

Site 16 (Alford Refrigerated Warehouses) are located approximately 350 to 500 ft from the existing ROW on the east side of Cadiz Street. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Currently, the site has been cleared of all structures. All proposed

construction activities would occur within the existing TxDOT ROW. The topography in the area gently slopes to the west and south to the Historic Trinity River Channel, away from the proposed construction activities. Site 16 is considered to pose a low risk to the construction of the proposed project due to its location in relation to the proposed improvements; however, there is a possibility that contamination could have extended into the proposed construction area.

Site 17 (Fuel City II) is located adjacent to the existing ROW. A small amount of ROW would be acquired from the southeast corner of the parcel. The site would not be physically impacted by the construction activities of the proposed project. Bridge piers would be drilled and constructed immediately adjacent to the site. There are no recorded incidences of contamination releases for this site. Site 17 is considered to pose a low risk to the construction of the proposed project due to the available database information; however, there is a possibility that unknown contamination could be present at this site.

Site 32 (Kwik Stop) is located adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Minimal excavation would occur adjacent to the site to improve the arterial road. The existing pavement would be removed, the area graded, and repaved. Site 32 is considered to pose a low risk to the construction of the proposed project due to the minimal excavation required at this location; however, there is a possibility that contamination could be encountered during the proposed construction activities.

Site 35 (Burnett Field) is located slightly above-grade and adjacent to the proposed project. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. The topography gently slopes to the north and east toward the proposed construction area. Minimal excavation would occur adjacent to the site to improve the arterial road. The existing pavement would be removed, the area graded, and repaved. Site 35 is considered to pose a low risk to the construction of the proposed project due to the minimal excavation required at this location; however, a slight possibility exists that contamination could be encountered during the proposed construction activities.

Site 52 (Former Texas Delivery Service) is located near the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Site is located above-grade and approximately 150 ft from the existing ROW. Site 52 is considered to pose a low risk to the construction of the proposed project due to its location in relation to the proposed construction activities; however, there is a possibility that contamination could have extended into proposed construction area.

In addition to the sites listed in the environmental database report, previous environmental reports for projects within the Dallas Floodway were reviewed to compile information regarding soil analytical data within approximately 200 ft of the proposed ROW at IH 30 and IH 35E. Because soil borings were performed throughout the Dallas Floodway and not just within the proposed project limits, the 200 ft distance was selected to provide a better

characterization of the locations of contaminated soils within and adjacent to the proposed project. The dates of the reports ranged from 1984 to 2012. The reports reviewed are described below and the soil boring sites are depicted on the **Constraints Maps** in **Appendix D.**

HNTB, Hazardous, Toxic and Radioactive Waste (HTRW) Work Plan for Proposed Levee Modifications, prepared for City of Dallas, January 9, 2012:
The report summarized readily available soil analytical data from six historical environmental reports within the Dallas Floodway and portions of the Dallas Floodway Extension. The historical environmental reports were reviewed to compile information regarding soil analytical data over the Dallas Floodway and portions of the Dallas Floodway Extension. The soil analytical data was tabulated and compared to TCEQ's standards which were revised in 2010, and compared to the locations of planned Section 408 modifications and utility modifications, to evaluate the potential for encountering impacted soil during the planned modifications construction activities.

Terra-Mar, Inc., Geotechnical/Environmental Investigation, Trinity River Implementation Plan, Dallas, Texas, prepared for Halff Associates, Inc. Dallas, Texas, October 12, 1999:
A total of 13 soil boring tests were performed. The soil borings were located within the Trinity River Floodplain, between Corinth Street and IH 30. Selected soil samples were collected from the soil borings and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), the eight Resource Conservation and Recovery Act (RCRA) metals, and herbicides and pesticides. Two samples were also analyzed for the toxicity characteristic leaching procedure (TCLP) for chromium, lead and mercury. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Five of the soil borings are located along the proposed project limits. SB-12 and SB-13 are located along IH 30 and SB-7, SB-8, and SB-9 are located along IH 35E. The results of four previous studies were used in preparation of the Terra-Mar report. These additional studies include:

- Alan Plummer and Associates, Inc., Sampling and Testing of Existing Soils and Sediment in the Trinity River Flood Plain and Channel, prepared for the City of Dallas, January 18, 1984. A total of six borings were performed in the vicinity of the Commerce Street, IH 30 and Corinth Street bridges. Selected soil samples were analyzed for metals and pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Three soil borings (AP-2, AP-3, and AP-5) are located north of IH 30.

- Carter & Burgess, Chain of Lakes Park – an Alternative to Town Lake, prepared for Mr. Trammel Crow, December 3, 1984. A total of 20 soil boring tests were performed in the floodplain, between Corinth Street and IH 30. Selected soil samples were analyzed for total metals, total pesticides, Extraction Procedure Toxicity (EP Tox) metals and EP Tox pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. None of these soil borings are located within or adjacent to the proposed project limits.

- Maxim Engineers, Upper Trinity River Channel Sampling and Analysis for Dallas Floodway Channel Modifications, prepared for the City of Dallas, November 19, 1990. A total of 18 environmental soil boring tests were performed in the floodplain between Corinth Street and the Mockingbird Lane bridge. The purpose for this study was to evaluate the suitability of the soils within the river channel to construct levees. Six composite soil samples were analyzed for priority pollutant metals (total and leachate), pesticides and total PCBs. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Soil borings M1-13 and M1-15 are located between the eastbound and westbound lanes of IH 35E in the Dallas Floodway.

- Maxim Technologies, Trinity River Sediment Sampling and Geotechnical Investigation, Trinity River Floodplain Modification, prepared for the City of Dallas, September 1, 1995. A total of 10 soil boring tests were performed in the floodplain, east of Corinth Street. This report supplemented Maxim's report dated November 19, 1990. Additional work was performed to investigate the presence of priority pollutant metals and to investigate locations for borrow materials for a dredge spoils cap. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. None of these soil borings are located within or adjacent to the proposed project limits.

CH2M Hill, Phase II Environmental Site Assessment, Dallas Floodway, Upper Trinity River, Dallas, Texas, prepared for USACE, Fort Worth District, February 2008:
The CH2M Hill report presents the results of environmental analysis conducted within the Trinity River Floodplain. A total of 96 soil probes were performed for this study. The soil borings were located within the Trinity River Floodplain, between Corinth Street and the John Carpenter Freeway/SH 183 bridge for the East Levee and the Loop 12 bridge for the West Levee. Selected soil samples were collected from the soil probes and analyzed for VOCs, SVOCs, the eight RCRA metals, herbicides, pesticides and PCBs. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. A total of twelve soil borings from this study are located within the area assessed. Three soil borings (SB016, SB023, and SB035) are located along IH 30. Nine soil borings (SB006, SB008, SB009, SB039, SB041, SB090, SB092, SB093, and SB094) are located along IH 35E.

Xenco Laboratories, Soil Analytical Laboratory Data, October 27, 2008 (text of report not available; however, the laboratory report was provided to HVJ Associates):
A total of 29 soil boring tests were performed for the study. The soil borings were located within the floodplain, between Corinth Street and west of the Westmoreland Road/Mockingbird Lane bridge. Soil samples were collected from the soil borings and analyzed for VOCs, polynuclear aromatic hydrocarbons (PAHs) and the eight RCRA metals. Selected soil samples were analyzed for pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Two soil borings are located near the proposed project limits. EB-20 is north of the proposed ROW at IH 30 and EB-23 is north of the proposed ROW at IH 35E.

2009-2010 Floodway Soil Boring Results: Dallas Floodway and Dallas Floodway Extension

Approximately 525 hollow stem auger soil borings were advanced in mid-2009 to mid-2010 as part of the geotechnical engineering study for the Dallas Floodway and Dallas Floodway Extension project (HNTB, 2009). Potential contamination in these soil borings was not confirmed analytically, as the samples were not sent to a laboratory for formal environmental analysis of Constituents of Concern (COCs). Two soil borings (FWR-02-22-CB and FWR-02-23-CB) from this report are located just north of the proposed ROW at IH 30 (**Appendix D: Constraints Maps Sheet 2**). Both of these geotechnical samples had contamination noted at the geotechnical laboratory. However, during the geotechnical exploration phase there were no petroleum hydrocarbon odors were noted

The Soil COCs for the proposed construction activities are considered heavy metals. These are primarily arsenic, chromium, lead, manganese, mercury; nickel, selenium, and zinc; and, in one case, barium. Twenty-four of the 26 soil borings located within or adjacent to the proposed project limits are included in **Table 8-22**. Potential contamination in two soil borings (FWR-02-23-CB and FWR-02-23-CB) was not confirmed analytically and is not included in the table. The table also includes the COCs for each of the soil borings. The table contains the detected concentration levels of each of the COCs relevant to the current TCEQ Tier 1 Protective Concentration Levels (PCLs), the Texas-Specific Soil Background Concentrations (TSSBC), and the potential exposure scenario of the Texas Risk Reduction Program (TRRP) Tier 1 PCLs of the total soil combined ($^{Tot}Soil_{Comb}$) pathway. It is to be noted, that for this assessment, the relevant pathway for comparison purposes is the $^{Tot}Soil_{Comb}$ pathway for a 30 acre source area. The $^{Tot}Soil_{Comb}$ is the PCL for human health exposures to surface soils through the combined ingestion of soil and vegetables, inhalation of volatiles and particulates, and dermal contact pathways. The table includes several soil analytical results that have a "J" flag, indicating that the reported result is an estimated value.

Table 8-22: Summary of Constituents of Concern

Soil Boring ID	COCs	Depth (ft bgs)	Concentration Levels (mg/Kg)	TSSBC (mg/Kg)	$^{Tot}Soil_{Comb}$ (mg/Kg)	Constraints Map Sheet No.
AP-2	Aldrin	4-6	0.06	NA	0.051(1)	4
	Lead	0-2 and 4-6	48 and 85	15	500	
	Manganese	0-2 and 4-6	368 and 423	300	NA	
	Nickel	0-2 and 4-6	21 and 21	10	830	
	Zinc	0-2 and 4-6	29 and 64	30	9,900	
AP-3	Chromium	0-2	30	30	27,000	4
	Lead	0-2 and 4-6	96 and 22	15	500	
	Manganese	0-2	345	300	NA	
	Nickel	0-2 and 4-6	22 and 22	10	830	
	Zinc	0-2 and 4-6	64 and 34	30	9,900	
AP-5	Lead	0-2 and 4-6	50 and 25	15	500	2
	Manganese	0-2	422	300	NA	
	Mercury	0-2	1.2	0.04	2.1	
	Nickel	0-2 and 4-6	23 and 20	10	830	
	Zinc	0-2 and 4-6	130 and 39	30	9,900	
EB-20	Arsenic	0-4 and 4-8	8.67 and 8.01	5.9	24	4
	Chromium	4-8	33.9	30	27,000	
	Lead	0-4 and 4-8	27.5 and 16.4	15	500	
	Mercury	0-4	0.04849	0.04	2.1	
	Selenium	0-4 and 4-8	0.634 and 0.385J	0.3	310	
EB-23	Arsenic	4-8	5.98	5.9	24	9

Soil Boring ID	COCs	Depth (ft bgs)	Concentration Levels (mg/Kg)	TSSBC (mg/Kg)	$^{Tot}Soil_{Comb}$ (mg/Kg)	Constraints Map Sheet No.
	Lead	0-4 and 4-8	16.2 and 55.2	15	500	
	Mercury	4-8	0.05362	0.04	2.1	
	Selenium	4-8	0.302J	0.3	310	
M1-13	Chromium	Unknown	37.3	30	27,000	9
	Lead	Unknown	22.9	15	500	
	Nickel	Unknown	20.4	10	830	
M1-15	Chromium	Unknown	37.3	30	27,000	9
	Lead	Unknown	22.9	15	500	
	Nickel	Unknown	20.4	10	830	
SB-7	Lead	0-5	16.5	10	500	9
SB-8	Lead	0-5 and 5-10	34.14 and 18.1	15	500	9
	Mercury	0-5 and 5-10	0.4639 and 0.5154	0.04	2.1	
	Selenium	5-10	2.66	0.3	310	
SB-9	Lead	0-5 and 5-10	38.9 and 18.8	15	500	9
SB-12	Lead	0-5 and 5-10	30.0 and 47.6	15	500	4
SB-13	Lead	0-5 and 5-10	17.8 and 16.0	15	500	2
SB006	Arsenic	10-12	7.56J	5.9	24	9
	Lead	0-2 and 10-12	31.7 and 25.9	15	500	
SB008	Lead	0-2	22.4	15	500	9
SB009	Arsenic	0-2 and 3-5	8.73J	5.9	24	9
	Chromium	0-2	41.2	30	27,000	
	Lead	0-2	115	15	500	
	Mercury	0-2	0.0949	0.04	2.1	
SB016	Arsenic	0-2, 2-4, and 6-8	7.05J, 6.03J, and 9.38J	5.9	24	4
	Barium	2-4	313	300	8,100	
	Lead	0-2, 2-4, and 6-8	210, 177, and 33.5	15	500	
	Mercury	0-2, and 2-4	0.205 and 0.16	0.04	2.1	
SB023	Arsenic	0-2	18.3	5.9	24	4
SB035	Arsenic	0-2 and 3-5	6.86J, 9.49J, and 5.95J	5.9	24	4
	Chromium	3-5	35.8	30	27,000	
	Lead	0-2 and 3-5	23.9 and 144	15	500	
	Mercury	3-5	0.129	0.04	2.1	
SB039	Arsenic	0-2 and 4-6	6.07J and 7.54J	5.9	24	9
	Lead	0-2 and 4-6	68.8 and 25.2	15	500	
	Mercury	0-2 and 4-6	0.0565J and 0.0606J	0.04	2.1	
SB041	Lead	0-2 and 13-15	32.5 and 19.4	15	500	9
SB090	Arsenic	13-15	6.05J	5.9	24	9
	Lead	32	32	15	500	
SB092	Arsenic	0-2 and 13-15	6.57J and 7.78J	5.9	24	9
	Lead	0-2	47.4	15	500	
	Mercury	0-2	0.0837	0.04	2.1	
SB093	Arsenic	0-2 and 13-15	6.41J and 6.04J	5.9	24	9
	Chromium	13-15	30.4	30	27,000	
	Lead	0-2 and 0-2	33.7 and 51.4	15	500	
	Mercury	0-2 and 0-2	0.0478J and 0.0868J	0.04	2.1	
SB094	Arsenic	13-15	6.01J	5.9	24	9
	Chromium	0-2	30	30	27,000	
	Lead	0-2	73.6	15	500	
	Mercury	0-2	0.0635	0.04	2.1	

Notes:
J –Reported result is an estimate
ft bgs – feet below the ground surface
NA –Not Available
(1) – Protection to groundwater standard ($^{GW}Soil_{Ing}$)
$^{Tot}Soil_{Comb}$ – May 2011 Tables for a 30 acre source area (Table 1)

In addition to assessing the metals in the soil borings, data from some of the studies included analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, and polychlorinated biphenyl (PCBs) and whether any concentrations exceeded the TRRP Critical PCLs. Soil boring AP-2 exceeded the TRRP Critical PCL ($^{GW}Soil_{Ing}$) for aldrin, a pesticide in a sample collected at 4 to 6 ft below ground surface (bgs.). Soil boring SB016 exceeded the TRRP Critical PCL ($^{Tot}Soil_{Ing}$) for benzo(a)pyrene a SVOC in a sample collected from 0 to 2 ft below ground surface (bgs).

The detected concentrations of each of the COCs are below the relevant potential exposure scenario of the TRRP Tier 1 PCLs of the total soil combined pathway with the exceptions of aldrin and benzo(a)pyrene. Soil boring AP-2 had a sample above the TRRP Critical PCL. Soil boring SB016 had one sample collected 0 to 2 ft bgs exceed the TRRP Critical PCL for benzo(a)pyrene. If these areas are disturbed during construction they would have to be addressed within the plans and specifications.

The main exposure pathway for the reported heavy metals, aldrin, and benzo(a)pyrene detected throughout the Dallas Floodway is by inhalation of fugitive dust generated during construction activities; however, keeping the materials damp would help reduce exposure. Added worker safety protection during construction activities such as wearing a protective dust mask is a feasible method for reducing potential exposure risk to a COC along with keeping the construction area damp. The plans and specifications for the proposed project would include a notice to contractors informing them of the heavy metals, aldrin, and benzo(a)pyrene known at this time.

Additional assessment would be on-going for the facilities that pose an environmental concern to the proposed project in order to provide a better determination of the impact(s) that these past operations may have on the proposed project. As more detailed project design is developed, the potential for these hazardous materials sites to affect the proposed construction would be evaluated. Additional investigation and assessment of the high risk sites are recommended to identify if construction activities at those locations may encounter contaminants.

A Soil and Groundwater Management Plan (SGMP) has been developed for the proposed project. The SGMP contains recommendations for managing contaminated soil, groundwater, and waste generated during construction. It establishes minimum qualifications for the environmental specialist personnel responsible for the proper implementation of the plan. The SGMP provides procedures for field screening of soil and groundwater produced from construction excavations. It also provides guidance for the proper disposal or discharge of groundwater produced from construction excavations and reuse of affected soils within the same or nearby excavations while minimizing off-site disposal. The design-build contractor is responsible for preparing a comprehensive Hazardous Materials Management Plan (HMMP) outlining field screening procedures and management of affected soils to be followed during construction. The HMMP may utilize recommendations, procedures, or guidance from the SGMP.

At this time, utility adjustment requirements are anticipated, but specifics have not yet been determined. There is a potential for contamination to be encountered during utility

adjustments. Coordination with utility companies concerning this contamination would be addressed during the ROW stage of project development. It is anticipated that all utility adjustments or relocations would be completed prior to construction.

The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials (ACM) and lead based paint (LBP) testing would be performed on the existing bridge structures. It is recommended that ACM and LBP testing be performed on the building structures to be removed dependent upon the age of the individual structure. TxDOT would notify the Department of State Health and Human Services (DSHS) of the bridge demolition 15-working days prior to the scheduled demolition.

Should unanticipated hazardous materials/substances be encountered, the TxDOT Dallas District Hazardous Materials Section would be notified and steps would be taken to protect personnel and the environment. Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for this project would be removed as soon as the work schedules permit.

8.10 Construction Impacts

No-Build Impact

Under the No-Build Alternative for Dallas Horseshoe Project, construction activities would not occur. Consequently, there would be no construction related impacts.

Build Impact

Temporary impacts associated with construction activities would occur. Due to operations normally associated with road construction, there is a possibility that noise levels would be above normal in the areas adjacent to the ROW. In general, construction is normally limited to daylight hours when occasional loud noises are more tolerable. However, substantial nighttime construction at the Mixmaster and other areas of heavy traffic is anticipated in order to minimize construction impacts to road users. 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 (i.e., minimization of nighttime construction at residential areas) and proper maintenance of muffler systems.

While construction activities would impact operations through the interchange, mainlane capacity and existing ramp movements between the IH 30 and IH 35E would be maintained. However, construction activities would require temporary lane, local ramp, and cross street closures, including the closure of a portion of the IH 35E HOV lane. Closure of a section of this HOV lane may result in temporary traffic operations impacts throughout the duration of the construction, estimated to last 4 years. Detours would be provided within and around the Mixmaster in order to minimize impacts resulting from road closures.

A coordination meeting was held with DART representatives on February 28, 2012 to discuss the project and review the potential closure of the entire IH 35E HOV lane, which is proposed to begin near the Houston Street Viaduct, within the proposed project limits, and end just south of US 67, outside of the proposed project limits for a total distance of approximately 6 miles. During the meeting, it was agreed that in order to minimize construction impacts due to HOV closure, closure of HOV lane would be limited to the section of the HOV between the Houston Street Viaduct and Marsalis Avenue, a distance of approximately 3 miles. This approach would allow continued operation of the HOV lane from US 67 to Marsalis Avenue during the construction phase of the proposed project. Construction activities would not require closure of the IH 30 HOV/managed lanes.

Effort must be made to minimize duration of closure of the IH 35E HOV. Per DART's request, a minimum of 30-days advance notice shall be given to DART before implementing specific construction phases with potential to impact existing DART bus stops. DART would need this time to develop bus detour routes and inform the public.

Regardless, access to businesses and residences would be maintained at all times. City and local public safety officials would be notified of the proposed road closures or detours. Detour timing and necessary rerouting of emergency vehicles would be coordinated with the proper local agencies. Lane closures and detours would comply with the Manual of Uniform Traffic Control Devices (MUTCD) standards.

A Traffic Control Concept Workshop was held on February 29, 2012 for the Dallas Horseshoe Project to review and discuss the preliminary traffic control plan. The attendees of the workshop reviewed the current Traffic Control Plan and design criteria, and discussed the varying constraints on access anticipated during construction. Discussions also included potential impacts to public facilities such as the Methodist Dallas Medical Center and the Dallas Convention Center. Potential detour routes for the local neighborhoods and downtown traffic were identified. Other discussions included potential Impacts to traffic during the Dallas Horseshoe Project construction in conjunction with planned City of Dallas reconstruction projects such as Riverfront Boulevard, Cadiz Street, and Beckley Avenue. Attendees to the Traffic Control Concept Workshop included representatives from TxDOT, City of Dallas, and NCTCOG.

A number of access points to the Dallas Floodway are available for maintenance purposes. The Trinity River Flood Control District uses maintenance roads to access sumps, pumps, and other features along and within the Dallas Floodway. Because the construction equipment for the proposed project would be accessing the construction area within the Dallas Floodway through these levee maintenance roads, there is potential to impact the roads. Any impacted maintenance road would be restored to their pre-construction condition and location following construction completion.

The Dallas Floodway system was designed to safely contain flooding and protect life and property. As such, any proposed developments near the Dallas Floodway system must keep the safe passage of floodwater as the first priority. Implementation of the proposed project would not adversely impact system-wide performance (i.e., it would not adversely affect the structural integrity, flood carrying capacity, access and egress, or safe and

efficient O&M of the floodway). The proposed project would not impair the flood-fighting ability of the Dallas Floodway flood control system.

Construction may temporarily degrade air quality through dust and exhaust gases associated with construction equipment. Measures to control fugitive dust would be considered and incorporated into the final design and construction specifications and included on the EPIC sheet that will be included with the final design plan set.

8.11 Items of Special Nature

Airway-Highway Clearance
The nearest airport to the proposed project is the Dallas Love Field, located in the City of Dallas. Dallas Love Field is approximately 27,000 ft (5 miles) from the proposed project. Several heliports are located in proximity to the proposed project as follows: Belo Broadcasting Heliport, approximately 1,500 ft east of the intersection of IH 35E and Reunion Boulevard; Dallas City Hall Heliport, located 2,700 ft northeast of the intersection of IH 30 and Hotel Street; Southland Center Heliport, located 1,600 ft northeast of the intersection of IH 30 and Hotel Street and the Dallas CBD Vertiport, located 500 ft north of IH 30 and Hotel Street. Because the project would involve the construction of high mast illumination, signing, and bridges that could be an obstruction to air navigation, a Notice of Proposed Construction or Alteration (Form 7460-1) would be filed with the Federal Aviation Administration (FAA) to obtain airway-highway clearance. **Appendix D: Constraints Map, Sheet 12** depicts the location of each heliport.

9.0 INDIRECT IMPACTS ANALYSIS

9.1 Step 1: Introduction and Methodology

The purpose of this section is to assess the indirect effects related to the proposed Dallas Horseshoe Project. The Council on Environmental Quality (CEQ) defines indirect effects as:

> *"effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."* (40 C.F.R. § 1508.8)

This indirect effects analysis was conducted in accordance with TxDOT's *Revised Guidance on Preparing Indirect and Cumulative Impacts Analyses* (September 2010). The *Revised Guidance on Preparing Indirect and Cumulative Impact Analyses* specifies a seven-step process (**Table 9-1**) for determining indirect effects. This seven-step process is adapted from the method set forth in the *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*, Report 466, NCHRP, 2002 (NCHRP Report 466).

Table 9-1: Seven Step Approach to Estimate Indirect Impacts

Step 1 – Scoping: The basic approach, effort required, and geographical boundaries of the study are determined.
Step 2 – Identify the Study Area's Goals and Trends: Information regarding the study area is compiled with the goal of defining the context for assessment.
Step 3 – Inventory the Study Area's Notable Features: Additional data on environmental features are gathered and synthesized with a goal of identifying specific environmental issues by which to assess the project.
Step 4 – Identify Impact-Causing Activities of Proposed Action and Alternatives: Fully describe the component activities of each project alternative
Step 5 – Identify Potentially Substantial Indirect Effects for Analysis: Indirect effects associated with project activities and alternatives are catalogued, and potentially substantial effects meriting further analysis are identified.
Step 6 – Analyze Indirect Effects and Evaluate Results: Qualitative and quantitative techniques are employed to estimate the magnitude of the potentially substantial effects identified in Step 5 and describe future conditions with and without the proposed transportation improvement. The uncertainty of the results of the indirect effects analysis is evaluated for its ramification on the overall assessment.
Step 7 – Assess Consequences and Consider/Develop Mitigation (when appropriate): The consequences of indirect effects are evaluated in the context of the full range of project effects. Strategies to avoid or lessen any effects found to be unacceptable are developed. Effects are reevaluated in the context of those mitigation strategies.

All indirect effects would occur outside of the existing or proposed ROW. As to the cause and effect relationship between the proposed improvements and the indirect impact, CEQ states that indirect effects may include induced changes to land use resulting in resource impacts (40 C.F.R. § 1508.8). Indirect effects can be linked to direct effects in a causal chain (NCHRP Report 466). The chain can be extended as indirect effects produce further consequences. Examples of direct and indirect effects of several types of transportation projects are summarized in **Table 9-2**.

Table 9-2: Examples of Indirect Effects

Project Action	Direct Effect	Indirect Effect
Bypass Highway	Improved Access	Farmland converted to residential use. New residences produce new labor force attracting new businesses.
New Light Rail	Improved Access	New businesses open producing jobs/taxes. Traditional businesses/residents priced out.
New Highway	Improved Access	Development alters character of historic area. Visitors increase to historic area

Source: NCHRP Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (2002).

Probability also helps distinguish indirect effects from direct effects; direct effects are often inevitable while indirect effects are merely probable.

Each step of the seven-step process has been applied to the proposed project and the findings documented in this EA. The proposed action, or Build Alternative, includes the improvements related to the Dallas Horseshoe Project. The proposed project would generally follow the

existing alignment and would entail the acquisition of approximately 17.3 acres of proposed ROW.

A meeting with planning and public works officials representing the City of Dallas was held in December 2011 to supplement the seven-step process for evaluating indirect effects. Attendees from the following City of Dallas departments attended and participated during the meeting: Public Works and Transportation, Long Range Planning, Trinity River Corridor Project Office, CityDesign Studio, and Office of Economic Development. Questions were provided to the attendees in advance to allow the meeting representatives to prepare for a discussion involving indirect effects. A map illustrating a draft area of influence, or AOI, was presented to the meeting attendees and feedback received during the meeting resulted in modifications to the AOI. The AOI defined in Step 1 contains the initial AOI agreed to by the meeting participants as an acceptable study area for indirect impacts analysis, in addition to modifications made to the AOI due to changes in project limits along IH 30.(i.e., inclusion of the Dallas CBD). The following analysis presented in Steps 1 through 7 contains feedback, suggestions, and professional opinions provided during the December 2011 meeting.

9.2 Step 1: Initial Scoping

The purpose of Step 1 is to establish the context for the indirect impacts analysis. The geographic boundary of the indirect impacts study area, or AOI, is formed by adjacent major roadways or arterials which delineate the Dallas CBD, various residential communities, historic districts, and commercial/Tax Increment Financing (TIF) districts which are captured within the AOI. The AOI is bound by Sylvan Avenue on the west; Colorado Boulevard, Zang Boulevard, and 8th Street on the south; Corinth Street, Lamar Street, DART Red/Blue lines, and US 75 on the east; and Woodall Rodgers Freeway, Harry Hines Boulevard, Oak Lawn Avenue, and the Historic Trinity River Channel on the north. The AOI is roughly defined by portions of or the entirety of the following economic, community, or historic entities: Design District TIF, Sports Arena TIF (contains Victory Park and the American Airlines Center), Fort Worth Avenue TIF, Oak Cliff Gateway TIF, City Center TIF, Farmers Market TIF, Downtown Connection TIF, Cedars West Transit Oriented Development (TOD) TIF, Lancaster Corridor TOD TIF, La Bajada Neighborhood, East Kessler Park Neighborhood, Kessler Park Historic District, Lake Cliff Historic District, Trinity Bottoms Neighborhood, and the Dallas CBD. Defining the AOI in this manner is one of several acceptable methods identified in the NCHRP Report 466.

The AOI encompasses approximately 5,164 acres within the City of Dallas and is depicted in **Appendix A: Exhibit 9 - Indirect Impacts Area of Influence**. The temporal boundary for the indirect impacts analysis is 2050. The year 2050 was chosen to correlate with the City of Dallas *Trinity River Corridor Comprehensive Land Use Plan* (2050) which has the farthest reaching planning horizon date of all the land use plans that are applicable within the AOI. Data collection for indirect impacts analysis includes a literature review, collection of demographic and economic data, windshield survey results, and a collection of land use information from the City of Dallas and NCTCOG.

9.3 Step 2: Identify the Study Area's Goals and Trends

Study Area Goals

Many regional and local planning initiatives are focused on areas partially or wholly contained by the AOI. Below are summaries of various transportation, urban, ecological, and economic development plans that are relevant to the indirect impacts analysis.

Mobility 2035: The Metropolitan Transportation Plan for North Central Texas
This plan defines transportation systems and services in the DFW Metropolitan Area. It serves as a guide for the expenditure of state and federal funds through the year 2035. The plan addresses regional transportation needs identified through forecasting current and future travel demand, developing and evaluating system alternatives, and selecting those options best achieving the mobility needs of the region. The proposed project is included in this plan (referred to as the "Project Pegasus Partial Implementation"). Another proposed transportation improvements located within the AOI provided in *Mobility 2035* is the proposed Trinity Parkway/S.M. Wright Parkway project.

City of Dallas – Comprehensive Plan (*forwardDallas!*)
The proposed project lies completely within the City of Dallas. The City of Dallas's comprehensive plan, *forwardDallas!*, was adopted June 14, 2006, and serves as the City's overall policy guide directing future land uses. The plan consists of a community vision, a policy plan, an implementation plan, and a monitoring plan. The community vision component of the plan is a collection of shared ideas provided by citizens of what they desire for the City in the future. The vision is a broad description of the future of Dallas reflecting the aspirations and core values of its stakeholders and residents.

The policy plan component, the actual development policy guide component of the plan, substantiates and provides guidance for the implementation of the City's broad vision established by community participants. It provides a description of implementation strategies and policies organized into functional components to provide an institutional base for the *forwardDallas!* initiative and to guide public and private activities toward the vision. The goals and focal points of the policy plan are:

- To improve the quality of life for all Dallas residents;
- To serve as a framework to guide Dallas as it grows and matures;
- To facilitate the growth of the economy, focusing on emerging economic engines and opportunities that bring prosperity to Dallas residents;
- To open new housing choices to citizens at all income levels;
- To guide the general location and pattern of future land uses;
- To foster strategic development in order to achieve the City's goals;
- To guide growth toward areas that benefit the City as a whole, while steering away from stable residential areas; and
- To create development opportunities capitalizing on public transit options.

The implementation plan is a 5- to 7-year work program detailing specific actions to be undertaken. The City's action plan, a subset of the implementation plan, outlines a 1- to 2-year work program detailing specific actions for the immediate future because they are either systemically urgent issues or are targeted geographic areas with opportunities where immediate attention can yield quick success. The monitoring plan establishes benchmarks and a monitoring system to assess whether the goals of the vision and policy plan are realized. It also provides specific methods to evaluate the performance of the overall plan.

According to a 2002 inventory of generalized land uses in the *forwardDallas!* plan, existing land uses in the AOI consist mostly of downtown, urban mixed-use, urban neighborhood, retail/industrial, and a large area of open space that can be attributed to the Trinity River Floodway. The majority of land in the AOI is built out, with only infill development and redevelopment opportunities remaining. The City of Dallas's *forwardDallas!* plan does not contain an official future land use map but does contain a *Vision Illustration* compiled from input provided by community vision participants. Suggestions for future land uses according to the *Vision Illustration* designate most land in the AOI to be used as an urban mixed-use district or urban neighborhood with smaller pockets of downtown land use categories. The area contained by the Trinity River Floodway is designated as open space.

City of Dallas – Trinity River Corridor Comprehensive Land Use Plan

In addition to f*orwardDallas!*, the City of Dallas employs over 250 other plans, studies, and reports as policy guides for directing land use within the City. The *Trinity River Corridor Comprehensive Land Use Plan*, adopted March 2005, serves the City of Dallas as a policy guide for decisions related to land uses within a 70-square mile region designated by the *Plan* as the Trinity River Corridor which includes the AOI for the proposed project. The *Trinity River Corridor Comprehensive Land Use Plan* is one guiding component for the future of the Trinity River Corridor and adjacent land to further the goals and objectives of the overall Trinity River Corridor Project. The Trinity River Corridor Project involves flood protection, environmental restoration and recreation, transportation, and community and economic development projects and improvements for the Trinity River Corridor. The *Trinity River Corridor Comprehensive Land Use Plan* suggests a wide variety of land uses within the AOI including Regional Corridor, Trinity River Floodway, Residential Riverside, CBD, Mixed-Use/Adaptive Reuse, Residential Traditional, and Residential Urban. The *Trinity River Corridor Comprehensive Land Use Plan* suggests that the proposed project's AOI would generally continue to develop or redevelop into higher density uses through the year 2050, especially for areas directly abutting the Trinity River Floodway.

City of Dallas – Trinity River Corridor Project

The Trinity River Corridor Project, a more comprehensive effort for a larger area containing the AOI, was approved as a capital bond program in 1998 by the citizens of the City of Dallas and is composed of three central elements: building of levees, wetlands, downtown lakes, gateway parks, and trails; expansion and preservation of the Great Trinity Forest; and transportation improvements. In 2003, the City of Dallas adopted the *Balanced Vision Plan* to guide the implementation of specific goals and interrelated projects associated with the overall Trinity River Corridor Project. Examples of projects proposed within or adjacent to the AOI reflected in the Trinity River Corridor Project include the construction of the Trinity Parkway, the extension of the Woodall Rodgers Freeway bridge and associated

improvements (TxDOT), and multiple facilities within the Trinity River Corridor including the Urban and Natural Lakes, Promenade, Central Island, Lake Isthmus, and Amphitheater and Floating Stage.

In the context of the Trinity River Corridor Project and *Balanced Vision Plan*, the f*orwardDallas!* plan, and the *Trinity River Corridor Comprehensive Land Use Plan*, the proposed improvements to IH 30 and IH 35E are compatible with the City of Dallas's land use and transportation goals of promoting a wider variety of transportation options for the area.

City of Dallas – Downtown Dallas 360 Plan
The *Downtown Dallas 360* Plan was formally adopted by the Dallas City Council in April 2011. The plan is a result of collaboration between the City of Dallas, Downtown Dallas, Inc., and private stakeholders and is a strategic, action-oriented development plan that provides a blueprint for the next phase of downtown revitalization. The *Downtown Dallas 360* Plan cultivates a collective vision for the future of downtown Dallas and creates strategic implementation actions for achieving that vision. As part of the plan's implementation, a major goal is to identify and prioritize capital spending. The *Downtown Dallas 360 Plan* further advances the DFW regional vision of better multi-modal integration, lowering of auto-oriented land use, and focuses on a more diverse downtown urban experience through increased housing choices, reuse of existing buildings, and a more engaging pedestrian environment. Overarching goals include creating an exciting urban experience, a balanced transportation system, and an inclusive urban environment. The vision and goals of the plan are centered on five focus areas which are detailed in the Plan.

City of Dallas – 2011 Dallas Bike Plan
The *2011 Dallas Bike Plan* was prepared for the City of Dallas within a public participation framework, and for the NCTCOG to serve as the basis for the creation of a regional template. The plan was developed in close coordination with Dallas County, DART, TxDOT, and Dallas Independent School District (ISD). The 2011 Dallas Bike Plan updates the 1985 Dallas Bike Plan and provides a master plan and an implementation strategy for a new bicycle network, the Dallas Bikeway System, which would be made from designated on-street and off-street facilities. The mission of the plan is to improve the safety, use, and efficiency of the bicycle in the City of Dallas and to better integrate the bicycle mode within the City and regional transportation system.

In the context of the *2011 Dallas Bike Plan*, future bicycle facilities along IH 30 and IH 35E are shown on the plan as "Needs Further Analysis." Based on the design schematic, proposed improvements to cross streets and frontage roads would provide for the accommodation of a 14-ft wide shared-use outside on-street lane (for bicycles and vehicles). To accommodate pedestrian travel along Riverfront Boulevard, Beckley Avenue, Colorado Boulevard, and the proposed frontage roads, the project would include proposed sidewalks within the project limits. The proposed sidewalks would meet ADA design criteria.

City of Dallas – Trail Network Master Plan
The City of Dallas currently has over 100 miles of trails open for use with over 150 more included in the Trail Network Master Plan (March 2005). The Trail Network Master Plan

illustrates Programmed/Funded Trails and Proposed Trails within the AOI. The Programed/Funded Trail identified on the master plan is Coombs Creek Trail. The proposed trails which traverse the AOI include the Oak Cliff Park Neighborhood Trail and the Trinity Trail (along the East and West Levees).

NCTCOG and City of Dallas – Union Station to Oak Cliff Streetcar TIGER Project
In December 2010, the FTA awarded a $23 million Transportation Investment Generating Economic Recovery (TIGER) grant award to support a streetcar project within the City of Dallas. TIGER is a component of the American Recovery and Reinvestment Act of 2009. This project, the Union Station to Oak Cliff Streetcar TIGER Project, is consistent with the NCTCOG *Mobility 2035* MTP. As the grant recipient, the NCTCOG is the project sponsor and current owner. Upon completion of the proposed action, ownership would be transferred to the City of Dallas. To facilitate implementation, the City of Dallas has entered into an agreement with DART to build, manage, and operate the streetcar system.

The Union Station to Oak Cliff Streetcar TIGER Project would provide connectivity between the Methodist Dallas Medical Center, Oak Cliff neighborhood, and Union Station in downtown Dallas, which is a major hub for access to system-wide multi-modal facilities. The project consists of an approximately 1.6-mile streetcar alignment operating on an at-grade track in a dedicated, bi-directional streetcar lane. The travel route would run from Union Station over the Houston Street Viaduct to Zang Boulevard to Colorado Boulevard, terminating at the Colorado Boulevard and Beckley Avenue intersection. There are a total of four proposed stops, all located within roadway ROW.

City of Dallas – TIF Districts
TIF districts allow the City of Dallas to reinvest added tax revenue from a new development back into the area where it originated. The TIF program is used to finance new public improvements in designated areas. The goal is to stimulate new private investment and thereby increase real estate values. Any increase in tax revenue (cause by new development and higher property values) is paid into a special TIF fund to finance improvements. Potential improvements include wider sidewalks, utilities, public landscaping, lighting, environmental remediation, demolition, and historic facades (City of Dallas, 2011).

Nine TIF districts are wholly or partially located within the AOI. The TIF districts wholly contained by the AOI include the Design District, Sports Arena, City Center, and Farmers Market TIFs. The remaining five TIFs that are partially contained by the AOI include the Fort Worth Avenue, Oak Cliff Gateway, and Downtown Connection TIFs, and the Cedars West and Lancaster Corridor TOD TIFs.

Study Area Trends
Prior to World War II, the development of the City of Dallas's urban core was largely contained within Loop 12. Land uses within the AOI are a testament to the industrial and residential development that spread westward from the City of Dallas's CBD. IH 30 and IH 35E have been transportation corridors in the City of Dallas for approximately 50 years. At present, the AOI is nearly "built-out" as few parcels remain available for development. However, the potential remains for some infill development or redevelopment of

underutilized land. The purpose of the proposed project is to improve safety, improve traffic operations, and manage traffic congestion along IH 30 and IH 35E and at the Mixmaster near downtown Dallas. The proposed Dallas Horseshoe Project would address long-term transportation solutions for the Trinity River Corridor and for the western portions of the City of Dallas and Dallas County by providing enhanced connectivity of several modes across an existing physical impediment. The proposed project is also designed to enhance the regional transportation system by bringing the IH 30 and IH 35E facilities up to design standards.

The AOI (comprising a small portion of the City of Dallas and Dallas County) totals approximately 5,164 acres, approximately 37 percent of which are currently developed (approximately 1,923 acres). Approximately 1,015 acres (roughly 19 percent) of the AOI are either dedicated lands (i.e., parks and flood control) or associated with water features associated with the Dallas Floodway. Approximately 622 acres (roughly 12 percent) of the AOI are undeveloped and the remaining approximate 1,633 acres (roughly 32 percent) consist of paved surfaces (local roadways, highways, parking lots, etc.). A majority of the undeveloped land in the AOI is located within the Dallas Floodway.

As described in **Section 8.1.1. Regional and Community Growth**, household population projections generated by the NCTCOG indicate dramatic growth would likely occur in the DFW MPA through the year 2040. According to the NCTCOG, the four 2040 Demographic Forecast Market Areas which contain the Dallas Horseshoe Project are projected to experience increases in household population ranging from approximately 13.3 to 650.6 percent compared to the NCTCOG MPA which is expected to increase 82.5 percent. Employment projections provided by the NCTCOG for the four forecast market areas indicate strong growth in employment; from 2005 to 2040, employment is projected to increase within a range of approximately 28.0 to 96.3 percent, while employment within the NCTCOG MPA is expected to increase approximately 82.3 percent. **Table 8-1** in **Section 8.1.1** summarizes population and employment growth for the four forecast market areas traversed by the Dallas Horseshoe Project in addition to the 12-county NCTCOG forecast area.

Summary of Study Area Goals and Trends

As reflected above, the AOI is nearing build-out and is evolving toward a denser and more intensively used urban environment. Much of the future development within the AOI would be influenced by the above mentioned regional and local urban plans and policies, as well as City and USACE plans for the development of park and recreational resources within the Trinity River Corridor. The anticipated increase and pattern of development and redevelopment is consistent with the goals and objectives of the City of Dallas's f*orwardDallas!* plan, *Trinity River Corridor Comprehensive Land Use Plan*, Trinity River Corridor Project, *Downtown Dallas 360* Plan and TIF districts and has intensified over the past decade. This steady transition is expected to continue into the foreseeable future.

9.4 Step 3: Inventory of Study Area's Notable Features

The majority of the AOI is either developed or is currently retained as dedicated land (Dallas Floodway). Land uses in the AOI consist primarily of mixed-density industrial and single family residential uses with a large area of open space that is attributed to the Dallas Floodway which includes the Trinity River. Smaller areas of retail uses are also scattered across the AOI. The majority of land within the AOI is built out, with only infill development and redevelopment opportunities remaining. Much of the land in the AOI is targeted for redevelopment with numerous plans and economic development goals that entail higher density and greater intensity land uses in the future. Approximately 17.3 acres are anticipated to be converted to transportation use as a result of the proposed project.

Notable features (NF) that could be indirectly impacted within the AOI are listed in **Table 9-3**. These notable features are representative examples of relatively unique and important landscape features (e.g. Dallas Floodway), valued environmental component from an economic standpoint (e.g. Sports Arena TIF District which includes Victory Park), or valued environmental components from a community perspective (e.g. various neighborhoods and historic districts).

Table 9-3: Notable Features Inventory

ID	Notable Feature
NF 1	La Bajada Neighborhood
NF 2	East Kessler Park Neighborhood (NRHP Historic District)
NF 3	Dallas Floodway
NF 4	Lake Cliff Neighborhood (NRHP Historic District)
NF 5	Trinity Bottoms Neighborhood
NF 6	Cedars Neighborhood
NF 7	Dallas CBD
NF 8	Sports Arena TIF District
NF 9	Design District

Source: Study Team, March 2011.

9.5 Step 4: Identify Impact-Causing Activities of the Preferred Alternative

Transportation projects such as the proposed Dallas Horseshoe Project could involve a number of impact-causing activities. This step is intended to conceptualize, not quantify, potential indirect impacts that would occur because of the proposed project. The general types of project impact-causing activities include the following (NCHRP Report 466):

- **Modification of regime effects** – Approximately 0.86 acre of riparian woodland habitat could be removed as a result of the construction of the proposed project. Sixteen large trees were identified within the existing and proposed ROW which could be removed as a result of the proposed project.
- **Land transformation and construction** – The proposed project consists of the replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway,

reconstruction of the Mixmaster, improvements to frontage roads, and the accommodation of pedestrian and bicycle facilities. Approximately 17.3 acres of additional ROW would be required for the proposed action. It is anticipated that approximately 66 parcels would be associated with the proposed ROW acquisitions; approximately 15 displacements are anticipated (two residences, six billboards, and seven commercial facilities). A permanent easement would be necessary from the City of Dallas because approximately 53.7 acres of area within the Dallas Floodway would be traversed by the proposed project.

- **Processing** – Storage of materials would occur off-site. It is anticipated, based on usual practices, that the contractor, when selected, would negotiate the location for the contractor's field office and storage site. If the contractor chooses to use undeveloped land or another site for material storage, impacts to natural resources may increase.
- **Land alteration** – Land alteration as a result of the proposed project would largely be limited to the areas of proposed ROW and areas that could be affected by encroachment-alteration activities (e.g. changes in travel patterns and access). Areas of vegetation disturbed during construction activities would be reseeded/revegetated with native vegetation after construction is completed. The majority of additional pavement would be added above grade.
- **Resource renewal** – The total number of large individual trees that may be removed and total acreage of riparian woodland affected may change during final design. TxDOT would minimize the loss by preserving as many trees as possible. Trees within the ROW, but not in the construction zone, would not be removed if possible.
- **Changes in traffic** – The proposed project is expected to reduce congestion by improving traffic operations along IH 30, IH 35E, and at the Mixmaster. The proposed project would improve mobility and access by providing continuous frontage roads, widening and extending the IH 35E HOV lane, providing an extension of the IH 30 eastbound HOV/managed lane, and reducing weaving through the construction of direct connectors and collector distributor roads. The proposed project would also expand modal choice with the introduction of pedestrian and bicycle capacity across the Dallas Floodway along IH 30 and IH 35E. The proposed project would also result in roadway enhancements which can result in changes of traffic patterns and thus have the potential to indirectly impact air quality in the area.
- **Waste emplacement and treatment** – Soil excavated from the proposed project limits would likely be stockpiled for use on another project or sold for other uses, depending on the results of soil testing. The contractor, when selected, may choose to provide portable sanitary facilities for employees at the field office. No other sanitary waste discharge is anticipated.
- **Chemical treatment** – No use of fertilizer is anticipated during revegetation. Periodic applications of herbicide may occur during the maintenance phase of the proposed project.
- **Access alteration** – Proposed changes in access modifications related to ramp, direct connectors, and collector distributors are captured in **Table 6-1**. Other changes in access not related to ramps include various bicycle and pedestrian

improvements. Regarding bicycle and pedestrian improvements, the proposed project would include a two-way 14- to 18-ft wide bicycle facility along the eastbound frontage road bridge and a two-way, 8- to 18-ft wide pedestrian facility along the westbound frontage road bridge. Both facilities would provide direct connectivity to the future Coombs Creek Trail Extension, planned Trinity Levee Trails/Connections, planned Reunion Overlook and planned Riverfront Boulevard Cycle Tracks. Between Colorado Avenue and Riverfront Boulevard, the bridges along IH 35E would accommodate a 6-ft wide sidewalk along the outside of the collector distributor roads. In order to accommodate pedestrian access to IH 30 and IH 35E, Beckley Avenue and Colorado Boulevard would include 6-ft wide sidewalks. A shared-use 14-ft wide outside lane for bicycles and vehicles is proposed along both sides of Riverfront and Colorado Boulevard. The proposed design would accommodate for future bicycle and pedestrian improvements by others along Riverfront Boulevard and Beckley Avenue. The proposed bicycle and pedestrian lanes are compatible with the *2011 Dallas Bike Plan* (June 2011), the City of Dallas *Trail Network Master Plan* (March 2005), and the *Downtown Dallas 360* Plan.

9.6 Step 5: Identify Potentially Substantial Indirect Effects

Step 5 examines the probability for substantial indirect impacts potentially associated with the proposed project. The objective of this step is to compare project impact-causing actions with the list of goals and notable features to explore potential cause-effect relationships and establish which effects are potentially substantial and merit subsequent detailed analysis (or conversely, which effects are not potentially substantial and require no further assessment).

Encroachment-Alteration Effects

Ecological Effects

Project biologists have determined that ecological encroachment-alteration effects have no potential to be substantial. The land within the AOI totals 5,164 acres and consists of approximately 784 acres of herbaceous vegetation with scattered woody species, approximately 125 acres of riparian woodlands, and approximately 2,742 acres of urban vegetation consisting of maintained or landscaped vegetation forms. Approximately 130 acres of wetlands and 161 acres of water features exist within the AOI. The remaining approximate 1,222 acres within the AOI are either paved or a structure is present. Potential loss of habitat may occur along the boundaries of habitat already fragmented by the original construction of IH 30 and IH 35E, as well as construction of surrounding commercial and residential properties, but this would not lead to further fragmentation of habitat beyond what already exists in this urban environment.

Based on observations from field reconnaissance during 2011, there are no substantial plant communities or native prairie remnants present that would be adversely affected by the proposed project, and the proposed project would have no effect on any of the threatened or endangered species that may occur in Dallas County, their habitats, or designated critical habitats. Potential indirect effects on wildlife habitat from roadway

projects include impacts from induced development. However, removal of wildlife habitat resulting from induced development is not likely to occur in the AOI as a consequence of the proposed project because what wildlife habitat exists is either protected from development or is interspersed with existing development. Existing dependent wildlife would likely already be adapted to the habitat-fragmented urban environment. The proposed project would not alter the hydric regime or reduce diversity within the ecosystem. Indirect effects to vegetation and wildlife habitat as a result of the proposed improvements are anticipated to be minimal and have not been studied further.

Potential indirect effects on waters of the U.S. (including wetlands) from roadway projects include the fill and degradation of waters of the U.S. (including wetlands) from induced development. Because stormwater management facilities required by the City of Dallas's Stormwater Ordinance would regulate stormwater flow into waters of the U.S. (including wetlands) from any induced development, the indirect effects to waters of the U.S. (including wetlands) as a result of the proposed improvements are anticipated to be minimal and have not been studied further.

Potential indirect effects on floodplains from roadway projects include increases in stormwater runoff due to changes in land use and increased development that may be accelerated by improved mobility and managed congestion on the transportation system on land surrounding the proposed facility. Because stormwater management facilities required by the City of Dallas's Stormwater Ordinance would regulate stormwater flow into floodplains from induced development, the indirect effects to floodplains as a result of the proposed improvements are anticipated to be minimal and have not been studied further.

The AOI is part of the EPA designated nine-county serious nonattainment area for ozone. The AOI is currently in attainment for all other NAAQS pollutants, please refer to **Section 8.5 Air Quality** for the air quality assessment for the proposed project. Based on the results of Steps 1 through 4 that evaluated the possible project-related actions that can indirectly impact air, the proposed project would not be anticipated to cause indirect air quality impacts in the AOI. No change in attainment status is anticipated within the study area as a result of emissions associated with the proposed project. In order for the region to achieve ozone attainment, a variety of point, non-point, and mobile source emission reduction strategies must be implemented for the entire DFW area as outlined in the SIP. Indirect air quality impacts from MSATs are unquantifiable due to existing limitations to determine pollutant emissions, dispersion, and impacts to human health. Emissions would likely be lower than present levels in future years as a result of the EPA's national control regulations (i.e., new light-duty and heavy-duty on-road fuel and vehicle rules and the use of low sulfur diesel fuel). Even with an increase in VMT and possible temporary emission increases related to construction activities, the EPA's vehicle and fuel regulations, coupled with fleet turnover, will cause substantial reductions of on-road emissions over time, including CO, MSATs, and the ozone precursors VOC and NOx. As the proposed project is not anticipated to result in indirect air quality impacts, further discussion in Steps 6-7 below is not necessary.

Socio-economic Effects

Encroachment-alteration effects to socio-economic resources were identified as potentially

substantial due to the improved access and mobility that would occur as a direct result of the increased capacity and expansion of multi-modal choice across the Dallas Floodway. Two broad forms of socio-economic impacts include: 1) changes in travel patterns and access, and 2) direct relocation of homes and businesses. These direct impacts may lead to indirect effects on neighborhood cohesion, neighborhood stability, travel patterns, changes in the local economy, changes in access to specific services, recreation patterns at public facilities, pedestrian dependency and mobility, and perceived quality of the natural environment, among others. Changes in access can include driveway changes, relocations of ramps, introduction of raised medians, alterations of intersections that restrict access to local streets, or the introduction of bicycle and pedestrian facilities. These may result in changes in travel patterns throughout an area. For example, adding capacity to an existing facility across a physical barrier such as the Dallas Floodway may alter travel patterns and the economics of travel patterns and corresponding land uses by increasing both travel demand and supply to the proposed facility away from existing roadway facilities. Additionally, changes in access could result in substantial impacts to public services and facilities have been studied further.

Induced Growth Effects

The AOI contains approximately 622 acres of undeveloped land (approximately 12 percent of total AOI acreage). FHWA generally acknowledges that increasing mobility typically increases the attractiveness for development. But due to the nearly built-out development density within the AOI, it was discussed during the December 2011 stakeholder meeting that redevelopment to more dense and intense uses in the AOI is likely to occur in concert with the planning goals of the City of Dallas, regardless of the proposed project. The proposed project is located within an existing urbanized environment, and the proposed project is needed to keep pace with modern design criteria. Although the proposed improvements to IH 30 and IH 35E have been planned for several years and land use planning in the AOI reflects the continued presence of these facilities, the proposed project could accelerate the advancement of the City of Dallas's land use goals of increasing density and establishing a mixed-use environment beyond what may already occur if the IH 30 and IH 35E facilities were left unimproved. However, feedback received during the December 2011 stakeholder meeting indicated induced development would not likely be a result of the proposed Dallas Horseshoe Project.

The general land use patterns surrounding the existing IH 30 and IH 35E facilities are reflected in the City of Dallas's comprehensive plan, *forwardDallas!*. This plan, along with the *Trinity River Corridor Comprehensive Land Use Plan* and the *Downtown Dallas 360* Plan, suggest more dense and intense land uses on both sides of the Trinity River, and the increase in capacity and modal choice associated with the Dallas Horseshoe Project may render land designated for future higher density and intensity uses more attractive to consumers and developers sooner than in the absence of the proposed project. However, future land use designations and associated zoning would likely not change as a result of the proposed project. Although many existing zoning designations are currently incompatible with the City of Dallas's future land use policy guides, the City is in the process of rezoning property throughout the Trinity River Corridor, including some land within the AOI. Nonetheless, the proposed project is anticipated to have no effect on these land use changes in the form of induced development as the City of Dallas's goal to rezone land is

independent of the Dallas Horseshoe Project. With respect to induced growth effects, induced growth is not anticipated to occur and has not been studied further.

Effects Related to Induced Growth

Induced growth is not anticipated to result in substantial ecological effects based on the reasons previously provided. Habitat throughout the AOI is fragmented and human activity is common throughout this urban area. Additional development may serve to further fragment what limited habitat exists and reduce the amount of habitat available, but species composition in the AOI is already consistent with that of an urbanized area. No induced growth or development can be expected in the Dallas Floodway where the vast majority of existing wildlife habitat exists. Therefore, ecological effects related to induced growth have not been studied further. Socio-economic effects related to induced growth, specifically changes in population density and economic growth, are not anticipated and have not been studied further.

9.7 Step 6: Analyze Indirect Effects and Evaluate Results

Few potentially substantial indirect impacts have been identified. These impacts are further analyzed below.

Encroachment-Alteration Effects

Changes in Travel Patterns and Access

In terms of traffic operations, the improvements associated with the Dallas Horseshoe Project are expected to manage congestion along regional and local transportation systems as vehicles begin using the improved IH 30 and IH 35E facilities and adjacent cross streets. The improvements are also anticipated to improve access to opposite sides of the Trinity River for a variety of travel modes that are congruent with the City of Dallas's planning goals of redeveloping the area into a higher density and intensity, mixed-use, pedestrian-friendly environment. Populations representing notable features associated with neighborhoods (NF 1 – La Bajada Neighborhood, NF 2 – East Kessler Park Neighborhood, NF 4 – Lake Cliff Neighborhood, NF 5 – Trinity Bottoms Neighborhood, and NF 6 – Cedars Neighborhood), as well as NF 7 – Dallas CBD, NF 8 – Sports Arena TIF District, and NF 9 – Design District are likely to benefit from the indirect effects of improved access and mobility across the Dallas Floodway. The proposed project is also likely to attract traffic from other Dallas Floodway roadway crossings in its immediate vicinity as supply to support additional traffic demand increases.

Socio-economic Indirect Impacts

With respect to relocations and displacements, indirect impacts would be driven by the relocation of the residential and commercial properties anticipated to be displaced by the proposed Dallas Horseshoe Project. Examples of indirect impacts due to relocations and displacements include a minor reduction in the supply of affordable housing for the two potentially displaced households, changes in residential and commercial property values due to the proposed improvements, changes in local tax base due to the anticipated displacements, and impacts to the employees (such as increased commuting time) who

could be displaced by the proposed improvements. However, the majority of the traveling public, adjacent residential populations, and commercial workforce would indirectly benefit from the proposed improvements due to improved access and mobility.

In terms of residential indirect impacts, the proposed project's impact on affordable housing along the IH 35E facility may slightly decrease the stock of affordable housing supply in the immediate area. However, current MLS data indicates comparable housing supply is available throughout the same ZIP code which contains the anticipated residential displacements. In addition, planning efforts within the AOI are focused on increasing housing choices for residents of all income levels. Residential properties located near IH 35E which are not physically impacted by the proposed improvements may experience a change in market value, either positive or negative.

With respect to encroachment-alteration effects to socio-economic resources, indirect impacts would be driven by changes in travel patterns and access associated with the proposed Dallas Horseshoe Project. The potential indirect impacts resulting from the implementation of the proposed improvements would include improved vehicular access to employment opportunities, markets, goods or services, residential uses, and public facilities due to increased vehicular mobility. Other factors, such as real estate market conditions, local government development codes and plans, city financing opportunities (for various public facility improvements), anticipated growth, public facility and amenities siting (schools, health care facilities, greenspace, etc.), changes in energy costs, and other local and regional roadway improvements play a role in nearby land development investment decisions. However, real estate investment decisions are typically made with regard to factors such as transportation access and mobility. Although not the sole factor in inducing these development projects, the proposed project may have introduced a potential acceleration in these land development decisions.

Other socio-economic indirect impacts that could result from the implementation of the proposed Dallas Horseshoe Project include expedited and localized economic growth due mainly to increases in land rents, market capture, and related development pressures associated with increased visibility and improved east-west and north-south mobility and access. It is anticipated that the proposed improvements would have a beneficial effect on overall socio-economic conditions within the AOI.

A beneficial impact from construction of the proposed project involves potential expedited increases in local property and sales tax revenues and improved fiscal efficiency associated with concentrated service provision resulting from denser, modernized, commercial, tax-generating development as well as an increasing rate of denser residential development expanding the AOI's population base to support existing and forthcoming commercial development. Another beneficial impact from construction of the proposed project would entail a substantial expansion of modal choices for consumers traversing the Dallas Floodway and the AOI, which would further support the denser, more pedestrian- and bicycle-oriented environment envisioned by the planning goals of the City of Dallas as pedestrian and biking facilities are incorporated into the proposed project.

The potential for the nine notable features located within the AOI to be adversely impacted

by indirect impacts is unlikely as a result of the proposed project. The planned recreational and public space investment function of the Dallas Floodway (NF 3) and the Sports Arena TIF District (NF 8) would be beneficially impacted as a result of the proposed project. It is expected that the proposed bicycle and pedestrian facility improvements would contribute to furthering the public recreation and environmental restoration projects and goals corresponding with the Trinity River Corridor Project as well as the surrounding land use goals of the *Trinity River Corridor Comprehensive Land Use Plan*. The added capacity and modal expansion associated with the proposed project improvements would provide improved vehicular, bicycle, and pedestrian access to the existing and planned recreational components of the Trinity River Floodway, allowing a wider range of users [including residents from the neighborhoods associated with NF 1 – La Bajada Neighborhood, NF 2 – East Kessler Park Neighborhood, NF 4 – Lake Cliff Neighborhood, NF 5 – Trinity Bottoms Neighborhood, NF 6 – Cedars Neighborhood, NF 7 – Dallas CBD, and NF 9 – Design District] the opportunity to take advantage of their leisurely value. Additionally, improved access and multi-modal mobility are anticipated to benefit and support the planned transition of much of the AOI to a higher density, mixed-use, more intense, urban environment as suggested by the *Trinity River Corridor Comprehensive Land Use Plan*, which proposes for the value of future land uses adjacent to the Trinity River Floodway to rely heavily on the conversion of the floodway to an environmental and recreational amenity.

In summary, the proposed improvements would have a beneficial indirect impact on the overall socio-economic conditions within the AOI.

9.8 Step 7: Assess Consequences and Consider/Develop Mitigation (when appropriate)

Land use planning practices currently implemented by the City of Dallas would help manage any indirect impacts on regional and community growth within the AOI including impacts related to an accelerated rate of redevelopment, increased population density, and localized economic growth. Examples of regulatory growth and development management techniques include subdivision regulations, zoning ordinances, land development regulations, and tree preservation ordinances. The responsibility of transportation providers such as TxDOT, local and regional transit agencies, and local governments would be to implement a transportation system to complement land use or development management techniques currently in place. Policy guides and implementation tools are already in place within the City of Dallas to ensure certain types of development or redevelopment occur within the AOI.

It is not anticipated that the proposed project would have an adverse effect on the notable features within the indirect impacts AOI. Additionally, the proposed access improvements to the Dallas Floodway and City of Dallas pedestrian/bicycle trails would benefit their utility to the community in the long-term due to increased accessibility through expanded modal means. Indirect impacts related to the Dallas Floodway are anticipated to occur amicably with the City of Dallas's goals to enhance the Trinity River Corridor as proposed in the Trinity River Corridor Project. Therefore, no mitigation to the Trinity River Floodway is

suggested.

The incorporation of future parks, open spaces, and natural environmental amenities within the Trinity River Floodway as proposed in the Trinity River Corridor Project would provide additional wildlife habitat and shelter. Establishing lakes and wetlands, fruit or nut-bearing trees, and shrubs and native grain-bearing grasses, much of which is proposed for the Trinity River Corridor, would help mitigate any impacts to habitat used by wildlife.

10.0 CUMULATIVE IMPACTS ANALYSIS

10.1 Introduction and Methodology

Council on Environmental Quality regulations (40 C.F.R. § 1508.7) define cumulative impacts (i.e., effects) as "the impact on the environment which results from the incremental impact of the proposed action when added to other past, present and reasonably foreseeable future actions." The purpose of cumulative impacts analysis is to view the direct and indirect impacts of the proposed project within the larger context of past, present, and future activities that are independent of the proposed project, but which are likely to affect the same resources in the future. This approach allows the decision maker to evaluate the incremental impacts of the proposed Build Alternative in light of the overall health and abundance of selected resources. The evaluation process for each resource considered may be expressed in shorthand form as follows:

BASELINE CONDITION + FUTURE EFFECTS + PROJECT IMPACTS = CUMULATIVE EFFECTS
(historical and current) (expected projects) (direct and indirect)

The following eight-step approach as described in TxDOT's *Revised Guidance on Preparing Indirect and Cumulative Impact Analyses* (September 2010), was utilized to assess the potential cumulative impacts of the past, present, and reasonably foreseeable actions to the resources in the project area:

1. Identify the resources to consider in the analysis.
2. Define the study area for each affected resource. Cumulative impacts are considered within spatial and temporal boundaries. Each resource has its own resource study area (RSA) to best assess the impacts to that individual resource. Each RSA was defined by professionals experienced in the study and analysis of each resource.
3. Describe the current health and historical context for each resource. The examination of the current health and historical context of each resource is necessary to establish a baseline for determining the effects of the proposed action and other reasonably foreseeable actions on the resource.
4. Identify direct and indirect impacts that may contribute to a cumulative impact. The analysis of cumulative impacts must look at the impacts of the proposed action in combination with the impacts of other past, present, or reasonably foreseeable actions within the RSAs. Identification of the direct and indirect impacts of the proposed action would also assist in determining the project's

contribution to the cumulative impact on the resource.

5. Identify other reasonably foreseeable actions that may affect the resources.
6. Identify and assess potential cumulative impacts to the resources.
7. Report the results.
8. Assess and discuss mitigation issues for all adverse impacts.

Steps 1 through 6 will be applied to each resource. Once each resource is analyzed, Steps 7 and 8 will follow and address all identified resources.

In order to have a cumulative impact on the resource, the proposed action must have either a direct or indirect impact on that resource. Additionally, the cumulative impact analysis focuses on those resources substantially impacted by the proposed action and resources currently in poor or declining health, even if the direct and indirect impacts resulting from the project are relatively small (less than substantial). Resources impacted by modifications to the USACE Public Works project (Dallas Floodway) are also included in this cumulative impacts analysis. All of the resource categories considered in this EA were candidates for analysis with regard to cumulative impacts. As documented in **Sections 8.0. Specific Areas of Environmental Concern** and **Section 9.0. Indirect Impacts Analysis,** in this document, it was determined that the proposed action would not have substantial direct or indirect impacts on the following resources: Regional and Community Growth; Community Cohesion; LEP Populations; Environmental Justice Populations; Public Facilities and Services; ROW Acquisitions, Easements, Displacements and Relocations; Section 4(f)/6(f) Properties; Aesthetic Considerations; Cultural Resources (which includes Historic Properties and Archeological Resources); Threatened and Endangered Species; Vegetation and Wildlife Habitat; Topography and Soils; Lakes, Rivers, and Streams; Water Quality; Hazardous Materials; and Items of a Special Nature (which include Airway-Highway Clearance).

Cumulative impacts are analyzed in terms of the specific resource being affected. The resources considered in this cumulative impacts analysis include:

Air Quality
- NAAQS
- CO
- MSAT

Waters of the U.S., including Wetlands
Floodplains

The goal is to determine whether the proposed action's direct and indirect impacts, considered with other reasonably foreseeable actions, would result in substantial degradation of a resource that would not result from the proposed action considered alone. TxDOT's *Revised Guidance on Preparing Indirect and Cumulative Impact Analyses* (September 2010) states: "The cumulative impact analysis should focus on: 1) those resources substantially impacted by the project and 2) resources currently in poor or declining health or at risk even if project impacts (either direct or indirect) are relatively small."

Cumulative impacts were evaluated using the following factors: the historical context of each resource, current condition and trend, future land use and zoning plans, and the pertinent regulations and standards associated with each resource. These factors capture the influences that have shaped and are shaping the amount and quality of each resource, and which would continue to shape the resources into the future. Implicit in the approach to predicting the future condition of resources are several key assumptions:

- All reasonably foreseeable actions would be completed as currently planned.
- The relationships between the resources, ecosystems, and human communities that have been identified from historical experience would continue into the future.
- The sponsors of government and private projects would comply with relevant federal, state, and local laws designed to protect each resource. Regulatory agencies would perform their duties in accordance with legal requirements and internal guidelines.

Of particular importance is the assumption concerning compliance with relevant environmental laws designed to ensure the sustainability of resources. Over the past several decades federal, state, and local lawmaking bodies have enacted statutes, regulations, and ordinances designed to preserve and enhance the abundance and quality of natural resources by requiring project sponsors to avoid, minimize, and mitigate the environmental impacts of their projects or actions. Cumulative impacts analysis focuses on the "net effects" on each resource that remain after full compliance with the regulatory requirements at all levels.

Other reasonably foreseeable effects include additional regionally significant transportation projects associated with *Mobility 2035*.

The resources or environmental issues related to the proposed project with the potential for cumulative effects are listed in **Table 10.1**. As recommended by the CEQ guidance, specific indicators of each resource's condition have been identified as shown in **Table 10-1** and the associated RSAs are depicted in **Appendix A, Exhibit 10: Cumulative Impacts Resource Study Areas**. The use of indicators of a resource's health, abundance, and/or integrity are helpful tools in formulating quantitative or qualitative metrics for characterizing overall effects to resources. These indicators are also key aspects of each resource that have already been evaluated in terms of the project's direct and indirect impacts, and facilitate greater consistency and objectivity in the analysis of cumulative effects.

Table 10-1: Resource Indicators and Study Areas for the Cumulative Impacts Analysis

Resource Category	Indicators of Resource Condition and Potential Impacts	Resource Study Area (RSA)
Air Quality	8-Hour Ozone Standard: ability of the region to meet this air quality standard	9-county serious non-attainment area for the DFW Metropolitan Area (includes Dallas County), proposed project ROW, and the MSAT affected transportation network
	Carbon Monoxide: carbon monoxide concentrations modeled along the ROW under worst meteorological conditions	
	MSAT: trend of emissions over time	
Waters of the U.S., including Wetlands	Jurisdictional and potentially jurisdictional waters of the U.S., including wetlands	Portions of the Dallas West Bank and Dallas East Bank watersheds and the FEMA designated 100-year floodplain from Commerce Street to the southern end of the East and West Levees
Floodplains	Flood protection; recreation and environmental restoration projects; transportation projects, and land use and community development projects	

10.2 Air Quality

10.2.1 Step 1: Resource Identification

Ozone and Carbon Monoxide
In order to protect human health and the environment, the CAA of 1970 mandated the establishment of the NAAQS and regulations to reduce air pollutants. When the pollutant level within an area exceeds the NAAQS, EPA designates the area as "non-attainment" for the pollutant.

MSAT
In addition to NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

10.2.2 Step 2: Resource Study Area

The RSA for evaluating air quality associated with the NAAQS and transportation conformity was designated as the nine-county DFW non-attainment area for the 8-hour

ozone standard, which includes Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant counties as depicted in **Appendix A: Exhibit 10 - Cumulative Impacts Resource Study Areas**. This area represents the management unit for mobile source pollutants as regulated by federal, state, and local government agencies. The NAAQS criteria pollutants include ozone, carbon monoxide, particulate matter, nitrogen dioxide, sulfur dioxide, and lead. Unlike the other resources evaluated, air quality impacts from mobile sources are evaluated and managed on a regional basis primarily through the NCTCOG, in coordination with the EPA, TCEQ, TxDOT, and FHWA. Evaluating air quality in relation to cumulative impacts requires looking at three distinct RSAs, as described below:

Ozone

The RSA for evaluating the ozone NAAQS was designated as the DFW 8-hour ozone serious non-attainment area, which includes Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties.

Carbon Monoxide

The RSA for CO was based on the ROW line, which represents the locations with the highest potential for CO concentrations. The RSA for CO includes specific locations along the ROW line at the following roadway sections:

1) IH 30 between Beckley Avenue and the Mixmaster
2) The Mixmaster between Houston and Jefferson Street viaducts
3) IH 35E between Colorado Boulevard and the Mixmaster

MSAT

The MSAT RSA is specified by an affected transportation network. The MSAT study area is composed of the affected transportation network. The Dallas Horseshoe Project affected transportation network includes the proposed network links and other transportation model links reflecting a plus or minus five or greater percent change in traffic volume between the Build and No-Build scenarios for the year 2035. The plus or minus 5 percent threshold was adopted as the basis to determine the MSAT study area. Because the 2012 base year scenario represents the existing condition, the affected transportation network for 2012 is composed of those links determined to change plus or minus five or greater percent in traffic volume between the Build and No-Build scenarios in 2035 and which currently exist in the 2012 network. The resulting affected transportation network for scenario year 2035 consists of those links determined to change plus or minus five or greater percent in 2035. The application of the threshold was adopted as the basis to determine the affected transportation network RSA and located within the NCTCOG MPA. This large area represents the management unit for mobile source pollutants as regulated by federal, state, and local government agencies.

Unlike the other resources evaluated, air quality impacts from MSATs have been evaluated qualitatively for the proposed project by TxDOT and FHWA in the cumulative impacts analysis. MSATs are regulated by EPA on a national basis through requirements for fuels and vehicle technology. The MSAT RSA qualitatively evaluated emission changes based upon the proposed project and national trends.

10.2.3 Step 3: Resource Health and Historical Context

Health

The EPA establishes limits on atmospheric pollutant concentrations through enactment of the NAAQS for six principal, or criteria pollutants. The EPA designated nine counties in the DFW area as serious nonattainment for 8-hour ozone. The region is currently in attainment for all other criteria pollutants. Although there have been year-to-year fluctuations, the ozone trend continues to show improvement. The trend of improving air quality in the region is attributable in part to the effective integration of highway and alternative modes of transportation, cleaner fuels, improved emission control technologies, and NCTCOG regional clean air initiatives.

10.2.4 Step 4: Direct and Indirect Impacts

Direct Impacts

Direct impacts on air quality and MSATs from the project are primarily those associated with the increased capacity, accessibility and the resulting projected increases in VMT. Emission reductions as a result of EPA's new fuel and vehicle standards are anticipated to offset impacts associated with VMT increases.

Indirect Impacts

Indirect impacts on air quality and MSATs are primarily related to any expected development resulting from the proposed project increased accessibility or capacity to the area. Any increased air pollutant or MSAT emissions resulting from the potential development of the area must meet regulatory emissions limits established by the TCEQ and EPA as well as obtain appropriate authorization from the TCEQ and therefore are not expected to result in any degradation of air quality or MSAT levels.

10.2.5 Step 5: Reasonably Foreseeable Actions

Increased development and urbanization can result in increased air pollutant or MSAT emissions resulting from these actions. These must meet regulatory emissions limits established by the TCEQ and EPA as well as obtain appropriate authorization from the TCEQ and therefore are not expected to result in any degradation of air quality or MSAT levels. Reasonably foreseeable actions that could impact air quality within the RSA include recommended funded freeway, tollway, and HOV/managed lane improvements and regionally significant arterials listed in *Appendix E: Mobility Options of Mobility 2035* (NCTCOG, http://www.nctcog.org/trans/mtp/2035/index.asp).

10.2.6 Step 6: Cumulative Impacts Assessment

Any increased air pollutant or MSAT emissions resulting from increased capacity, accessibility, and development are projected to be more than offset by emissions reductions from EPA's new fuel and vehicle standards or addressed by EPA's and TCEQ's regulatory emissions limits programs. Projected traffic volumes are expected to result in no impacts on air quality; improved mobility and circulation may benefit air quality. Increases in urbanization would likely have a negative impact on air quality. However, planned

transportation improvements in the project area as listed in a conforming MTP (*Mobility 2035*) and TIP (2011-2014 TIP, as amended) coupled with EPA's vehicle and fuel regulations fleet turnover, are anticipated to have a cumulatively beneficial impact on air quality.

10.2.7 Step 7: Results

The cumulative impact on air quality from the proposed project and other reasonably foreseeable transportation projects are addressed at the regional level by analyzing the air quality impacts of transportation projects in the *Mobility 2035 MTP* and the 2011-2014 TIP, as amended. The proposed project and the other reasonably foreseeable transportation projects were included in the *Mobility 2035 MTP* and the 2011-2014 TIP, as amended, and have been determined to conform to the SIP. When combined, planned transportation improvements, revised EPA fuel and vehicle regulations, and fleet turnover are anticipated to have a cumulatively beneficial impact on air quality.

10.2.8 Step 8: Mitigation

The mitigation of future development within the region considered for this study would rest with the agencies with the authority to implement such controls. This authority rests with the municipal governments and to a lesser extent, the county governments. The responsibility of transportation providers such as TxDOT, local and regional transit agencies, and the local governments would be to implement a transportation system to complement the land use or development controls implemented.

Air Quality

A variety of federal, state, and local regulatory controls as well as local plans and projects have had a beneficial impact on regional air quality. The CAA, as amended, provides the framework for federal, state, tribal, and local rules and regulations to protect air quality. The CAA required the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. In Texas, the TCEQ has the legal authority to implement, maintain, and enforce the NAAQS. The TCEQ establishes the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general comprehensive plan. Authorization in the Texas Clean Air Act (TCAA) allows the TCEQ to do the following: collect information and develop an inventory of emissions; conduct research and investigations; prescribe monitoring requirements; institute enforcement; formulate rules to control and reduce emissions; establish air quality control regions; encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and to establish and operate a system of permits for construction or modification of facilities. Local governments having some of the same powers as the TCEQ can make recommendations to the commission concerning any action of the TCEQ that may affect their territorial jurisdiction, and can execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA or the rules or orders of the TCEQ.

The CAA also requires states with areas that fail to meet the NAAQS prescribed for criteria pollutants to develop a SIP. The SIP describes how the state would reduce and maintain air pollution emissions in order to comply with the federal standards. Important components of a SIP include emission inventories, motor vehicle emission budgets, control strategies to reduce emissions, and an attainment demonstration. The TCEQ develops the Texas SIP for submittal to the EPA. One SIP is created for each state, but portions of the plan are specifically written to address each of the non-attainment areas. These regulatory controls, as well as other local transportation and development initiatives implemented throughout the DFW metropolitan area by local governments and other entities provide the framework for growth throughout the area consistent with air quality goals. As part of this framework, all major transportation projects, including the proposed project, are evaluated at the regional level by the NCTCOG for conformity with the SIP.

The cumulative impact of reasonably foreseeable future growth and urbanization on air quality within this area would be minimized by enforcement of federal and state regulations, including the EPA and TCEQ, which are mandated to ensure that such growth and urbanization would not prevent attainment with the 8-hour ozone standard or threaten the maintenance of the other air quality standards.

10.3 Waters of the U.S., including Wetlands

10.3.1 Step 1: Resource Identification

Pursuant to Executive Order 11990 (Protection of Wetlands) and Section 404 of the Clean Water Act (CWA), investigations are conducted to identify Waters of the U.S. within a proposed project limits. According to the USACE, the Federal agency which possesses authority over waters of the U.S., wetlands must possess three essential characteristics. Under normal circumstances, these characteristics include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

A majority of the waters of the U.S., including wetlands within the project limits are inside the Dallas Floodway which has been studied extensively. The USACE approved Jurisdictional Determination for the Dallas Trinity River Floodway, USACE Project Number SWF-2011-00049 [USACE Approved Jurisdictional Determination (J.D.)], identified jurisdictional features within an area beginning at the southern limits of the levees north to just south of Irving Boulevard. The USACE Approved J.D. is valid until March 24, 2016.

Due to the proposed modifications to the USACE Public Works project (Dallas Floodway), this resource was assessed for cumulative impacts.

10.3.2 Step 2: Resource Study Area

The RSA for waters of the U.S., including wetlands, is approximately 1,352 acres in size and is depicted in **Appendix A: Exhibit 10**. The RSA is comprised of portions of the Dallas West Bank and Dallas East Bank watersheds, in addition to the FEMA designated 100-year floodplain. The limits of the RSA extend from Commerce Street to the southern end of the

East and West Levees. Due to the size of the Dallas West Bank and Dallas East Bank watersheds, the FEMA designated 100-year floodplain, and the location of the proposed project, not all of the watersheds or 100-year floodplain are included in the cumulative impacts RSA. Watersheds were utilized because they form natural boundaries between habitats and contain the waters of the U.S., including wetlands being assessed. Impacts to the watersheds themselves are not being assessed, only the impacts to the waters of the U.S., including wetlands within the watersheds. The 100-year floodplain was chosen because of its direct correlation to the functionality of the Dallas Floodway. The temporal boundaries for the cumulative impacts analysis are from circa 1870 to 2050. The year 1870 is chosen because it encapsulates the early development of transportation and utility infrastructure in the City of Dallas, which are noteworthy features contributing to the City of Dallas' evolving physical character. The year 2050 is chosen because it comprehensively captures the extent of reasonably foreseeable proposed actions within the cumulative impacts study area in accordance with existing planning efforts, namely the City of Dallas *Trinity River Corridor Comprehensive Land Use Plan* (2050).

10.3.3 Step 3: Resource Health and Historical Context

Historically, waters of the U.S., including wetlands, have not been recognized for their ecological importance. Over time, many of these areas were filled, dredged, or developed to make the land available for use. From the mid-1800s until 1970, approximately one-half of Texas' historic wetlands acreage was converted from natural systems in response to society's demand for urban development and sustenance. Since 1970, wetlands have been identified as providing important economic and environmental functions, such as temporarily storing floodwaters, reducing floodwater velocity, filtering sediment and pollutants, and providing important habitat for many species of plants and wildlife. A 1980 statewide inventory of forested wetlands identified 5,973,000 acres of bottomland hardwoods and 95,000 acres of swamps remaining in Texas. These acreages reflect an estimated 63 percent loss of these types of wetlands from their pre-settlement high of more than 16 million acres.

The statewide trends stated above reflect the local experience with historic wetland impacts. The DFW metropolitan area accounts for the most urbanized portion of the Upper Trinity River Watershed. Straightening of channels, dredging and filling of streambeds, ditching and draining of wetlands, construction of levees, and removal of natural vegetation has also occurred in certain areas. The most obvious manifestation of this urban development is the increase of impervious surfaces and the corresponding loss of natural vegetation. Land clearing, soil compaction, riparian corridor encroachment, and modifications to the surface water drainage network have all accompanied urbanization of the DFW area. These human activities are evident within the immediate surroundings of the proposed Dallas Horseshoe Project. Human use of the Trinity River in this portion of Dallas has included activities to straighten, narrow, deepen, fill, block, and otherwise encroach upon the river channel. In the corridor, the entire length of the Trinity River has been reconstructed from well upstream of Westmoreland Road to downstream of Corinth Street, with the only remnant pieces of the old river channel now existing as drainage sumps on the landside of the East and West Levees. Additionally, upstream, multi-purpose federal reservoirs have altered seasonal and shorter-term river flows. As a result, much of

the channel system has become simplified, stabilized in position, disconnected from part of the historical stream meander corridor and floodplain, and subject to stabilized stream flows that have lost part of their flow variability. These same physical alterations of the pre-historic Trinity River channel are also responsible for the creation of wetlands in the modern Dallas Floodway in recent decades.

A variety of regulatory controls have had a profound effect on waters of the U.S., including wetlands. The two principal overriding controls requiring the protection of wetlands is Section 404 of the CWA and EO 11990 (Protection of Wetlands, 1977). Additionally the TCEQ adopted state goals for "no net loss" of acreage or ecological function of wetlands. These goals reflect the regulatory program under the CWA which prohibits the discharge of soils into waters of the U.S., including wetlands, unless authorized by a permit issued under Section 404 of the CWA. The USACE has authority over such actions and requires the permittee to restore, create, enhance, or preserve nearby wetlands as compensation for any damage. This means of compensatory mitigation is intended to comply with the general goals of the CWA and the specific goal of "no net loss" of wetlands. Regulations have been enacted on a federal, state, and local level to achieve the goal of "no net loss" of wetlands. Regulatory controls are expected to continue the trend of stabilizing the amount of existing wetlands and the creation of new wetlands through vigorous application of mitigation requirements under the CWA.

10.3.4 Step 4: Direct and Indirect Impacts

Direct Impacts

As documented in **Section 8.7.2**, there are seven wetland features and three water features from the USACE Approved J.D. located within the limits of the proposed project. The seven wetland features total approximately 14.17 acres and the three water features total approximately 9.17 acres. Of the three water features, one feature (linear sump) is considered non-jurisdictional in the USACE Approved J.D.

Approximately 0.31 acre of jurisdictional waters (909 linear ft) and approximately 0.09 acre of jurisdictional wetlands would be permanently impacted by the proposed project. The permanent impacts to waters of the U.S., including wetlands within the Dallas Floodway would result from the placement of bridge columns, bridge footings, and overhead sign bases within the delineated boundaries of the features. Permanent impacts to the Historic Trinity River Channel would occur as a result of modifications to Able Pump Station Sump Ponds 2 and 3.

Indirect Impacts

Project biologists have determined that encroachment-alteration effects have no potential to be substantial. Potential indirect effects on waters of the U.S. (including wetlands), from roadway projects could include the fill and degradation of waters of the U.S. (including wetlands) from induced development; however, a meeting held with stakeholders to identify indirect impacts associated with the proposed project did not identify specific induced development that would result the proposed project. Because stormwater management facilities required by the City of Dallas' Stormwater Ordinance would regulate stormwater

flow into waters of the U.S. (including wetlands) from any future development, the indirect effects to waters of the U.S. (including wetlands) are anticipated to be minimal.

10.3.5 Step 5: Reasonably Foreseeable Actions

Current and future land uses have been developed and are reflected in the various local and regional planning initiatives that are inclusive of the RSA (refer to **Section 9.3**). The various plans would likely not change as the proposed project is a planned transportation corridor that would benefit from coordinated design, infrastructure, and compatibility of land uses. As the remaining land adjacent to the proposed project is developed, the overall qualities of the natural resources could be reduced.

Major (announced) projects related to flood risk management, recreation/environmental restoration, and transportation/utility infrastructure could result in additional impacts (beneficial or adverse) to the waters of the U.S., including wetlands RSA. Reasonably foreseeable actions within the RSA include:

- Modifications to the Dallas Floodway System to Reduce the Potential for Levee Underseepage
- BVP Flood Risk Management
- BVP Ecosystem Restoration Projects
- BVP Parks and Recreation Projects
- Jefferson Memorial Bridge
- Trinity Parkway
- Riverfront Boulevard
- Union Station to Oak Cliff Streetcar
- Trinity Trail (City of Dallas Trail Network Master Plan)

10.3.6 Step 6: Cumulative Impacts Assessment

The following table summarizes potential cumulative impacts to waters of the U.S., including wetlands.

Table 10-2: Summary of Anticipated Cumulative Impacts to Waters of the U.S., including Wetlands RSA

Project Name	Data/Information Source	Potential Impacts to Waters of the U.S., including Wetlands
BVP Flood Risk Management	*TRCCLUP* (2005)*; Trinity Parkway Supplemental Draft Environmental Impact Statement & Draft Section 4(f) Evaluation* (2009)	Unknown
BVP Ecosystem Restoration/*BVP* Parks &Recreation	*Trinity Parkway Supplemental Draft Environmental Impact Statement & Draft Section 4(f) Evaluation* (2009); *TRCCLUP* (2005)	+ 405 acres of waters of the U.S., including wetlands
Jefferson Memorial Bridge	*Trinity Parkway Supplemental Draft Environmental Impact Statement & Draft Section 4(f) Evaluation* (2009); *TRCCLUP* (2005)	No impacts anticipated.
Trinity Parkway	*Trinity Parkway Supplemental Draft Environmental Impact Statement & Draft Section 4(f) Evaluation* (2009); *TRCCLUP* (2005)	-4 acres to -111 acres of water or wetland features
Riverfront Boulevard	*Trinity Parkway Supplemental Draft Environmental Impact Statement & Draft Section 4(f) Evaluation* (2009); *TRCCLUP* (2005)	No impacts anticipated.
Union Station to Oak Cliff Streetcar	*Union Station to Oak Cliff Dallas Streetcar Dallas, Texas; Environmental Assessment (2011)*	No impacts anticipated.
Trinity Trail	*City of Dallas Trail Network Master Plan (2005)*	Unknown
Proposed Dallas Horseshoe Project	Section 8.7.2 of this EA	Approximately 0.31 acre of jurisdictional waters (909 linear ft) and approximately 0.09 acre of jurisdictional wetlands would be permanently impacted.
	Cumulative Impacts Summary	**Net benefit ranging from approx. 293 to 400 acres**

10.3.7 Step 7: Results

Reasonably foreseeable actions could potentially result in impacts to waters of the U.S. and wetlands, because the major projects related to flood risk management, recreation/environmental restoration, and transportation/utility infrastructure could result in additional impacts (beneficial or adverse). A range of cumulative impacts to waters of the U.S., including wetlands, within or traversing the RSA associated with the major projects listed in **Table 10-2** would result in a net gain of approximately 293 to 400 acres of water and/or wetland features.

10.3.8 Step 8: Mitigation

Avoidance or minimization of impacts to waters of the U.S. and wetlands should be performed during the project design phase so that only the least amount of impact occurs. Mitigation is only conducted when impacts to waters of the U.S. and wetlands cannot be avoided. Typical mitigation for impacts to waters of the U.S. includes the construction of mitigation areas or purchasing credits from a mitigation bank. Mitigation is frequently conducted as one of the requirements for obtaining a Section 404 permit. The USACE

decides what the ratio of the mitigation area would be relative to the acreage of impacts to waters of the U.S. The standard mitigation ratio for no net loss is a 1:1 ratio. A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or in certain circumstances, preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 or a similar state or local wetland regulation. Pursuant to the 2008 Final Rule on Compensatory Mitigation, the USACE would consider the type and location options for compensatory mitigation in the following order: mitigation bank credits, in-lieu fee program credits, and then permittee responsible mitigation. Mitigation banks are a form of "third-party" compensatory mitigation, in which the responsibility for compensatory mitigation implementation and success is assumed by a party other than the permittee.

10.4 Floodplains

10.4.1 Step 1: Resource Identification

Local floodplains have been affected both directly and indirectly by urban land development within flood conveyance areas, and indirectly by increased stormwater runoff from impervious surfaces as well as past agricultural, drainage, and mining activities. Flood control improvements and regulatory requirements have stabilized and improved the flood conveyance abilities of floodplains within the vicinity of the proposed project. Although any direct impacts to the Dallas Floodway as a result of the proposed improvements associated with the Dallas Horseshoe Project are anticipated to be minimal, reasonably foreseeable actions of other agencies are expected to pose additional impacts. Due to the proposed modifications to the USACE Public Works project (Dallas Floodway), this resource was assessed for cumulative impacts.

10.4.2 Step 2: Resource Study Area

The RSA for floodplains is approximately 1,352 acres in size and is depicted in **Appendix A: Exhibit 10**. The RSA (the same RSA utilized for the waters of the U.S., including wetlands cumulative impacts analysis) is comprised of portions of the Dallas West Bank and Dallas East Bank watersheds and the FEMA designated 100-year floodplain. The limits of the RSA extend from Commerce Street to the southern end of the East and West Levees.

The temporal boundaries for the cumulative impacts analysis coincides with past flood protection actions in the Trinity River Floodway, local and regional growth, and projected land use in the study area from 1958 to 2050. The year 1958 is chosen to correlate with the last major modification of the Trinity River Floodway levee system. The year 2050 is chosen because it comprehensively captures the extent of reasonably foreseeable proposed actions within the cumulative impacts study area in accordance with existing planning efforts, namely the City of Dallas *Trinity River Corridor Comprehensive Land Use Plan* (2050).

10.4.3 Step 3: Resource Health and Historical Context

Flood Protection

Maintenance of floodplains is vital to the protection of property and the well-being of the citizens of Dallas, and potential loss or alteration can become an immediate issue of concern with regard to human safety and property damage. In their natural condition, floodplains serve vital functions, including temporary storage of floodwaters, moderation of peak flows, maintenance of water quality, groundwater recharge, prevention of erosion, and provision of wildlife habitat. They can also provide recreational opportunities and establish an aesthetic quality in a given area. These functions are best served if floodplains are kept in their natural state.

Originally, the natural Trinity River channel and associated floodplain was a continuous, meandering waterway traversing the western portion of the present Dallas CBD. In 1908, a devastating flood inundated a large portion of the City of Dallas's downtown area as well as transit operations between Oak Cliff and Dallas. Subsequently in 1926, an assessment district, known as the City and County of Dallas Levee Improvement District, was established that re-routed the hydraulic conveyance from the natural channel to its present-day straightforward alignment and location. In the early 1930s, the existing East and West Levees were constructed to serve this goal and were designed to have 2,000 to 3,000 ft of distance between their inside footings. In the late 1950s, the USACE modified the levee system by expanding the levee cross-section, flattening the levee side slopes, and increasing the crest width to approximately 16 feet. Simultaneous improvements to the interior drainage system also occurred. The East and West Levees were originally designed to confine a flood of about two and one half times the size of the 1908 flood, but major urban development, land use changes, and surrounding increases in impervious surface coverage since project completion in 1958 reduced that level of flood protection. Land clearing, soil compaction, riparian corridor encroachment, and modifications to the surface water drainage network have all accompanied urbanization of the area.

Two separate actions during the past four decades further diminished the Dallas Floodway levee system's ability to contain the SPF to 300-year protection. First, considerable urbanization in the DFW Metroplex, particularly upstream from the East and West Levees, substantially increased the quantity of flood waters produced by the Trinity River. In 1960, the estimated SPF discharge was 226,000 cubic feet per second as compared with 270,000 cubic feet per second in 2003. Second, downstream of the East and West Levees, the Great Trinity Forest's growth and abundance of trees have considerably reduced flood conveyance in the southern Trinity River Corridor and ultimately within the Dallas Floodway.

Recreation and Environmental Restoration

In 1929, the City and County of Dallas Levee Improvement District, originally established for land management purposes in the Dallas Floodway, offered the entire inter-levee area existing at the time (approximately 3,300 acres) to the Dallas Park Board to be developed and maintained as a park. From 1929 to the 1970s, the offer sat unaccepted until U.S. Representative James M. Collins secured approximately $2.2 million in Federal funds from the Department of Housing and Urban Development (HUD) to help the City obtain property between the levees. Further, the Industrial Properties Corporation donated approximately

933 acres to the City of Dallas, and the City contributed approximately $1.1 million to complete the acquisitions by January 1974. In 2008, the Trinity Overlook Park was completed at Beckley Avenue and Commerce Street. The purpose of the park is to provide a view of the proposed construction of additional improvements associated with the reasonably foreseeable actions of the Trinity River Corridor Project.

Land Use and Community Development

In terms of the historical context of land uses surrounding the floodplains RSA, past changes in land development are characterized by a transition from a traditional, early twentieth century mix of land uses to a somewhat more modern urban and downtown environment. Prior to World War II, land uses surrounding the floodplains RSA were generally more intensive, medium density residential, commercial, public, and industrial uses concentrated along the Trinity River, railways, and major multi-modal thoroughfares. Since World War II, like many other large and rapidly growing cities in the U.S., land uses surrounding the floodplains RSA transitioned to a generally higher density, but less intensive, mixed-use environment with a variety of residential, retail, office, service commercial, public, and light industrial uses and densities scattered across both sides of the Trinity River. Land uses on the east side of the Trinity River have generally evolved into a highly dense, typical large city, CBD environment serving the city and region as an employment, arts, convention, and business destination hub accommodating numerous interrelated and agglomerated economic functions. Much of the land on the west side has retained its lower density mix of single-family residential, service commercial, and light industrial uses.

10.4.4 Step 4: Direct and Indirect Impacts

Direct Impacts

As documented in **Section 8.7.3**, the proposed project would demonstrate that it satisfies the TREIS ROD criteria for water surface elevation, valley storage, and erosive water velocities for both the 100-year and SPF events. A Hydraulic and Hydrology Technical Report has been developed and will be included in the Section 408 supplemental. The report determined that due to the total number of bridge columns to be placed within the Dallas Floodway, a hydraulic swale would be constructed to offset potential impacts to a rise in the water surface elevation. The hydraulic swale would be located at IH 30 between the East Levee and the Trinity River. It would be approximately 600 ft long, 100 ft wide, and 2 ft deep.

Indirect Impacts

Potential indirect effects on floodplains from roadway projects include increases in stormwater runoff due to changes in land use and increased development that may be accelerated by improved mobility and managed congestion on the transportation system on land surrounding the proposed facility. Because stormwater management facilities required by the City of Dallas' Stormwater Ordinance would regulate stormwater flow into floodplains from induced development, the indirect effects to floodplains as a result of the proposed improvements are anticipated to be minimal and were not studied further.

10.4.5 Step 5: Reasonably Foreseeable Actions

In addition to the proposed project, a number of additional flood protection, recreation and environmental restoration, transportation, and land use and community development actions have occurred and are proposed within or near the Dallas Floodway.

Flood Protection

As mentioned in Step 3, numerous past actions have had a profound influence on the current state of the Dallas Floodway and corresponding flood protection infrastructure's ability to serve its purpose. Since the original Trinity River channel was altered in the early 1930s, the original and existing levee system has attempted to serve the goal of protecting the City of Dallas from flood inundation. However, numerous other past actions may have jeopardized the levee system's ability to contain the SPF. These actions include rapid urban development and land use changes with increases in impervious surface coverage primarily upstream of the East and West levees and the growth of vegetation in the Great Trinity Forest downstream reducing the Dallas Floodway's flood conveyance capacity.

A periodic inspection of the City of Dallas's levee system in March 2009 revealed 198 deficiencies regarding maintenance items associated with the Dallas Floodway and yielded an "unacceptable rating" from the USACE. Some broad deficiencies identified as part of the March 2009 inspection include the possible significance of structural encroachments and penetrations that may impact the integrity and performance of the levee system, erosion, siltation, vegetation, and channel instability. It is a stated goal of the City of Dallas to restore the levees to the 100-year flood level of protection to retain eligibility in the FEMA program and to bring the levees into current compliance with USACE levee criteria to provide SPF protection.

As part of the Trinity River Corridor Project and as guided by its corresponding Balanced Vision Plan, flood protection measures currently underway and planned to continue through 2015 in the floodplains RSA seek to strengthen the Dallas Floodway and its floodwater conveyance through a number of actions. These actions include existing levee and interior drainage improvements and the establishment of a "Chain of Wetlands." Other proposed actions will generally be dictated by the Dallas Levee Remediation Plan, which provides three main goals for implementing flood protection improvement measures. These goals include the identification and evaluation of levee remediation alternatives by utilizing existing and further geotechnical investigations and technical analyses, identification of technically sound and cost-effective remediation measures if needed, and the evaluation of improvement options.

Levee and interior drainage improvements underway or that are reasonably foreseeable through the year 2015, as directed by the goals of the Trinity River Corridor Project, include flattening and raising the existing East and West Levees two feet and the construction of seven interior drainage pump stations. The establishment of the "Chain of Wetlands," which are ultimately expected to divert excess water away from the Trinity River and further reduce flood elevations as well as provide a secondary route for Trinity River floodwaters to move through the Great Trinity Forest downstream, are currently underway. Other smaller

or ongoing proposed improvements to the Dallas Floodway include more frequent mowing cycles, rip rap/drainage relocation for erosion, remediation measures, and the removal of the ATSF Railroad Bridge.

Recreation and Environmental Restoration

As previously mentioned in Step 3, numerous past efforts have attempted to convert the Dallas Floodway into a vast recreational space and environmental amenity. The majority of proposed recreational improvements in the floodplains RSA would be associated with the planned Trinity Lakes Park, which would contain the East and West Levees. Associated Trinity Lakes Park improvements involve the establishment of two lakes inside the floodplains RSA between the East and West Levees to serve specific recreational functions. Both passive and active recreational space is planned for areas between the levees adjacent to the lakes. Urban Lake and its associated promenade and arrival plaza would be established under the Margaret Hunt Hill Bridge crossing of the Trinity River and adjacent to the East and West Levees. The promenade would accommodate 19,000 people during peak events and activities. A water maze appealing to children is also proposed adjacent to Urban Lake.

Between Urban Lake and a second proposed lake, Natural Lake, a proposed isthmus would provide an opportunity for canoeists and kayakers to navigate between two water courses. A series of floating wetlands is also proposed for Natural Lake to serve as a design aesthetic, educational demonstration, habitat, and water quality improvement measure. Natural Lake would also feed into the proposed Corinth Wetlands and Oxbow Lake area, designed to be a passive observation area for understanding and appreciating wetland habitats and systems. This proposed environment would be an attraction for migratory birds and other wetland and riparian wildlife. The area would also include birding observation areas, boardwalks, tree groves, and shaded respites.

Transportation

Past transportation projects in the floodplains RSA near the limits of the proposed Dallas Horseshoe Project include the original construction of Dallas's downtown street grid and subsequent platted local streets (e.g. Riverfront Boulevard), IH 30, IH 35E, Houston Street Viaduct, Jefferson Boulevard Viaduct, Commerce Street, and N. Corinth Street. As land use densities in and surrounding downtown Dallas increased throughout the twentieth century, the need for greater capacity to move a higher volume of motor vehicles at faster speeds became more pronounced, and consequently, numerous transportation projects were completed to alleviate congestion, improve mobility, increase access, and enhance safety as downtown Dallas continued to develop as an employment destination for workers throughout the DFW Metroplex.

Other current and proposed transportation improvements in the floodplains RSA include the construction of the Jefferson Memorial Bridge, the construction of the proposed Trinity Parkway, improvements to Riverfront Boulevard, establishment of the Union Station to Oak Cliff Streetcar (along the Houston Street Viaduct), and further development of the Trinity Trail (City of Dallas Trail Network Master Plan).

Land Use and Community Development

Present and reasonably foreseeable land use and community development actions in and near the floodplains RSA generally involve the revitalization, redevelopment, adaptive reuse, and some preservation of the existing urban landscape. According to the Trinity River Corridor Comprehensive Land Use Plan, with the implementation of proposed improvements to the Trinity River Corridor, CBD land uses currently confined to downtown Dallas west of the IH 35E facility are planned to extend westward across both the East and West Levees and planned park spaces to the opposite side of the Dallas Floodway. Land south and west of the Dallas Floodway and West Levee is targeted for mixed use and adaptive reuse development patterns. Existing single-family neighborhoods abutting the West Levee are proposed to be preserved as traditional residential zones, enhanced, and tied into the river greenbelt. High density residential development is planned for the area directly south of the IH 30 Bridge crossing the Dallas Floodway. Further high density residential development is planned for areas adjacent to the Dallas Floodway and East Levee extending north of Commerce Street. The conversion of the Dallas Floodway into a large recreational and environmental observation area is expected to increase property values and enhance areas of the city adjacent to the floodway.

Several of these plans/projects would result in additional stormwater runoff due to increases in impervious surfaces associated with transportation improvements and development. Several other plans/projects would result in enhancement and development within the floodplain for recreational uses as well as redevelopment on land surrounding the floodplain. As a result, continuous improvements to the floodwater conveyance system in the area would be required of planned projects and would be accomplished consistent with the area's growth and development. None of the planned projects are designed specifically to increase valley storage of floodwaters in the Dallas Floodway. However, the combined impacts of stormwater conveyance enhancement and improvement projects and the strict regulatory controls in place with regard to floodplains and floodwater management (i.e. regional CDC process) indicate that future plans/projects would result in no negative impacts to valley storage and may likely result in an overall minor benefit to the Dallas Floodway.

The foregoing conclusion regarding the overall lack of hydraulic impacts from reasonably foreseeable projects rests upon the demonstrated effectiveness of the regional CDC process as well as the heightened standards of the USACE. The CDC process is a regulatory procedure focusing on cumulative hydraulic impacts of projects affecting the Trinity River. Authorization for any construction within the CDC jurisdictional area requires the applicant to show that hydraulic impacts would not violate the 1988 ROD criteria. The USACE, the City of Dallas, and the NCTCOG continue to administer the CDC process as in the past, there are stringent safeguards in place to protect the Dallas Floodway from projects and design features that would diminish its flood conveyance capacity.

10.4.6 Step 6: Cumulative Impacts Assessment

With regard to the flood protection function of the Dallas Floodway, the cumulative impacts of past, present, and reasonably foreseeable actions in conjunction with the proposed improvements associated with the Dallas Horseshoe Project are expected to be substantial but beneficial. The proposed Dallas Horseshoe Project is designed to ensure the continued

function of the Dallas Floodway for flood and stormwater conveyance. Likewise, all other plans for the enhancement of natural resources and recreational amenities within the Dallas Floodway include detailed design considerations that are expected to improve valley storage capacity and otherwise enhance the flood protection role of the Dallas Floodway. For example, the "Chain of Wetlands," proposed by the City of Dallas, would be expected to divert excess water away from the Trinity River and further reduce flood elevations as well as provide a secondary route for Trinity River floodwaters to move through the Great Trinity Forest downstream. As explained in **Section 9.0**, very little additional impervious surface coverage is expected as a consequence because most of the land that would be subjected to redevelopment is already built-out. Redevelopment would take the form of increased density and not result in building horizontally on additional land. One benefit to the floodplains RSA from this concept is that a greater density of population would be concentrated in a smaller area with very little, if any, increase in impervious surfaces channeling stormwater runoff into the Trinity River. Higher densities accommodate more people per amount of impervious surface coverage, and with fewer areas of impervious surfaces relative to the area's population, anticipated redevelopment would regionally contribute to an overall reduction of stormwater conveyance to the Trinity River versus if horizontal development patterns in the Trinity River watershed prevailed.

The CDC regulatory structure overseeing any activity within the Dallas Floodway is a driving force in the preparation of any plans for projects in the Dallas Floodway. The CDC process is founded upon a cumulative impacts hydrologic model maintained by USACE that is used to test the hydraulic impacts of all projects proposed to be constructed in the floodway. If a project fails to meet CDC hydraulic criteria, it must be redesigned and retested until it conforms to the criteria.

10.4.7 Step 7: Results

Regarding cumulative impacts on the recreational and environmental role of the Dallas Floodway, the proposed Dallas Horseshoe Project improvements would improve access to the planned park spaces and environmental observation areas within the floodplain RSA. With added vehicular capacity traversing the Trinity River and connecting the recreational amenities within the Dallas Floodway to surrounding land uses as a result of the proposed improvements combined with the other proposed reasonably foreseeable transportation projects, recreational consumers would realize improved mobility and lessened congestion compared to existing traffic bottlenecks found on corridors crossing the Trinity River. Additionally, the future land use goals of increasing density and establishing more mixed-use, sustainable, neighborhood districts on land surrounding the floodplains RSA would add more value and utility to the establishment of the Dallas Floodway as an environmental amenity for recreational consumers as a greater population density clusters around the floodway.

10.4.8 Step 8: Mitigation

As previously noted, the proposed project is designed to effectively eliminate any impacts on the flood conveyance functions of the Dallas Floodway, and all other plans or proposed actions that would affect the natural resources and flood conveyance function of the Dallas

Floodway would also be subject to the same regulatory oversight. The flood protection role of the Dallas Floodway is an inherent and integral component of the overall Trinity River Corridor Project in which all actions proposed as part of the project by the City of Dallas revolve around improving the Dallas Floodway's ability to convey floodwaters as well as its role as an environmental amenity. It is expected that continued interaction between various project sponsors (i.e. City of Dallas, TxDOT, private developers) and USACE would ensure that any construction activities within the Dallas Floodway meet 1988 Trinity River Environmental Impact Statement ROD criteria, thus obviating any need for additional mitigation beyond regulatory compliance.

11.0 MITIGATION AND MONITORING COMMITMENTS

Section 408

The proposed project would cross the Dallas Floodway, a USACE Public Works project; therefore, the proposed project would require approval under Section 408. Final USACE review and approval of the 100 percent complete PS&E (for foundations and other proposed construction on areas adjacent to the Dallas Floodway levees) and issuance of all necessary permits is required before construction commences.

LEP Population

During the preparation for the public hearing, reasonable steps, such as the publication of Bilingual announcements in local papers that inform the public of the opportunity to request an interpreter (for language or other special communication needs) to be present at the public hearing were taken to ensure that such persons have meaningful access to the programs, services, and information that TxDOT provides.

Environmental Justice

The TxDOT Relocation Office would provide assistance to all individuals, families, businesses, and non-profit organizations displaced as a result of the proposed improvements. Assistance would be provided should the local existing housing market be insufficient for relocation.

ROW Acquisition, Easements, Displacements and Relocations

The proposed improvements would require additional ROW, and thus would result in a number of displacements. Approximately 17.3 acres of proposed ROW and 15 displacements would be required. TxDOT would be responsible for the ROW acquisitions. Acquisition and relocation assistance would be in accordance with the TxDOT Right-of-Way Acquisition and Relocation Assistance Program. Consistent with the USDOT policy, as mandated by the URARPAA, as amended in 1987, TxDOT would provide relocation resources (including any applicable special provisions or programs) to all displaced persons without discrimination.

As mandated by the URARPAA, as amended in 1987, residential replacement structures must be located in the same type of neighborhood and be equally accessible to public services and places of employment. TxDOT would complete a survey of the housing market and provide housing supplements to displaced residents, if necessary. Additionally, TxDOT would relocate residents up to 50 miles. Assistance would be

provided should the local existing housing market be insufficient for relocation. This assistance could apply to the potential residential displacees given the value of some the potentially displaced homes are not commensurate with current available housing values.

A permanent easement from the City of Dallas would be required because construction is proposed to occur within the Dallas Floodway.

Aesthetic Considerations

Urban Design Technical Guidelines to guide the design-build contractor in the development of the overall structural form and aesthetic enhancements of the Dallas Horseshoe Project would be developed. The guidelines would outline specific technical direction on project elements in terms of form, shape, dimension, color palette, and architectural character.

Historical and Archeological Sites

The removal of the existing interim IH 35E HOV crossover structure located between the Houston Street and Jefferson Boulevard viaducts south of the Mixmaster would allow for the restoration of the Houston Street Viaduct southern railing to be restored to its previous appearance by "in-kind replica." The replacement of the railing would comply with a mitigation plan set forth in a THC coordination letter dated September 24, 1996. In addition, the removal of a staircase located along the northern railing of the Houston Street Viaduct south of the Mixmaster would also result of the replacement of railing with "in-kind replica."

If archeological or historic sites are discovered prior to or during construction, work would cease immediately. A TxDOT staff archeologist would then assess the site pursuant to the TAC and the site would be avoided or mitigated according to Section 106 of the NHPA. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

Air Quality

Measures to control fugitive dust would be considered and incorporated into the final design and construction specifications and included on the EPIC sheet that will be included with the final design plan set.

Threatened/Endangered Species and Wildlife Habitat

Prior to any construction activities a qualified biologist shall survey the proposed study area for any listed species, due to the time period that would elapse between this evaluation and the start of construction activities. A brief investigation of the site immediately prior to construction by a qualified wildlife biologist would help to minimize any adverse impacts to species that have limited mobility during roadway construction activities.

Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. Between February 15 and October 1, the contractor would be prepared to prevent migratory birds from building nests per the EPIC plans. In the event that migratory birds are encountered on-site during project

construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided. If species are present, work should cease at that location and TxDOT personnel should be contacted. If any active nests are found, the local USFWS biologist should be contacted by TxDOT to determine an appropriate plan of action.

Direct impacts to the mussel species could occur if a section of the existing bridge were to fall into the Trinity River during demolition. Increased turbidity and sedimentation during bridge construction could pose a threat to survival of the mussel species in the Trinity River. Appropriate measures would be taken to prevent demolition and construction materials from falling into the Trinity River. Any temporary or permanent fill, or work occurring directly in this water, would require prior coordination with TxDOT. Appropriate measures would be taken to prevent demolition and construction materials from falling into the Trinity River. Any temporary or permanent fill, or work occurring directly in this water body would require prior coordination with TxDOT. Mitigation for the construction impacts would require the relocation of mussels to an approved location outside of the project area and monitoring of the relocated mussels. A monitoring plan would be prepared and submitted to TxDOT for approval to document the survival rate of relocated mussels throughout the approved monitoring period. Approved BMPs would be installed, inspected, and maintained as detailed in the construction documents.

EO 13112 and Executive Memorandum on Beneficial Landscaping

In accordance with EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT approved seeding specifications that is in compliance with EO 13112 would be done where possible.

Lakes, Rivers, and Streams

The Trinity River and the Historic Trinity River Channel are considered navigable waterways. This project includes bridge construction in or over a navigable water of the U.S. under Sections 9 and 10 of the Rivers and Harbors Act of 1899. The Section 404/10 activity would be covered under RGP-12, *Modifications and Alterations of Corps of Engineers Projects*. In accordance with the General Bridge Act of 1946 and Section 9 of the Rivers and Harbors Act of 1899, TxDOT coordinated with FHWA to determine if a USCG permit is required for the proposed bridge construction. Pursuant to 23 U.S.C. 144(h), the proposed bridge qualifies for an exemption from the requirements imposed under 33 U.S.C. 401 and 525(b), and the lighting and signal requirements imposed under 33 C.F.R. 118.40(b).

Waters of the U.S., including Wetlands

The placement of temporary or permanent dredge or fill material into waters of the U.S., including wetlands, that are determined to be jurisdictional would be authorized by RGP-12, *Modifications and Alterations of Corps of Engineers Projects*. Mitigation for the permanent Section 404/10 impacts would consist of the construction of a wetland within the southern portion of the hydraulic swale south of IH 30. State of Texas water quality certification, issued on January 21, 2010, is provided through the conditions of RGP-12 for projects that result in a loss of less than 0.5 acre of waters of the U.S.

Floodplains

The proposed project is located within a FEMA designated 100-year floodplain within the City of Dallas in Dallas County, both participants of the NFIP. Therefore, coordination with the local floodplain administrator would be required. The design-build contractor will coordinate with the local floodplain administrator, county floodplain administrator, and state NFIP coordinator as specified in the Technical Provisions and in the EPIC plans. The design-build contractor will provide all information and technical data needed to file LOMR with FEMA. This coordination would take place before construction begins.

The TREIS ROD criteria apply because the Dallas Horseshoe Project would be constructed over and within the Trinity River floodplain. The proposed project would be in compliance with 23 C.F.R. 650 regarding location and hydraulic design of highway encroachments within the floodplains. It would demonstrate that it satisfies the TREIS ROD criteria for no increase in water surface elevations or valley storage for the 100-year and less than five percent valley storage loss for the SPF events. Because of the number of bridge columns proposed to be placed within the Dallas Floodway, a hydraulic swale would be constructed to offset potential impacts to a rise in the water surface elevation. The hydraulic swale would be located at IH 30 between the East Levee and the Trinity River and be approximately 600 ft long, 100 ft wide, and 2 ft deep.

Because the proposed project is within the Trinity River Corridor Development Regulatory Zone, the CDC process would apply. However, per coordination with the City of Dallas in January 2012, it is anticipated that the CDC application would not be needed for the Dallas Horseshoe Project. Final determination of applicability is contingent upon USACE approval of hydraulic analysis performed as part of the Section 408 approval process.

To compensate for the reduction in storage capacity, both Sump Ponds 2 and 3 of the Able Pump Station would be modified in accordance with an approach agreed upon between representatives of TxDOT and City of Dallas during an Able Pump Station coordination meeting held in February 2012.

Water Quality

The runoff from proposed improvements would discharge directly to the Upper Trinity River (Segment 0805), which is listed as threatened/impaired in the 2010 CWA Section 303(d) list. Coordination with TCEQ would be required.

Impacts to stormwater would be minimized as much as possible by utilizing approved temporary and permanent erosion and sediment control best management practice as specified by TCEQ CGP (TXR 150000). The CGP requires that a SW3P, NOI, and NOT be prepared for the proposed project. The proposed project is located within the boundaries of the City of Dallas and TxDOT's MS4 Phase I permits, and TxDOT would need to comply with the applicable MS4 requirements.

Construction equipment, spoil material, supplies, forms, and building shall not be placed or stored in the floodway during construction activities. Any item that may be transported by flood flows shall not be stored within the floodway. Locations of construction trailers and stockpile areas shall be included on project plans and approved by USACE and the

City of Dallas.

Traffic Noise
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.

Hazardous Materials
TxDOT prepared a SGMP for the proposed project. The design-build contractor is responsible for preparing a comprehensive HMMP that will be followed during construction. If the proposed construction activities would disturb soil borings AP-2 and SB016, they would have to be addressed within the plans and specifications. The plans and specifications for the proposed project will include a notice to contractors informing them of the heavy metals, aldrin, and benzo(a)pyrene known at this time.

Additional investigation and assessment of the high risk sites are recommended to identify if construction activities at those locations may encounter contaminants.

The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials and LBP testing would be performed on the existing bridge structures. It is recommended that ACM and LBP testing be performed on the building structures to be removed dependent upon the age of the individual structure. TxDOT would notify the DSHS of the bridge demolition 15-working days prior to the scheduled demolition.

Should unanticipated hazardous materials/substances be encountered, the TxDOT Dallas District Hazardous Materials Section would be notified and steps would be taken to protect personnel and the environment. Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for this project would be removed as soon as the work schedules permit.

Construction Impacts
Construction activities would require temporary lane, local ramp, and cross street closures. In order to minimize construction impacts due to HOV lane closure, the closure to the IH 35E HOV would be limited to the section between the Houston Street Viaduct and Marsalis Avenue, a distance of approximately 3 miles. This approach would allow continued operation of the HOV lane from US 67 to Marsalis Avenue during the construction phase of the proposed project, estimated to last 4 years. Detours would be provided within and around the Mixmaster in order to minimize impacts resulting from road closures. Regardless, access to businesses and residences would be maintained at all times.

Per DART's request, a minimum of 30-days advance notice shall be given to DART before implementing specific construction phases with potential to impact existing DART bus

stops. DART would need this time to develop bus detour routes and inform the public.

City and local public safety officials would be notified of proposed road closures or detours. Detour timing and necessary rerouting of emergency vehicles would be coordinated with the proper local agencies. Lane closures and detours would comply with the MUTCD standards.

The construction equipment for the proposed project would be accessing the construction area within the Dallas Floodway through levee maintenance roads. Any impacted maintenance road would be restored to their pre-construction condition and location following construction completion.

Airway-Highway Clearance

The nearest airport to the proposed project is the Dallas Love Field, located in the City of Dallas. Dallas Love Field airport is approximately 27,000 ft (5 mi) from the proposed project. Because the project would involve the construction of high mast illumination, signing, and bridges that could be an obstruction to air navigation; a Notice of Proposed Construction or Alteration (Form 7460-1) would be filed with the FAA to obtain airway-highway clearance.

12.0 PUBLIC INVOLVEMENT

Past public involvement activities related to the proposed project include the public involvement process for the Trinity Parkway Corridor Major MTIS. For the MTIS, an extensive public and agency involvement outreach program was developed and over 100 presentations were made and eight public meetings were conducted. Additionally, 32 presentations, 6 public meetings and 1 public hearing were held for Project Pegasus. The public involvement followed TxDOT's and FHWA's policies and procedures.

During the preparation of the Dallas Horseshoe Project EA, residents of a Kessler Park neighborhood, located south of IH 30, between Sylvan Avenue and Beckley Avenue, raised traffic noise concerns. To address these concerns, TxDOT met with members of this community as requested on April 24, 2012 and on August 1, 2012. During the meetings TxDOT answered question on traffic noise and on the proposed design. TxDOT explained to community members that no traffic noise abatement is proposed because the project would not result in a traffic noise impact in this neighborhood.

On August 2, 2012, a public hearing was conducted as part of the EA and design schematic process for the Dallas Horseshoe. The public hearing was held at the Hyatt Regency – Room Landmark AB located at 300 Reunion Boulevard, Dallas, TX 75207. On August 2, 2012, a public hearing was conducted as part of the EA and design schematic process for the Dallas Horseshoe. The public hearing was held at the Hyatt Regency –

Room Landmark AB located at 300 Reunion Boulevard, Dallas, TX 75207. This venue was determined based on proximity to the proposed project, capacity, and accessibility by public transportation. Additionally, parking at no cost at a nearby parking lot was available to those attending the hearing.

The public hearing was held, from 6:00 p.m. to 8:30 p.m. An Open House was held from 6:00 p.m. to 7:00 p.m., followed by a formal presentation and an opportunity for public comment. The total registered attendance was 118 persons, which included 1 elected official, 2 public officials, 70 members of the public, and 40 team members, and 5 representatives of the media.

In summary, nine comments were received during the public comment period, which ended on Monday, August 13, 2012. A written comment of support was submitted by the City of Dallas Council Member Linda Koop (District 11) before the public hearing. FEMA submitted a comment regarding compliance with EOs 11988 and 11990. The rest of the comments received were primarily concerned with traffic noise impacts and compatibility with other projects. Other comments were related to stormwater management, project cost, and prioritization of project elements. Overall, the comments received were in support of the project. No comments opposing the project were submitted.

During the preparation for the public hearing, reasonable steps, such as the publication of Bilingual announcements in local papers that informed the public of the opportunity to request the presence of an interpreter (for language or other special communication needs) at the public hearing were taken to ensure that such persons have meaningful access to the programs, services, and information that TxDOT provides. Among other material, bilingual brochures on Title VI the Civil Rights Restoration Act of 1987 were available at the public hearing. The Civil Rights Restoration Act of 1987 provides that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”

13.0 DETERMINATION OF ASSESSMENT

Based on the information in this EA and in the project’s administrative record, TxDOT recommends implementation of the Build Alternative.

The safety of the existing facility would be improved by the replacement of the IH 30 and IH 35E bridge structures. The proposed project would provide a highway facility that would meet current design and safety standards. The reconstruction of the Mixmaster would improve mobility within the project area. This improved mobility would result in reducing the time necessary to move people and goods from one point to another. The construction of the Build Alternative would best meet the need and purpose stated in this document.

The engineering, social, economic, and environmental investigations conducted thus far for the proposed project indicate that it would result in no significant adverse impacts to

the quality of the human or natural environment.

TxDOT requests that FHWA find that implementing the proposed project would not be a major federal action significantly affecting the quality of the human environment and thus issue a FONSI for this project.

APPENDIX A: Maps

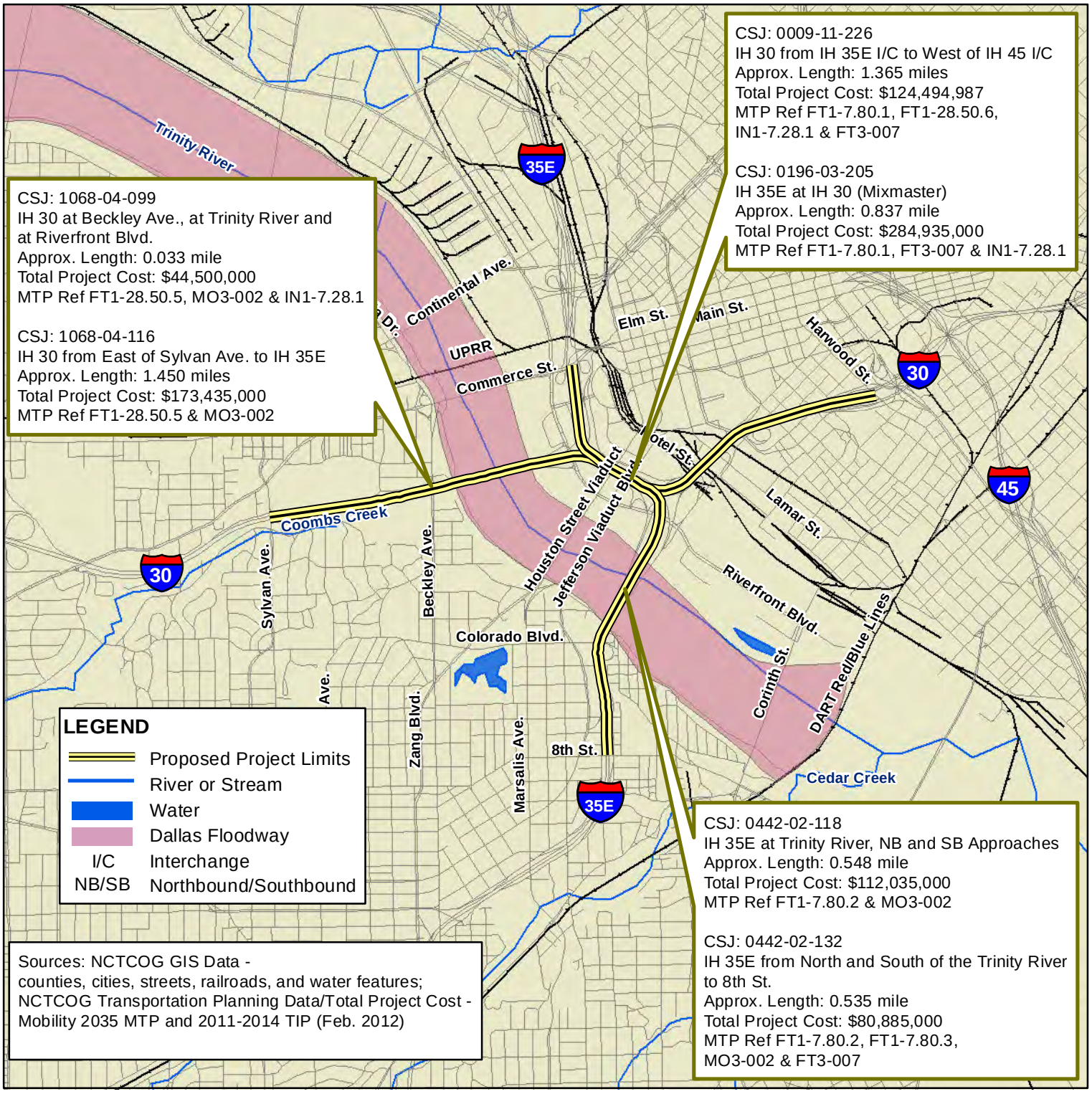


EXHIBIT 1
PROJECT LOCATION MAP

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

ABBREVIATIONS

AM	Morning
CD	Collector distributor Road
DC	Direct-connector
EB	Eastbound
FR	Frontage Road
HOV	High Occupancy Vehicle
IC	Interchange
M	Managed
ML	Mainlanes
NB	Northbound
REV	Reversible
SB	Southbound
WB	Westbound

Texas Department of Transportation

EXHIBIT 2
EXISTING FACILITY

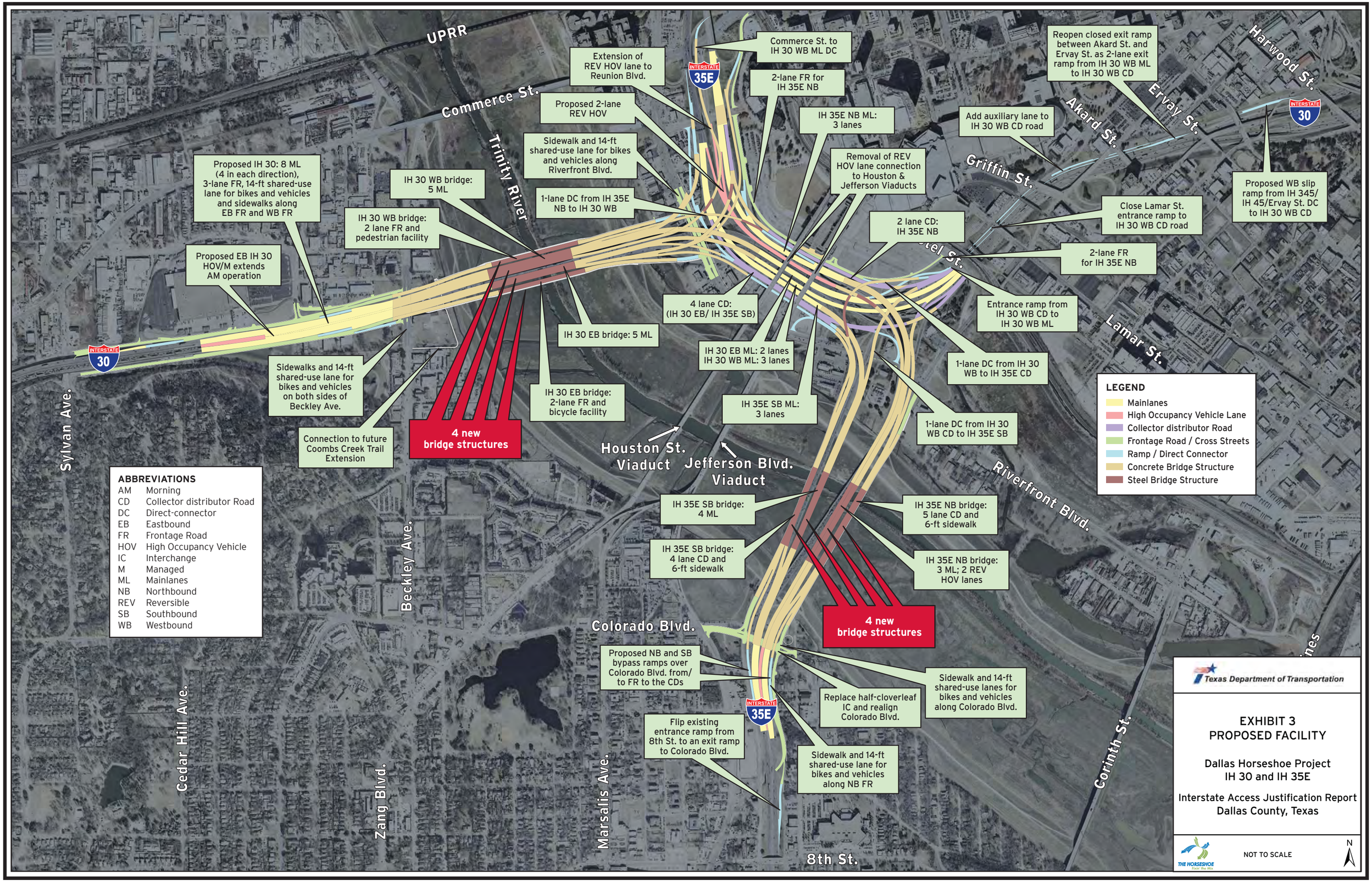
Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

THE HORSESHOE
Fixin' the Mix

NOT TO SCALE

N


UPRR
Commerce St.
Trinity River
Extension of REV HOV lane to Reunion Blvd.
Commerce St. to IH 30 WB ML DC
2-lane FR for IH 35E NB
Proposed 2-lane REV HOV
Sidewalk and 14-ft shared-use lane for bikes and vehicles along Riverfront Blvd.
IH 35E NB ML: 3 lanes
Removal of REV HOV lane connection to Houston & Jefferson Viaducts
Reopen closed exit ramp between Akard St. and Ervay St. as 2-lane exit ramp from IH 30 WB ML to IH 30 WB CD
Add auxiliary lane to IH 30 WB CD road
Harwood St.
Akard St.
Ervay St.
Griffin St.
Proposed WB slip ramp from IH 345/ IH 45/Ervay St. DC to IH 30 WB CD
Close Lamar St. entrance ramp to IH 30 WB CD road
Proposed IH 30: 8 ML (4 in each direction), 3-lane FR, 14-ft shared-use lane for bikes and vehicles and sidewalks along EB FR and WB FR
IH 30 WB bridge: 5 ML
IH 30 WB bridge: 2 lane FR and pedestrian facility
1-lane DC from IH 35E NB to IH 30 WB
2 lane CD: IH 35E NB
2-lane FR for IH 35E NB
Proposed EB IH 30 HOV/M extends AM operation
4 lane CD: (IH 30 EB/ IH 35E SB)
Entrance ramp from IH 30 WB CD to IH 30 WB ML
Lamar St.
IH 30 EB bridge: 5 ML
IH 30 EB ML: 2 lanes IH 30 WB ML: 3 lanes
1-lane DC from IH 30 WB to IH 35E CD
Sidewalks and 14-ft shared-use lane for bikes and vehicles on both sides of Beckley Ave.
IH 30 EB bridge: 2-lane FR and bicycle facility
IH 35E SB ML: 3 lanes
1-lane DC from IH 30 WB CD to IH 35E SB
Connection to future Coombs Creek Trail Extension
4 new bridge structures
Houston St. Viaduct
Jefferson Blvd. Viaduct
Riverfront Blvd.
IH 35E SB bridge: 4 ML
IH 35E NB bridge: 5 lane CD and 6-ft sidewalk
IH 35E SB bridge: 4 lane CD and 6-ft sidewalk
IH 35E NB bridge: 3 ML; 2 REV HOV lanes
4 new bridge structures
Colorado Blvd.
Proposed NB and SB bypass ramps over Colorado Blvd. from/ to FR to the CDs
Sidewalk and 14-ft shared-use lanes for bikes and vehicles along Colorado Blvd.
Replace half-cloverleaf IC and realign Colorado Blvd.
Flip existing entrance ramp from 8th St. to an exit ramp to Colorado Blvd.
Sidewalk and 14-ft shared-use lane for bikes and vehicles along NB FR
8th St.
Corinth St.
Sylvan Ave.
Beckley Ave.
Cedar Hill Ave.
Zang Blvd.
Marsalis Ave.
INTERSTATE 30
INTERSTATE 35E
LEGEND
Mainlanes
High Occupancy Vehicle Lane
Collector distributor Road
Frontage Road / Cross Streets
Ramp / Direct Connector
Concrete Bridge Structure
Steel Bridge Structure
ABBREVIATIONS
AM Morning
CD Collector distributor Road
DC Direct-connector
EB Eastbound
FR Frontage Road
HOV High Occupancy Vehicle
IC Interchange
M Managed
ML Mainlanes
NB Northbound
REV Reversible
SB Southbound
WB Westbound
Texas Department of Transportation
EXHIBIT 3
PROPOSED FACILITY
Dallas Horseshoe Project
IH 30 and IH 35E
Interstate Access Justification Report
Dallas County, Texas
THE HORSESHOE
NOT TO SCALE
N

UPRR
Commerce St.
Trinity River
35E
Reunion Blvd.
Akard St.
Ervay St.
Harwood
30
Griffin St.
Hotel St.
Lamar St.
Planned Trinity Levee Trail
Houston St. Viaduct
Jefferson Blvd. Viaduct
Riverfront Blvd.
30
Coombs Creek Trail
Sylvan Ave.
Beckley Ave.
Colorado Blvd.
Cedar Hill Ave.
Zang Blvd.
Marsalis Ave.
35E
8th St.
Corinth St.

LEGEND

- Proposed Sidewalk
- Proposed Sidewalk (CTB Separated)
- Existing Sidewalk
- Proposed Bike Facility
- 14-ft Shared-Use Lane for Bicycles and Vehicles

2005 Dallas Trail Master Plan

- Existing Trail/Sidewalk/Street
- Proposed/Programmed Trail

2011 Dallas Bike Plan

- Existing Bike Facility
- Facility Needs Further Analysis

EXHIBIT 4
BICYCLE/PEDESTRIAN IMPROVEMENTS

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

NOT TO SCALE

N

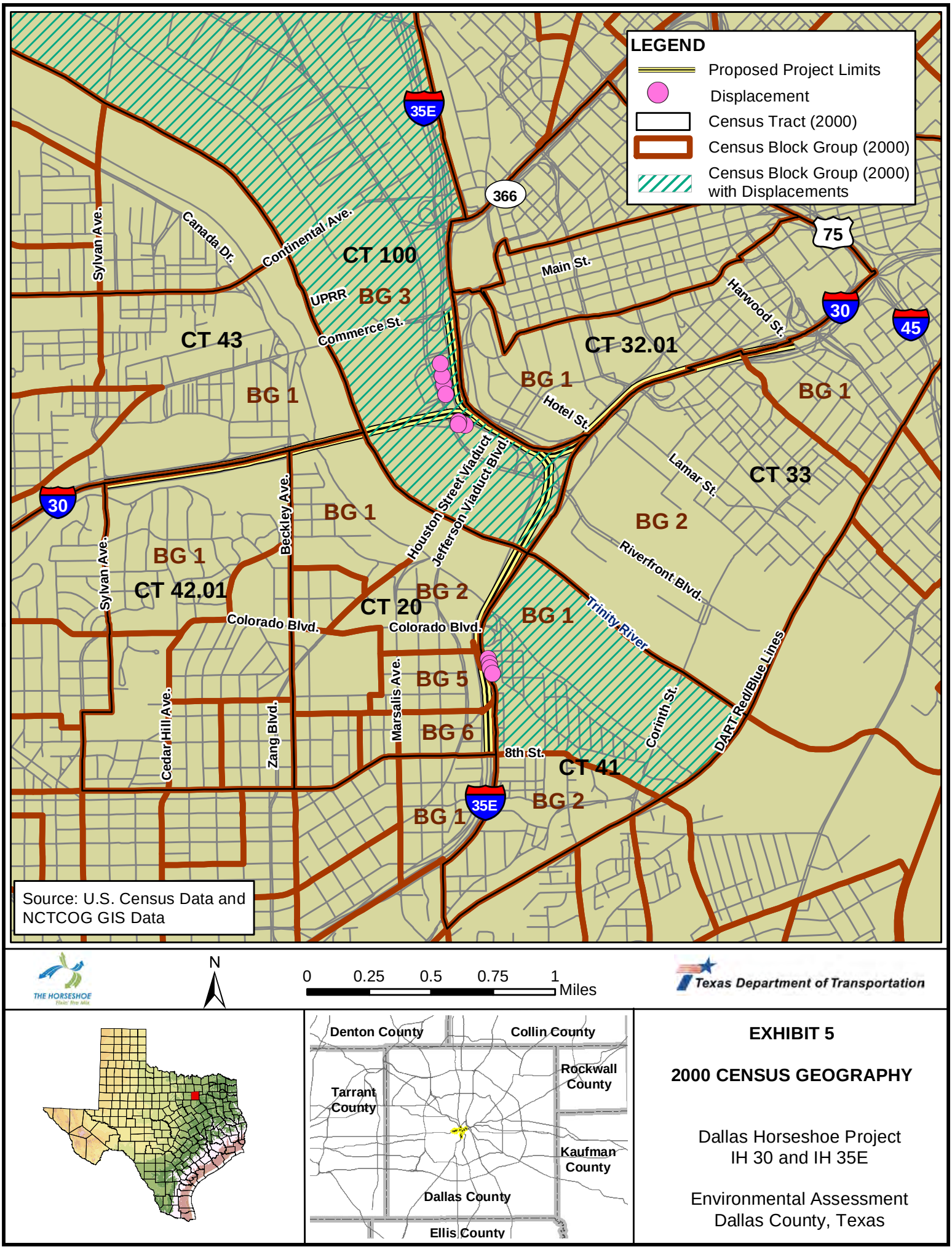


EXHIBIT 5

2000 CENSUS GEOGRAPHY

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

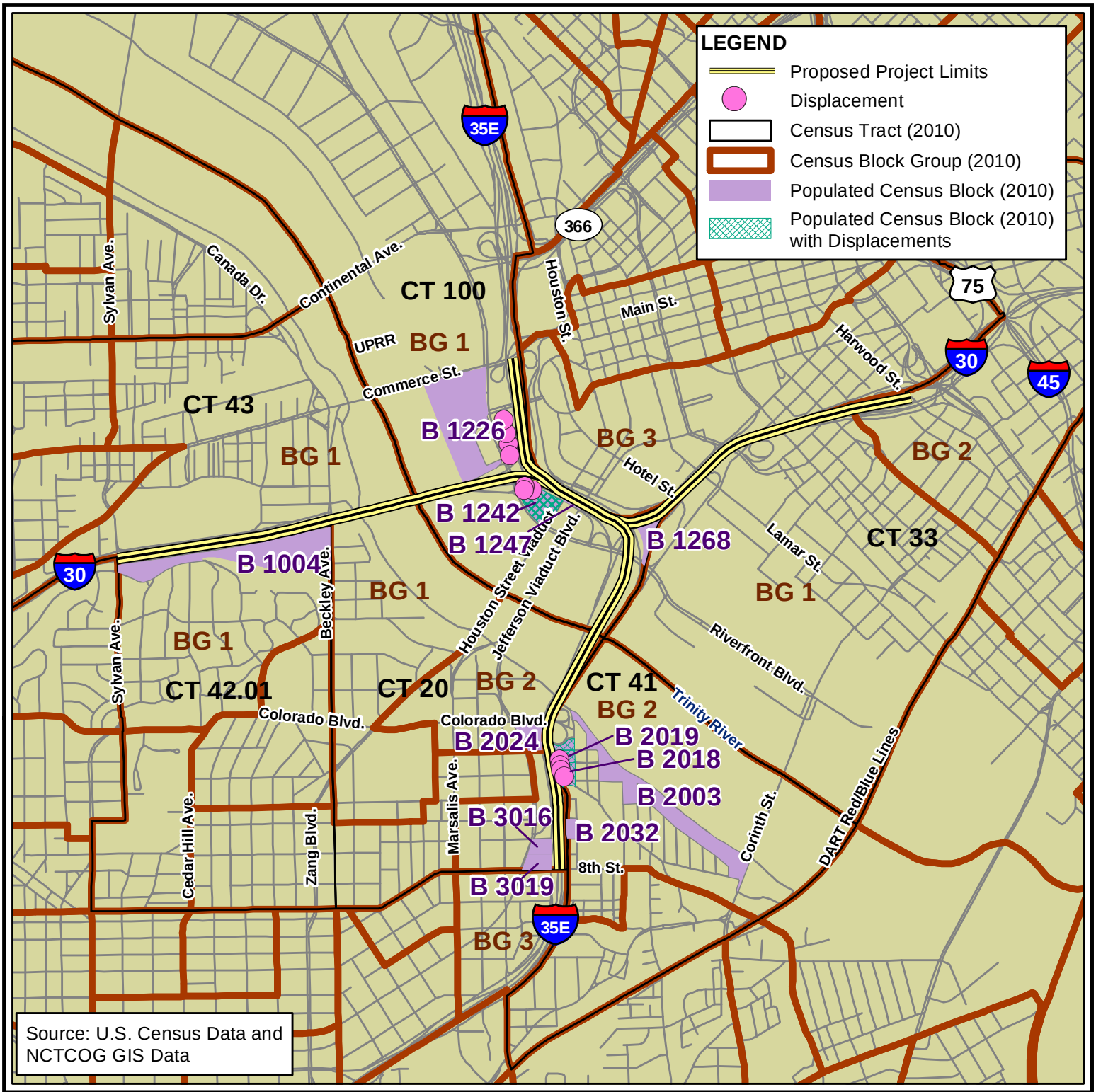
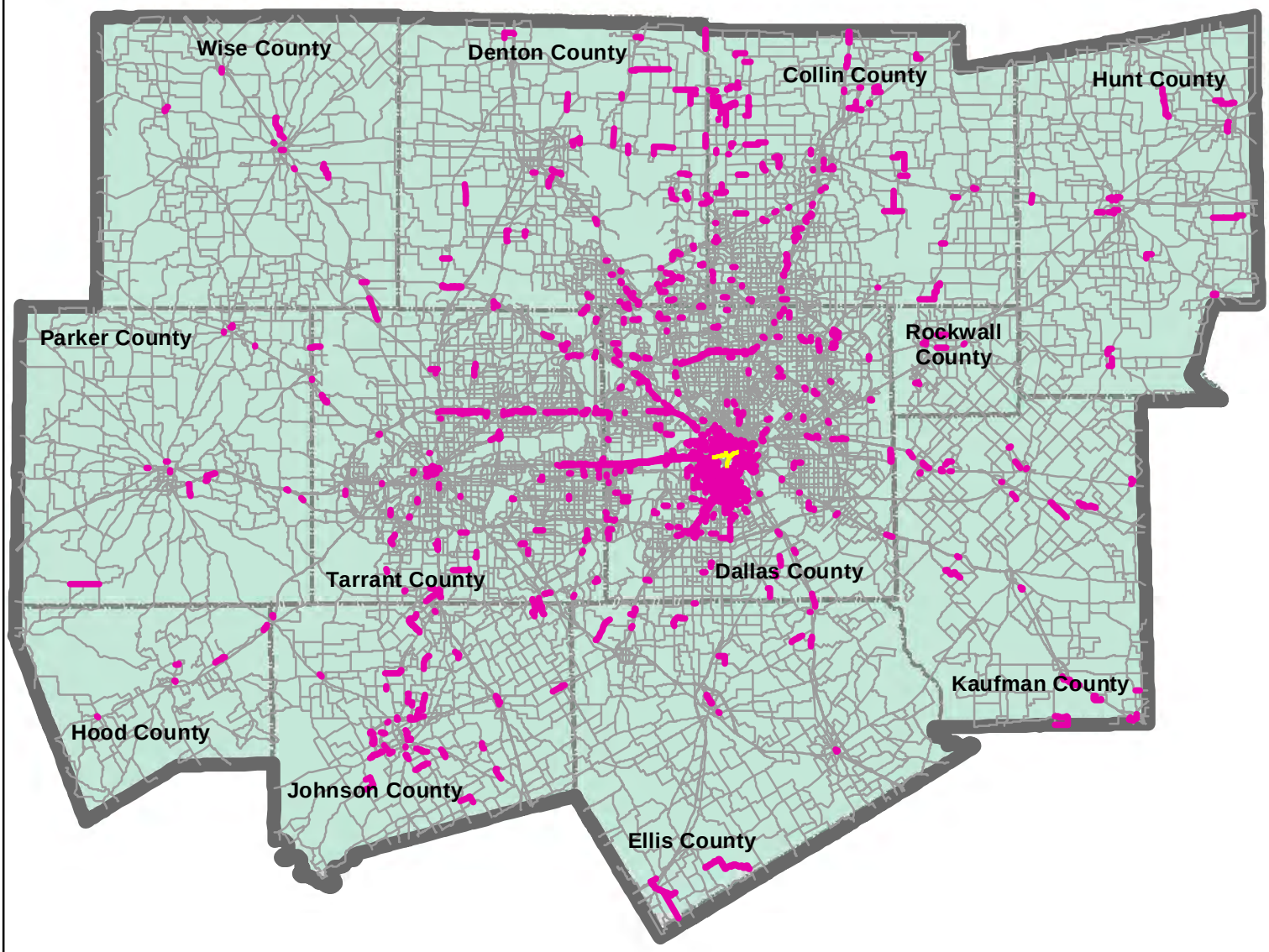


EXHIBIT 6

2010 CENSUS GEOGRAPHY

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



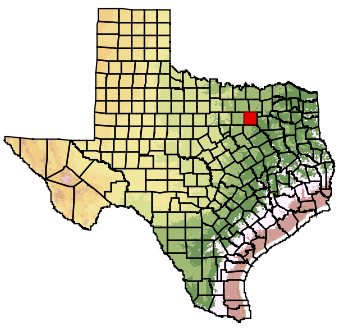
LEGEND

- Proposed Project Limits
- NCTCOG MPA
- Affected Transportation Network 2012

Source: NCTCOG GIS Data and 2012 Traffic Network

N

0 10 20 30 40 Miles



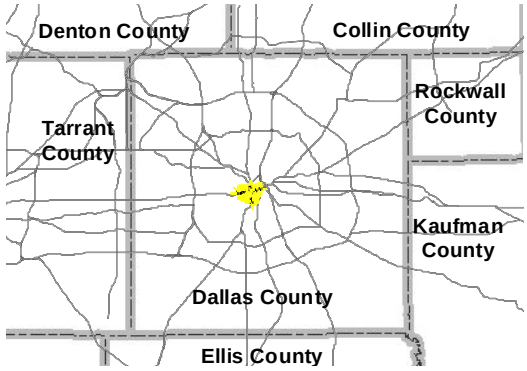
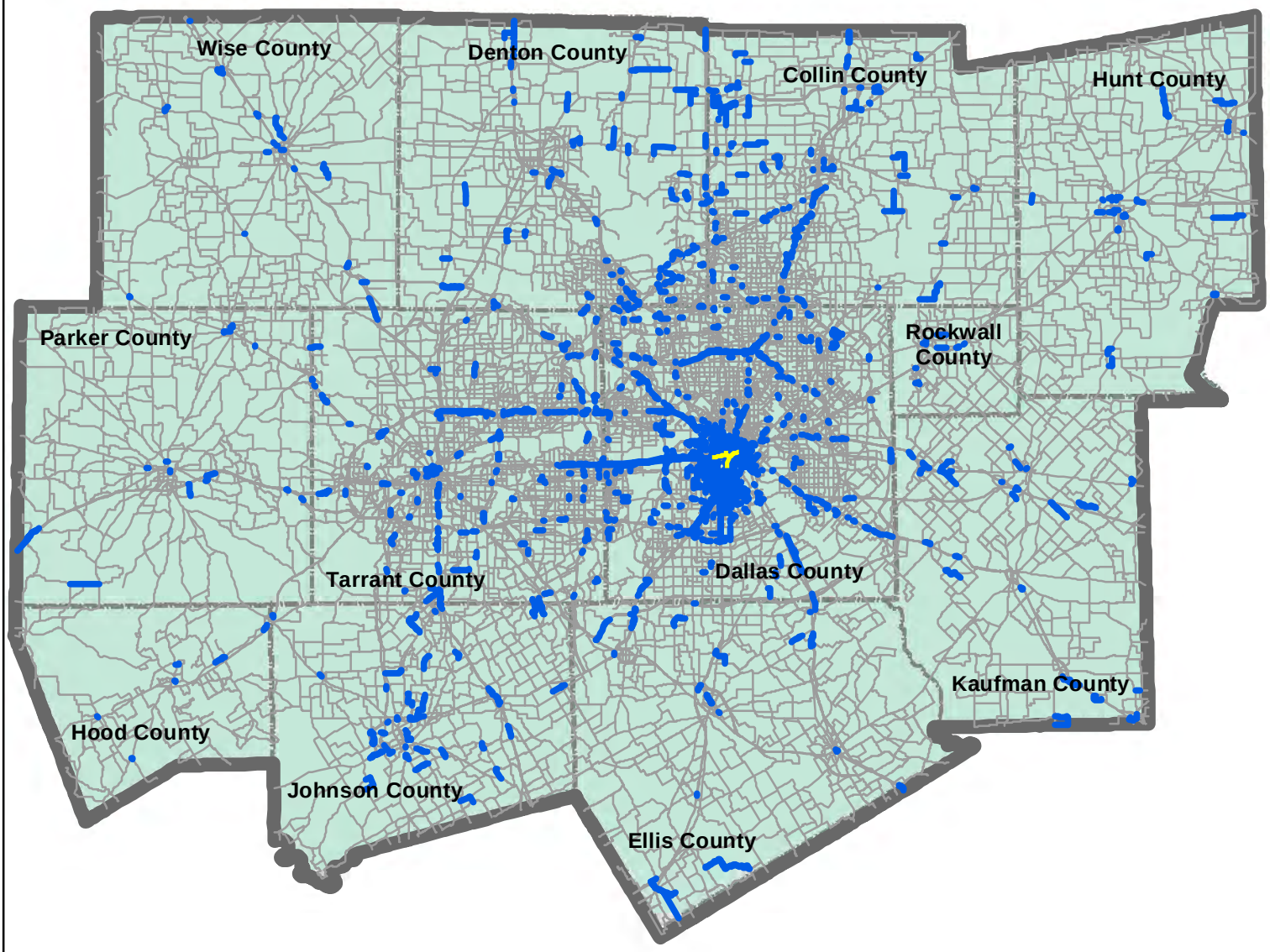


EXHIBIT 7
MOBILE SOURCE AIR TOXICS (MSAT) AFFECTED TRANSPORTATION NETWORK (YR 2012 SCENARIO)
SHEET 1 OF 2

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



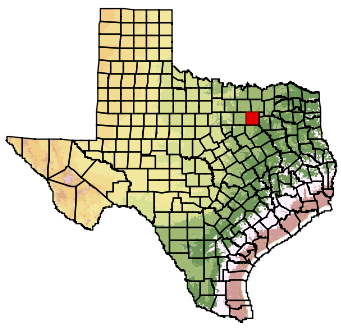
LEGEND

- Proposed Project Limits
- NCTCOG MPA
- Affected Transportation Network 2035

Source: NCTCOG GIS Data and 2035 Traffic Network

N

0 10 20 30 40 Miles



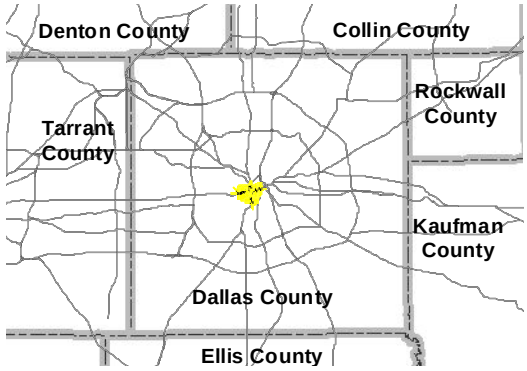


EXHIBIT 7
MOBILE SOURCE AIR TOXICS (MSAT) AFFECTED TRANSPORTATION NETWORK (YR 2035 SCENARIO)
SHEET 2 OF 2

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

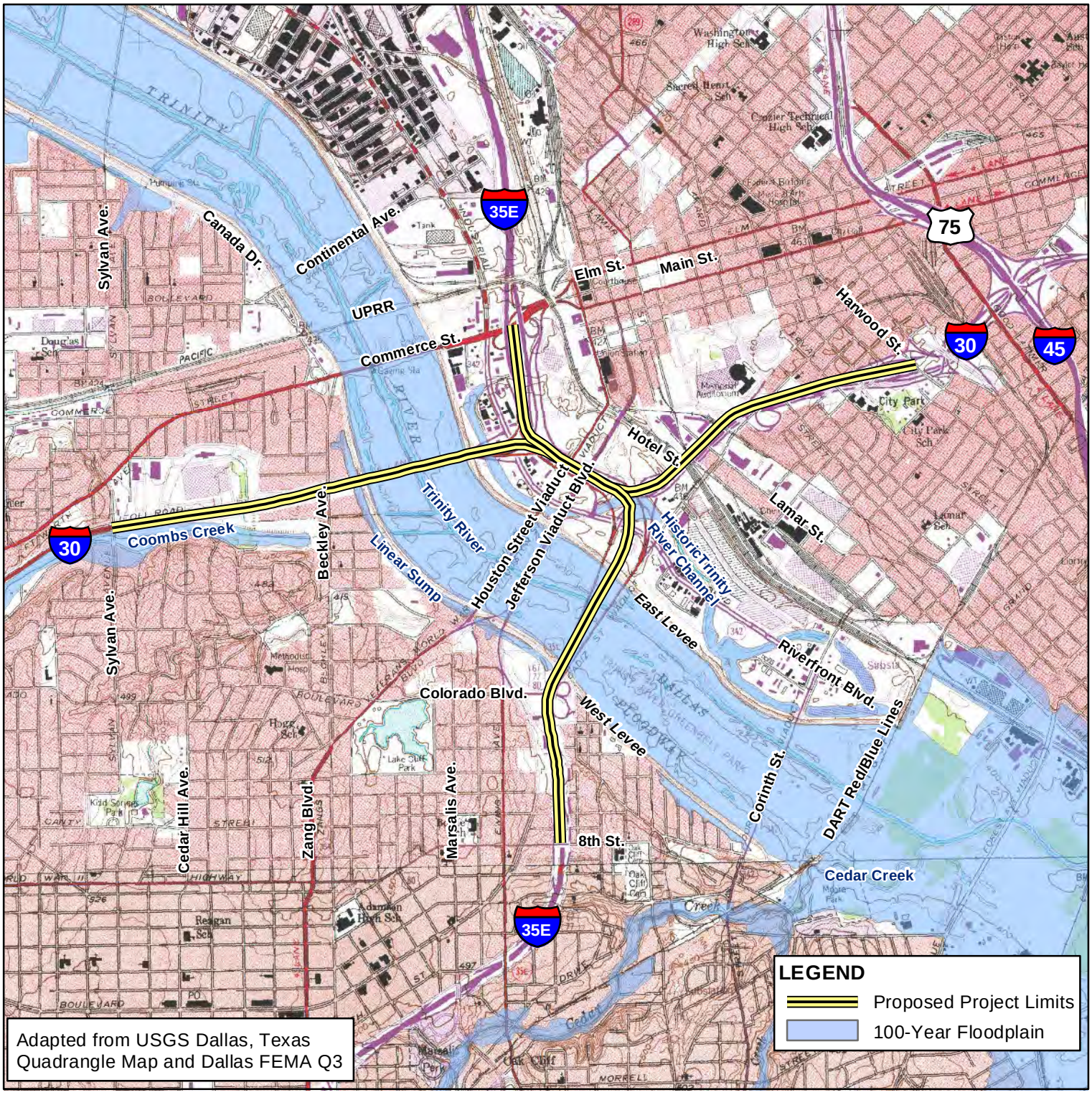
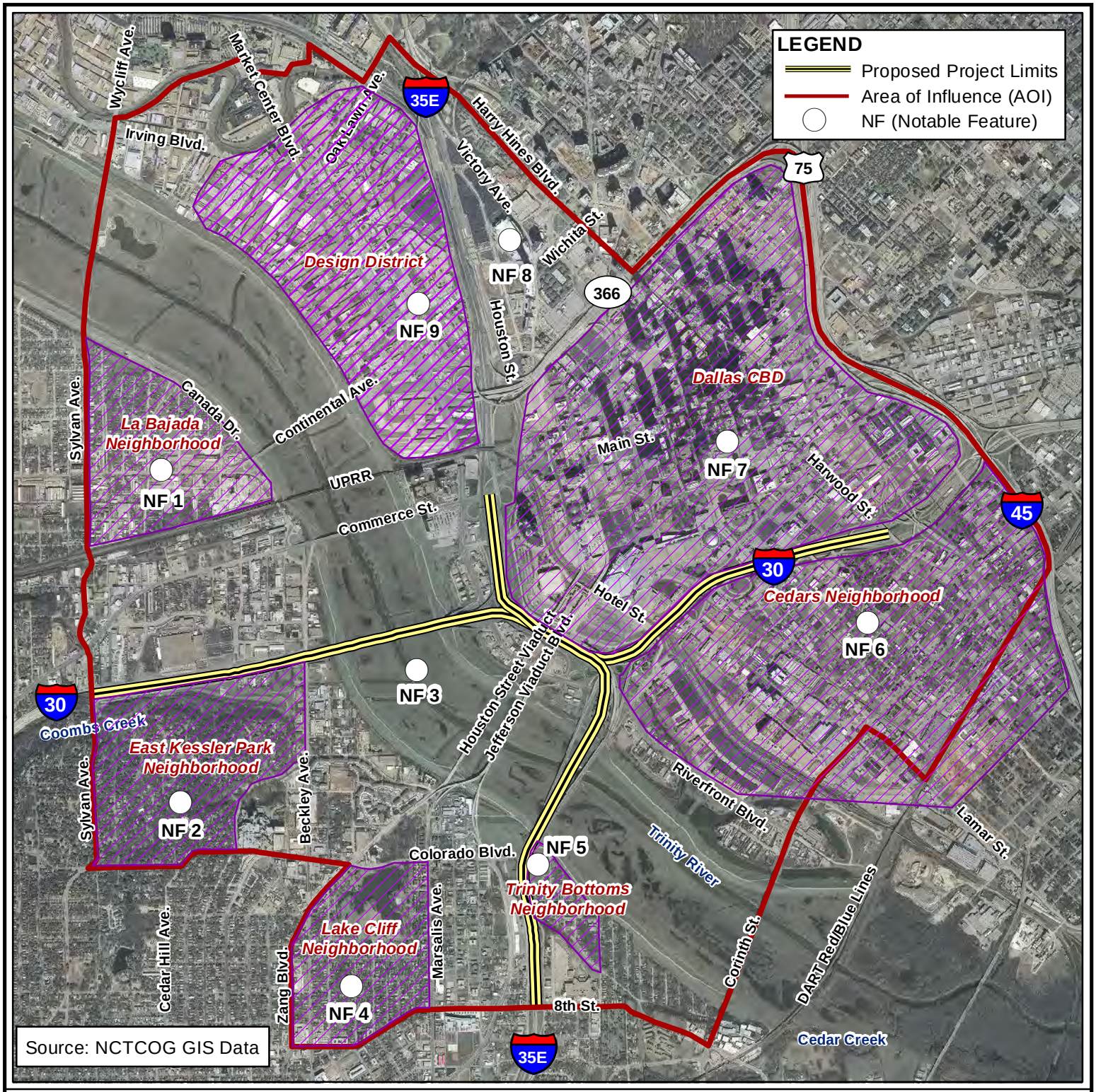


EXHIBIT 8
FEMA FLOODPLAIN AND USGS QUADRANGLE MAP

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

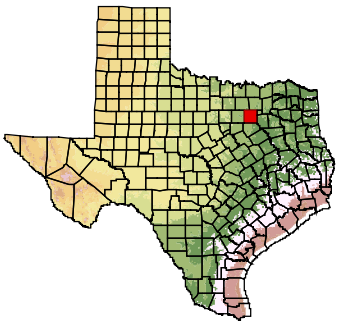


THE HORSESHOE

N

0 0.25 0.5 0.75 1 Miles

Texas Department of Transportation



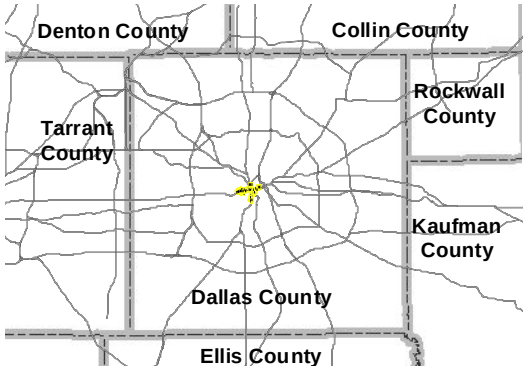
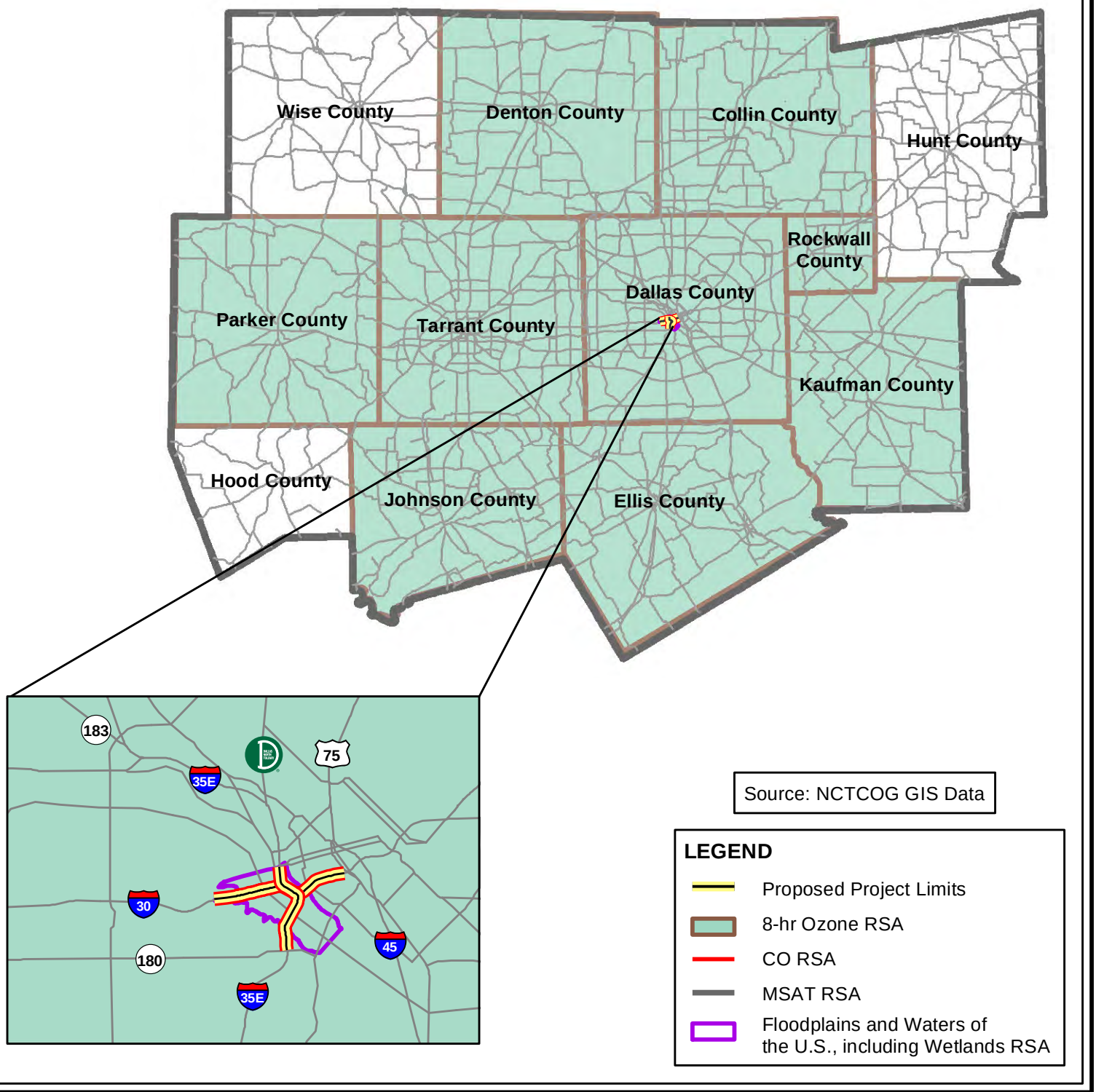


EXHIBIT 9
INDIRECT IMPACTS
AREA OF INFLUENCE

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



Source: NCTCOG GIS Data

LEGEND

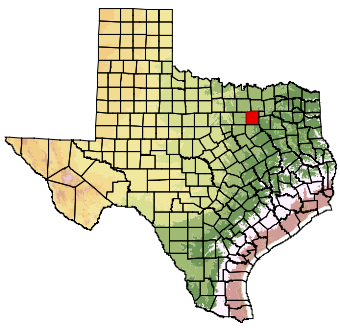
- Proposed Project Limits
- 8-hr Ozone RSA
- CO RSA
- MSAT RSA
- Floodplains and Waters of the U.S., including Wetlands RSA

THE HORSESHOE

N

0 10 20 30 40 Miles

Texas Department of Transportation



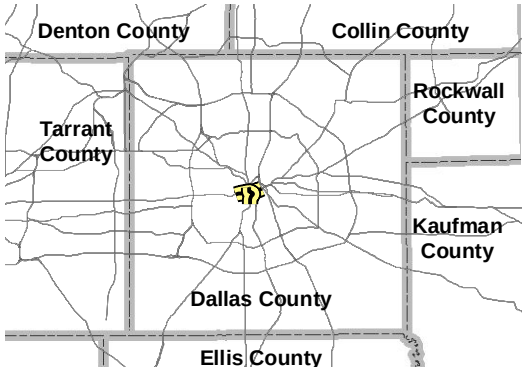


EXHIBIT 10
CUMULATIVE IMPACTS RESOURCE STUDY AREAS

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

APPENDIX B: Draft Section 408 Environmental Compliance Information

SECTION 408
ENVIRONMENTAL COMPLIANCE INFORMATION

DALLAS HORSESHOE PROJECT
IH 30 and IH 35E

SEPTEMBER 2012

TABLE OF CONTENTS

ATTACHMENTS

TABLES

1.0 INTRODUCTION

The Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT) propose improvements to Interstate Highway (IH) 30 and IH 35E near downtown Dallas in Dallas County, Texas, a distance of approximately 5 miles. The proposed improvements collectively referred to as the "Dallas Horseshoe Project," include the replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway. The proposed project encompasses the reconstruction of sections of the IH 30/IH 35E interchange, locally known as the "Mixmaster," to include general purpose lanes, collector distributor roads, access ramps, and direct connection ramps. Other improvements include the extension of the existing reversible high occupancy vehicle (HOV) lanes along IH 35E. In addition, the proposed facility would improve the frontage roads and accommodate pedestrian and bicycle facilities throughout.

The Dallas Horseshoe Project would traverse the Dallas Floodway; which is a public works project within the U.S. Army Corp of Engineers (USACE) jurisdiction; therefore, in accordance to 33 U.S. Code (U.S.C.) Section 408, commonly referred to as Section 408, USACE review and approval of the proposed action would be required.

In accordance with Section 408 requirements, any alteration of a USACE public works project requires USACE review and approval to ensure that the alteration does not adversely impact the USACE Public Works, in this case the Dallas Floodway. In accordance with 33 Code of Federal Regulations (C.F.R.) Section 230, Procedures for Implementing the National Environmental Policy Act (NEPA) [Engineering Regulation (ER) 200-2-2], a NEPA document must be prepared to address the impacts to the environment as a result of the proposed action. Because the Dallas Horseshoe Project is a transportation project, the FHWA is the lead agency.

FHWA requested that USACE participate as a cooperating agency on this project due to their legal jurisdiction of the Dallas Floodway and to maximize interagency coordination. In December 2011, USACE formally accepted status as a cooperating agency and stated that USACE jurisdiction would focus on those activities pertaining to Section 408 issues and Sections 404 and 10 processes. The letter from FHWA requesting USACE participation as a cooperating agency and USACE response letter are available for review in **Appendix F: Agency Coordination** of the FHWA Environmental Assessment for the Dallas Horseshoe Project, referred to as the "EA."

The purpose of this document is to provide supplemental information for environmental compliance of the Section 408 process. This document would help the USACE determine whether or not the Dallas Horseshoe Project also referred to as the "Proposed Action" would result in an alteration, permanent occupation, or use of a federal project that would be injurious to the public interest and whether or not it would impair the usefulness of the Dallas Floodway. The potentially impacted resources include: geology and soils, water resources (i.e., groundwater; lakes, rivers, and streams; waters of the U.S. including wetlands; floodplains; and water quality); biological resources [i.e., vegetation and wildlife habitat, threatened and endangered species, migratory bird treaty act (MBTA)]; cultural resources (i.e. historic and archeological); and hazardous materials. Other items of special

interest include utilities, public safety, and aesthetic and visual resources. Construction impacts are considered temporary and are addressed under each resource.

Project Limits

Improvements along IH 30 extend from Sylvan Avenue to west of IH 45; and along IH 35E, from 8th Street to IH 30. The Project Location Map in **Appendix A: Exhibit 1** of the EA illustrates the project limits.

1.1 Section 408

Under Section 408, any proposed modification to an existing USACE project, whether federally or locally maintained, that goes beyond those modifications required for normal operation and maintenance (O&M) requires a determination by the Secretary of the Army that the proposed alteration, permanent occupation, or use of a federal project would not be injurious to the public interest and would not impair the usefulness of such work. Any proposed temporary or permanent alteration, occupation, or use of any public works, for any purpose is only allowable with the permission of the Secretary of the Army. The authority to make this determination and approve modifications to federal works under Section 408 has been delegated to the Chief of Engineers, USACE.

TxDOT's consultant, HNTB Corporation (HNTB), is the Engineer of Record (EOR) throughout the Section 408 process and as such responsible to perform the preliminary geotechnical analysis, hydraulic and hydrology analysis, and O&M assessment. However, the design-build contractor will become the EOR for the final design. If design changes result in substantially different information from the preliminary analysis provided by HNTB, the design-build contractor or EOR would be responsible for any additional geotechnical analysis, hydrology and hydraulics analysis, and for revisions to the O&M assessment.

1.2 Design Considerations

Conceptual bridge design considerations for the IH 30 mainlane and IH 35E mainlane and frontage crossings were developed for the proposed project as part of the *Draft Urban Design Technical Guidelines*. The guidelines developed through an iterative process with TxDOT and City of Dallas, for the Dallas Horseshoe Project include urban design details for aesthetics and opportunities for structural form and architectural enhancements. The purpose of the guideline document is to guide the design-build contractor in the development of the overall structural form and aesthetic enhancements of the Dallas Horseshoe Project.

These guidelines outline specific technical direction on project elements in terms of form, shape, dimension, color palette, and architectural character to guide final design by the design-build contractor. The guidelines define elements of the vehicular and pedestrian bridges, columns, caps, ramps, direct connectors, walls, traffic barriers, sidewalks and approaches, directional signage, roadway lighting, under-bridge treatments, and aesthetic lighting.

The design considerations developed include:

- Prestressed concrete I-beam with cast-in-place single or multiple column bents.
- Prestressed concrete I-beam with cast-in-place single or multiple column bents and/or steel welded plate I-girder superstructures as determined by the design-build contractor. This will reduce the amount of columns located with the Dallas Floodway.
- Prestressed concrete I-beam with cast-in-place single or multiple column bents and/or steel welded plate I-girder superstructures as determined by the design-build contractor. Longer steel spans would be specified for the section of the proposed IH 30 and IH35E bridges across the Dallas Floodway. This will reduce the amount of columns located within the floodway and provide a structural form that responds to the design of the Trinity River Greenbelt Park.

The design consideration selected provides longer steel spans specifically for the section of the proposed IH 30 mainlane and IH35E mainlane and frontage bridges across the Dallas Floodway. It would reduce the amount of columns located within the floodway, provide the fewest penetrations, and therefore reduce potential impacts to the Dallas Floodway. It would also provide a bridge structure more compatible with the existing uses within the Dallas Floodway and the future Trinity River Greenbelt Park design.

The *Draft Urban Design Technical Guidelines* for the Dallas Horseshoe Project are available for review at the TxDOT Dallas District Office, 4777 E. Highway 80, Mesquite, Texas 75150-6643.

1.3 Approach

In order to avoid duplicating information presented in the EA, only those resources with potential to be impacted by the modification to the USACE Public Works project under the Proposed Action are included in this appendix. Potential impacts to other resources such as socio-economics, aesthetic considerations, air quality, items of special concern (i.e., airway-highway clearance); indirect and cumulative impacts; and other issues such as traffic noise can be found in **Section 8.0, Specific Areas of Environmental Concern** of the EA as follows:

- Socio-economics Impacts: **Section 8.1**
- Aesthetic Considerations: **Section 8.3**
- Air Quality: **Section 8.5**
- Noise: **Section 8.8**
- Items of Special Nature: **Section 8.11**
- Indirect Impacts: **Section 9.0**
- Cumulative Impacts: **Section 10.0**

Other project pertinent information regarding the existing and proposed facilities, project funding, need and purpose, alternatives, surrounding area description, mitigation and monitoring commitments, public involvement as well as determination of assessment can be found in EA **Sections 2.0**, **3.0**, **4.0**, **5.0**, **6.0**, **7.0**, **11.0**, **12.0**, and **13.0**, respectively.

1.4 Right-of-Way Acquisitions, Easements, Displacements, and Relocations

As stated in **Section 3.2** of the EA, the proposed project would traverse approximately 53.7 acres of land located within the Dallas Floodway. The land, which is within a floodplain area, is owned by the City of Dallas and under USACE and Federal Emergency Management Agency (FEMA) jurisdiction. The City of Dallas owns in fee simple all real estate interests required for construction within the floodway. TxDOT would acquire a permanent easement from the City of Dallas for the proposed work across the Dallas Floodway. Existing and proposed right-of-way (ROW), including the proposed TxDOT permanent easement within the Dallas Floodway, are displayed in **Appendix D: Constraints Maps** of the EA.

There would be no displacements within the Dallas Floodway. Drainage easements would not be required. Temporary construction easements may be required; however, their location has not been determined at this stage of project development.

2.0 ENVIRONMENTAL CONSEQUENCES

The potential environmental consequences resulting from the Proposed Action are discussed in the sections below. In general, environmental consequences can be considered temporary or permanent in nature. Permanent impacts are those anticipated to last indefinitely. Temporary impacts consist of those that would result from construction activities (i.e., construction staging, excavation, hauling, access, etc.) anticipated to last for some period of time but that would eventually return to pre-construction contours. Pre-construction activities/site preparation activities include installation of best management practices (BMPs) such as erosion control devices in accordance with the storm water pollution prevention plan (SW3P).

Estimates of the potential environmental impacts resulting from the Proposed Action were based on the following assumptions:

- The construction area within the Dallas Floodway was assumed to be 100 ft from each side of the proposed IH 30 and IH 35E bridges;
- The construction equipment for the proposed project would be accessing the construction area within the Dallas Floodway through levee maintenance roads. Any impacted maintenance road would be restored to their pre-construction condition and location following construction completion;
- Proposed activities within the Dallas Floodway would include:
    a. Removal of existing bridge structures for IH 30 and IH 35E across the Dallas Floodway;
    b. Construction of foundations for the proposed IH 30 and IH 35E new bridge structures and proposed relocation of Oncor transmission towers; and
    c. Construction of temporary bridge over the Trinity River channel for moving equipment within the floodway during construction of the proposed IH 30 and IH 35E bridges.

2.1 Geology and Soils

The study area for geology and soils corresponds to the area necessary to construct the proposed project which could incur temporary and permanent impacts resulting from the

construction activities. The study area at IH 30 and IH 35E is within the limits of the project ROW and extends to the residential and commercial property boundaries on the east and west sides of the Dallas Floodway. The geology and soils; water resources; and, biological resources study area collectively comprise the natural resources study area.

The regional geology of the Upper Trinity River Basin reflects the various depositional phases and environments that took place during Pennsylvanian, Cretaceous, and Quaternary geologic eras. The oldest strata, which are exposed in the northwestern reaches of the basin, are Pennsylvanian in age and consist of marine and near shore sand, shale, and limestone strata. Cretaceous strata, consisting of near shore sand and marine shale and limestone are exposed at the surface over most of the Upper basin. The Cretaceous sediments, which dip gently toward the east and southeast, were deposited unconformably over the northwest-dipping Pennsylvanian strata after a period of lifting and erosion (*The Geology of Dallas County*, University of Texas Bulletin, No. 1818, Shuler, 1913). No unique geologic features or geologic hazards are located within the study area.

The rock outcroppings in Dallas County are of the Upper Cretaceous Woodbine formation. The uppermost division of the Woodbine formation is the Lewisville beds. This division is composed of sands and sandy clays, and outcrops in a small area about six miles long and a mile wide along the western boundary of the county north of the Trinity River floodplain. Three broad belts of rock running slightly east and north divide the remainder of the county into sub-equal divisions. The western belt is underlain by bluish-black and gray shales of the Eagle Ford formation; the middle belt is underlain by the indurated chalks and shaly limestone of the Austin formation; and, the eastern belt is composed of the soft shales, marls, and clays of the Taylor formation.

Three general soil types, the Eddy-Stephen-Austin, Trinity-Frio, and Silawa-Silstid-Bastsil, are present within the study area according to the Soil Survey of Dallas County, Texas, February, 1980, U.S. Department of Agriculture (USDA) – NRCS. The Eddy-Stephen-Austin is very shallow to moderately deep and gently sloping to moderately steep loamy and clayey soils on uplands. The Trinity-Frio is deep, nearly level clayey soils on floodplains. The Silawa-Silstid-Bastsil is deep, nearly level to sloping loamy and sandy soils on stream terraces.

Farmland Protection Policy Act
The proposed project is located within an urbanized area and there are no prime farmland soils located within the proposed ROW. The proposed project is exempt from the requirements of the Farmland Protection Policy Act and requires no coordination with the Natural Resource Conservation Service.

2.1.1 Environmental Consequences

Soils would be disturbed during construction and maintenance activities associated with the Proposed Action. The proposed project would displace existing soils for the construction of bridge piers within the Dallas Floodway. This would reduce the ability of nutrients to disperse in some locations within the study area. This is limited to the area of pier penetration, and would therefore not substantially affect the vegetation present within the

soils. Soil disturbance could result in temporarily increased erosion rates until the disturbed areas re-vegetate.

However, this temporary increase would be mitigated through engineering measures during construction and maintenance activities and using BMPs included as part of the Proposed Action. Appropriate temporary erosion and sedimentation control practices such as temporary vegetation, mulch, sod, silt fences, rock berms, grassy swales, and vegetation-lined ditches would be installed prior to the initiation of construction as applicable and would be maintained throughout the duration of the construction. Disturbed areas that are seeded or resodded would be checked periodically to ensure that grass coverage is properly maintained and would be watered, fertilized, and reseeded or sodded if necessary. These additional actions would help reduce erosion.

The spoil material would be removed from the Dallas Floodway and either stockpiled for future maintenance needs or, if contaminated, disposed of properly according to the Hazardous Materials Management Plan (HMMP) developed for the proposed project. Future maintenance could consist of restoring existing maintenance to pre-construction conditions after construction is completed. Implementation of the Proposed Action would result in minor impacts to geology and soils.

2.2 Water Resources

The study area for water resources encompasses the area necessary to construct the proposed project and that could incur temporary and permanent impacts resulting from the construction activities within the Dallas Floodway and adjacent sumps. The study area at IH 30 and IH 35E is within the limits of the proposed ROW (i.e., construction area within the Dallas Floodway assumed to be 100 ft from each side of the proposed IH 30 and IH 35E bridges) and extends out on the land side of the levees to include the sumps and sump ponds associated with the Dallas Floodway.

2.2.1 Groundwater Resources

There are two water-bearing aquifers underlying the study area, which include the Woodbine aquifer and the Paluxy formation. The Woodbine aquifer and Paluxy formation are part of the Trinity group, a major aquifer in the state of Texas. The Woodbine aquifer is composed of sandstone beds interbedded with shale and clay. This aquifer is divided into three water-bearing zones that differ in productivity and quality. The lower two zones of the aquifer are accessed to supply water for domestic and municipal uses. The upper Woodbine zone contains water of very poor quality. Heavy municipal and domestic uses have contributed to over 100 feet (ft) in water-level declines within these aquifers throughout North Central Texas. The aquifer reaches a maximum depth of 2,500 ft below land surface level with a maximum thickness of approximately 700 ft. The Paluxy formation, a minor aquifer, is a relatively thin stratigraphic unit composed of sandstone, limestone, and shale. This formation is charged with fresh to slightly saline water. The most extensive exploitation of the Paluxy formation has occurred around the Dallas-Fort Worth (DFW) metropolitan area of Tarrant and western Dallas counties. Extensive development of these aquifers has

occurred in the DFW region where water levels have historically dropped as much as 550 ft according to the Texas Water Development Board.[1]

2.2.2 Lakes, Rivers, and Streams

There are two named waterways located within the proposed project limits. These are the Trinity River and the Historic Trinity River Channel. These are depicted on **Exhibit 8-FEMA Floodplain and USGS Quadrangle Map** in **Appendix A** of the EA. The Trinity River is a man-made channel that re-routed the hydraulic conveyance from the natural channel to the present-day straightforward alignment and location. The Historic Trinity River Channel is located east of the East Levee and flows under IH 30 and IH 35E. One linear sump traverses the proposed project limits under IH 30 on the west side of the West Levee and one is located on the east side of the East Levee at IH 35E.

The Trinity River and the Historic Trinity River Channel are considered navigable waterways. This project includes bridge construction in or over a navigable water of the U.S. under Section 10 of the Rivers and Harbors Act of 1899.

2.2.3 Waters of the U.S., including Wetlands (Executive Order 11990)

Pursuant to Executive Order (EO) 11990 (Protection of Wetlands), Section 404 of the Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act of 1899, an investigation was conducted to identify potential jurisdictional waters of the U.S., including wetlands, within the study area. The study area encompasses the area necessary to construct the proposed project and that could incur temporary and permanent impacts resulting from the construction activities within the Dallas Floodway and adjacent sumps. The study area at IH 30 and IH 35E is within the limits of the project ROW and extends out on the land side of the levees to encompass the sumps and sump ponds associated with the Dallas Floodway. Results of the investigation are included in **Section 8.7.2** of the EA.

2.2.4 Floodplains (Executive Order 11988)

Executive Order 11988 pertains to floodplain management and directs all federal agencies to avoid, if possible, development and other activities in the 100-year floodplain. Where the base floodplain cannot be avoided, special considerations and studies for new facilities and structures are needed. Design and siting of facilities and structures are based on scientific, engineering, and architectural studies, such as, consideration of human life, natural processes, cultural resources, and the planned life span of the preferred alternative. Federal agencies are required to:

- Reduce the risk of flood loss;
- Minimize the impact of floods on human safety, health, and welfare; and,
- Restore and preserve the natural and beneficial values served by floodplains in carrying out agency responsibilities.

[1] Ashworth, John B. and Janie Hopkins. 1995. *Aquifers of Texas*. Texas Water Development Board, Report 345.

USACE ER 1165-2-26 contains the USACE's policy and guidance for implementing EO 11988. Per ER 1165-2-26, the USACE must first determine whether there are practicable alternatives to placing a proposed project in a floodplain. In addition, ER 1165-2-26 specifies that all reasonable factors should be taken into consideration when determining practicability. These factors are: conservation; economics; visual; natural and beneficial values served by floodplains; impact of floods on human safety; locational advantage; the functional need for locating the development in the floodplain; historic values; fish and wildlife habitat values; endangered and threatened species; federal and state designations of wild and scenic rivers, refuges, etc.; and, in general, the needs and welfare of the people.

The proposed project is located within a FEMA designated 100-year floodplain. The Trinity River Environmental Impact Statement (TREIS) Record of Decision (ROD) criteria would need to be met as the proposed project would be constructed over and within the Trinity River floodplain. Because the proposed project is within the Trinity River Corridor Development Regulatory Zone, a Corridor Development Certificate (CDC) would be required. The proposed project would need to demonstrate, individually and cumulatively, that there is no increase in water surface elevations or valley storage for the 100-year and less than five percent valley storage loss for the Standard Protection Flood (SPF) event.

Because of the total number of bridge columns for the Proposed Action that would be placed within the Dallas Floodway, a hydraulic swale would be constructed to offset potential impacts to a rise in the water surface elevation. The hydraulic swale would be located at IH 30 between the East Levee and the Trinity River. It would be approximately 600 ft long, 100 ft wide and 2 ft deep. The southern portion of the hydraulic swale would be utilized for wetland mitigation. A berm would separate the wetland mitigation area from the remaining portion of the hydraulic swale. The location of the hydraulic swale is shown the **Constraints Maps** in **Appendix D** of the EA.

Sump Ponds 2 and 3 of the Able Pump Station would have fill material placed within the north portion of the existing ponds to provide an adequate road base for construction of a proposed ramp and a collector distributor road. This fill material, in addition to new bridge substructure, would reduce the current storage capacity of the existing sump ponds. To compensate for this reduction in storage capacity, both Ponds 2 and 3 would be modified in accordance with an approach agreed upon between representatives of TxDOT and City of Dallas during an Able Pump Station coordination meeting held in February 2012.

Material would be excavated between the southern limits of the existing ponds and Riverfront Boulevard and along the western edge of Pond 2, to compensate for the loss of storage capacity. The excavation would ensure that the existing total storage capacity of Sump Ponds 2 and 3 would be maintained. Due to the construction of the proposed collector-distributor, the existing culvert under IH 35E that discharges into Pond 2 would be reconstructed under the proposed pavement to the new northern edge of the ponds. The existing culvert interconnecting Ponds 2 and 3 would be removed and a new culvert constructed to accommodate new bridge substructures and the required flow capacity established by the City of Dallas for the new Able Pump Station design.

The existing two culverts under Riverfront Boulevard that interconnect Pond 1 to Pond 2 may also be modified. The existing upstream headwalls for these culverts in Pond 2 may be relocated or modified to accommodate the revised limits of Pond 2. The existing culverts under Riverfront Boulevard will be replaced as part of a separate project planned by the City of Dallas and Dallas County to reconstruct Riverfront Boulevard from Continental Avenue to Cadiz Street. The existing culvert under Cadiz Street that interconnects Able Sump Pond 3 to Pond 4 will be replaced under a separate project planned by the City of Dallas to reconstruct Cadiz Street from South Lamar Street to Riverfront Boulevard.

2.2.5 Water Quality

A portion of the Upper Trinity River watershed is located within the study area. This portion of the watershed has undergone extensive development in the last several decades. As a result, increased runoff from urban, industrial, and agricultural areas has entered the river system and has resulted in water quality issues including sediment, nutrients, and pesticides from nonpoint sources. Urban and industrial stormwater runoff carry pollutants from many sources, including oil and grease, heavy metals, chemicals, toxic substances, solid waste (trash and debris), wastewater, effluence, bacteria, sediment, and other waste streams. The amount of contaminants found in stormwater can vary depending on surrounding land use and the frequency and intensity of rain events. The Upper Trinity River (Segment 0805) is located within the study area and is listed as threatened/impaired for bacteria, dioxin in edible tissue, and polychlorinated biphenyls (PCBs) in edible tissue in the 2010 CWA Section 303(d) list.

2.2.6 Environmental Consequences

Groundwater

Construction activities related to the Proposed Action, which would occur within relatively small areas of the Trinity River floodplain, are not anticipated to reach the depths of aquifers utilized to pump groundwater, or use materials that would potentially contaminate groundwater. There are no domestic or irrigation wells within or immediately adjacent to the proposed construction areas. Potential impacts to groundwater resources are not likely to occur as a result of the Proposed Action.

Lakes, Rivers, and Streams

The Section 404/10 activity would be covered under Regional General Permit 12 (RGP-12), *Modifications and Alterations of Corps of Engineers Projects*.

This project would involve bridge construction in or over a navigable water of the U.S. under Section 9 of the Rivers and Harbors Act of 1899. Per coordination with the U.S. Coast Guard (USCG), the Proposed Action is exempt from USCG lighting requirements. The USCG STAA concurrence letter, dated April 11, 2012, is available in **Appendix F** of the EA.

Waters of the U.S., including Wetlands

The placement of temporary or permanent dredge or fill material in waters of the U.S., including wetlands, would be authorized by Regional General Permit 12 (RGP-12), *Modifications and Alterations of Corps of Engineers Projects*. RGP-12 authorizes the discharge of dredged or fill material into waters of the U.S., including wetlands, and work in or affecting navigable waters of the U.S. associated with modifications and alterations to

USACE projects that receive USACE approval under Section 408 and that meet all the General Conditions of RGP-12.

A Preconstruction Notification would not be required, because the proposed project does not contain pitcher plant bogs, bald cypress-tupelo swamps, or the area of Caddo Lake in Texas designated as a "Wetland of International Importance." State of Texas water quality certification, issued on January 21, 2010, is provided through the conditions of RGP-12 for projects that result in a loss of less than 0.5 acre of waters of the U.S.

RGP-12 states that adverse impacts to waters of the U.S., including wetlands, shall be avoided and minimized to the extent practicable through the use of alternatives that have less adverse impact on the aquatic environment. Complete avoidance of the jurisdictional features would only occur if the proposed project was not constructed. The permanent impacts were minimized to the extent possible as permanent fill impacts would be a result of the placement of bridge columns, bridge footings, overhead sign bases, culverts, and relocation of one Oncor transmission tower within the boundaries of the waters of the U.S. The relocation of this Oncor transmission tower would occur near the West Levee as a result of the IH 35E bridge replacement. The existing Oncor transmission tower would need to be relocated approximately 180 ft to the west of its existing location. One 9.5 ft column would replace the existing transmission tower. Refer to **Attachment 1, Sheet 5 of 6, of Appendix B: Section 408 Environmental Compliance Information** for the location of this existing and proposed Oncor transmission tower. **Table 2-1** contains the approximately permanent and temporary impacts to the waters of the U.S. **Attachment 1** shows the permanent and temporary impacts.

Table 2-1: Impacts to Waters of the U.S., including Wetlands, within the Natural Resources Study Area

Area	Feature	Type of Feature	Feature Name/Type	Water of the U.S.? (Yes/No)	Proposed Work or Structure	Approximate Permanent Impacts (Acres/Linear ft)	Approximate Temporary Impacts (Acres/Linear ft)
IH 30	24	Open Water	Trinity River	Yes	Bridge	0.01/ 12	0.00/ 0
	53	Emergent Wetland	N/A	Yes	N/A	0.00/ NA	0.27/ NA
	54	Emergent Wetland	N/A	Yes	Bridge	0.02/ NA	3.39/ NA
	55	Open Water	Historic Trinity River Channel	Yes	N/A	0.01/ 16	0.00/ 0
	56	Emergent Wetland	N/A	Yes	N/A	0.00/ NA	0.27/ NA
	72	Open Water	Linear Sump	No	N/A	N/A	N/A
	85	Emergent Wetland	N/A	Yes	Bridge	0.01/ N/A	1.48/ N/A
IH 35E	24	Open Water	Trinity River	Yes	Bridge	0.01/ 80	0.25/ 50
	65	Emergent Wetland	N/A	Yes	Bridge and Oncor Tower	0.03/ N/A	3.20/ N/A
	66	Emergent Wetland	N/A	Yes	Bridge	0.02/ N/A	4.13/ N/A
	67	Emergent Wetland	N/A	Yes	Bridge	0.01/ N/A	1.34/ N/A
	79	Open Water	Historic Trinity River Channel	Yes	Culvert	0.28/ 801	0.02/ 259
					Wetland Total	**0.09/ NA**	**14.08/ NA**
					Waters Total	**0.31/ 909**	**0.27/ 309**
					Totals	**0.40/ 909**	**14.35/ 309**

Source: Study Team, April 2012.

Within the Dallas Floodway, between the levees, the permanent impacts would result from the placement of bridge columns, bridge footings, and overhead sign bases within the delineated boundaries of the features. At each of these locations, it is anticipated that construction activities would consist of clearing the immediate area of vegetation to allow for the drilling of each column or footing. The detailed construction method would be determined by the design-build contractor.

Temporary impacts to the waters of the U.S., including wetlands, would result from temporary fills needed to construct the proposed project. A temporary crossing of the Trinity River to facilitate the movement of materials from the east to the west side of the river may occur. The proposed crossing, if utilized is not anticipated to exceed 50 ft in width and would allow for the continuous flow of the Trinity River. Any temporary crossings would be coordinated with USACE and would meet the General Conditions of RGP-12.

Wetlands may be temporarily filled to allow for construction of the proposed project or mats may be utilized to minimize soil disturbance to the extent possible. In areas where temporary fills are needed, the affected areas would be returned to their pre-existing contours. Because the detailed method of construction would be determined by the design-build contractor, the extent of temporary impacts includes the entire wetland area within the construction limits. It is anticipated that the entire area of each wetland would not be impacted at the same time and the actual temporary impacts would be less than anticipated. Temporary impacts due to the placement of fill within the waters of the U.S. would be restored to preconstruction elevations and revegetated with native vegetation after construction is complete. Areas left bare due to construction activities would also be revegetated. The approximate acreage and linear ft of temporary impacts to jurisdictional and potentially jurisdictional features are included in **Table 2-1**.

Permanent impacts to the Historic Trinity River Channel at IH 35E would occur as a result of modifications to Able Sump Ponds 2 and 3. Anticipated impacts would result from the placement of fill material within the limits of the ordinary high water mark to provide an adequate road base for construction of a proposed ramp and a collector distributor road. Other impacts would result from the reconstruction of the existing culvert discharging into Pond 2, the removal and replacement of the existing interconnecting culvert between Ponds 2 and 3, and the modification of the upstream headwalls for the two interconnecting culverts between Ponds 1 and 2. Permanent impacts would result from fill material, reconstruction/modification of three existing culverts and installation of the new interconnecting culvert between Ponds 2 and 3. The removal of existing culverts and construction of new bridge substructure would result in temporary impacts. Some segments of the Historic Trinity River Channel would be re-aligned to allow the stream to flow through the new culverts and the modified limits of Able Sump Ponds 2 and 3.

Mitigation is proposed for the permanent impacts to two streams (Features 24 and 55) and five wetlands (Features 54, 65, 66, 67, and 85) within the Dallas Levees. Mitigation is also proposed for the culvert extension located south of IH 30 at Feature 79 (0.09 acre and 175 linear feet). The permanent impacts to the streams total 0.11 acre (283 linear feet) and 0.09 acre for the wetlands for which compensatory mitigation is proposed. Proposed mitigation for the permanent impacts to waters of the U.S., including wetlands, would be construction of a 0.20 acre wetland. The proposed wetland mitigation site would be located within the Dallas Floodway in the hydraulic swale at IH 30. The mitigation site would be contoured using multiple elevation gradients to a maximum depth of 2 ft and would be vegetated with appropriate wetland herbaceous species.

The remaining section of Feature 79 (0.19 acre and 626 linear feet) at IH 30 would be re-aligned to allow the stream to flow through the new culverts and the modified limits of Ponds 2 and 3. Feature 79 (Historic Trinity River Channel was separated by the creation of the levees and is currently functioning as part of the interior drainage system. This section of the Historic Trinity River Channel serves as a drainage feature delivering water to the Able Pump Station. The area is routinely maintained by mowing and only contains herbaceous vegetation. The overall existing channel is approximately 1,060 linear ft and the ordinary high water mark varies from approximately 8 ft to 35 ft. The proposed channel would be approximately 1,140 linear ft and have a bottom width of approximately 20 ft to 40

ft. The realigned channel would be extended west of the existing channel to a new culvert. After construction activities are completed, the area would be revegetated. The re-aligned channel would continue to function as part of the interior drainage system. The proposed modification to Feature 79 at the Able Sump Pond 2 and 3 locations would not result in the loss of aquatic function. Therefore, no additional mitigation would be required for these impacts to waters of the U.S.

The culvert between Able Sump Ponds 2 and 3 would be removed and replaced south of its current location. A culvert north of Riverfront Boulevard would be reconstructed. These impacts would be considered temporary and no mitigation is proposed.

Section 404/10 mitigation options considered for the proposed project were the purchase of mitigation bank credits and on-site mitigation. On-site mitigation was determined to be most appropriate for the proposed project because it would occur within the same area as the impacted features and provide benefits such as increasing wildlife habitat, water storage, water filtration, and improving water quality. In addition, the proposed mitigation site would be protected as it would be within the Dallas Floodway, which the City of Dallas plans, operates, and maintains and is under regulatory control of the USACE. Concerning hydrology, the proposed mitigation site would be suitable because of its location adjacent to the Trinity River. Typically the Trinity River rises above its flood stage of 30 ft several times a year resulting in inundation of the proposed mitigation area. It was determined in coordination with USACE Fort Worth Regulatory staff that appropriate mitigation would be to construct the wetland within the limits of the already proposed hydraulic swale at IH 30. It is anticipated that once the site becomes established, it would function as a higher quality wetland than those anticipated to be impacted by the proposed project.

Floodplains

The project is located within a FEMA designated 100-year floodplain. The proposed project 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 TREIS ROD criteria apply because the Dallas Horseshoe Project would be constructed over and within the Trinity River floodplain. The proposed project would demonstrate that it satisfies the TREIS ROD criteria for water surface elevation, valley storage, and erosive water velocities for both the 100-year and SPF events during the Section 408 process.

Because the proposed project is within the Trinity River Corridor Development Regulatory Zone, the CDC process would apply. However, per coordination with the City of Dallas in January 2012, it is anticipated that the CDC application would not be needed because a CDC hydraulic review for the proposed project would be performed by USACE under the Section 408 approval process. Final determination of applicability of the CDC process is contingent upon USACE approval of hydraulic analysis performed as part of the Section 408 approval process. Documentation of the January 2012 correspondence is included in **Appendix F** of the EA.

Water Quality

Construction equipment, spoil material, supplies, forms, or any other item that may be transported by flood flows shall not be placed or stored within the floodway unless actively utilized in the day-to-day construction work. Equipment or materials actively used in day-to-day construction work may be left in the floodway overnight with prior written approval from the City of Dallas Flood Control District. Equipment and materials not approved by City of Dallas Flood Control District will be moved out of the floodway when not in use and stored in the design-build contractor's staging area outside of the floodway or at a designated location on the levee top road if previously authorized by the City of Dallas Flood Control District.

2.3 Biological Resources

The study area for the biological resources encompasses the area necessary to construct the proposed action and that could incur temporary and permanent impacts resulting from the construction activities within the Dallas Floodway and adjacent sumps. The study area at IH 30 and IH 35E is within the limits of the project ROW and extends out on the land side of the levees to encompass the sumps and sump ponds associated with the Dallas Floodway.

2.3.1 Vegetation and Wildlife Habitat

The U.S. Fish and Wildlife Service (USFWS) *Existing Habitat Conditions Planning Aid Report for the Dallas Floodway Project (April 2010)* and field reconnaissance (December 1 and 8, 2011) were utilized to determine and describe the various habitat types present within the study area. These habitat types consist of aquatic, bottomland hardwood, grassland, and urban and are described in **Section 8.6.3** of the EA.

Representative habitat types and associated acreages present within the study area are included in **Table 8-14** of the EA.

Based on the field surveys conducted on December 1 and 8, 2011, there are 11 large trees located within the study area. **Table 8-15** of the EA contains the locations, type, and size of the large trees and representative photographs can be found in **Appendix G** of the EA. The location of the trees listed is displayed in **Constraints Maps** in **Appendix D** of the EA. Approximately 0.86 acre of riparian woodland habitat would be removed as a result of the construction of the proposed project. The 0.86 acre of riparian woodland is located within the Dallas Floodway.

2.3.2 Threatened and Endangered Species

Federal listed species are protected under the Endangered Species Act of 1973. In general, this act protects both the species and their habitat. State listed species are protected under the Texas Administrative Code, Title 31, Part 2, Chapter 65, Subchapter G, Rules 65.71 - 65.176 and under the Texas parks and Wildlife Department (TPWD) Statutes Chapters 67 and 68 revised May 31, 2002. These regulations primarily address direct effects to the state listed species only and do not address their habitat. The pertinent USFWS and TPWD Annotated County list of Threatened, Endangered, and Rare Species were reviewed. **Table 8-13** of the EA includes the federal listed and state listed threatened (T) and endangered (E) species indigenous to Dallas County, Texas.

Refer to **Section 8.6.2** of the **EA** as the federally-listed threatened or endangered species known to occur in Dallas County include the endangered whooping crane, interior least tern, black-capped vireo, golden-cheeked warbler and the threatened piping plover. These are all avian species that are considered migratory and as such, are also protected under the Migratory Bird Treaty Act (MBTA).

Suitable foraging habitat for the whooping crane was observed within the study area for the whooping crane. The whooping crane forages in estuaries, prairie marshes, savannah, croplands, and pastures. The species is a winter resident at the Aransas National Wildlife Refuge. This species could use the study area as a stopover location during migration.

Suitable habitat for the interior least tern (federally-listed) is not currently present within the project limits. Ground disturbance related to construction activities at and near the levees may incidentally create areas that are attractive to interior least terns for use as potential nesting sites.

No suitable habitat was observed within the project limits for the black-capped vireo, golden-cheeked warbler, and piping plover.

2.3.3 Migratory Bird Treaty Act (MBTA)

The avian species that utilize the habitat within the study area are considered migratory and are protected under the MBTA.

2.3.4 Environmental Consequences

Vegetation and Wildlife Habitat

There are approximately 103.4 acres of available habitat in the natural resources study area. Implementation of the Proposed Action may temporarily impact approximately 99.08 acres of the habitat types and permanently impact approximately 1.84 acres of habitat types. **Table 8-14** of the EA presents the potential temporary and permanent impacts to habitat types within the natural resources study area**.**

In addition to the impacts to the habitat types, a total of 11 mature trees would potentially be impacted as they are located within the construction areas. In the IH 30 construction area there is one tree present and there are ten trees located within the IH 35E construction area. Efforts to protect the trees during construction would occur as it may be possible to preserve those located near the edge of the construction areas. After construction is completed, the areas of bare ground resulting from the construction activity would be reseeded/revegetated.

No long-term impacts to wildlife populations are anticipated as a result of the proposed project. In areas temporarily impacted, wildlife species would likely re-colonize the available habitat areas after construction. If active bird nests are encountered during the construction of the proposed project, the nests would be avoided. Due to the abundance of similar habitat adjacent to the proposed project within the Dallas Floodway, the impacts to wildlife, including migratory birds, would be considered minor.

Invasive Species and Beneficial Landscaping Practices

Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits and temporary sodding\seeding would be considered where large areas of disturbed ground would be left bare for a considerable length of time. In accordance with EO 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT approved seeding specifications that is in compliance with EO 13112 would be done where possible. Moreover, abutting turf grasses within the ROW would re-establish throughout the project limits. Soil disturbance would be minimized to ensure that invasive species would not establish in the ROW.

Threatened and Endangered Species

The federally-listed threatened or endangered species known to occur in Dallas County are all avian species that are considered migratory. These species may temporarily use portions of the study area for resting or foraging during their migration. No effects to these species are anticipated to occur as a result of the proposed construction activities.

Ground disturbance related to construction activities may incidentally create areas that are attractive to interior least terns for use as potential nesting sites. The species breeding season extends from May through August. Because construction would be on-going during the breeding season, ground disturbance related to construction activities may incidentally create areas that are attractive to interior least terns for use as potential nesting sites. Large areas (greater than one acre) cleared to bare soil and left idle for more than one week would be surveyed prior to resuming construction activities. Should interior least terns happen to utilize any of the project areas during construction activities, the USFWS would be notified to discuss alternative development plans or the need for consultation under Section 7 of the Endangered Species Act (ESA). Because this section of the Trinity River is not typically utilized during nesting season and there are established nesting areas in the Dallas area, no effects to the species are anticipated to occur as a result of the construction of the proposed project.

After reviewing habitat requirements and conducting field visits on December 1 and 8, 2011, it was determined that the Proposed Action would have no effect on any federally-listed threatened or endangered species, their habitat, or designated critical habitat, nor would it affect any state-listed species.

Hazardous Wildlife Attractants on or Near Airports

An airport, Dallas Love Field is located northwest of the northern limit of the East Levee. Parts of the Proposed Action are located approximately 21,600 feet southeast of the north-south runway at Dallas Love Field. This is beyond the 10,000 feet recommended distance cited for airports serving turbine-powered aircraft. The Proposed Action would be implemented within an area that is routinely maintained through mowing. It is not anticipated that it would become a preferred attractant to wildlife because the proposed construction would not provide sufficient habitat and the entire Dallas Floodway System presently contains numerous other areas that are utilized by wildlife. The proposed construction is not anticipated to result in additional concerns to Dallas Love Field Airport

regarding wildlife threats to aircraft. It is not recommended that this area be monitored during and after construction because the area would not be an attractant for wildlife.

2.4 Cultural Resources

Cultural resources typically include archeological, historical, architectural and traditional cultural properties associated with Native Americans or other groups. Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended, requires that all federal agencies take into account the effects of their undertakings on historic properties.

Section 405(a) of the 2010 Supplemental Disaster Relief and Summer Jobs Act [Public Law (PL) 111-212] states that the USACE is not required to make determinations of eligibility under the NHPA for the Dallas Floodway Levee System. USACE Implementation Guidance dated October 19, 2010 directs the Fort Worth District not to make further determinations under the NHPA and to examine, describe, and consider the built environment that comprises the Dallas Floodway as cultural resources within the context of the scope of impacts that must be analyzed under NEPA.

Several other federal laws and regulations have been established to manage cultural resources, including the Archeological and Historic Resources Preservation Act (1974), the Archeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

Coordination with federally recognized American Indian tribes must occur in accordance with the American Indian Religious Freedom Act (1978); EO 13007 Indian Sacred Sites; and EO 13175 Consultation and Coordination with Indian Tribal Governments.

2.4.1 Historic Resources

In November and December 2004, TxDOT and the Texas State Historic Preservation Officer (TSHPO) conducted Section 106 coordination for 42 resources identified and documented in a Historic Resources Survey Report (HRSR) as part of Project Pegasus. **Appendix E** of the EA includes the list of those resources and the final Nation Register of Historic Places (NRHP) determinations of NRHP Eligibility and Effects per Section 106 coordination which concluded in December 2004. A copy of the correspondence letters between November 2004 and December 2004 are included in **Appendix F** of the EA. As part of the Section 106 coordination process for Project Pegasus, it was determined by TSHPO that no proposed ROW would be required from any of the NRHP listed or eligible properties. The historic associations and integrity of the properties would also remain intact for the current project because the contexts of the properties have long included highway traffic.

There are multiple historic resources that have been previously documented within the area of potential effects (APE) that have either been listed in the NRHP or determined NRHP Eligible. **Table 2-2** below lists previously documented historic resources that are located within the APE.

Table 2-2: Previously Identified Historic Properties Located within the APE

2004 Project Pegasus ID	Name of Property	Address/Location
9	Dealey Plaza Historic District	Bounded by Pacific Avenue, Market Street, Jackson Street, and Dallas ROW
15	Houston Street Viaduct	Houston Street across the Dallas Floodway
Properties Determined to be Eligible for the NRHP through Coordination with the Texas Historical Commission (THC)		
2004 Project Pegasus ID/ Other	**Name of Property**	**Address of Property**
14	Kessler Park Historic District (Second Extension)	Bounded by Dallas-Fort Worth Turnpike, Sylvan Avenue, Zang Boulevard and Jefferson Boulevard
22	Kovandovitch House	523 Eads Street
24	Cadiz Street Pump Station	Cadiz Street at Hotel Street
37	Dallas Farmer's Market	IH 30, Harwood Street, and Pearl Street
39	Weisfeld Center	902 Browder Street
2011 Coordination	Dallas Floodway	From the Loop 12 crossings of the West and Elm Forks of the Trinity River to the existing AT&SF Railroad Bridge

Sources: THC Historic Sites Atlas (accessed March 2012), Project Pegasus HRSR (2004), and various THC coordination.

As described in **Section 8.4.1** of the EA, the *Dallas Horseshoe Project HRSR* (March 2012) identified 80 additional historic-age (pre-1967) resources within the APE that were not documented in the 2004 Project Pegasus HRSR due to a different delineation of the APE or historic-age dates.

Dallas Floodway

On December 30, 2011, the Texas Historical Commission (THC) determined the Dallas Floodway is Eligible for the NRHP at the local level of significance in the areas of Engineering and Community Planning and Development, under Criterion A. The Dallas Horseshoe Project would cross the Dallas Floodway but would not impact the function of the floodway and is not anticipated to alter any significant features of the floodway. It is anticipated that the construction of the IH 30 and IH 35E bridges across the Dallas Floodway would not have the potential for adverse effect, because the proposed modification to the piers would not impede the Dallas Floodway's function.

Permanent impacts to the Old Trinity River Channel at IH 35E would occur as a result of modifications to Able Sump Ponds 2 and 3. Anticipated impacts would result from the placement of fill material within the limits of the ordinary high water mark to provide an adequate road base for construction of a proposed ramp and a collector distributor road. Other impacts would result from the reconstruction of the existing culvert discharging into Pond 2, the removal and replacement of the existing interconnecting culvert between Ponds 2 and 3, and the modification of the upstream headwalls for the two interconnecting culverts between Ponds 1 and 2. Permanent impacts would result from fill material,

reconstruction/modification of three existing culverts and installation of the new interconnecting culvert between Ponds 2 and 3. The removal of existing culverts and construction of new bridge substructure would result in temporary impacts. Some segments of the Old Trinity River Channel would be re-aligned to allow the stream to flow through the new culverts and the modified limits of Able Sump Ponds 2 and 3. It is anticipated these impacts would not have the potential for adverse effect, because the proposed reconstruction/modification of the existing culverts and installation of a new culvert would not impede the Dallas Floodway's function.

Section 106 Coordination

Pursuant to Stipulation VI "Undertakings with Potential to Cause Effects" of the 2005 Programmatic Agreement for Transportation Undertakings (PA-TU) among FHWA, TSHPO, Advisory Council on Historic Preservation (ACHP), TxDOT and the Memorandum of Understanding (MOU), TxDOT Environmental Affairs Division (ENV) will determine if potentially NRHP Eligible historic resources are present within the proposed project's APE and if individual project coordination with TSHPO will be required. The Criteria of Effect and Criteria of Adverse Effect were applied to the listed and eligible resources within the APE, and no adverse effects on the historical associations, architectural and engineering features, or integrity of the properties identified as historically significant are anticipated. Per June 2012 coordination with the THC, the proposed project will have no adverse effects on historic properties/districts. The THC concurrence letter reflecting this conclusion is available in **Appendix F** of the EA.

2.4.2 Archeological Resources

The study area for archeological resources consists of the construction area within project limits.

Prior Archeological Surveys

The THC Archaeological Sites Atlas was examined to identify additional existing cultural resources within the study area (**Table 2-3**). In 2003, a reconnaissance survey and database review was conducted to determine the potential for archaeological deposits falling within Project Pegasus, which includes the Dallas Horseshoe Project limits.[2] Based on the results of this reconnaissance, it was determined that the potential for intact deeply buried prehistoric deposits were likely in the floodplain, these deposits may only be encountered randomly. Therefore, encountering these deposits in a coring or trenching scenario is considered extremely minimal. However, the potential for encountering intact historic-age deposits was more likely to occur along the terrace or bluff edges above the floodplain, but may be under significant amounts of fill material.

Several other archeological investigations immediately adjacent to the study area are presented in **Table 2-3**.

[2] Green, M.M., and D.E. Peter. *Assessing the Potential for Intact Archaeological Deposits within the Pegasus Project: Reconstruction of the IH-30/IH-35E Corridor (Canyon/Mixmaster/Lower Stemmons) in Dallas County, Texas.* Miscellaneous Reports of Investigations 291. Geo-Marine, Inc., Plano, Texas (2003).

Table 2-3: Previous Archaeological Surveys within or Immediately Adjacent to the Study Area

Date Published	Sponsoring Agency	Citation	Study Information
1981	USACE, Fort Worth District	Unavailable	Survey
1987	UTMA	Unavailable	Literature Search
1991	FHWA	Unavailable	Survey
2002	Dallas Area Rapid Transit	West End Historic District Archaeological Investigations for Interim Service to Victory Station, Northwest Corridor, Dallas County, Tx	Survey
1996	City of Dallas	The Archaeological Monitoring of the Dallas Floodway Channel Modifications and Levee Fill Modifications Phase I	Monitoring
2000	City of Dallas and HKS	Cultural Resources and Bioarchaeological Investigations at the Dallas Convention Center and Pioneer Cemetery, Dallas, Tx	Testing/ Exhumations
2006	North Texas Tollway Authority	Archaeological Testing for the Trinity Parkway	Testing

Source: Texas Archeological Sites Atlas (April 2012).

Traditional Cultural Properties

The file search with the THC Archaeological Sites Atlas identified no known Traditional Cultural Properties within the study area.

Archeological Resources

There are no known archeological sites within the archeology study area. However, there are 12 known archeological sites within a mile of the archeology study area. The eligibility of 3 sites is unknown at this time, 6 sites are all officially not NRHP eligible, and 2 sites are listed on the NRHP. The 12 known sites within a mile of the Dallas Horseshoe Project are listed in **Table 2-4**.

Table 2-4: Known Archeological Sites within 1 Mile from the Dallas Horseshoe Project

Trinomial	Site Size (meter^2)	Time Period*	NRHP Eligibility Status	Report Citation
41DL250	Lawn area of Old Dallas County Courthouse	Historic	Listed on NRHP	W.A. Westbury. *Archeological Testing at the Old Dallas County Courthouse,* Dallas (1985).
41DL279	3,721	Historic (1850-1880)	Eligible	Jurney, D.H., and S.L. Andrews. *Archaeological Investigations at 41DL279, Site of the John F. Kennedy Exhibit, Dallas County Administration Building, Dallas, Texas*. Archaeology Research Program, Southern Methodist University, Dallas, Texas (1994).
41DL347	Unknown	Historic (1890s-1930)	Unknown	Alan Skinner 1992 Site Form; Texas Archeological Sites Atlas.
41DL362	Unknown	Historic (1850s-1880s)	Not Eligible	Skinner, S.A., B.B. Whorton, and L.K. Trask. *The Archaeological monitoring of the Dallas Floodway Modifications and Levee Fill Modifications Phase I.* Cultural Resources Report 96-19. AR Consultants, Inc., Dallas, Texas (1996).
41DL363	Unknown	Historic (1900-1916)	Not Eligible	Skinner, S.A., B.B. Whorton, and L.K. Trask. *The Archaeological monitoring of the Dallas Floodway Modifications and Levee Fill Modifications Phase I.* Cultural Resources Report 96-19. AR Consultants, Inc., Dallas, Texas (1996).
41DL370	3,885	Historic (1920s)	Not Eligible	Skinner, S.A., B.B. Whorton, and L.K. Trask. *The Archaeological monitoring of the Dallas Floodway Modifications and Levee Fill Modifications Phase I.* Cultural Resources Report 96-19. AR Consultants, Inc., Dallas, Texas (1996).
41DL371	Unknown	Historic (1880s-1920s)	Not Eligible*	Skinner, S.A., B.B. Whorton, and L.K. Trask. *The Archaeological monitoring of the Dallas Floodway Modifications and Levee Fill Modifications Phase I.* Cultural Resources Report 96-19. AR Consultants, Inc., Dallas, Texas (1996).
41DL377	Unknown	Historic (1880s-1910)	Not Eligible	R.W. Moir personal communication (2003).

41DL390	425	Historic (late 19th and early 20th centuries)	Listed on NRHP	Cooper, J.H., A.L. Tine, M. Prior, C.M. Clow, D. Shanabrook, and E. Salo. *Cultural Resources and Bioarchaeological Investigations at the Dallas Convention Center and Pioneer Cemetery, Dallas, Texas.* Miscellaneous Reports of Investigations No. 205. Geo-Marine, Inc., Plano, Texas (2000).
41DL410	440	Historic (late 19th and early 20th centuries)	Unknown	Site Form from Gaither, S., K. Kahl, R. Procter, and J. Whaley. *West End Historic District Archaeological Investigations for Interim Service to Victory Station, Northwest Corridor, Dallas County, Texas.* Dallas Area Transit Technical Series Report of Investigations No. 1. LopezGarcia Group, Dallas, Texas. (2002).
41DL440	Unknown	Historic (late 19th century)	Unknown	Fredrick, C.D., L.K. Trask, and S.A. Skinner. *Archaeological Testing for the Trinity Parkway.* Cultural Resources Report 2006-32. AR Consultants, Inc., Dallas, Texas (2006).
41DL494	1500	Historic	Not Eligible	Site Form from Tine, A, J.H. Cooper, R.S. Higgins. *Archeological Investigations of 5.3 Acres of the Fiji Senior Retirement Building HUD Development Project, Dallas County, Texas.* Short Report of Investigations 2009-H-07. C Dimensions, Plano, Texas (2009).

**Site 41DL371 was recommended for designation as a State Archeological Landmark but has not been designated.*

2.4.3 Environmental Consequences

The need for an intensive survey was determined through analysis of geotechnical core samples. Based on the analysis performed for the proposed action and consultation results, no further work is warranted. There are no known archeological sites within the study area.

TxDOT archeologists completed their review for the Proposed Action in March 2012 and determined that the proposed action will have no effect or no adverse effect on archeological sites or cemeteries that would be afforded further consideration under cultural resource laws. No individual consultation with the THC/TSHPO was required. In addition, no public controversy exists regarding the project's potential impacts on archeological sites or cemeteries. The no effect determination memo signed by TxDOT is included in **Appendix F: Agency Coordination** of the EA.

In the event that 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. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

2.5 Hazardous Materials

The study area for hazardous materials encompasses the area necessary to construct the proposed project and that could incur temporary and permanent impacts resulting from the

construction activities within the Dallas Floodway and adjacent sumps. The study area at IH 30 and IH 35E is within the limits of the project ROW and extends out on the land side of the levees to encompass the sumps and sump ponds associated with the Dallas Floodway. Hazardous materials sites adjacent to these areas have also been assessed; because the possibility may exist that contamination from these sites could be encountered within the study area.

The hazardous materials assessment performed for the EA broadly follows guidance provided by the American Society for Testing and Materials (ASTM) E1527-05 standard; however, it is noted that this hazardous materials assessment is a limited Phase I Environmental Site Assessment. Results of the Regulatory Records Review and a visual survey are included in **Section 8.9** of the EA. The sites identified in the database searches and those verified in the field were assessed for the potential to be encountered during construction within the Dallas Floodway or sumps.

Based on distance, topographic gradient, historical information, database information, and property impacts there are three sites categorized as high risk (Sites 1, 12 and 15). Sites considered likely to be contaminated and within the proposed ROW are categorized as "high risk." Examples of high risk sites include landfills and leaking petroleum storage tanks sites. The locations of the high risk sites are shown on **Exhibit 8: Constraints Maps** in **Appendix A** of the EA. The following provides details on the three high risk sites.

Site 1 (Southwest Industrial Gases, Inc.) is located within the proposed ROW. Site 15 (North Texas Tollway Authority Maintenance Facility) is located within the existing ROW. Both sites are at-grade with the proposed project. It is anticipated that the entire parcel of Site 1 would be acquired. Both sites would be physically impacted by the proposed construction activities of the proposed project. The proposed construction activities at these sites would consist of grading, excavation, and drilling of piers for bridge supports. Site 1 and Site 15 are considered to pose a high risk to the construction of the proposed project due to the construction activities to occur at the site and the recorded incidences of contaminant releases and storage of chemical materials on the sites.

Site 12 (Burden Brothers) is located at-grade and adjacent to the existing ROW. Although this site would not be physically impacted by the construction activities, there is a slight slope from IH 30 to the drainage sumps to the east and south of the site. Five bridge bents are located immediately north of the site and bridge piers for the bents would be drilled and constructed at these locations.

Based on distance, topographic gradient, historical information, database information, and property impacts there are five sites characterized as low risk. Sites are categorized as "low risk" if available information indicates that some potential for contamination exists, but the site is not likely to pose a contamination problem during construction. The locations of the low risk sites are shown on **Exhibit 8: Constraints Maps** in **Appendix A** of the EA. The following provides details on the three high risk sites.

Site 2 (Hardfacing Specialty Company) is located at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired. The site would be physically

impacted by the construction activities of the proposed project. The proposed construction activities at this site would consist of grading, excavation, and drilling of piers for bridge supports. Site 2 is considered to pose a low risk to the construction of the proposed project from available database information; however, there is a possibility that contamination is present at the site and could be encountered during construction.

Site 14 (In & Out Store/ Buy Low Discount) is located at-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Adjacent to this site, the proposed project would improve the exit ramp as it intersects with Riverfront Boulevard. The proposed improvements would follow the same general alignment as the existing roadway. Minimal grading/excavation would be needed at this location. The petroleum storage tanks (PSTs) at this site are located near the southeast corner of the parcel, approximately 150 to 200 ft away from the proposed edge of pavement. The topography in this area gently slopes away from the proposed project limits toward the east. Site 14 is considered to pose a low risk to the construction of the proposed project due to the proposed construction activities adjacent to the site, the location of the PSTs, and the topography of the area.

Site 16 (Alford Refrigerated Warehouses) is located approximately 350 to 500 ft from the existing ROW on the east side of Cadiz Street. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Currently, the site has been cleared of all structures. All proposed construction activities would occur within the existing ROW. The topography in the area gently slopes to the west and south to the Historic Trinity River Channel, away from the proposed construction activities. Site 16 is considered to pose a low risk to the construction of the proposed project due to its location in relation to the proposed improvements; however, there is a possibility that contamination could have extended into the proposed construction area.

Site 17 (Fuel City II) is located adjacent to the existing ROW. A small amount of ROW would be acquired from the southeast corner of the parcel. The site would not be physically impacted by the construction activities of the proposed project. Bridge piers would be drilled and constructed immediately adjacent to the site. There are no recorded incidences of contamination releases for this site. Site 17 is considered to pose a low risk to the construction of the proposed project due to the available database information; however, there is a possibility that unknown contamination could be present at this site.

Site 32 (Kwik Stop) is located adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Minimal excavation would occur adjacent to the site to improve the arterial road. The existing pavement would be removed, the area graded, and repaved. Site 32 is considered to pose a low risk to the construction of the proposed project due to the minimal excavation required at this location; however, there is a possibility that contamination could be encountered during the proposed construction activities.

In addition to the sites listed in the environmental database report, previous environmental reports for projects within the Dallas Floodway were reviewed to compile information regarding soil analytical data within approximately 200 ft of the proposed ROW at IH 30 and IH 35E. Because soil borings were performed throughout the Dallas Floodway and not just within the proposed project limits, the 200 ft distance was selected to provide a better characterization of the locations of contaminated soils within and adjacent to the proposed project. The dates of the reports ranged from 1984 to 2012. The reports reviewed are described in **Section 8.9** of the EA and the soil boring sites are depicted on the **Constraints Maps** in **Appendix D** of the EA.

In addition to assessing the metals in the soil borings, data from some of the studies included analysis of volatile organic compounds, semi-volatile organic compounds (SVOCs), pesticides, herbicides, and PCBs and whether any concentrations exceeded the Texas Risk Reduction Program Critical (TRRP) Protective Concentration Levels (PCLs). Soil boring AP-2 exceeded the TRRP Critical PCL ($^{GW}Soil_{Ing}$) for aldrin, a pesticide, in a sample collected at 4 to 6 ft below ground surface (bgs). Soil boring SB016 exceeded the TRRP Critical PCL ($^{Tot}Soil_{Ing}$) for benzo(a)pyrene, a SVOC, in a sample collected from 0 to 2 ft bgs.

2.5.1 Environmental Consequences

Additional assessment would be on-going for the facilities that pose an environmental concern to the proposed project in order to provide a better determination of the impact(s) that these past operations may have on the proposed project. As more detailed project design is developed, the potential for these hazardous materials sites to affect the proposed construction would be evaluated. Additional investigation and assessment of the high risk sites are recommended to identify if construction activities at those locations may encounter contaminants.

The soil constituents of concern (COC)s for the proposed construction activities are considered heavy metals. These are primarily arsenic, chromium, lead, manganese, mercury; nickel, selenium, and zinc; and, in one case, barium. Twenty-four of the 26 soil borings located within or adjacent to the proposed project limits are included in **Table 8-22** of the EA.

The detected concentrations of each of the COCs are below the relevant potential exposure scenario of the TRRP Tier 1 PCLs of the total soil combined pathway with the exceptions of aldrin and benzo(a)pyrene. Soil boring AP-2 had a sample above the TRRP Critical PCL. Soil boring SB016 had one sample collected 0 to 2 ft bgs exceed the TRRP Critical PCL for benzo(a)pyrene. If these areas are disturbed during construction they would have to be addressed within the plans and specifications.

The main exposure pathway for the reported heavy metals, aldrin, and benzo(a)pyrene detected throughout the Dallas Floodway is by inhalation of fugitive dust generated during construction activities; however, keeping the materials damp would help reduce exposure. Added worker safety protection during construction activities such as wearing a protective dust mask is a feasible method for reducing potential exposure risk to a COC along with keeping the construction area damp. The plans and specifications for the proposed project

would include a notice to design-build contractors informing them of the heavy metals, aldrin, and benzo(a)pyrene known at this time.

A Soil and Groundwater Management Plan (SGMP) has been developed for the proposed project. The SGMP contains the recommendations for managing contaminated soil, groundwater, and waste generated during construction. It establishes minimum qualifications for the environmental specialist personnel responsible for the proper implementation of the plan. The SGMP provides procedures for field screening of soil and groundwater produced from construction excavations. It also provides guidance for the proper disposal or discharge of groundwater produced from construction excavations and reuse of affected soils within the same or nearby excavations while minimizing off-site disposal. The design-build contractor is responsible for preparing a comprehensive HMMP outlining field screening procedures and management of affected soils to be followed during construction. The HMMP may utilize recommendations, procedures, or guidance from the SGMP.

At this time, utility adjustment requirements are anticipated, but specifics have not yet been determined. There is a potential for contamination to be encountered during utility adjustments. Coordination with utility companies concerning this contamination would be addressed during the ROW stage of project development. It is anticipated that all utility adjustments or relocations would be completed prior to construction.

The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials (ACM) and lead based paint (LBP) testing would be performed on the existing bridge structures. It is recommended that ACM and LBP testing be performed on the building structures to be removed dependent upon the age of the individual structure. TxDOT would notify the Department of State Health and Human Services of the bridge demolition 15-working days prior to the scheduled demolition.

Should unanticipated hazardous materials/substances be encountered, the TxDOT Dallas District Hazardous Materials Section would be notified and steps would be taken to protect personnel and the environment. Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for this project would be removed as soon as the work schedules permit.

2.6 Utilities

The study area for the utilities encompasses the area necessary to construct the proposed project and that could incur temporary and permanent impacts resulting from the construction activities within the Dallas Floodway and adjacent sumps. The study area at IH 30 and IH 35E is within the limits of the project ROW and extends out on the landside of the levees to encompass the sumps and sump ponds associated with the Dallas Floodway.

Utilities present within, adjacent to, or crossing the utilities study area were grouped together in categories and consist of gas, communication, electric, and water. Several utilities extend across the levees and the floodplain, while others parallel the landside toe of the levees. A brief discussion of the specific types of utilities within each category follows.

Utilities are present within the study area at IH 30 and IH 35E. Although the implementation of the Proposed Action would result in the relocation of Oncor transmission towers, it would not result in a decrease in utility services. Implementation of the Proposed Action would result in minor impacts to the utilities at IH 30 and IH 35E.

2.7 Public Safety

The most profound factor suggested by researchers that influence public safety in the event of a flood is the adequacy, effectiveness, and timeliness of warning systems. The City of Dallas' flood warning system, Automated Local Evaluation in Real Time (ALERT), which was originally developed by the National Weather Service, is a method of using remote sensors in the field to transmit environmental data to central computers in real time. In 1990, the City of Dallas installed two base station computers as well as ALERT sensors at 63 locations within the City's stormwater automation project. According to the City of Dallas' Trinity Watershed Management Department, the City currently uses sensors in 88 locations. The sensors monitor rainfall, stream level, temperature, humidity, wind speed and direction, and lift station status at these various locations throughout the city. The information gathered through the ALERT system allows the City of Dallas Office of Emergency Management to plan for and implement emergency evacuations. The City of Dallas also utilizes the Flooded Roadway Warning System (FRWS) with sensors at 42 locations. Sensors associated with the FRWS monitor when flood water reaches the edge of a roadway and activate warning signs for residents and roadway motorists. The sensors also alert the central computer system.

2.7.1 Environmental Consequences

The Proposed Action is not anticipated to affect public safety. Prior to construction, the design-build contractor would prepare and submit an emergency action plan. The plan would be implemented in the event of imminent flooding during construction and address emergency actions to be implemented during above normal river stages for the entire length of the project and duration of project construction. The existing flood warning systems would prevail under the Proposed Action.

2.8 Aesthetics and Visual Resources

Aesthetics and visual resources are the natural and man-made features that comprise the visual qualities of a given area. Such features form the overall impression that an observer may receive of an area or its landscape character. Topography, water, vegetation, man-made features, and the degree of available panoramic view are examples of visual characteristics.

The study area for evaluating potential impacts to the aesthetics and visual resources is defined as, any point within or crossing the Dallas Floodway from which the IH 30 or IH 35E bridges may be viewed. This may be at grade inside the levees of the Dallas Floodway or on the bridge structure as it crosses between the East Levee and West Levee.

Bridge Structures
Within the Dallas Floodway, the IH 30 and IH 35E crossings consist of four structures in total (two structures each) which are described as follows:

- IH 30 eastbound bridge: 33 continuous spans, approximately 2,055 ft long, composed of 30 steel stringers and 3 steel plate girder main spans;
- IH 30 westbound bridge: 33 continuous spans, approximately 2,017 ft long, composed of 30 steel stringers and 3 steel plate girder main spans;
- IH 35E northbound bridge: consists of 46 spans, approximately 2,322 ft long, composed of 43 simple concrete approach spans and 3 steel plate girder main spans; and

IH 35E southbound bridge consists of 46 spans, approximately 2,574 ft long, composed of 43 steel I-beam approach spans and 3 steel plate girder main spans.

Proposed construction activities associated with the Proposed Action would result in short-term impacts to visual resources due to the presence of construction equipment, vehicles, and building activities. Bridge replacement will also impact visual resources. IH 30 and IH 35E bridge structures would be replaced with four new bridge structures. The proposed bridges would generally consist of cast-in-place concrete single or multiple column bents supporting prestressed concrete I-girder and/or steel welded plate I-girder superstructures as determined by the design-build contractor. Longer steel spans would be specified for the section of the proposed IH 30 and IH 35E bridges across the Dallas Floodway from the top of the west bank at the future Trinity River channel to the top of the east bank at the existing Trinity River channel.

2.8.1 Environmental Consequences

In addition to these improvements, technical guidelines would be developed to include urban design details for aesthetics and opportunities for more refined structural form and architectural enhancements. The purpose of the guideline document is to guide the design-build contractor in the development of the overall structural form and aesthetic enhancements of the Dallas Horseshoe Project. These guidelines outline specific technical direction on project elements in terms of form, shape, dimension, color palette, and architectural character to guide final design by the design-build contractor. The guidelines define elements of the vehicular and pedestrian bridges, columns, caps, ramps, direct connectors, walls, traffic barriers, sidewalks and approaches, directional signage, roadway lighting, under-bridge treatments, and aesthetic lighting.

3.0 REGULATORY REQUIREMENTS, PERMITS, AND AGENCY COORDINATION

The EA for the Proposed Action was prepared in accordance with statutes, regulations, and executive orders (EOs) as related to the proposed project. The status of the established impact analysis criteria and their applicability is discussed appropriately throughout the EA (i.e., EO 12898 is addressed under **Section 8.1.4. - Environmental Justice**). This section contains a summary of the status of each institutional/regulatory criterion followed in the EA. Further, this section summarizes specific permitting activities, agency coordination for each regulatory requirement, if applicable.

National Environmental Policy Act (NEPA)

The Dallas Horseshoe Project EA was prepared in accordance with the NEPA of 1969 [42 U.S. Code (U.S.C.) § 4321], as implemented by the Council on Environmental Quality (CEQ) regulations (40 C.F.R. §§ 1500-1508), and USACE ER 200-2-2. The EA analyzes the potential impacts of the Build and No-Build Alternatives and purports to provide sufficient analyses to reveal no significant impacts to resources associated with the Proposed Action.

CEQ Regulations (40 C.F.R. 1500-1508)

The CEQ, established under NEPA, implements and oversees federal processes. The CEQ regulations implement the procedural provisions of NEPA to ensure that federal programs comply with the guidelines of NEPA. The CEQ issues the Regulations for Implementing Procedural Provisions of NEPA (40 C.F.R. §§ 1500-1508). The development of the EA adheres to the CEQ Regulations.

U.S. Army Corps of Engineers Engineering Regulation 200-2-2

The USACE ER 200-2-2, Procedures for Implementing NEPA, establishes USACE procedures for implementing NEPA and CEQ regulations. The implementing procedures in ER 200-2-2 provide a framework for complying with the NEPA and CEQ requirements for all applicable USACE actions. The development of the EA adheres to USACE ER 200-2-2.

Farmland Protection Policy Act (FPPA)

The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. The proposed project is located within an urbanized area and there are no prime farmland soils located within the proposed ROW. The proposed project is exempt from the requirements of the Farmland Protection Policy Act and requires no coordination with the Natural Resource Conservation Service.

Civil Rights Restoration Act of 1987

The Civil Rights Restoration Act of 1987 provides that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Analyses in the EA concludes that the Proposed Action comply with the Civil Rights Restoration Act of 1987 as no persons would experience discrimination, be denied benefits, or lack participation associated with the execution of the Proposed Action Alternative based on race, color, or national origin. During the August 2, 2012 public hearing, TxDOT made its bilingual brochure on Title VI available. This brochure advises the public of its rights under Title VI of the Civil Rights Restoration Act of 1987.

Executive Order 13166 – Improving Access to Services for Persons with Limited English Proficiency (LEP)

Executive Order 13166 requires federal agencies to work to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally-assisted programs and activities may violate the prohibition under Title VI of the Civil Rights Restoration Act of 1987 and Title VI regulations against national origin discrimination.

Analyses in the EA reveal that the Proposed Action comply with EO 13166 as no persons with LEP would experience discrimination, be denied benefits, or lack participation associated with the execution of the Proposed Action.

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" tasks "each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations." Analyses in the EA reveal that the Proposed Action comply with EO 12898 as minority or low-income populations would not experience disproportionately high adverse human health and environmental effects as a result of the Proposed Action Alternative. The TxDOT Relocation Office would provide assistance to all individuals, families, businesses, and non-profit organizations displaced as a result of the proposed improvements.

Executive Order 11990 – Protection of Wetlands

The purpose of EO 11990 it to "minimize the destruction, loss of degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." The EO requires federal agencies to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. The Proposed Action Alternative would comply with EO 11990.

Clean Water Act (CWA)

The CWA establishes the basic structure for regulating discharges of pollutants into waters of the U.S. and regulating quality standards for surface waters. As specified by TCEQ CGP (TXR 150000), the proposed project would require a SW3P, NOI, and NOT. The SW3P would detail what BMPs would be utilized and where they would be utilized to reduce storm water impacts to the maximum extent practicable. The SW3P would also insure that all disturbed areas are properly revegetated prior to the NOT being filed. The Proposed Action would comply with the CWA.

The placement of temporary dredge or fill material in waters of the U.S. (including wetlands) that are determined to be jurisdictional is anticipated to be authorized by RGP-12, which authorizes the discharge of dredged or fill material into waters of the U.S., including wetlands, and work in or affecting navigable waters of the U.S. associated with modifications and alterations of Corps of Engineers projects that receive USACE approval under Section 408 and meets the conditions of RGP-12. State of Texas water quality certification, issued on January 21, 2010, is provided through the conditions of RGP-12.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act of 1899 generally prohibits the construction of structures over or in navigable waters of the U.S. without Congressional approval, which has been delegated to the USCG. The Rivers and Harbors Act of 1899 also prohibits excavation or fill within navigable waters of the U.S. without the approval of the USACE. The Trinity River

and Historic Trinity River Channels are Section 10 waters defined in the Rivers and Harbors Act of 1899.

General Bridge Act of 1946

The General Bridge Act of 1946 prohibits the construction of any bridge across navigable waters of the U.S. unless first authorized by the USCG. The Proposed Action Alternative would involve the construction of a bridge across navigable waters of the U.S. In accordance with the General Bridge Act of 1946 and Section 9 of the Rivers and Harbors Act of 1899, TxDOT coordinated with FHWA to determine if a USCG permit is required for the proposed bridge construction. Pursuant to 23 U.S.C. 144(h), the proposed bridge qualifies for an exemption from the requirements imposed under 33 U.S.C. 401 and 525(b), and the lighting and signal requirements imposed under 33 C.F.R. 118.40(b).

Executive Order (EO) 11988 – Floodplain Management

As discussed in Section 4.5.6, EO 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The proposed project would be in compliance with 23 C.F.R. 650 regarding location and hydraulic design of highway encroachments within the floodplains. It would demonstrate that it satisfies the TREIS ROD criteria for no increase in water surface elevations or valley storage for the 100-year and less than five percent valley storage loss for the SPF events.

Because the proposed project is within the Trinity River Corridor Development Regulatory Zone, a CDC process would apply. However, per coordination with the City of Dallas in January 2012, it is anticipated that the CDC application would not be needed because a CDC hydraulic review for the proposed project would be performed by USACE under the Section 408 approval process. Final determination of applicability is contingent upon USACE approval of hydraulic analysis performed as part of the Section 408 approval process. The Proposed Action would comply with EO 11988.

Endangered Species Act of 1973

Section 7 of the ESA requires federal agencies to ensure that any action authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of listed species or modify their existing habitat. An assessment of impacts to the potential habitat of threatened and endangered species and species of concern along the proposed project was performed in accordance with federal and state regulations. After reviewing habitat requirements and conducting field visits in December 2011, it was determined that the proposed project would have no effect on any federally-listed threatened or endangered species, their habitat, or designated habitat. The Proposed Action Alternative would comply with the ESA of 1973.

Migratory Bird Treaty Act (MBTA)

The MBTA states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. Migration patterns would not be affected by the Proposed Action. In the event that migratory birds are

encountered on-site during project construction, every effort would be made to avoid take of protected birds, active nests, eggs, and/or young. Analyses in the EA reveal that the Proposed Action would comply with the MBTA.

Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. Between February 15 and October 1, the contractor would be prepared to prevent migratory birds from building nests per the Environmental, Permits, issues and Commitments plans. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided. If species are present, work should cease at that location and TxDOT personnel should be contacted. If any active nests are found, the local USFWS biologist should be contacted by TxDOT to determine an appropriate plan of action.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since, prohibits anyone without a permit issued by the Secretary of the Interior from "taking" bald eagles, including their parts, nests, or eggs. In the event that a bald or golden eagle is encountered on-site during project construction, every effort would be made to avoid take of these species, their active nests, their eggs, and/or their young. Analyses in the EA reveal that the Proposed Action and corresponding environmental processes of implementation would comply with the Bald and Golden Eagle Protection Act.

National Historic Preservation Act of 1966

Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the NHPA of 1966, among others, apply to transportation projects such as the Dallas Horseshoe Project. The Proposed Action traverses various historic components of the Dallas Floodway, including levees, overbank, main diversion channel, and several culverts and sumps. In accordance with the Supplemental Appropriations Act, 2010, Section 405. (b), FHWA is exempt from the requirements of Section 4(f) of the U.S. DOT Act of 1966 for any highway project to be constructed “in the vicinity of the Dallas Floodway.” TxDOT requested and received FHWA confirmation on June 15, 2012 that the Section 4(f) exemption applies to the Dallas Floodway components, as well as to any other historic resource included in the Dallas Horseshoe area of potential effects that falls “within the zone of impact (i.e. flood risk) for which the levees protect from a 100-year flood event.”

In November and December 2004, TxDOT and the TSHPO conducted Section 106 coordination for 42 resources identified and documented in a HRSR as part of Project Pegasus. **Appendix E** of the EA includes the list of those resources and the final NRHP determinations of NRHP Eligibility and Effects per Section 106 coordination which concluded in December 2004. A copy of the correspondence letters between November 2004 and December 2004 are included in **Appendix F** of the EA. As part of the Section 106 coordination process for Project Pegasus, it was determined by TSHPO that no proposed ROW would be required from any of the NRHP listed or eligible properties. TxDOT Historians have determined and THC concurred that no historic resources would be adversely impacted within the Proposed Action’s APE.

TxDOT archeologists completed their review of the Proposed Action on March 29, 2012 and determined that the project will have no effect on archeological sites or cemeteries that would be afforded further consideration under cultural resource laws. No consultation with the THC/TSHPO was required. In addition, no public controversy exists regarding the project's potential impacts on archeological sites or cemeteries. The no effect determination memo signed by TxDOT is included in **Appendix F** of the EA.

In the event that 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. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

Noise Control Act (NCA)
As discussed in Section 4.7, Section 4(b) of the NCA of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, and local noise requirements with respect to the control and abatement of environmental noise. During construction of the Proposed Action, construction and ground-disturbing activities could create localized, temporary noise impacts from construction equipment and vehicles. However, once construction is completed, background noise levels would return to usual levels. Although construction normally occurs during daylight hours when occasional loud noises are more tolerable, nighttime construction would be substantial for the proposed project because it involves a major interchange and two major highways. Nighttime construction would be utilized in order to help minimize disturbance to vehicular traffic. In order to comply with the NCA, 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 (i.e., reduced nighttime construction near residential areas) and proper maintenance of muffler systems. The Proposed Action and corresponding environmental processes of implementation would comply with the NCA.

Clean Air Act (CAA)
The CAA of 1970 mandated the establishment of the NAAQS and regulations to reduce air pollutants. These air pollutants are also known as criteria pollutants. The Dallas Horseshoe Project is located in Dallas County, which is part of the EPA's designated nine county serious nonattainment area for the 8-hour standard for the pollutant ozone; therefore, the transportation conformity rule applies. The proposed project is included in and consistent with the area's financially constrained long-range MTP (*Mobility 2035*) and the 2011-2014 TIP as amended. The U.S. DOT (FHWA/Federal Transit Administration) found the MTP and the TIP to conform to the State Implementation Plan on July 14, 2011.

Since approval of Project Pegasus schematic was obtained, design revisions were proposed to improve constructability and traffic operations during and after construction. The revisions involve the southern part of the IH 30 and IH 35E interchange; the terminus of the IH 30 HOV/managed lane; and operational improvements along IH 30 in the Canyon. In May 2012, the North Central Texas Council of Governments (NCTCOG) prepared a technical memorandum to determine whether or not the changes affected the *Mobility 2035*

air quality conformity determination. It was concluded that these design changes, would not conflict with any of the assumptions or policies included in *Mobility 2035*. Therefore, NCTCOG concluded, and the FHWA concurred, that the proposed design revisions would not affect the *Mobility 2035* conformity determination.

Fish and Wildlife Coordination Act (FWCA)

The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-666c), enacted in 1956, and amended several times since, calls for the USACE and other Federal agencies involved in water resources to consult with the USFWS and with the applicable state agency exercising administration over wildlife resources wherein the proposed project is to be construction or action taken, with a view to the conservation of wildlife resources by prevention of their direct or indirect loss and damage due to the activity proposed in a permit application. Analyses in the EA reveal that the Proposed Action and corresponding environmental coordination with USFWS and TPWD would comply with the FWCA. Documentation of coordination between USACE and the USFWS in accordance with the FWCA is available in **Attachment 2**.

4.0 SUMMARY AND CONCLUSIONS

Environmental impacts of the proposed action on geology and soils is limited to the area of pier penetration and would therefore not substantially affect geology and soils. However, soil disturbance could result in temporarily increased erosion rates until the disturbed areas re-vegetate. Appropriate temporary erosion and sedimentation control practices such as temporary vegetation, mulch, sod, silt fences, rock berms, grassy swales, and vegetation-lined ditches would be installed prior to the initiation of construction as applicable and would be maintained throughout the duration of the construction.

The Proposed Action would not result in alteration, permanent occupation, or use of a federal project that would be injurious to the public interest and would not impair the usefulness of the Dallas Floodway.

The Proposed Action would result in no impacts to groundwater; or lakes, rivers, and streams; and result in no effects to federal threatened and endangered species, their habitat, or designated critical habitat, nor would it affect any state-listed species.

Ground disturbance related to construction activities may incidentally create areas that are attractive to interior least terns for use as potential nesting sites. Large areas (greater than one acre) cleared to bare soil and left idle for more than one week would be surveyed prior to resuming construction activities. Should interior least terns happen to utilize any of the project areas during construction activities, the USFWS would be notified to discuss alternative development plans or the need for consultation under Section 7 of the ESA.

The placement of temporary or permanent dredge or fill material in waters of the U.S., including wetlands, would be authorized by RGP-12. The permanent impacts were minimized to the extent possible as permanent fill impacts would be a result of the placement of bridge columns, bridge footings, overhead sign bases, and culverts within the boundaries of the waters of the U.S. Mitigation is proposed for the permanent impacts to

two streams and five wetlands within the Dallas Levees. Mitigation is also proposed for the culvert extension located south of IH 30 at Feature 79. The permanent impacts to the streams total 0.11 acre (283 linear feet) and 0.09 acre for the wetlands. Proposed mitigation for the permanent impacts to waters of the U.S., including wetlands, would be construction of a 0.20 acre wetland. The proposed wetland mitigation site would be located within the Dallas Floodway in the hydraulic swale at IH 30. The mitigation site would be contoured using multiple elevation gradients to a maximum depth of 2 ft and would be vegetated with appropriate wetland herbaceous species.

The TREIS ROD criteria apply because the Proposed Action would be constructed over and within the Trinity River floodplain. The proposed project would demonstrate that it satisfies the TREIS ROD criteria for water surface elevation, valley storage, and erosive water velocities for both the 100-year and SPF events during the Section 408 process. A CDC hydraulic review for the proposed project would be performed by USACE under the Section 408 approval process. Final determination of applicability of the CDC process is contingent upon USACE approval of hydraulic analysis performed as part of the Section 408 approval process.

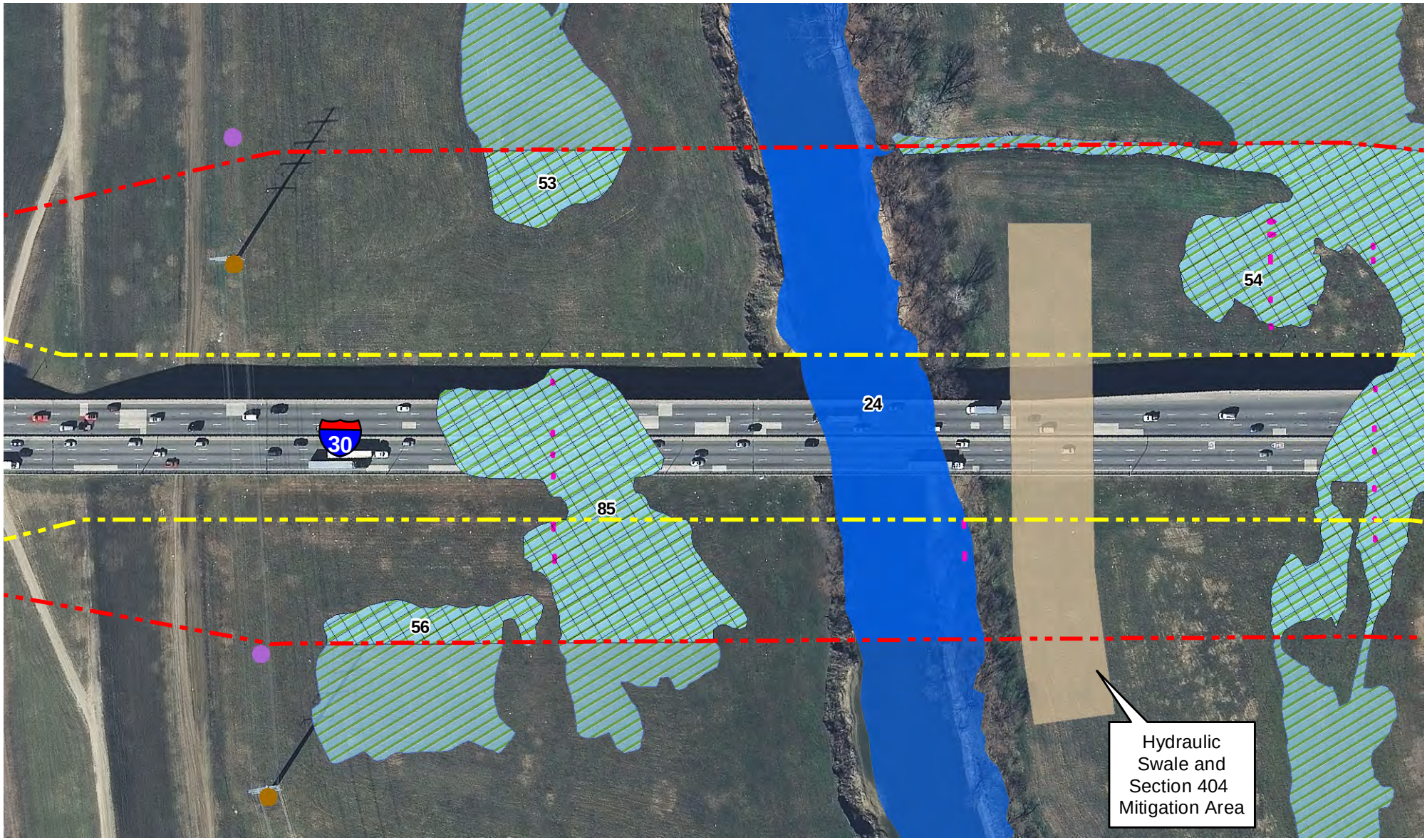
Equipment or materials actively used in day-to-day construction work may be left in the floodway overnight with prior written approval from the City of Dallas Flood Control District. Equipment and materials not approved by City of Dallas Flood Control District will be moved out of the floodway when not in use and stored in the design-build contractor's staging area outside of the floodway or at a designated location on the levee top road if previously authorized by the City of Dallas Flood Control District.

A total of 11 mature trees would potentially be impacted as they are located within the construction areas. In the IH 30 construction area there is one tree present and there are ten trees located within the IH 35E construction area. Efforts to protect the trees during construction would occur as it may be possible to preserve those located near the edge of the construction areas. After construction is completed, the areas of bare ground resulting from the construction activity would be reseeded/revegetated.

In 2011, the THC determined the Dallas Floodway is Eligible for the NRHP at the local level of significance in the areas of Engineering and Community Planning and Development, under Criterion A. The Dallas Horseshoe Project would cross the Dallas Floodway but would not impact the function of the floodway and is not anticipated to alter any significant features of the floodway. It is anticipated that the construction of the IH 30 and IH 35E bridges across the Dallas Floodway would not have the potential for adverse effect, because the proposed modification to the piers would not impede the Dallas Floodway's function. Pursuant to Stipulation VI "Undertakings with Potential to Cause Effects" of the 2005 PA-TU among FHWA, TSHPO, ACHP, TxDOT and the MOU, ENV will determine if potentially NRHP Eligible historic resources are present within the proposed project's APE and if individual project coordination with TSHPO will be required. TxDOT Historians have determined and THC concurred that no historic resources would be adversely impacted within the proposed project's APE.

TxDOT archeologists completed their review for the Proposed Action in March 2012 and determined that the proposed action will have no effect or no adverse effect on archeological sites or cemeteries. In the event that 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. If archeological sites are discovered within the Dallas Floodway during construction, these would be evaluated and mitigated as determined by the USACE.

A SGMP has been developed for the proposed project. The SGMP contains the recommendations for managing contaminated soil, groundwater, and waste generated during construction. The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials (ACM) and lead based paint (LBP) testing would be performed on the existing bridge structures. The design-build contractor is responsible for preparing a comprehensive HMMP outlining field screening procedures and management of affected soils to be followed during construction. The HMMP may utilize recommendations, procedures, or guidance from the SGMP.



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
- Jurisdictional Wetland
- Permanent Impact (Culvert)
- Oncor Tower to be Removed
- Permanent Impact (Bridge Bent)
- Temporary Impact (Construction)
- Area to be Filled
- Permanent Impact (Stream Re-alignment)
- New Oncor Tower

N

0 100 200 300 Feet

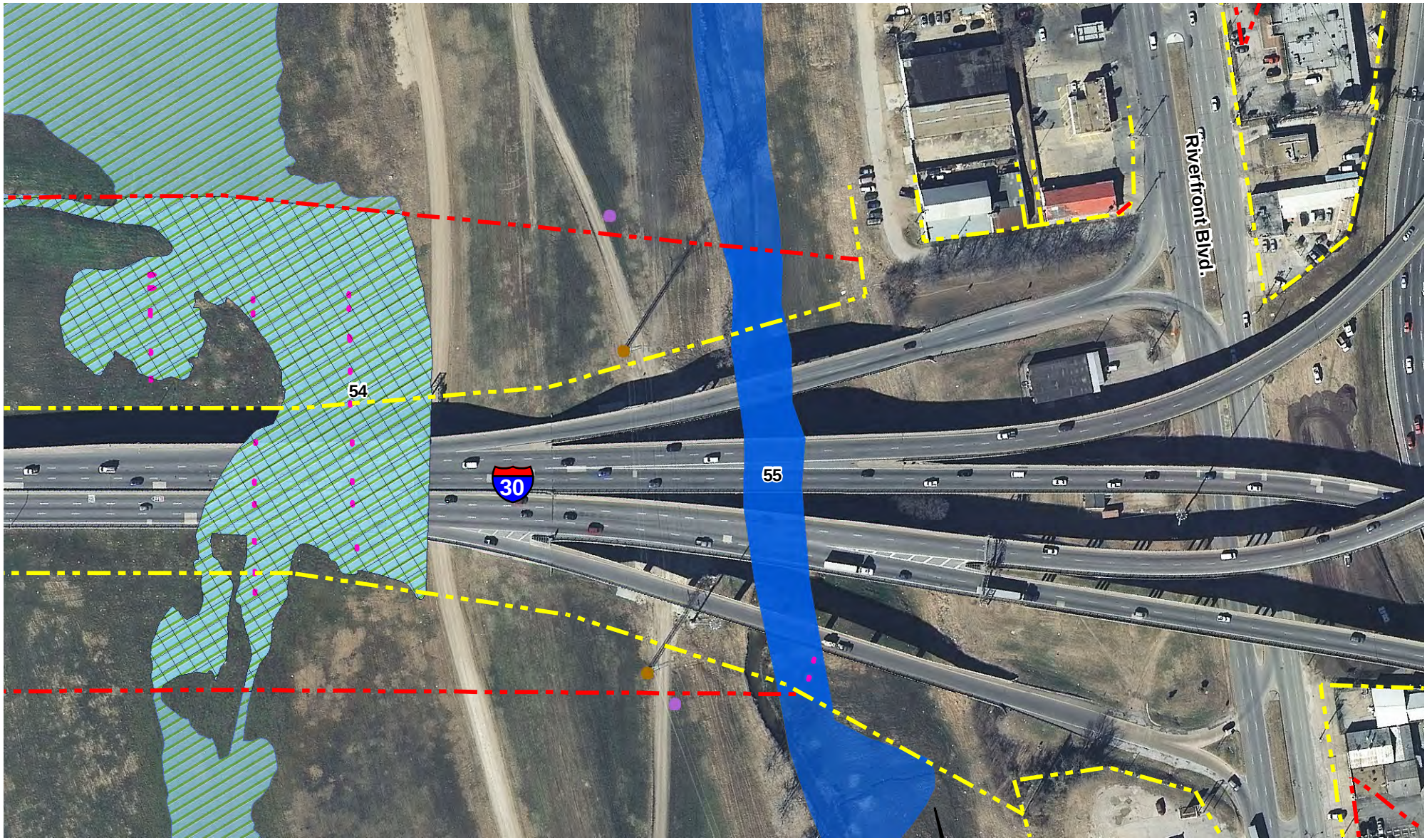
Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 1 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
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- Permanent Impact (Culvert)
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- Area to be Filled
- Permanent Impact (Stream Re-alignment)
- New Oncor Tower

N

0 100 200 300 Feet

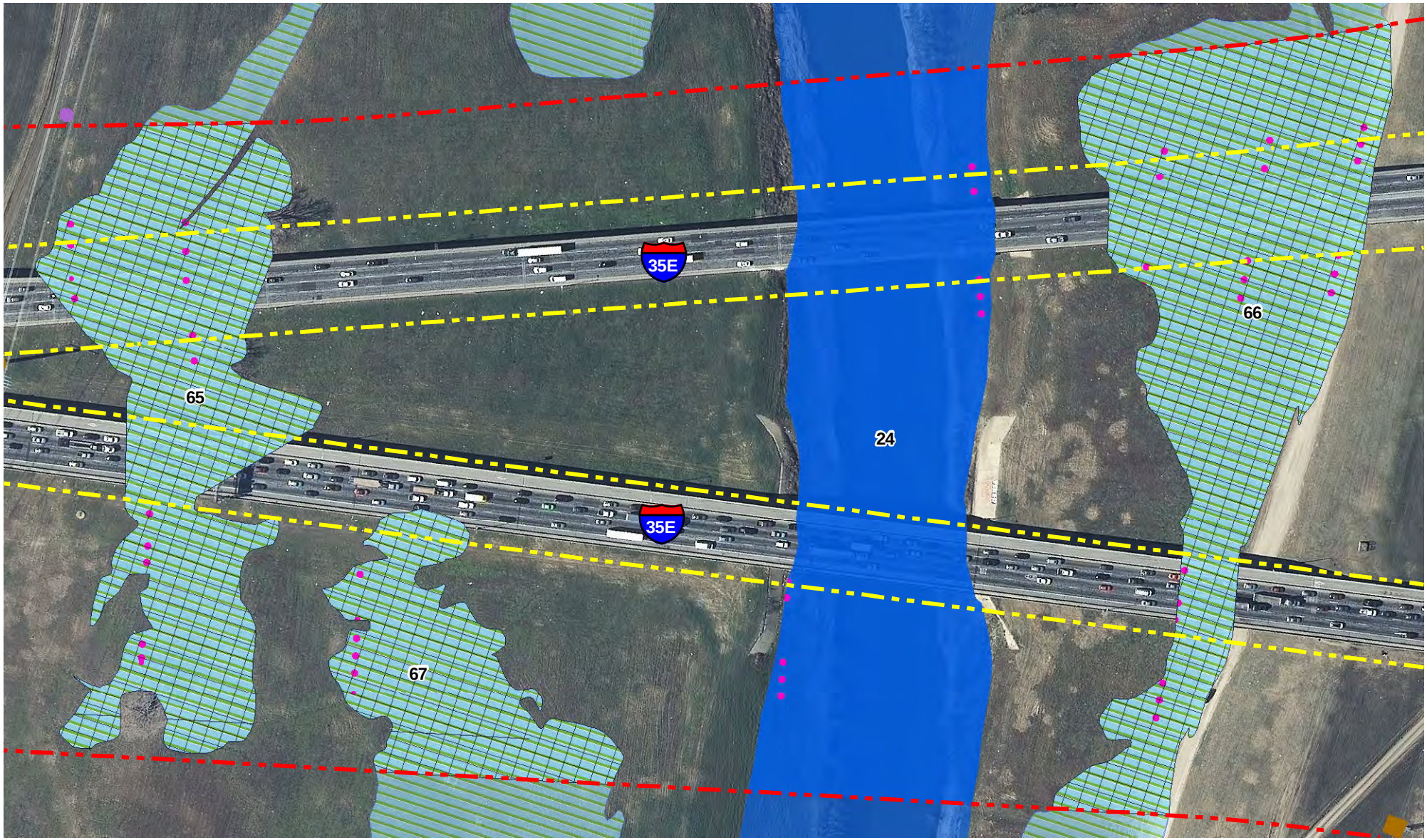
Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 2 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
- Jurisdictional Wetland
- Permanent Impact (Culvert)
- Oncor Tower to be Removed
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- Area to be Filled
- Permanent Impact (Stream Re-alignment)
- New Oncor Tower

N

0 100 200 300 Feet

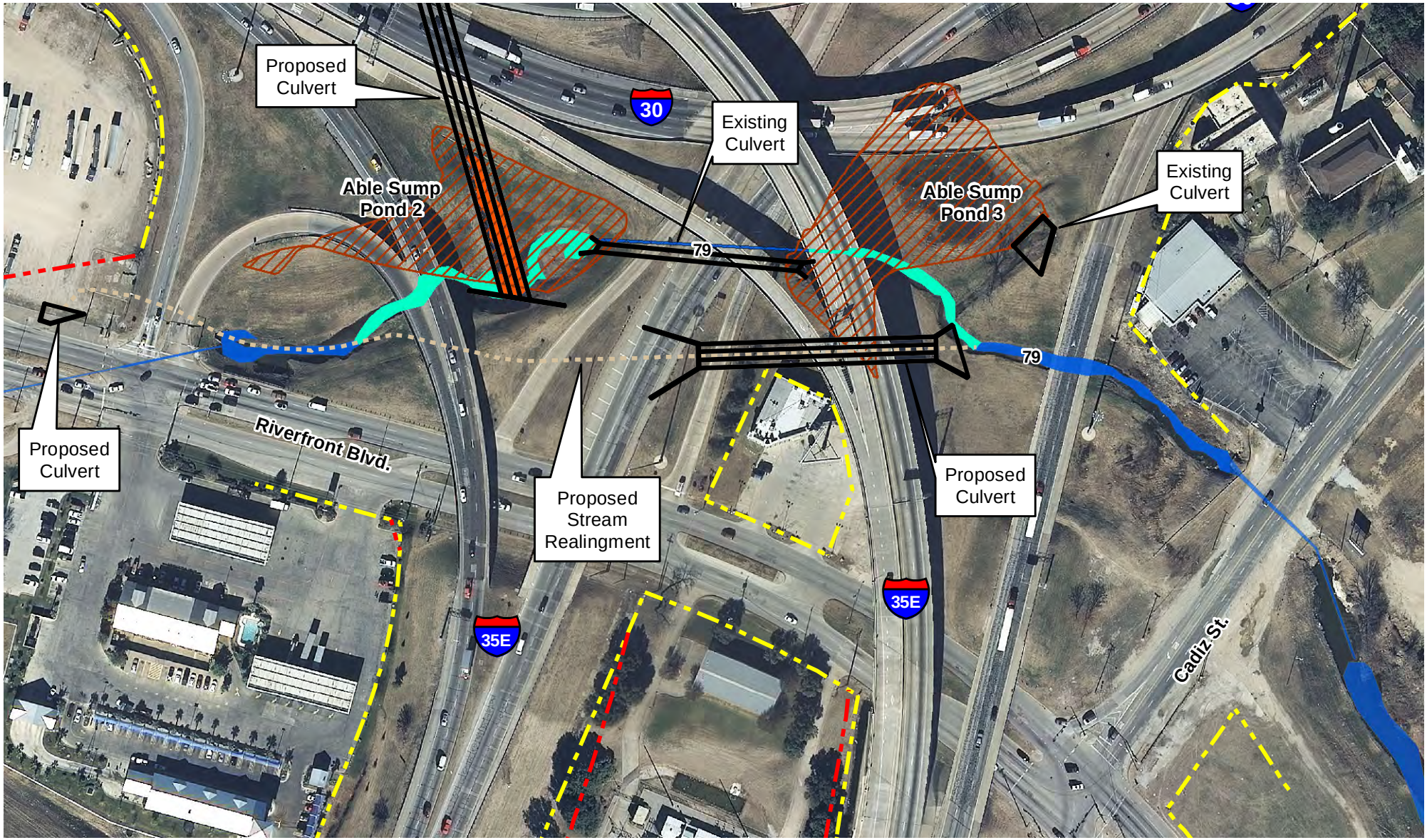
Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 3 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
- Jurisdictional Wetland
- Permanent Impact (Culvert)
- Oncor Tower to be Removed
- Permanent Impact (Bridge Bent)
- Temporary Impact (Construction)
- Area to be Filled
- Permanent Impact (Stream Re-alignment)
- New Oncor Tower

N

0 100 200 300 Feet

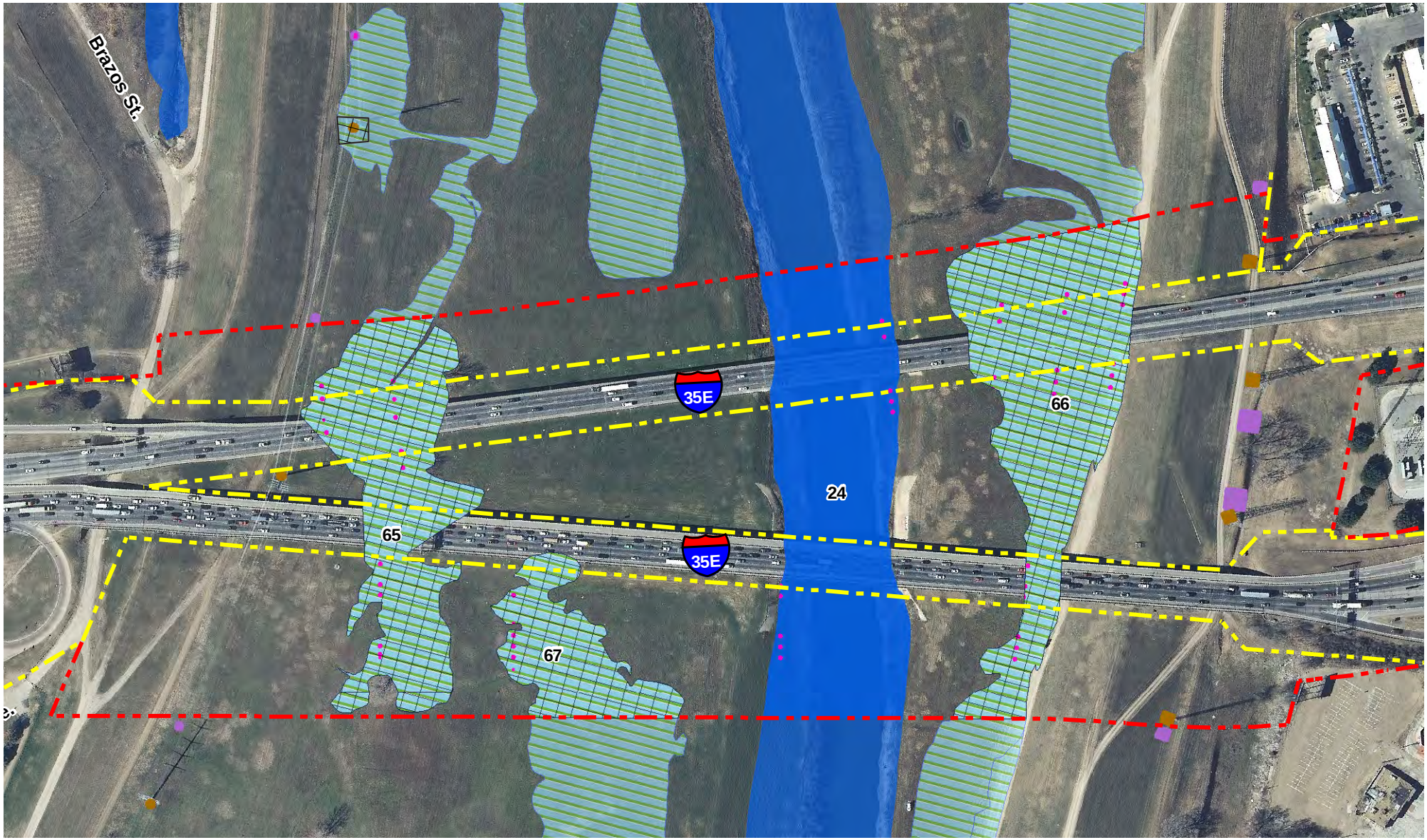
Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 4 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
- Jurisdictional Wetland
- Permanent Impact (Culvert)
- Oncor Tower to be Removed
- Permanent Impact (Bridge Bent)
- Temporary Impact (Construction)
- Area to be Filled
- Permanent Impact (Stream Re-alignment)
- New Oncor Tower

N

0 150 300 450 Feet

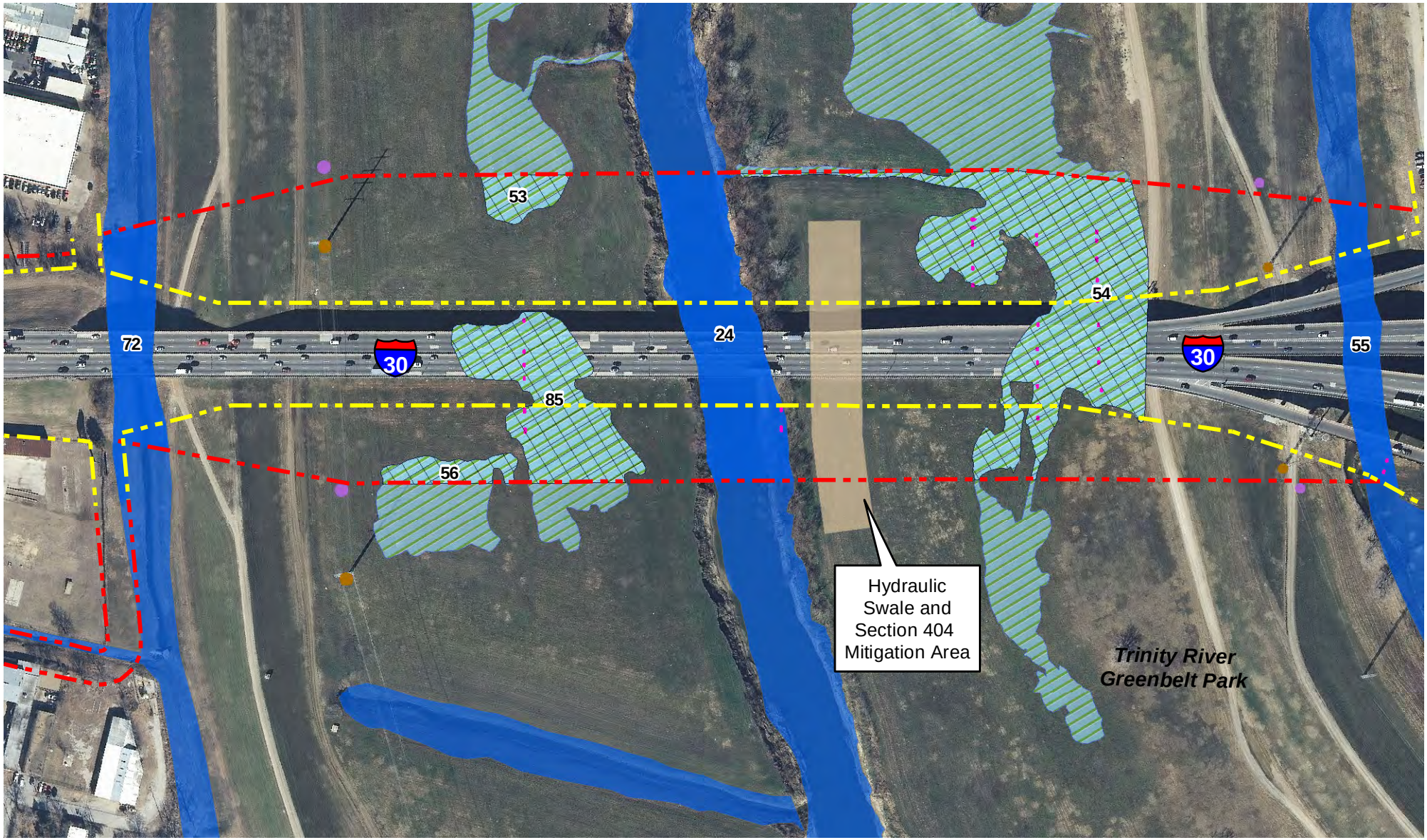
Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 5 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing ROW
- Proposed ROW
- Jurisdictional Water
- Jurisdictional Wetland
- Permanent Impact (Culvert)
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- Area to be Filled
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- New Oncor Tower

N

0 150 300 450 Feet

Texas Department of Transportation

THE HORSESHOE

ATTACHMENT 1
SECTION 404 IMPACTS
SHEET 6 OF 6

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

ATTACHMENT 2

-----Original Message-----
From: Hackett, Marcia R SWF [mailto:Marcia.R.Hackett@usace.army.mil]
Sent: Thursday, September 06, 2012 10:09 AM
To: Lupe Pettit
Cc: Davis, Matthew G SPK; Sims, Douglas C SWF; Loxley, Jon
Subject: FW: FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Lupe:

This email trail documents coordination with USFWS under the Fish and Wildlife Coordination Act for the IH-30/IH-35 Dallas Horseshoe project. I think adding a copy of this to Appendix F - Agency Coordination file or as an exhibit to Appendix B - 408 Environmental Compliance Information. Thanks.

Marcia Hackett
Regional Technical Specialist
Environmental Planning
CESWF-PER-EE, Room 3A14
819 Taylor Street
Fort Worth, Texas 76102
(817)886-1373
marcia.r.hackett@usace.army.mil

-----Original Message-----
From: Hackett, Marcia R SWF
Sent: Thursday, September 06, 2012 10:04 AM
To: 'Sean_Edwards@fws.gov'
Subject: RE: FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sean:

Thanks for your prompt reply. I appreciate your comment regarding FWS recommendation that opportunities for replacement of the loss of riparian woodland habitat be explored. As you noted, the Corps has no regulatory authority to require mitigation for this habitat type, but we agree that this 0.86 acres of riparian habitat, including the large trees are important as they are limiting component of the floodway habitat within the highly urbanized setting of Dallas. Thanks.

Marcia

-----Original Message-----
From: Sean_Edwards@fws.gov [mailto:Sean_Edwards@fws.gov]
Sent: Tuesday, September 04, 2012 1:41 PM
To: Hackett, Marcia R SWF
Subject: RE: FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Marcia,

I've had a chance to review the EA and Appendix B regarding the Dallas Horseshoe Project. The EA concludes that there would be no adverse impacts to the federally listed species of Dallas County. Due to an apparent lack of preferred habitats and the presence of ongoing disturbance, we believe that this determination is sound and well supported.

The EA also identifies that approximately .86 acres of riparian woodland habitat including 16 large trees would be removed as a result of construction of the proposed project. Although there may not be a regulatory process requiring mitigation for this, we recommend that opportunities to replace this loss of habitat be explored. Riparian habitats such as this may be the only refuge for certain migrating and resident species within urban settings.

Thank you for the opportunity to participate in the environmental review of this project. Please let me know if I may be of further assistance.

Kind Regards,

Sean Patrick Edwards
Program Coordinator, Conservation Planning
U.S. Fish & Wildlife Service
Ecological Services Field Office
2005 NE Green Oaks Blvd., Suite 140
Arlington, Texas 76006
817-277-1100
sean_edwards@fws.gov

"Hackett, Marcia R SWF" <Marcia.R.Hackett@usace.army.mil>

08/27/2012 02:37 PM To
"Sean_Edwards@fws.gov" <Sean_Edwards@fws.gov>
cc
Subject
RE: FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks, Sean. Attached are the updated versions of the EA, Appendix B that covers the Corps Section 408 requirements and the draft FONSI. I am going to ask that they include a small paragraph regarding FWCA under section 3.0 of Appendix B. I think if they do and you do a quick review, that should satisfy our coordination requirement.

Marcia

-----Original Message-----

From: Sean_Edwards@fws.gov [mailto:Sean_Edwards@fws.gov]
Sent: Monday, August 27, 2012 1:37 PM
To: Hackett, Marcia R SWF
Subject: Re: FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Marcia,

I'd be happy to review the document and expedite a response. Please put it to my attention.

Kind Regards,

Sean Patrick Edwards
Program Coordinator, Conservation Planning
U.S. Fish & Wildlife Service
Ecological Services Field Office
2005 NE Green Oaks Blvd., Suite 140
Arlington, Texas 76006
817-277-1100
sean_edwards@fws.gov

"Hackett, Marcia R SWF" <Marcia.R.Hackett@usace.army.mil>

08/27/2012 11:53 AM To
"Sean_Edwards@fws.gov" <Sean_Edwards@fws.gov>
cc
Subject
FHWA/TXDOT Dallas IH-30/IH-35 Bridges over Dallas Floodway (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sean:

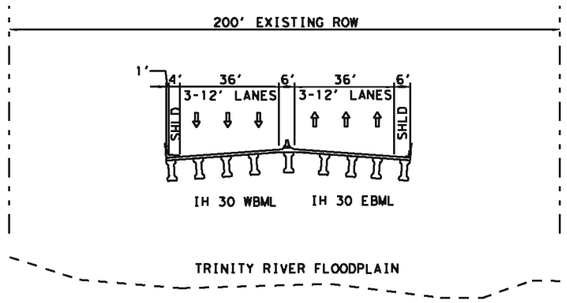
Mandy indicated that she has been in contact with you to do a quick review of the FHWA proposed modifications to the IH-35W bridge over the Fort Worth Floodway to meet the Corps responsibilities under FWCA. I am the EV Planner doing review of the IH-30/IH-35E bridge modifications being proposed across the Dallas Floodway. The consultant working on the EA evidently did coordinate with USFWS regarding T&E species, but not under FWCA. It is my understanding that FHWA/TXDOT generally does their coordination with TPWD for these types of projects and are not required to coordination with your agency under FWCA. However, since we are a cooperating agency under for the NEPA document and we require coordination under FWCA I would like to have you do a quick review of the EA and provide a letter of concurrence, if applicable.

I am relatively comfortable with the description of impacts to both T&E species and vegetation that was included in the EA, since they pulled info directly from the USFWS Existing Habitat Conditions Planning Aid Report for the Dallas Floodway Project (April 2010), from coordination with TPWD and field assessments that they conducted. If I would get you a copy of the EA, would you have the time to do a quick review of the pertinent sections to see if you have any comments or whether you concur with the findings? Thanks.

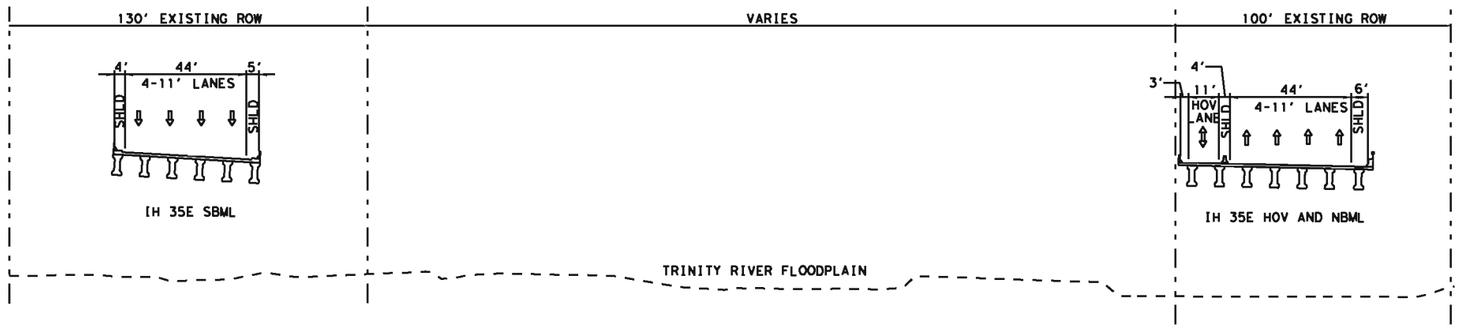
Marcia Hackett

APPENDIX C: Existing and Proposed Typical Sections

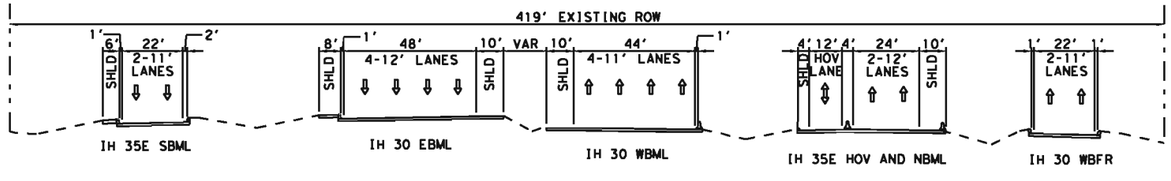
EBFR= EAST BOUND FRONTAGE ROAD
EBML= EAST BOUND MAINLANE
HOV= HIGH OCCUPANCY VEHICLE
NBML= NORTH BOUND MAINLANE
ROW= RIGHT-OF-WAY
SBML= SOUTH BOUND MAINLANE
SHLD= SHOULDER
VAR= VARIABLE
WBFR= WEST BOUND FRONTAGE ROAD
WBML= WEST BOUND MAINLANE



EXISTING IH 30 AT THE DALLAS FLOODWAY



EXISTING IH35E AT THE DALLAS FLOODWAY



EXISTING MIXMASTER AT HOUSTON STREET VIADUCT

Texas Department of Transportation

EXISTING AND PROPOSED
TYPICAL SECTIONS

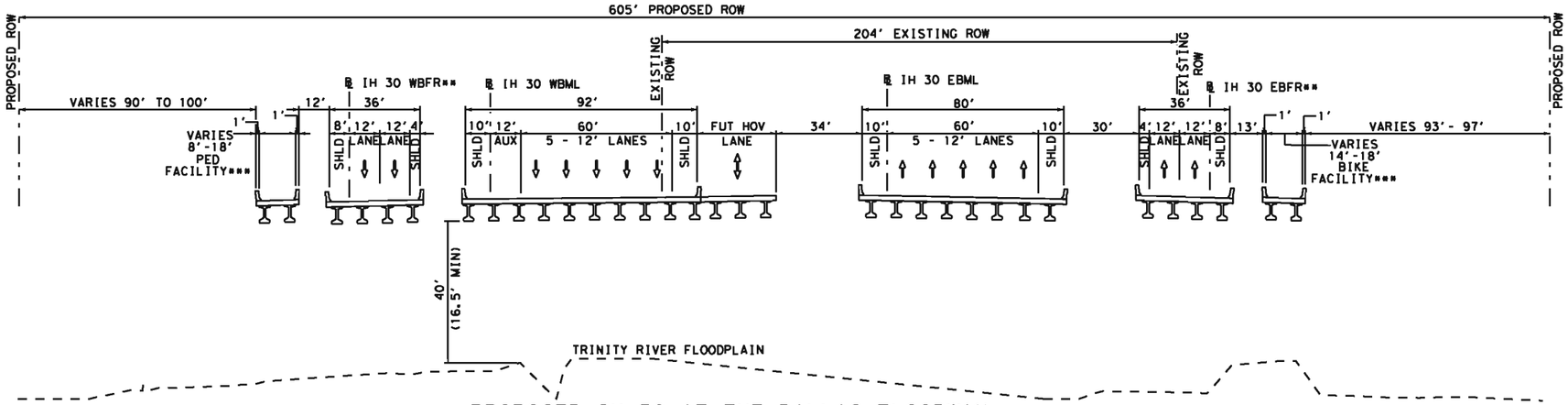
SHEET 1 OF 4

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

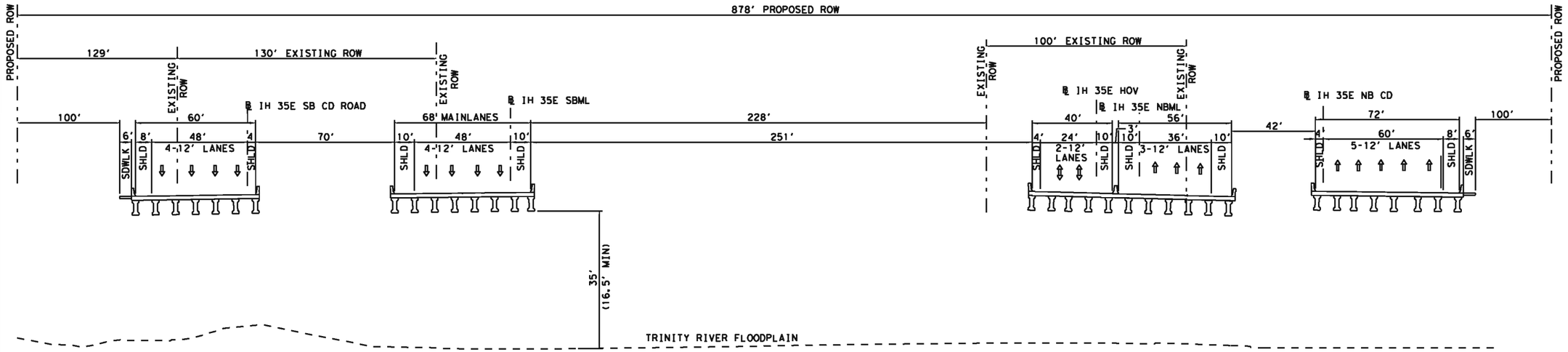
$$$$sytime$$$$
$$$$dgnspec$$$$

CD= COLLECTOR DISTRIBUTOR ROAD
DC= DIRECT CONNECTOR
EBFR= EAST BOUND FRONTAGE ROAD
EBML= EAST BOUND MAINLANE
MIN= MINIMUM
NBML= NORTH BOUND MAINLANE
ROW= RIGHT-OF-WAY
SBML= SOUTH BOUND MAINLANE
SDWLK= SIDEWALK
SHLD= SHOULDER
VAR= VARIABLE
WBFR= WEST BOUND FRONTAGE ROAD
WBML= WEST BOUND MAINLANE

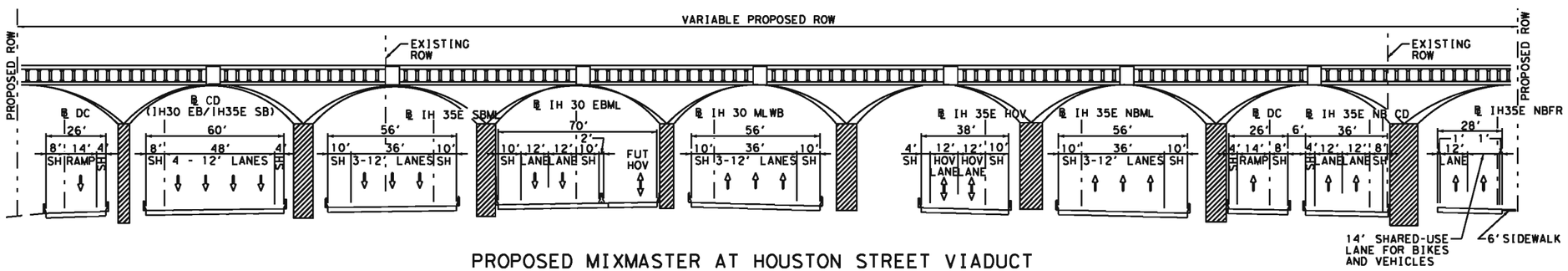


PROPOSED IH 30 AT THE DALLAS FLOODWAY

*FUTURE MANAGED LANES TO BE OPENED TO TRAFFIC UNDER SEPARATE PROJECT.
**THE FRONTAGE ROAD AND PED AND BIKE/FACILITY BRIDGES WOULD BE INTEGRATED AS ONE STRUCTURE.
***A VARIABLE WIDTH WOULD PROVIDE FLEXIBILITY FOR FUTURE PED AND/OR BIKE FACILITIES UNDER SEPARATE PROJECT BY OTHERS.



PROPOSED IH 35E AT THE DALLAS FLOODWAY



PROPOSED MIXMASTER AT HOUSTON STREET VIADUCT

Texas Department of Transportation

EXISTING AND PROPOSED TYPICAL SECTIONS

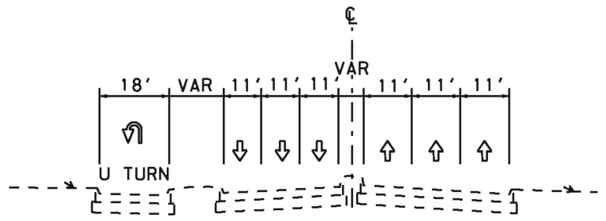
SHEET 2 OF 4

Dallas Horseshoe Project
IH 30 and IH 35E

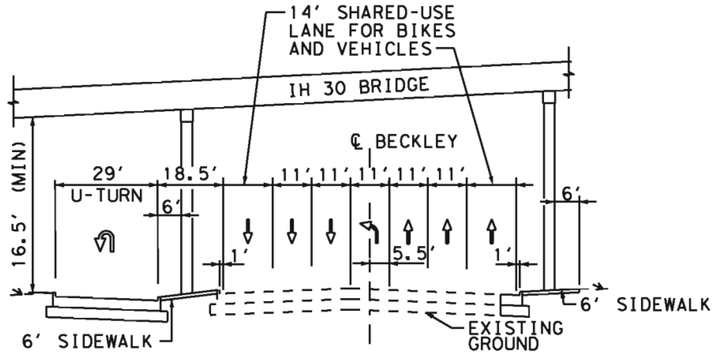
Environmental Assessment
Dallas County, Texas

$$$$syrtime$$$
$$$$dgnspec$$$

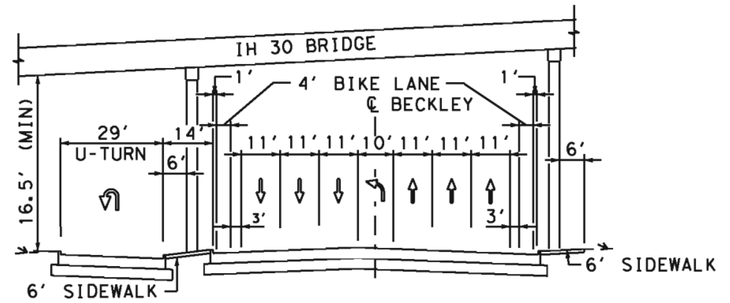
ROW= RIGHT-OF-WAY
SHLD= SHOULDER
SDWLK= SIDEWALK
VAR= VARIABLE
LN= LANE



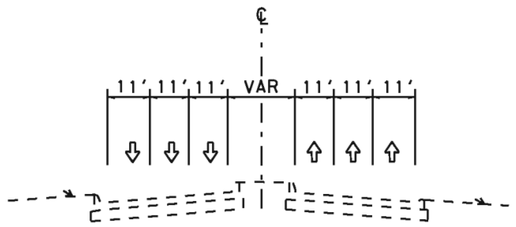
EXISTING BECKLEY AVENUE
(CROSS STREET)



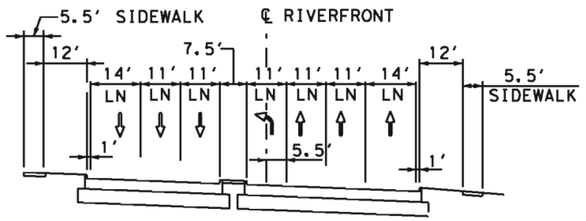
PROPOSED BECKLEY AVENUE
(CROSS STREET)



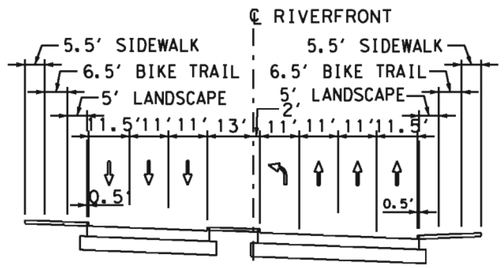
FUTURE BECKLEY AVENUE
(CROSS STREET)



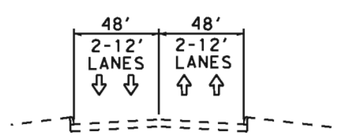
EXISTING RIVERFRONT BOULEVARD
(CROSS STREET)



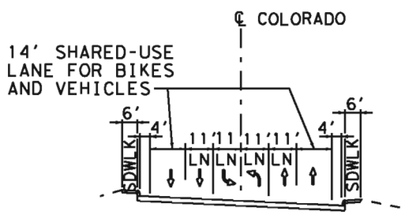
PROPOSED RIVERFRONT BOULEVARD
(CROSS STREET)



FUTURE RIVERFRONT BOULEVARD
(CROSS STREET)



EXISTING COLORADO BOULEVARD
(CROSS STREET)



PROPOSED COLORADO BOULEVARD
(CROSS STREET)

Texas Department of Transportation

EXISTING AND PROPOSED
TYPICAL SECTIONS

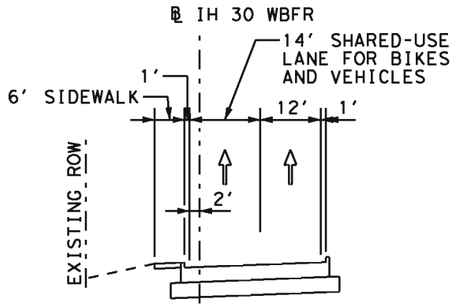
SHEET 3 OF 4

Dallas Horseshoe Project
IH 30 and IH 35E

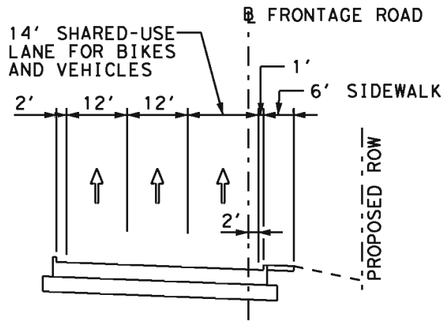
Environmental Assessment
Dallas County, Texas

$$$$sytime$$$
$$$$dgnspec$$$

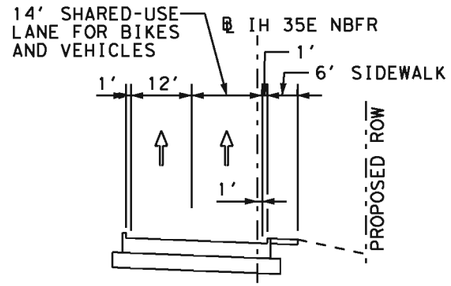
FOC= FACE OF CURB
ROW= RIGHT-OF-WAY
SHLD= SHOULDER
SDWLK= SIDEWALK
VAR= VARIABLE
RET WALL= RETAINING WALL
CTB= CONCRETE TRAFFIC BARRIER



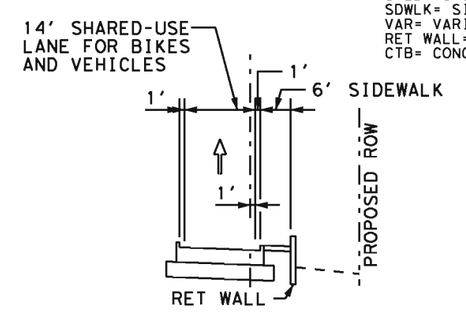
PROPOSED IH 30 WBFR
(2-LANE FRONTAGE ROAD)



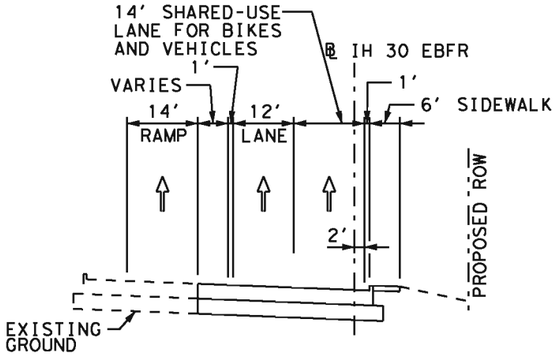
PROPOSED IH 30 EBFR & IH 30 WBFR
(MIRRORED)
(3-LANE FRONTAGE ROAD)



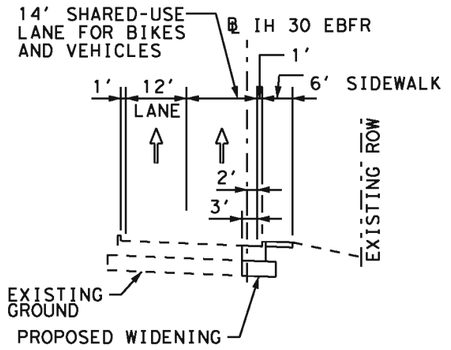
PROPOSED IH 35E NBFR
(2-LANE FRONTAGE ROAD)



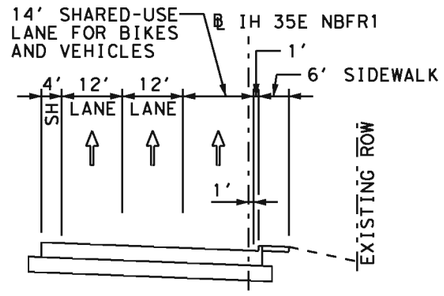
PROPOSED IH 35E NBFR
(1-LANE FRONTAGE ROAD WITH RETAINING WALL)



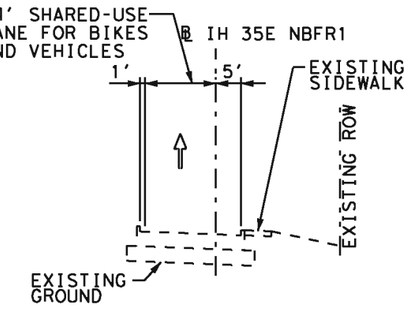
PROPOSED IH 30 EBFR
(2-LANE FRONTAGE ROAD WIDENING WITH RAMP)



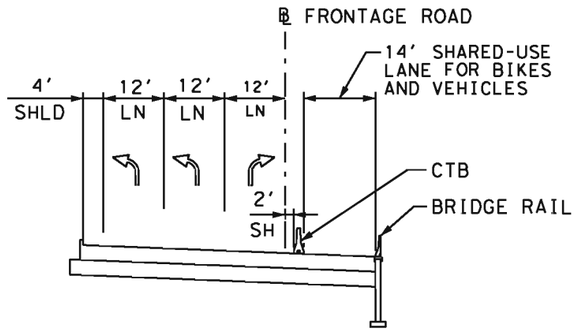
PROPOSED IH 30 EBFR
(2-LANE FRONTAGE ROAD WIDENING)



PROPOSED IH 35E NBFR
(3-LANE FRONTAGE ROAD)



PROPOSED IH 35E NBFR
(1-LANE FRONTAGE ROAD)



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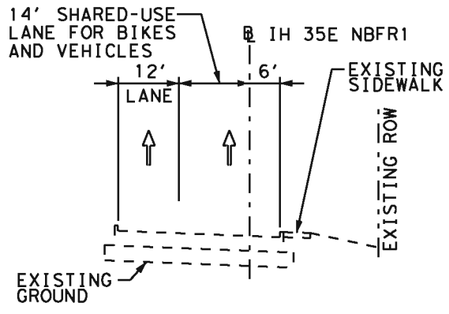
3-LANE FRONTAGE ROAD W/ WALL
APPROACHING RIVERFRONT BOULEVARD



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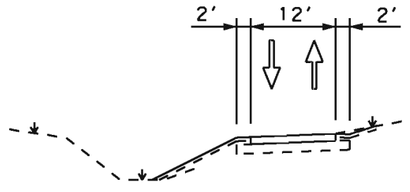


PROPOSED CONNECTION TO
FUTURE COOMBS CREEK
TRAIL EXTENSION

Texas Department of Transportation

EXISTING AND PROPOSED
TYPICAL SECTIONS

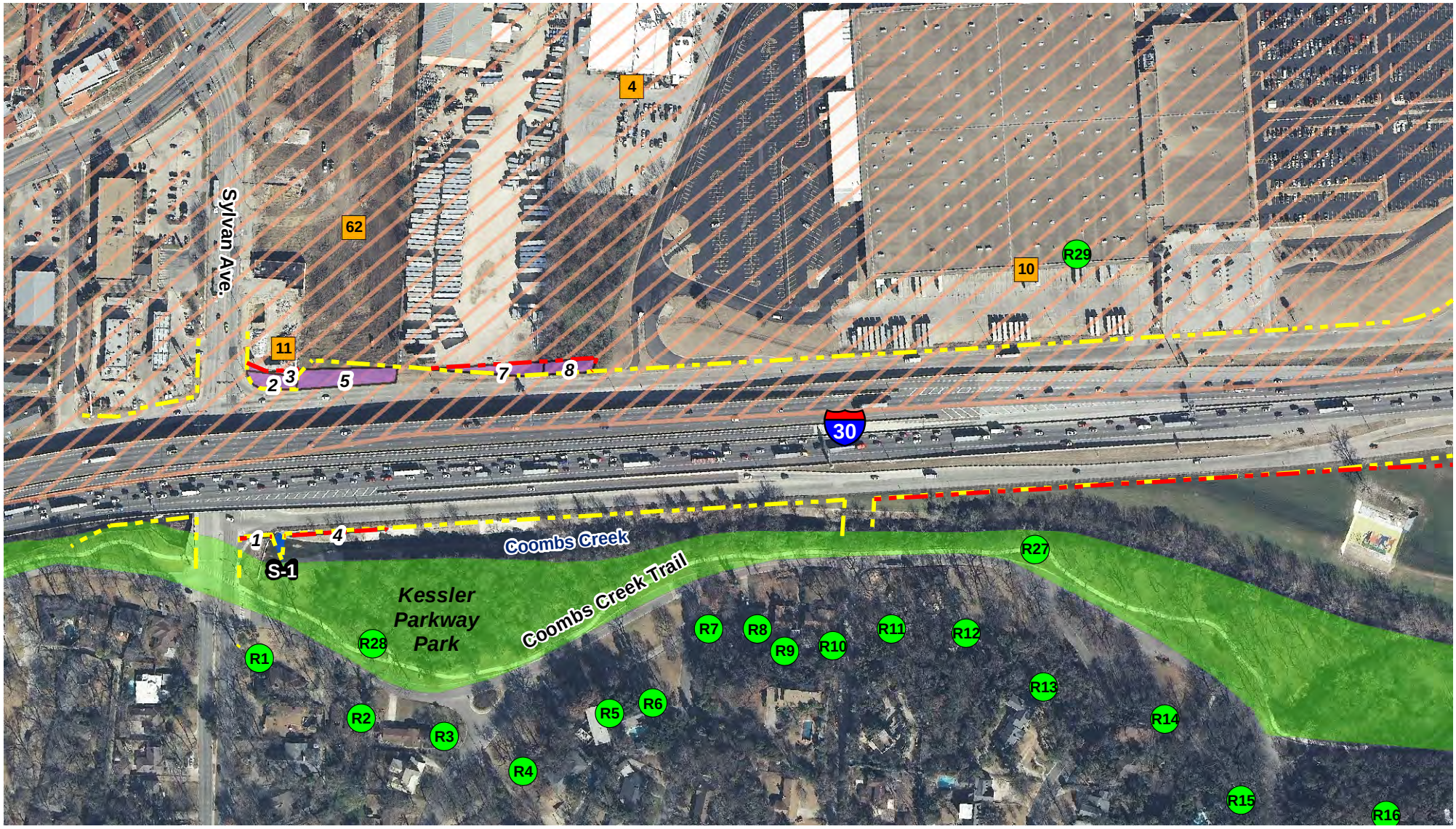
SHEET 4 OF 4

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

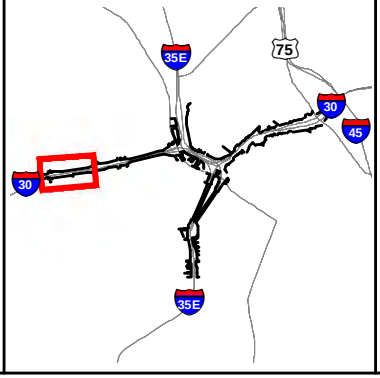
$$$$sytime$$$$
$$$$dgnspec$$$$

APPENDIX D: Constraints Maps



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Large Tree
- Woodland Area
- Acquired Parcel



N

0 200 400 600 Feet

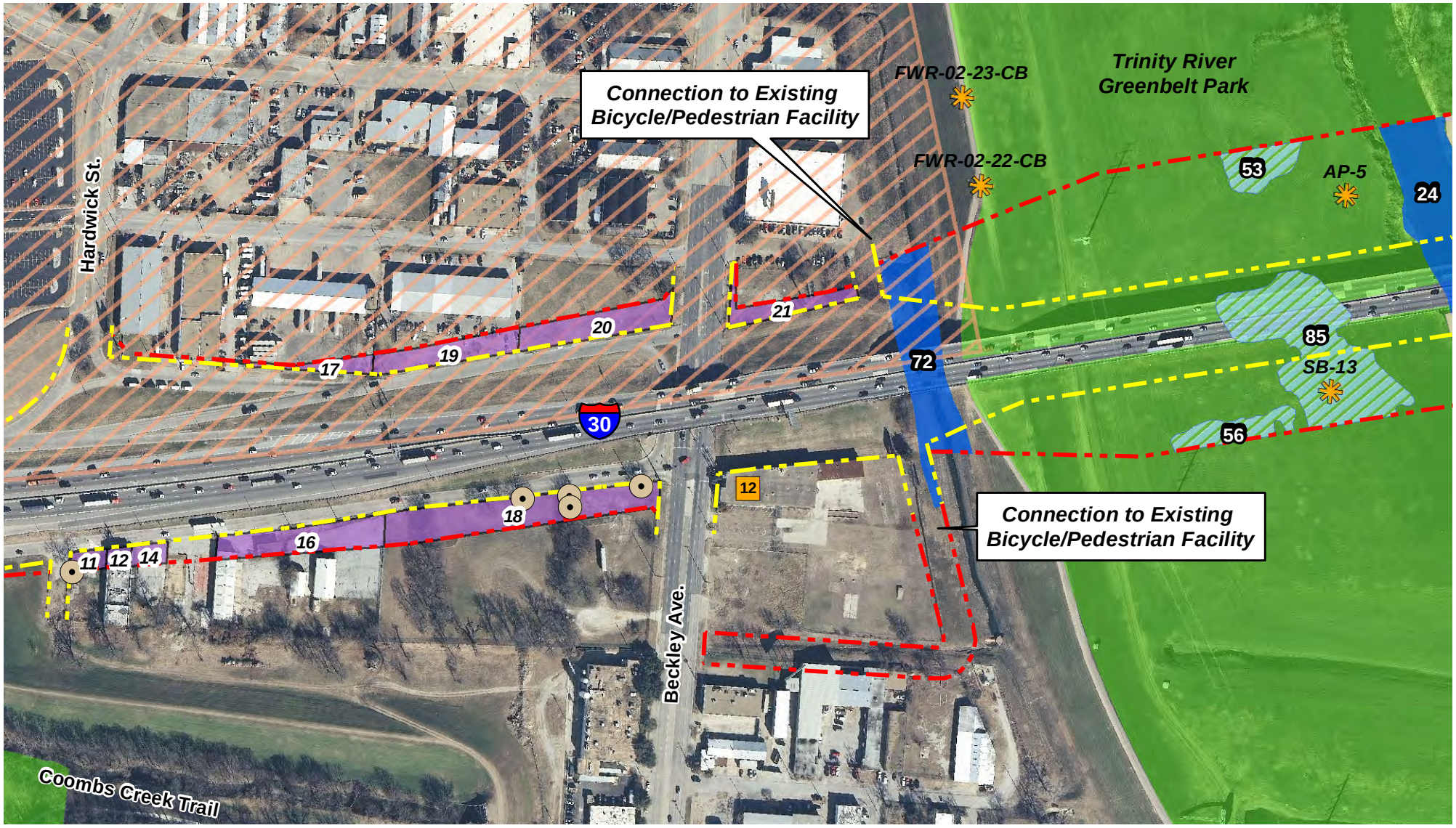
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 1 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
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- Water Feature
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- Impacted Noise Receiver
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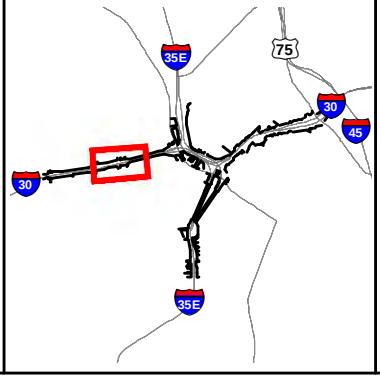
- Woodland Area
- Acquired Parcel



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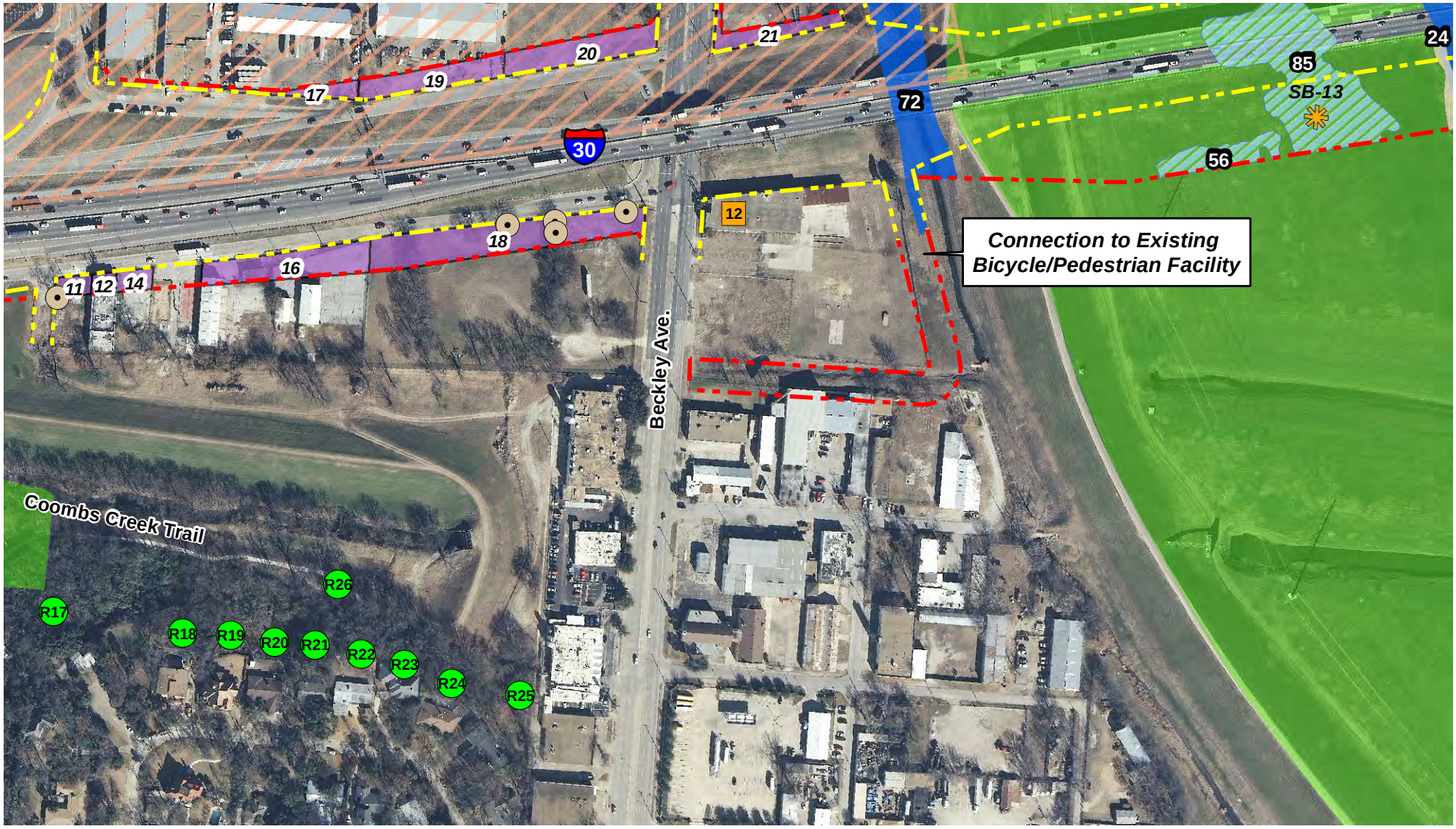
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 2 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
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- Potential Displacement
- Water Feature
- Wetland Feature
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- Impacted Noise Receiver
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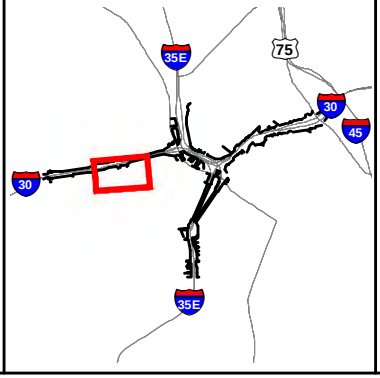
- Woodland Area
- Acquired Parcel



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0 200 400 600 Feet

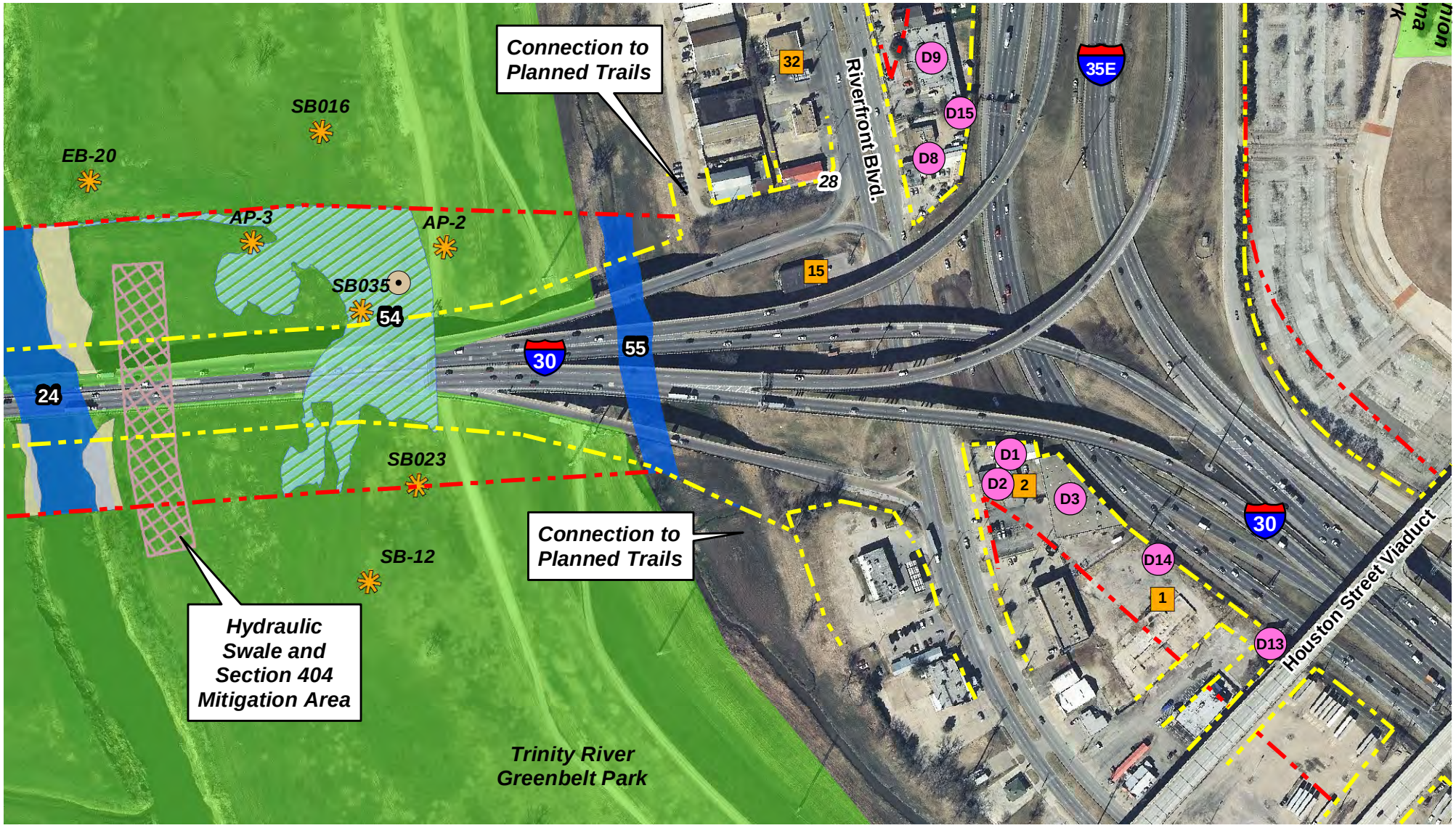
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 3 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
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- Large Tree
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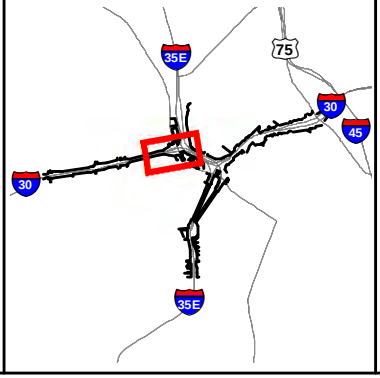
- Acquired Parcel



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0 200 400 600 Feet

THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 4 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
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- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
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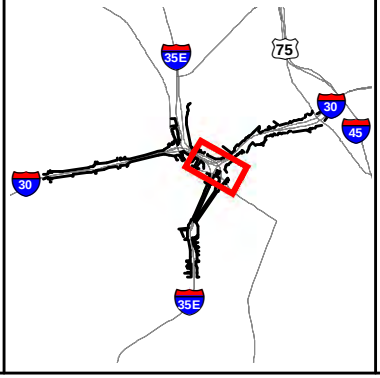
- Large Tree
- Woodland Area
- Acquired Parcel



0 200 400 600 Feet

THE HORSESHOE

Texas Department of Transportation

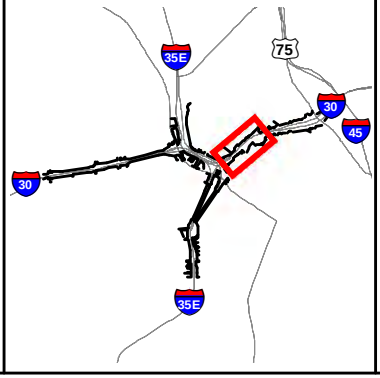
CONSTRAINTS MAPS
SHEET 5 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Large Tree
- Woodland Area
- Acquired Parcel



0 200 400 600 Feet

THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 6 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
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- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
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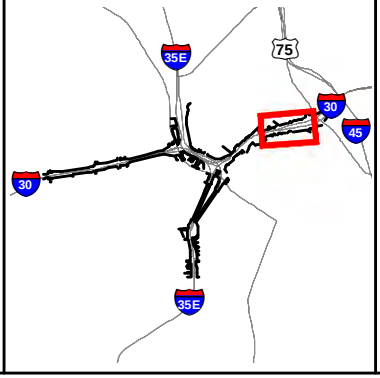
- Acquired Parcel



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0 200 400 600 Feet

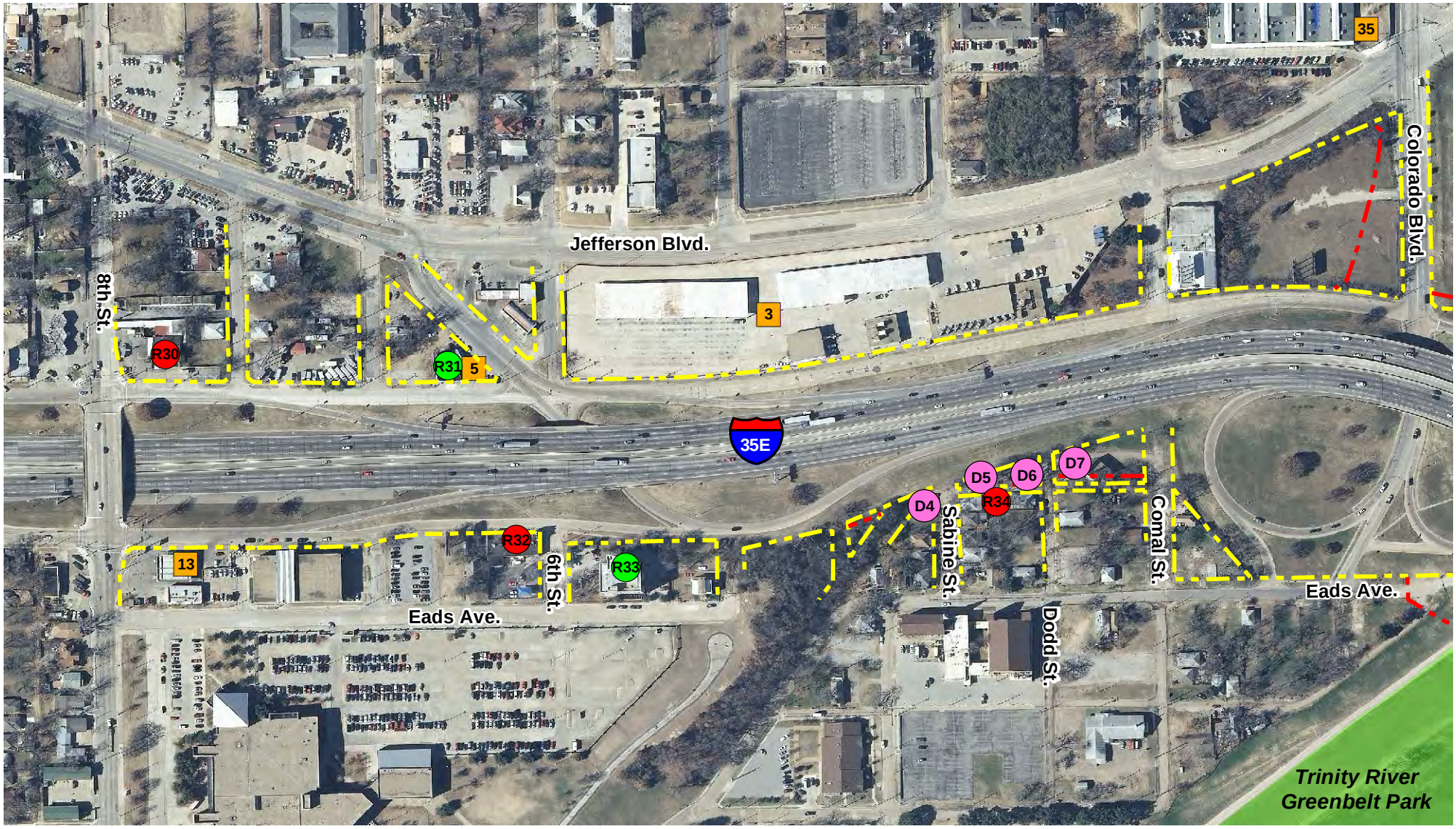
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 7 OF 12

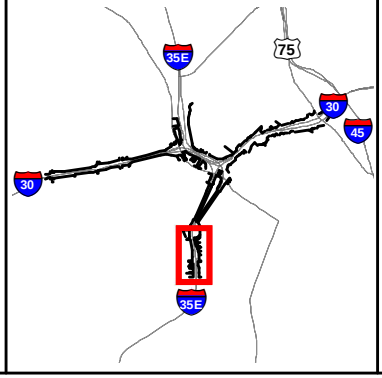
Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Large Tree
- Woodland Area
- Acquired Parcel



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0 200 400 600 Feet

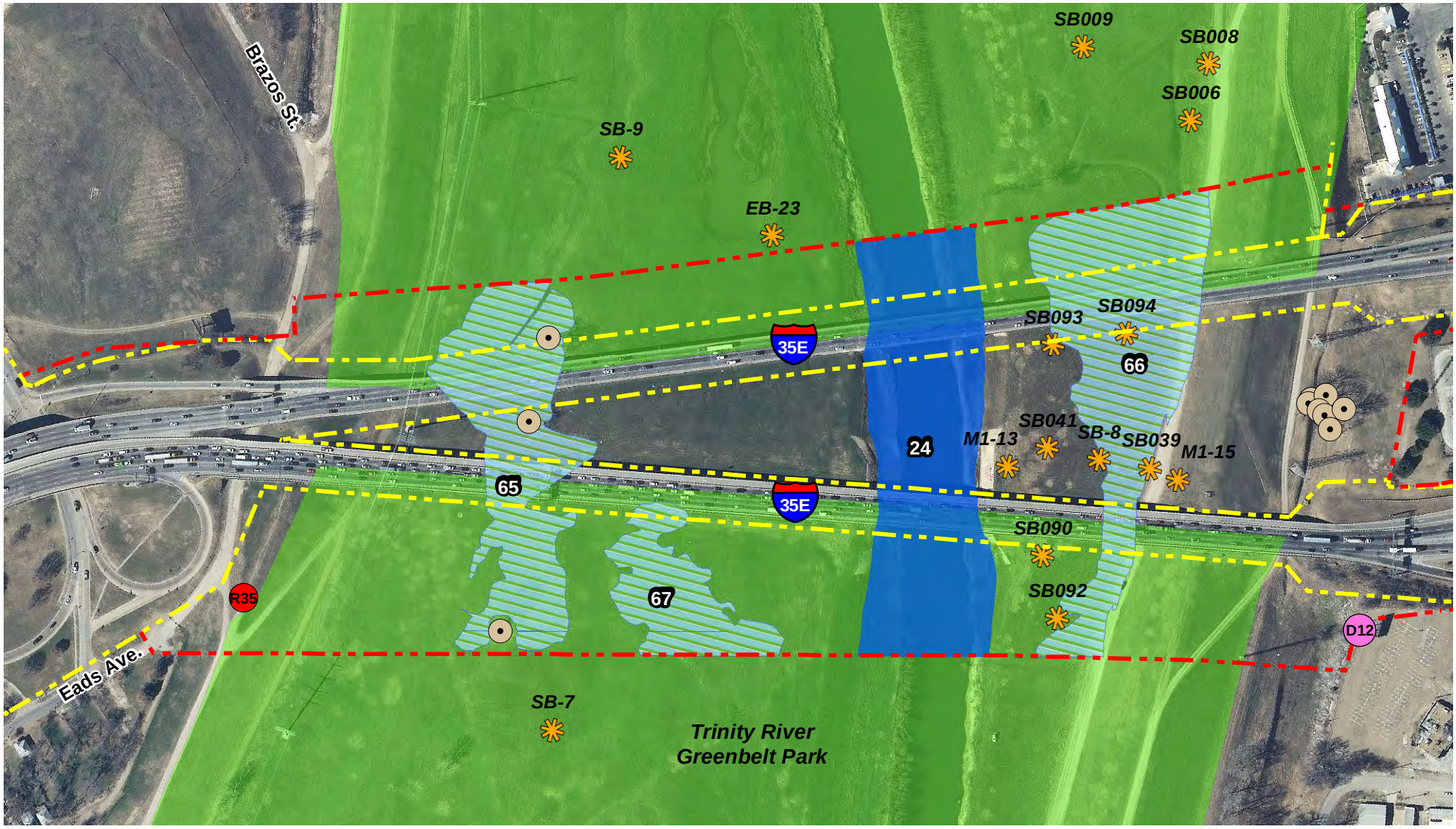
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 8 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
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- Potential Displacement
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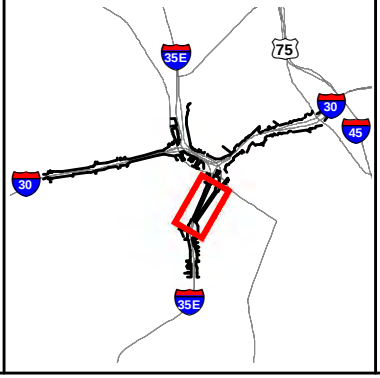
- Acquired Parcel



N

0 200 400 600 Feet

THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 9 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
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- Park
- Potential Displacement
- Water Feature
- Wetland Feature
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- Impacted Noise Receiver
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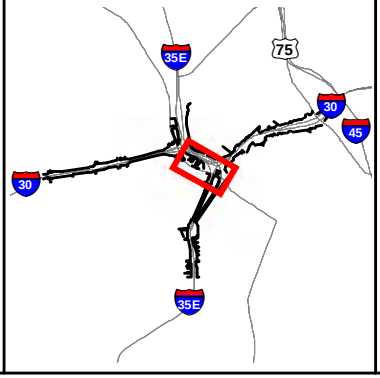

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0 200 400 600 Feet

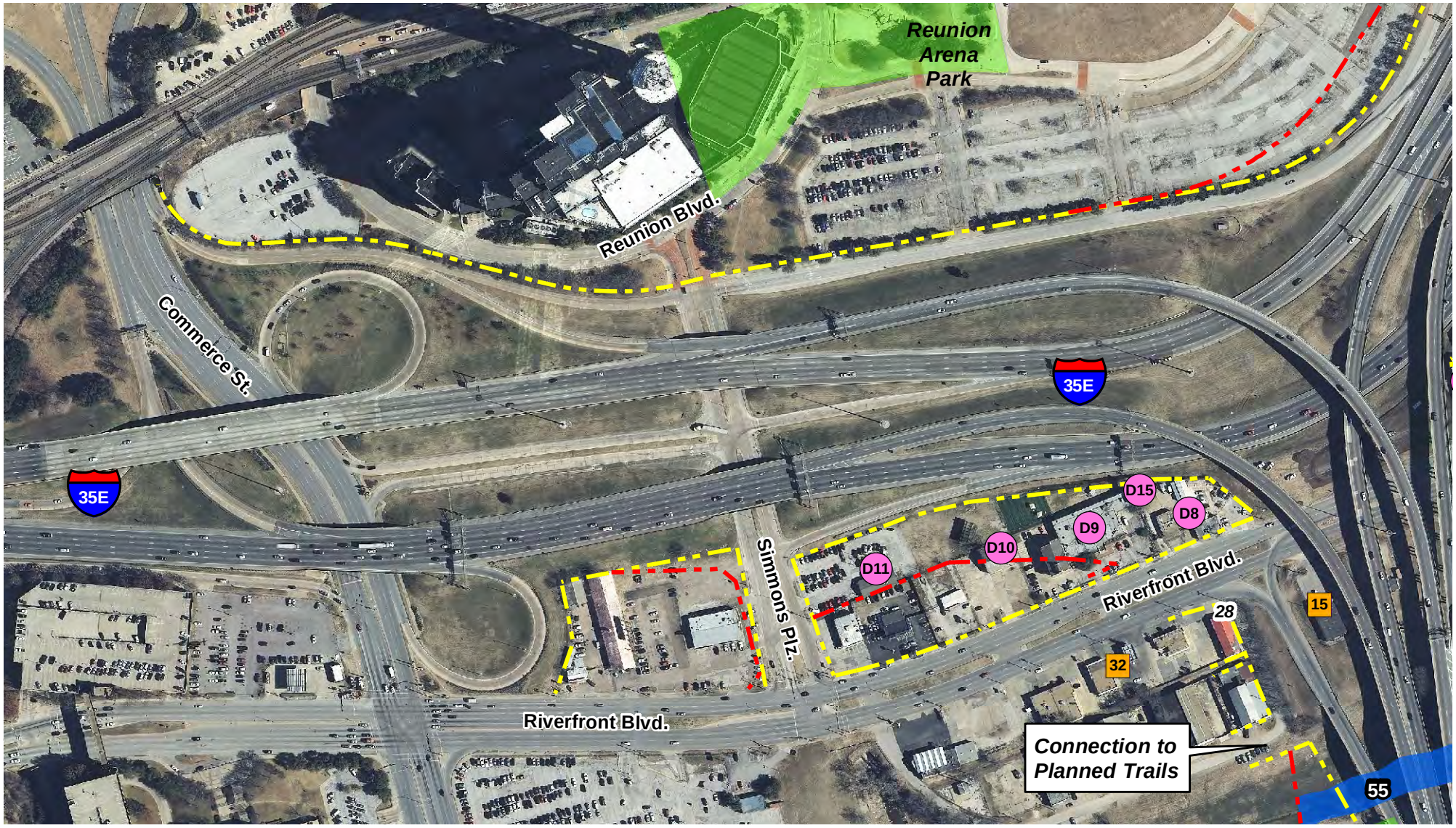
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 10 OF 12

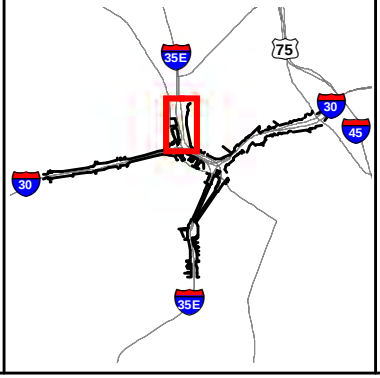
Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Large Tree
- Woodland Area
- Acquired Parcel



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0 200 400 600 Feet

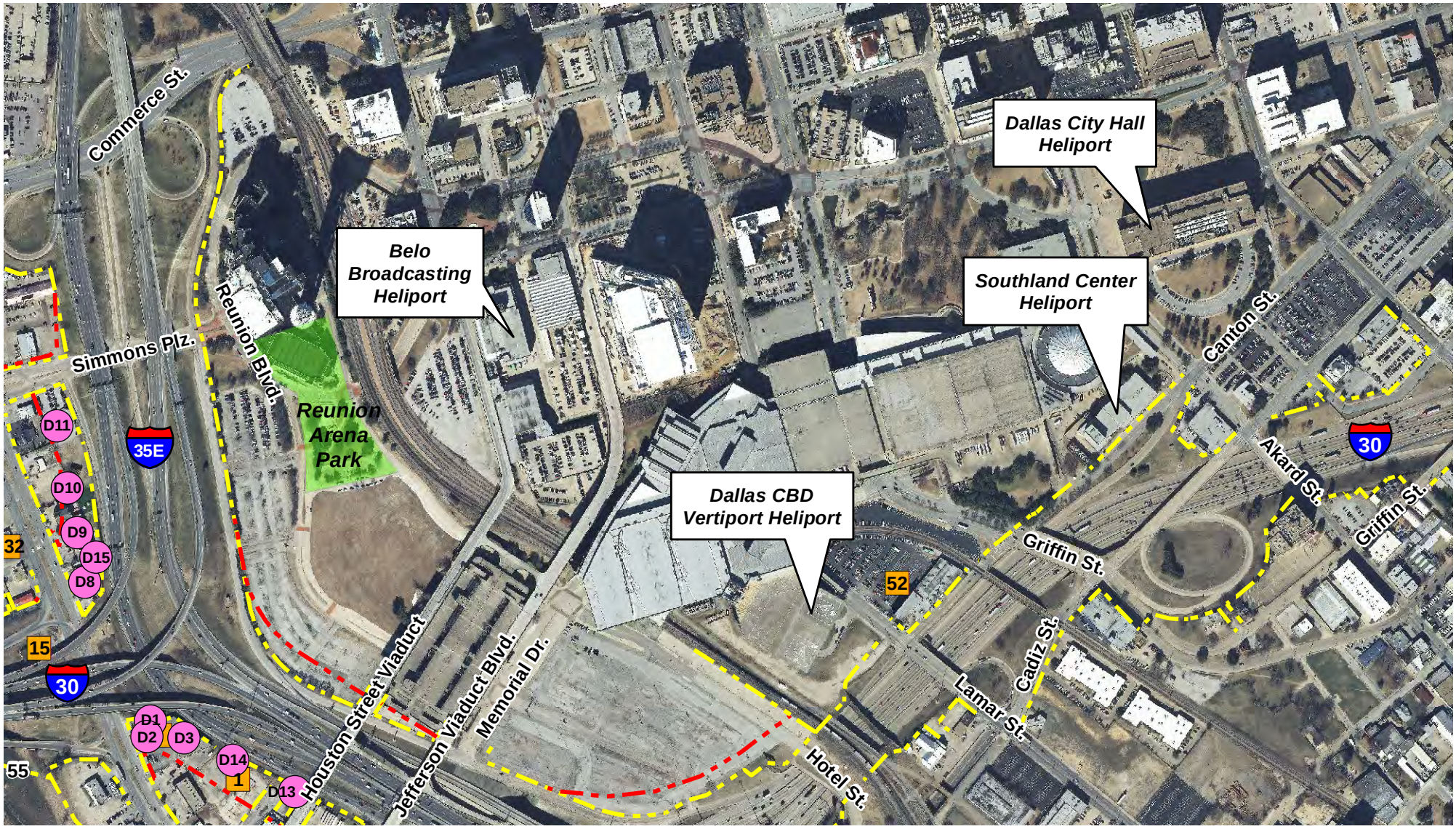
THE HORSESHOE

Texas Department of Transportation

CONSTRAINTS MAPS
SHEET 11 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas



LEGEND

- Existing Right-of-Way
- Proposed Right-of-Way
- RSR Corporation Site Boundary
- Hazardous Material Site
- Soil Boring
- Park
- Potential Displacement
- Water Feature
- Wetland Feature
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
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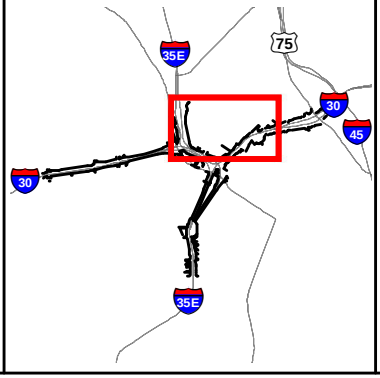

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0 400 800 1,200 Feet

THE HORSESHOE

Texas Department of Transportation

CORRIDOR MAPS
SHEET 12 OF 12

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

APPENDIX E: Supplemental Data

E-1: Summary of Bridge Inspection Records
E-3: Bridge Inventory and Inspection File
E-7: Mobility 2035: FT3-007 Policy
E-9: IH 30 Tie-Ins to Bicycle Facilities
E-11: 2040 Demographic Forecast Market Areas
E-13: List of Historic-Age Resources Associated with Project Pegasus
E-17: *Mobility 2035*: Corridor Fact Sheet 8, Project Pegasus Partial Implementation
E-19: *Mobility 2035:* Corridor Fact Sheets Summary
E-21: 2011-2014 STIP
E-31: Air Receiver Locations and CO Concentrations
E-33: TxNDD Database Search
E-61: Stream Data Form
E-63: Hazardous Materials Regulatory Database Summary
E-65: *Mobility 2030-2009 Amendment* Corridor Fact Sheet 33, The Pegasus Project

Summary of Bridge Inspection Records
Dallas Horseshoe Project

The following summarizes the existing conditions of the IH 30 and IH 35E bridge structures within the Dallas Horseshoe Project. The information was compiled from the TxDOT Bridge Inspection Records from May 2010 and August 2010. Photographs illustrating these conditions are included in **Appendix G**, **pages G-3** through **G-7**.

- The IH 35E northbound bridge northern abutment cap has a large crack which varies in width from 5 inches at the top of the cap to 4.5 inches at the bottom of the cap. It appears that lateral movement and settlement of the northeast wingwall combined with lack of adequate steel reinforcement between the cap and wingwall caused the crack (see photos in **Appendix G, page G-3**).
- Along the north abutment of the IH 35E northbound bridge, the bearing area of the east exterior sidewalk beam at the northern abutment has been reduced by approximately 6 inches due to cracking of the abutment cap (see photo in **Appendix G, page G-4**).
- The IH 35E northbound bridge pedestrian railing along the east side of the bridge has moderate collision damage. The horizontal rail is bent and one post is missing. Additionally, the top of the eastern rail has a moderate spall with exposed rebar approximately 200 ft from the south end of bridge (see photo in **Appendix G, page G-4**).
- The IH 35E southbound bridge deck has minor cracking with efflorescence.[1] There are also some localized areas of moderate cracking, minor to moderate delaminations, and spalls and exposed rebar at many of the deck drain locations. The underside of the deck at the northeast corner of span 40 has moderate fire damage over a 6-ft by 10-ft area of slab and an exposed bottom mat of rebar (see photo in **Appendix G, page G-4**).
- Along the IH 35E southbound bridge deck, railing parapets have minor scaling with numerous minor spalls with exposed rebar due to insufficient cover.[2] Railings have several impact scrapes, cracks and spalls. There are several repaired areas. Four sections of horizontal rail pipe are missing along the east side (see photo in **Appendix G, page G-4**).
- The IH 35E southbound bridge substructure received a rating of “fair” because among other deteriorating conditons, the abutment caps and back walls have several minor to moderate spalls; the underside of caps at bents 7 and 21 have widespread moderate spalls with exposed rebar; and several columns have moderate cracks and spalls with exposed rebar (see photo in **Appendix G, page G-5**). As shown in **Appendix G**, **page G-5,** the columns at bent 43 exhibit minor flexural cracks caused by embankment pressure.
- At the IH 30 eastbound bridge, the concrete deck exhibits moderate spalling and exposed steel at the north deck overhang of several spans. There are several

[1] Efflorescence is the resulting powdery substance or incrustation.
[2] A “parapet” is any low protective wall or barrier at the edge of a balcony, roof, bridge, or the like.

small spalls (mostly along the beams), delaminations, transverse cracking with efflorescence, and a minor map cracking in the soffit of the deck (see photos illustrating these conditions in **Appendix G, page G-5**).[3]

- Longitudinal and transversal cracking exists within the pavement located over the IH 30 eastbound bridge structure, at which asphaltic pavement covers expansion joints (see photo in **Appendix G, page G-6**).
- There is minor impact damage at the IH 30 eastbound bridge southern rail. Although the rail has been previously repaired, the rail is uneven in height because of the retrofit steel pedestals utilized. There is also minor cracking, spalling and scaling at the concrete portion of the rail (see photo in **Appendix G, page G-6**).
- There is moderate erosion of the west channel bank and channel bed of the Trinity River at bent 19 of the IH 30 eastbound bridge. Erosion has caused exposure of approximately 1 ft to 4.5 ft of the drilled shafts for the columns of bent 19. The channel bank is nearly vertical at this location. There is also minor drift within the channel bed at the columns for bent 19 (see photo included in **Appendix G, page G-6**).
- The southern end of the IH 30 eastbound western riprap has cracked and settled approximately 2.5 ft due to erosion/undermining of the west embankment. There is also minor cracking at the eastern riprap (see photo in **Appendix G, page G-7**).
- The IH 30 westbound bridge deck exhibits minor to moderate spalling with exposed steel in soffit of the deck overhangs as shown in the photo in **Appendix G, page G-7**.
- The IH 30 westbound bridge deck shows minor longitudinal and transversal cracking of the pavement. The photo in **Appendix G, page G-7**, shows spalling of the pavement over an expansion joint.
- There is minor spalling with exposed steel at IH 30 westbound bridge column 3 of bent 13 shown in **Appendix G, page G-7**.

[3] Soffit is the underside of an architectural feature, as a beam, arch, ceiling, vault, or cornice.

PAGE NO. 1 **PONTEX** TEXAS DEPARTMENT OF TRANSPORTATION DATE : 05/15/2012
ON-SYSTEM : VSAM * DALLAS DISTRICT * BRIDGE INVENTORY AND INSPECTION FILE PROGRAM : P120179

DI CO.	CONT	SC	STR	DUP	STR-F	**(006-1) FEATURE-X	**(007-0) FACILITY	**(009-0) LOCATION
18	057	0442	02	010	0 1	TRINITY RI & BRAZOS ST	IH 35E SB	0.9 MI S OF IH 30

ITEM #	FIELD **********	CODE	ITEM #	FIELD	CODE	ITEM #	FIELD	CODE
(004-0)	CITY CODE	10850	(045-2)	NO.MAJ APPR SPAN	002	(106-1)	WIDENING CODE	0
(005-2)	HWY.SYS	11	(045-3)	NO.MIN APPR SPAN	043	(107-1)	DECK STR TYP MAIN S....	1
(005-3)	RT.DESIGN	1	(046-0)	TOTAL NUMBER SPANS	0046	(108-1)	MAIN SPAN WEAR SF	688
(005-4)	HWY NO	0035	(047-0)	TOTAL HORIZ CLR	0480	(107-2)	STR.TYP MAJ APP SP	1
(005-5)	ROUTE DIR	2	(048-0)	MAX.SPAN LENGTH	0120	(108-2)	MAJ.APP SPN WEAR SF....	688
(006-2)	CRIT.BDG	*	(049-0)	STR.LENGTH	002439	(107-3)	STR.TYP MIN APP SP	1
(010-0)	RT.MIN VERT CLR	9999	(050-1)	LEFT SIDEWALK	035	(108-3)	MIN.APP SPN WEAR SF....	688
(011-0)	MI-POINT	15392	(050-2)	RIGHT SIDEWALK	035	(109-0)	AADT TRK PERCENT	08
(011-1)	MIPT DATE(PRI)	197405	(051-0)	ROADWAY WIDTH	0480	(110-0)	DESIGN NATION NETWK....	1
(011-1B)	REF-MKR & DISP	.0427 +00215	(052-0)	DECK WIDTH	0565	(111-0)	PIER/ABUT PROTECT	
(011-A1)	MIPT DATE(IR)		(053-0)	VERT.CLR OV	9999	(112-0)	NBIS BRIDGE LENGTH	Y
(012-0)	BASE HWY NETWORK		(054-1)	VERT.CLR REF FEAT	H	(113-0)	SCOUR CRITI BDG	8
(013-1)	LRS INVENTORY ..		(054-2)	VERT.CLR UND	1601	(113-1)	SCOUR VULNERABILTY	
(013-2)	LRS SUB RT.		(055-1)	LAT.CLR REF FEAT	H	(114-0)	FUTURE AADT	127150
(016-0)	LATITUDE (D/M/S)	32 45 54.82	(055-2)	RIGHT LAT CLEAR	060	(115-0)	YR OF FUTURE AADT	2030
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(017-0)	LONGITUDE(D/M/S)	096 48 24.38	(058-0)	DECK COND	6	(119-0)	COST ORGIN CONSTR	
(017-1)	GPS LONG.(DEG.)	096.80677146	(059-0)	SUPERSTR COND	6	(120-0)	DEFI / OBSO	O
(017-2)	COLLECTION METHOD	3	(060-0)	SUBSTR COND	5	(121-0)	SUFF.RATING	51.0
(019-0)	BYPASS LENGTH	01	(061-0)	CHANN-PROTECT	6	(122-0)	X-REF.PRI RT ID ..	
(020-0)	TOLL	3	(062-0)	CULVERT	N	(123-0)	STR.FUNC PRI RT	
(021-0)	MAINT.RESPON	01	(063-0)	METHOD OPR.RATING	1	(124-0)	X-REF.IR ID ..	
(022-0)	OWNER	01	(064-0)	OPERATION RATING	249	(125-0)	STR.FUNCT IR	
(022-1)	MAINT.SECT NO	15	(065-0)	RDWY APPR COND	7	(126-0)	DIST USE...10	AN
(023-1)	PROJECT TYPE	1	(065-1)	METHOD INV.RATING	1	(128-0)	OV.HEIGHT DAMAGE	N
(023-2)	CONT/SECT/JOB ...	044202018	(066-0)	INVENT RATING	236			
(026-0)	FUNCT.CLASS	41	(067-0)	STR.EVALUATION	(5) 5	(008-4A)	IR.CONTROL	
(027-0)	YR ORGIN BUILT	1957	(068-0)	DECK GEOMETRY	(2) 2	(008-5A)	IR.SECTION	
(028-1)	LANES ON STR	04	(069-0)	UND.CLR VERT&HORIZ	(4) 4	(011-A)	IR.MILEPOINT	
(028-2)	LANES UNDER STR	02	(070-0)	BRIDGE POSTING	5	(008-6A)	IR.STR NO	
(029-0)	AADT	090820	(071-0)	WATERWAY ADEQUACY	9	(008-3A)	IR.DUPL OVER	
(030-0)	YR OF AADT	2010	(072-0)	APPR RDWY ALIGN	8	(005-1A)	IR.FUNCTION	
(031-0)	DESIGN LOAD	5	(075-0)	TYPE WORK-REPLACE	381	(005-3A)	IR.DESIGNAT	
(032-0)	APPROACH WIDTH	056	(076-0)	LENGTH IMPROVEMENT	002439	(005-2A)	IR.HWY SYS	
(033-0)	MEDIAN	0	(088-0)	ST-FRAC-CRIT/STEEL NNN2		(005-4A)	IR.HWY NO	
(034-0)	SKEW	99	(090-0)	LAST INSP(MMDDYYYY)....08052010		(005-5A)	IR.DIR	
(035-0)	STR.FLARED	1	(091-0)	DESIGNAT INSP FREQ	24	(011-2B)	REF-MKR & DISP .	
(036-0)	TRAF.SAFTY FEAT	0001	(092-1)	FRACT/CRITI DETAIL	N	(047-A)	IR.HORIZ CLR	
(037-0)	HISTORICAL SIGNIF	4	(092-2)	UNDERWATER INSP	N	(010-A)	IR.RT.MIN VERT CLR	
(038-0)	NAVIG.CNTL	0	(092-3)	OTHER SPECIAL INSP	N	(012-A)	IR. BASE HWY NETWK	
(039-0)	NAVIG.VERT CLR	000	(093-1)	FRACT/CRITI(MMYYYY)....		(013-1A)	IR. LRS INV. ..	
(040-0)	NAVIG.HORIZ CLR	0000	(093-2)	UN/WATER INSP(MMYYYY)..		(013-2A)	IR. LRS SUB RT.	
(041-0)	OPER.STATUS	A	(093-3)	OT/SPEC.INSP(MMYYYY)...		(019-A)	IR.BYPASS LGTH	
(041-1)	LOAD TYPE	N	(094-0)	BDG IMPROVE COST	000234	(020-A)	IR.TOLL	
(041-2)	LOAD IN 1000LBS	NNN	(095-0)	RDWY IMPROVE COST	000059	(026-A)	IR.FUNCT CLASS	
(042-0)	TYPE SERVICE	16	(096-0)	TOTAL PROJECT COST C	000293	(029-A)	IR.AADT	
(043-1)	MAIN SPAN TYPE	2112	(097-0)	YR IMPROVE COST EST....	2010	(030-A)	IR.YEAR OF ADT	
(043-2)	MAJ.APP SPAN TYPE	2112	(098-0)	BORDER BRIDGE		(100-A)	IR.DEF HWY DESIGN	
(043-3)	MIN.APP SPAN TYPE	2111	(099-0)	BORDER STR NO...		(101-A)	IR.PAR STR DESIG	
(043-4)	CULVERT TYPE		(100-0)	DEFENSE HWY DESIGN	1	(102-A)	IR.DIR OF TRAF	
(043-5)	TUNNEL TYPE		(101-0)	PARALLEL STR DESIGN....	L	(103-A)	IR.TEMP STR DESIGN	
(044-1)	SUBSTR MAIN SPAN	361	(102-0)	DIR.OF TRAFFIC	1	(104-A)	IR. N H S	
(044-2)	SUBSTR MAJ APP SPAN....	361	(103-0)	TEMP STR DESIGN		(109-A)	IR.AADT TRK %	
(044-3)	SUBSTR MIN APP SPAN....	361	(104-0)	N H S	1	(110-A)	IR.DESIG NAT NETWK	
(045-1)	NO.MAIN SPAN	001	(105-0)	FED.LANDS HWY	0	(114-A)	IR.FUTURE AADT	
			(106-0)	YR RECONST	0000	(115-A)	IR.YR OF FUT AADT	

PAGE NO. 2 **PONTEX ** TEXAS DEPARTMENT OF TRANSPORTATION DATE : 05/15/2012
ON-SYSTEM VSAM * DALLAS DISTRICT * BRIDGE INVENTORY AND INSPECTION FILE PROGRAM : P120179
DI CO. CONT SC STR DUP STR-F **(006-1) FEATURE-X **(007-0) FACILITY **(009-0) LOCATION
18 057 0442 02 011 0 1 TRINITY RI & BRAZOS ST IH 35E NB 0.9 MI S OF IH 30

ITEM #	FIELD **********	CODE
(004-0)	CITY CODE	10850
(005-2)	HWY.SYS	11
(005-3)	RT.DESIGN	1
(005-4)	HWY NO	0035
(005-5)	ROUTE DIR	2
(006-2)	CRIT.BDG	*
(010-0)	RT.MIN VERT CLR	9999
(011-0)	MI-POINT	15392
(011-1)	MIPT DATE(PRI)	197405
(011-1B)	REF-MKR & DISP	.0427 +00215
(011-A1)	MIPT DATE(IR)	
(012-0)	BASE HWY NETWORK	
(013-1)	LRS INVENTORY ..	
(013-2)	LRS SUB RT.	
(016-0)	LATITUDE (D/M/S)	32 45 35.78
(016-1)	GPS LAT. (DEG.)	32.75994020
(017-0)	LONGITUDE(D/M/S)	096 48 31.78
(017-1)	GPS LONG.(DEG.)	096.80882652
(017-2)	COLLECTION METHOD	3
(019-0)	BYPASS LENGTH	02
(020-0)	TOLL	3
(021-0)	MAINT.RESPON	01
(022-0)	OWNER	01
(022-1)	MAINT.SECT NO	15
(023-1)	PROJECT TYPE	1
(023-2)	CONT/SECT/JOB ...	044202019
(026-0)	FUNCT.CLASS	41
(027-0)	YR ORGIN BUILT	1931
(028-1)	LANES ON STR	05
(028-2)	LANES UNDER STR	02
(029-0)	AADT	090820
(030-0)	YR OF AADT	2010
(031-0)	DESIGN LOAD	5
(032-0)	APPROACH WIDTH	075
(033-0)	MEDIAN	0
(034-0)	SKEW	00
(035-0)	STR.FLARED	1
(036-0)	TRAF.SAFTY FEAT	1011
(037-0)	HISTORICAL SIGNIF	3
(038-0)	NAVIG.CNTL	0
(039-0)	NAVIG.VERT CLR	000
(040-0)	NAVIG.HORIZ CLR	0000
(041-0)	OPER.STATUS	A
(041-1)	LOAD TYPE	N
(041-2)	LOAD IN 1000LBS	NNN
(042-0)	TYPE SERVICE	16
(043-1)	MAIN SPAN TYPE	2112
(043-2)	MAJ.APP SPAN TYPE	1121
(043-3)	MIN.APP SPAN TYPE	
(043-4)	CULVERT TYPE	
(043-5)	TUNNEL TYPE	
(044-1)	SUBSTR MAIN SPAN	361
(044-2)	SUBSTR MAJ APP SPAN....	361
(044-3)	SUBSTR MIN APP SPAN....	
(045-1)	NO.MAIN SPAN	003

ITEM #	FIELD	CODE
(045-2)	NO.MAJ APPR SPAN	043
(045-3)	NO.MIN APPR SPAN	
(046-0)	TOTAL NUMBER SPANS	0046
(047-0)	TOTAL HORIZ CLR	0520
(048-0)	MAX.SPAN LENGTH	0120
(049-0)	STR.LENGTH	002305
(050-1)	LEFT SIDEWALK	000
(050-2)	RIGHT SIDEWALK	043
(051-0)	ROADWAY WIDTH	0638
(052-0)	DECK WIDTH	0738
(053-0)	VERT.CLR OV	9999
(054-1)	VERT.CLR REF FEAT	H
(054-2)	VERT.CLR UND	1010
(055-1)	LAT.CLR REF FEAT	H
(055-2)	RIGHT LAT CLEAR	018
(056-0)	LEFT LAT CLEAR	000
(058-0)	DECK COND	5
(059-0)	SUPERSTR COND	5
(060-0)	SUBSTR COND	4
(061-0)	CHANN-PROTECT	6
(062-0)	CULVERT	N
(063-0)	METHOD OPR.RATING	1
(064-0)	OPERATION RATING	249
(065-0)	RDWY APPR COND	6
(065-1)	METHOD INV.RATING	1
(066-0)	INVENT RATING	236
(067-0)	STR.EVALUATION	(4) 4
(068-0)	DECK GEOMETRY	(4) 4
(069-0)	UND.CLR VERT&HORIZ	(2) 2
(070-0)	BRIDGE POSTING	5
(071-0)	WATERWAY ADEQUACY	9
(072-0)	APPR RDWY ALIGN	8
(075-0)	TYPE WORK-REPLACE	311
(076-0)	LENGTH IMPROVEMENT	002323
(088-0)	ST-FRAC-CRIT/STEEL NNN2	
(090-0)	LAST INSP(MMDDYYYY)....08052010	
(091-0)	DESIGNAT INSP FREQ	24
(092-1)	FRACT/CRITI DETAIL	N
(092-2)	UNDERWATER INSP	N
(092-3)	OTHER SPECIAL INSP	N
(093-1)	FRACT/CRITI(MMYYYY)....	
(093-2)	UN/WATER INSP(MMYYYY)..	
(093-3)	OT/SPEC.INSP(MMYYYY)...	
(094-0)	BDG IMPROVE COST	003252
(095-0)	RDWY IMPROVE COST	000813
(096-0)	TOTAL PROJECT COST C	004065
(097-0)	YR IMPROVE COST EST....	2010
(098-0)	BORDER BRIDGE	
(099-0)	BORDER STR NO...	
(100-0)	DEFENSE HWY DESIGN	1
(101-0)	PARALLEL STR DESIGN....	R
(102-0)	DIR.OF TRAFFIC	1
(103-0)	TEMP STR DESIGN	
(104-0)	N H S	1
(105-0)	FED.LANDS HWY	0
(106-0)	YR RECONST	1967

ITEM #	FIELD	CODE
(106-1)	WIDENING CODE	6
(107-1)	DECK STR TYP MAIN S....	1
(108-1)	MAIN SPAN WEAR SF	688
(107-2)	STR.TYP MAJ APP SP	1
(108-2)	MAJ.APP SPN WEAR SF....	688
(107-3)	STR.TYP MIN APP SP	N
(108-3)	MIN.APP SPN WEAR SF....	NNN
(109-0)	AADT TRK PERCENT	08
(110-0)	DESIGN NATION NETWK....	1
(111-0)	PIER/ABUT PROTECT	
(112-0)	NBIS BRIDGE LENGTH	Y
(113-0)	SCOUR CRITI BDG	8
(113-1)	SCOUR VULNERABILTY	
(114-0)	FUTURE AADT	127150
(115-0)	YR OF FUTURE AADT	2030
(116-0)	MIN.NAVIG VERT CLR	
(119-0)	COST ORGIN CONSTR	
(120-0)	DEFI / OBSO	D
(121-0)	SUFF.RATING	46.0
(122-0)	X-REF.PRI RT ID ..	
(123-0)	STR.FUNC PRI RT	
(124-0)	X-REF.IR ID ..	
(125-0)	STR.FUNCT IR	
(126-0)	DIST USE...10	AN
(128-0)	OV.HEIGHT DAMAGE	Y
(008-4A)	IR.CONTROL	
(008-5A)	IR.SECTION	
(011-A)	IR.MILEPOINT	
(008-6A)	IR.STR NO	
(008-3A)	IR.DUPL OVER	
(005-1A)	IR.FUNCTION	
(005-3A)	IR.DESIGNAT	
(005-2A)	IR.HWY SYS	
(005-4A)	IR.HWY NO	
(005-5A)	IR.DIR	
(011-2B)	REF-MKR & DISP .	
(047-A)	IR.HORIZ CLR	
(010-A)	IR.RT.MIN VERT CLR	
(012-A)	IR. BASE HWY NETWK	
(013-1A)	IR. LRS INV. ..	
(013-2A)	IR. LRS SUB RT.	
(019-A)	IR.BYPASS LGTH	
(020-A)	IR.TOLL	
(026-A)	IR.FUNCT CLASS	
(029-A)	IR.AADT	
(030-A)	IR.YEAR OF ADT	
(100-A)	IR.DEF HWY DESIGN	
(101-A)	IR.PAR STR DESIG	
(102-A)	IR.DIR OF TRAF	
(103-A)	IR.TEMP STR DESIGN	
(104-A)	IR. N H S	
(109-A)	IR.AADT TRK %	
(110-A)	IR.DESIG NAT NETWK	
(114-A)	IR.FUTURE AADT	
(115-A)	IR.YR OF FUT AADT	

DI CO.	CONT	SC	STR	DUP	STR-F	**(006-1) FEATURE-X	**(007-0) FACILITY	**(009-0) LOCATION
18	057	1068	04	070	0 1	TRINITY RIVER	IH 30 EB	0.4 MI W OF IH 35E

ITEM #	FIELD **********	CODE
(004-0)	CITY CODE	15800
(005-2)	HWY.SYS	11
(005-3)	RT.DESIGN	1
(005-4)	HWY NO	0030
(005-5)	ROUTE DIR	0
(006-2)	CRIT.BDG	
(010-0)	RT.MIN VERT CLR	9999
(011-0)	MI-POINT	12753
(011-1)	MIPT DATE(PRI)	197405
(011-1B)	REF-MKR & DISP	.0044 +00505
(011-A1)	MIPT DATE(IR)	
(012-0)	BASE HWY NETWORK	
(013-1)	LRS INVENTORY ..	
(013-2)	LRS SUB RT.	
(016-0)	LATITUDE (D/M/S)	32 46 09.43
(016-1)	GPS LAT. (DEG.)	32.76928603
(017-0)	LONGITUDE(D/M/S)	096 49 17.80
(017-1)	GPS LONG.(DEG.)	096.82161136
(017-2)	COLLECTION METHOD	3
(019-0)	BYPASS LENGTH	03
(020-0)	TOLL	3
(021-0)	MAINT.RESPON	01
(022-0)	OWNER	01
(022-1)	MAINT.SECT NO	15
(023-1)	PROJECT TYPE	3
(023-2)	CONT/SECT/JOB ...	10680400T
(026-0)	FUNCT.CLASS	41
(027-0)	YR ORGIN BUILT	1957
(028-1)	LANES ON STR	03
(028-2)	LANES UNDER STR	00
(029-0)	AADT	068400
(030-0)	YR OF AADT	2010
(031-0)	DESIGN LOAD	5
(032-0)	APPROACH WIDTH	040
(033-0)	MEDIAN	0
(034-0)	SKEW	00
(035-0)	STR.FLARED	1
(036-0)	TRAF.SAFTY FEAT	0001
(037-0)	HISTORICAL SIGNIF	4
(038-0)	NAVIG.CNTL	0
(039-0)	NAVIG.VERT CLR	000
(040-0)	NAVIG.HORIZ CLR	0000
(041-0)	OPER.STATUS	A
(041-1)	LOAD TYPE	N
(041-2)	LOAD IN 1000LBS	NNN
(042-0)	TYPE SERVICE	15
(043-1)	MAIN SPAN TYPE	2112
(043-2)	MAJ.APP SPAN TYPE	2111
(043-3)	MIN.APP SPAN TYPE	
(043-4)	CULVERT TYPE	
(043-5)	TUNNEL TYPE	
(044-1)	SUBSTR MAIN SPAN	341
(044-2)	SUBSTR MAJ APP SPAN....	341
(044-3)	SUBSTR MIN APP SPAN....	
(045-1)	NO.MAIN SPAN	003
(045-2)	NO.MAJ APPR SPAN	030
(045-3)	NO.MIN APPR SPAN	
(046-0)	TOTAL NUMBER SPANS	0033
(047-0)	TOTAL HORIZ CLR	0400
(048-0)	MAX.SPAN LENGTH	0130
(049-0)	STR.LENGTH	002233
(050-1)	LEFT SIDEWALK	000
(050-2)	RIGHT SIDEWALK	023
(051-0)	ROADWAY WIDTH	0400
(052-0)	DECK WIDTH	0457
(053-0)	VERT.CLR OV	9999
(054-1)	VERT.CLR REF FEAT	N
(054-2)	VERT.CLR UND	0000
(055-1)	LAT.CLR REF FEAT	N
(055-2)	RIGHT LAT CLEAR	999
(056-0)	LEFT LAT CLEAR	000
(058-0)	DECK COND	5
(059-0)	SUPERSTR COND	6
(060-0)	SUBSTR COND	6
(061-0)	CHANN-PROTECT	6
(062-0)	CULVERT	N
(063-0)	METHOD OPR.RATING	1
(064-0)	OPERATION RATING	249
(065-0)	RDWY APPR COND	6
(065-1)	METHOD INV.RATING	1
(066-0)	INVENT RATING	236
(067-0)	STR.EVALUATION	(6) 6
(068-0)	DECK GEOMETRY	(3) 3
(069-0)	UND.CLR VERT&HORIZ	(N) N
(070-0)	BRIDGE POSTING	5
(071-0)	WATERWAY ADEQUACY	9
(072-0)	APPR RDWY ALIGN	8
(075-0)	TYPE WORK-REPLACE	381
(076-0)	LENGTH IMPROVEMENT	002233
(088-0)	ST-FRAC-CRIT/STEEL	NNN2
(090-0)	LAST INSP(MMDDYYYY)	05252010
(091-0)	DESIGNAT INSP FREQ	24
(092-1)	FRACT/CRITI DETAIL	N
(092-2)	UNDERWATER INSP	N
(092-3)	OTHER SPECIAL INSP	N
(093-1)	FRACT/CRITI(MMYYYY)	
(093-2)	UN/WATER INSP(MMYYYY) ..	
(093-3)	OT/SPEC.INSP(MMYYYY) ...	
(094-0)	BDG IMPROVE COST	000179
(095-0)	RDWY IMPROVE COST	000045
(096-0)	TOTAL PROJECT COST	C 000224
(097-0)	YR IMPROVE COST EST....	2010
(098-0)	BORDER BRIDGE	
(099-0)	BORDER STR NO...	
(100-0)	DEFENSE HWY DESIGN	1
(101-0)	PARALLEL STR DESIGN....	R
(102-0)	DIR.OF TRAFFIC	1
(103-0)	TEMP STR DESIGN	
(104-0)	N H S	1
(105-0)	FED.LANDS HWY	0
(106-0)	YR RECONST	0000
(106-1)	WIDENING CODE	0
(107-1)	DECK STR TYP MAIN S....	1
(108-1)	MAIN SPAN WEAR SF	688
(107-2)	STR.TYP MAJ APP SP	1
(108-2)	MAJ.APP SPN WEAR SF....	688
(107-3)	STR.TYP MIN APP SP	N
(108-3)	MIN.APP SPN WEAR SF....	NNN
(109-0)	AADT TRK PERCENT	08
(110-0)	DESIGN NATION NETWK....	1
(111-0)	PIER/ABUT PROTECT	
(112-0)	NBIS BRIDGE LENGTH	Y
(113-0)	SCOUR CRITI BDG	8
(113-1)	SCOUR VULNERABILTY	
(114-0)	FUTURE AADT	095760
(115-0)	YR OF FUTURE AADT	2030
(116-0)	MIN.NAVIG VERT CLR	
(119-0)	COST ORGIN CONSTR	
(120-0)	DEFI / OBSO	O
(121-0)	SUFF.RATING	63.0
(122-0)	X-REF.PRI RT ID ..	
(123-0)	STR.FUNC PRI RT	
(124-0)	X-REF.IR ID ..	
(125-0)	STR.FUNCT IR	
(126-0)	DIST USE...09	AN
(128-0)	OV.HEIGHT DAMAGE	N
(008-4A)	IR.CONTROL	
(008-5A)	IR.SECTION	
(011-A)	IR.MILEPOINT	
(008-6A)	IR.STR NO	
(008-3A)	IR.DUPL OVER	
(005-1A)	IR.FUNCTION	
(005-3A)	IR.DESIGNAT	
(005-2A)	IR.HWY SYS	
(005-4A)	IR.HWY NO	
(005-5A)	IR.DIR	
(011-2B)	REF-MKR & DISP .	
(047-A)	IR.HORIZ CLR	
(010-A)	IR.RT.MIN VERT CLR	
(012-A)	IR. BASE HWY NETWK	
(013-1A)	IR. LRS INV. ..	
(013-2A)	IR. LRS SUB RT.	
(019-A)	IR.BYPASS LGTH	
(020-A)	IR.TOLL	
(026-A)	IR.FUNCT CLASS	
(029-A)	IR.AADT	
(030-A)	IR.YEAR OF ADT	
(100-A)	IR.DEF HWY DESIGN	
(101-A)	IR.PAR STR DESIG	
(102-A)	IR.DIR OF TRAF	
(103-A)	IR.TEMP STR DESIGN	
(104-A)	IR. N H S	
(109-A)	IR.AADT TRK %	
(110-A)	IR.DESIG NAT NETWK	
(114-A)	IR.FUTURE AADT	
(115-A)	IR.YR OF FUT AADT	

DI CO.	CONT	SC	STR	DUP	STR-F	**(006-1) FEATURE-X	**(007-0) FACILITY	**(009-0) LOCATION
18	057	1068	04	189	0 1	TRINITY RIVER	IH 30 WB	0.4 MI W OF IH 35E

ITEM #	FIELD **********	CODE
(004-0)	CITY CODE	15800
(005-2)	HWY.SYS	11
(005-3)	RT.DESIGN	1
(005-4)	HWY NO	0030
(005-5)	ROUTE DIR	0
(006-2)	CRIT.BDG	
(010-0)	RT.MIN VERT CLR	9999
(011-0)	MI-POINT	12753
(011-1)	MIPT DATE(PRI)	197405
(011-1B)	REF-MKR & DISP	.0044 +00505
(011-A1)	MIPT DATE(IR)	
(012-0)	BASE HWY NETWORK	
(013-1)	LRS INVENTORY ..	
(013-2)	LRS SUB RT.	
(016-0)	LATITUDE (D/M/S)	32 46 10.21
(016-1)	GPS LAT. (DEG.)	32.76950318
(017-0)	LONGITUDE(D/M/S)	096 49 18.02
(017-1)	GPS LONG.(DEG.)	096.82167303
(017-2)	COLLECTION METHOD	3
(019-0)	BYPASS LENGTH	03
(020-0)	TOLL	3
(021-0)	MAINT.RESPON	01
(022-0)	OWNER	01
(022-1)	MAINT.SECT NO	15
(023-1)	PROJECT TYPE	3
(023-2)	CONT/SECT/JOB ...	106804001
(026-0)	FUNCT.CLASS	41
(027-0)	YR ORGIN BUILT	1957
(028-1)	LANES ON STR	03
(028-2)	LANES UNDER STR	00
(029-0)	AADT	068400
(030-0)	YR OF AADT	2010
(031-0)	DESIGN LOAD	5
(032-0)	APPROACH WIDTH	040
(033-0)	MEDIAN	0
(034-0)	SKEW	00
(035-0)	STR.FLARED	1
(036-0)	TRAF.SAFTY FEAT	0111
(037-0)	HISTORICAL SIGNIF	4
(038-0)	NAVIG.CNTL	0
(039-0)	NAVIG.VERT CLR	000
(040-0)	NAVIG.HORIZ CLR	0000
(041-0)	OPER.STATUS	A
(041-1)	LOAD TYPE	N
(041-2)	LOAD IN 1000LBS	NNN
(042-0)	TYPE SERVICE	15
(043-1)	MAIN SPAN TYPE	2112
(043-2)	MAJ.APP SPAN TYPE	2111
(043-3)	MIN.APP SPAN TYPE	
(043-4)	CULVERT TYPE	
(043-5)	TUNNEL TYPE	
(044-1)	SUBSTR MAIN SPAN	341
(044-2)	SUBSTR MAJ APP SPAN....	341
(044-3)	SUBSTR MIN APP SPAN....	
(045-1)	NO.MAIN SPAN	003
(045-2)	NO.MAJ APPR SPAN	030
(045-3)	NO.MIN APPR SPAN	
(046-0)	TOTAL NUMBER SPANS	0033
(047-0)	TOTAL HORIZ CLR	0400
(048-0)	MAX.SPAN LENGTH	0130
(049-0)	STR.LENGTH	002233
(050-1)	LEFT SIDEWALK	023
(050-2)	RIGHT SIDEWALK	000
(051-0)	ROADWAY WIDTH	0400
(052-0)	DECK WIDTH	0457
(053-0)	VERT.CLR OV	9999
(054-1)	VERT.CLR REF FEAT	N
(054-2)	VERT.CLR UND	0000
(055-1)	LAT.CLR REF FEAT	N
(055-2)	RIGHT LAT CLEAR	999
(056-0)	LEFT LAT CLEAR	000
(058-0)	DECK COND	5
(059-0)	SUPERSTR COND	6
(060-0)	SUBSTR COND	5
(061-0)	CHANN-PROTECT	6
(062-0)	CULVERT	N
(063-0)	METHOD OPR.RATING	1
(064-0)	OPERATION RATING	249
(065-0)	RDWY APPR COND	6
(065-1)	METHOD INV.RATING	1
(066-0)	INVENT RATING	236
(067-0)	STR.EVALUATION	(5) 5
(068-0)	DECK GEOMETRY	(3) 3
(069-0)	UND.CLR VERT&HORIZ	(N) N
(070-0)	BRIDGE POSTING	5
(071-0)	WATERWAY ADEQUACY	9
(072-0)	APPR RDWY ALIGN	8
(075-0)	TYPE WORK-REPLACE	381
(076-0)	LENGTH IMPROVEMENT	002233
(088-0)	ST-FRAC-CRIT/STEEL	NNN2
(090-0)	LAST INSP(MMDDYYYY)	05252010
(091-0)	DESIGNAT INSP FREQ	24
(092-1)	FRACT/CRITI DETAIL	N
(092-2)	UNDERWATER INSP	N
(092-3)	OTHER SPECIAL INSP	N
(093-1)	FRACT/CRITI(MMYYYY)	
(093-2)	UN/WATER INSP(MMYYYY) ..	
(093-3)	OT/SPEC.INSP(MMYYYY) ...	
(094-0)	BDG IMPROVE COST	000179
(095-0)	RDWY IMPROVE COST	000045
(096-0)	TOTAL PROJECT COST	C 000224
(097-0)	YR IMPROVE COST EST....	2010
(098-0)	BORDER BRIDGE	
(099-0)	BORDER STR NO...	
(100-0)	DEFENSE HWY DESIGN	1
(101-0)	PARALLEL STR DESIGN....	L
(102-0)	DIR.OF TRAFFIC	1
(103-0)	TEMP STR DESIGN	
(104-0)	N H S	1
(105-0)	FED.LANDS HWY	0
(106-0)	YR RECONST	0000
(106-1)	WIDENING CODE	0
(107-1)	DECK STR TYP MAIN S....	1
(108-1)	MAIN SPAN WEAR SF	688
(107-2)	STR.TYP MAJ APP SP	1
(108-2)	MAJ.APP SPN WEAR SF....	688
(107-3)	STR.TYP MIN APP SP	N
(108-3)	MIN.APP SPN WEAR SF....	NNN
(109-0)	AADT TRK PERCENT	08
(110-0)	DESIGN NATION NETWK....	1
(111-0)	PIER/ABUT PROTECT	
(112-0)	NBIS BRIDGE LENGTH	Y
(113-0)	SCOUR CRITI BDG	8
(113-1)	SCOUR VULNERABILTY	
(114-0)	FUTURE AADT	095760
(115-0)	YR OF FUTURE AADT	2030
(116-0)	MIN.NAVIG VERT CLR	
(119-0)	COST ORGIN CONSTR	
(120-0)	DEFI / OBSO	O
(121-0)	SUFF.RATING	54.0
(122-0)	X-REF.PRI RT ID ..	
(123-0)	STR.FUNC PRI RT	
(124-0)	X-REF.IR ID ..	
(125-0)	STR.FUNCT IR	
(126-0)	DIST USE...09	AN
(128-0)	OV.HEIGHT DAMAGE	N
(008-4A)	IR.CONTROL	
(008-5A)	IR.SECTION	
(011-A)	IR.MILEPOINT	
(008-6A)	IR.STR NO	
(008-3A)	IR.DUPL OVER	
(005-1A)	IR.FUNCTION	
(005-3A)	IR.DESIGNAT	
(005-2A)	IR.HWY SYS	
(005-4A)	IR.HWY NO	
(005-5A)	IR.DIR	
(011-2B)	REF-MKR & DISP .	
(047-A)	IR.HORIZ CLR	
(010-A)	IR.RT.MIN VERT CLR	
(012-A)	IR. BASE HWY NETWK	
(013-1A)	IR. LRS INV. ..	
(013-2A)	IR. LRS SUB RT.	
(019-A)	IR.BYPASS LGTH	
(020-A)	IR.TOLL	
(026-A)	IR.FUNCT CLASS	
(029-A)	IR.AADT	
(030-A)	IR.YEAR OF ADT	
(100-A)	IR.DEF HWY DESIGN	
(101-A)	IR.PAR STR DESIG	
(102-A)	IR.DIR OF TRAF	
(103-A)	IR.TEMP STR DESIGN	
(104-A)	IR. N H S	
(109-A)	IR.AADT TRK %	
(110-A)	IR.DESIG NAT NETWK	
(114-A)	IR.FUTURE AADT	
(115-A)	IR.YR OF FUT AADT	

Roadway

Policies

MTP Reference #	Roadway
FT3-001	The RTC does not support converting existing free non-HOV/managed lane corridors to tollways.
FT3-002	Evaluate all new limited access capacity for priced facility potential.
FT3-003	To maximize the use of available funds, where reasonable, priced facilities should be developed with no or minimal federal and state funding assistance.
FT3-004	Plan and program non-regionally significant arterial improvements cooperatively with local governments.
FT3-005	Management strategies, consistent with the Regional Congestion Management Process, congestion management plans for regional tollway operators, and federal SOV justification requirements, unless precluded by existing bond covenants, should be implemented when an existing freeway, tollway, or managed lane adds capacity. Future bond covenants should accommodate a full range of management strategies.
FT3-006	System-wide HOV occupancy will be consistent with the latest RTC policy.
FT3-007	Additional and improved interchanges, frontage roads, and auxiliary lanes should be considered and implemented, as appropriate, on all freeway/tollway facilities in order to accommodate a balance between mobility, access, operational, and safety needs.
FT3-008	Encourage the early preservation of right-of-way in recommended roadway corridors.
FT3-009	Encourage the preservation of right-of-way in all freeway/tollway corridors to accommodate potential future transportation needs.
FT3-010	Corridor specific design and operational characteristics for recommended roadways will be determined through the project development process.
FT3-011	Support advanced planning activities to aid in strategic decision making regarding long-term plan and project development.
FT3-012	Corridor and environmental studies should be conducted with consideration for the region's air quality and financial constraints.
FT3-013	Support federal and state interregional corridor initiatives as appropriate.

Programs

Non-regionally Significant Arterials Program	
Reference	NRSA2-001
Background	Mobility 2035 identifies funding for arterial improvement to be committed to the Non-regionally Significant Arterial Program (Non-RSA) as reflected in the financial component of the plan. The timing for construction and identification of specific funding sources for each facility is on a quarterly basis in conjunction with development of the TIP project programming process.
Policy Position	▪ Non-regionally significant arterials are to be funded with local, state, and federal funds ▪ Program allows for the planning, engineering, right-of-way acquisition, and construction of Non-RSAs ▪ Exempt from Air Quality Conformity Determination process
Implementation	Non-RSAs will be amended to the Metropolitan Transportation Plan in conjunction with RTC approval of the quarterly TIP Modification Cycle: ▪ Identification of specific funding sources ▪ Public involvement and Policy Board approval ▪ Inclusion in Metropolitan Transportation Plan modeling network (when appropriate) and MTP document

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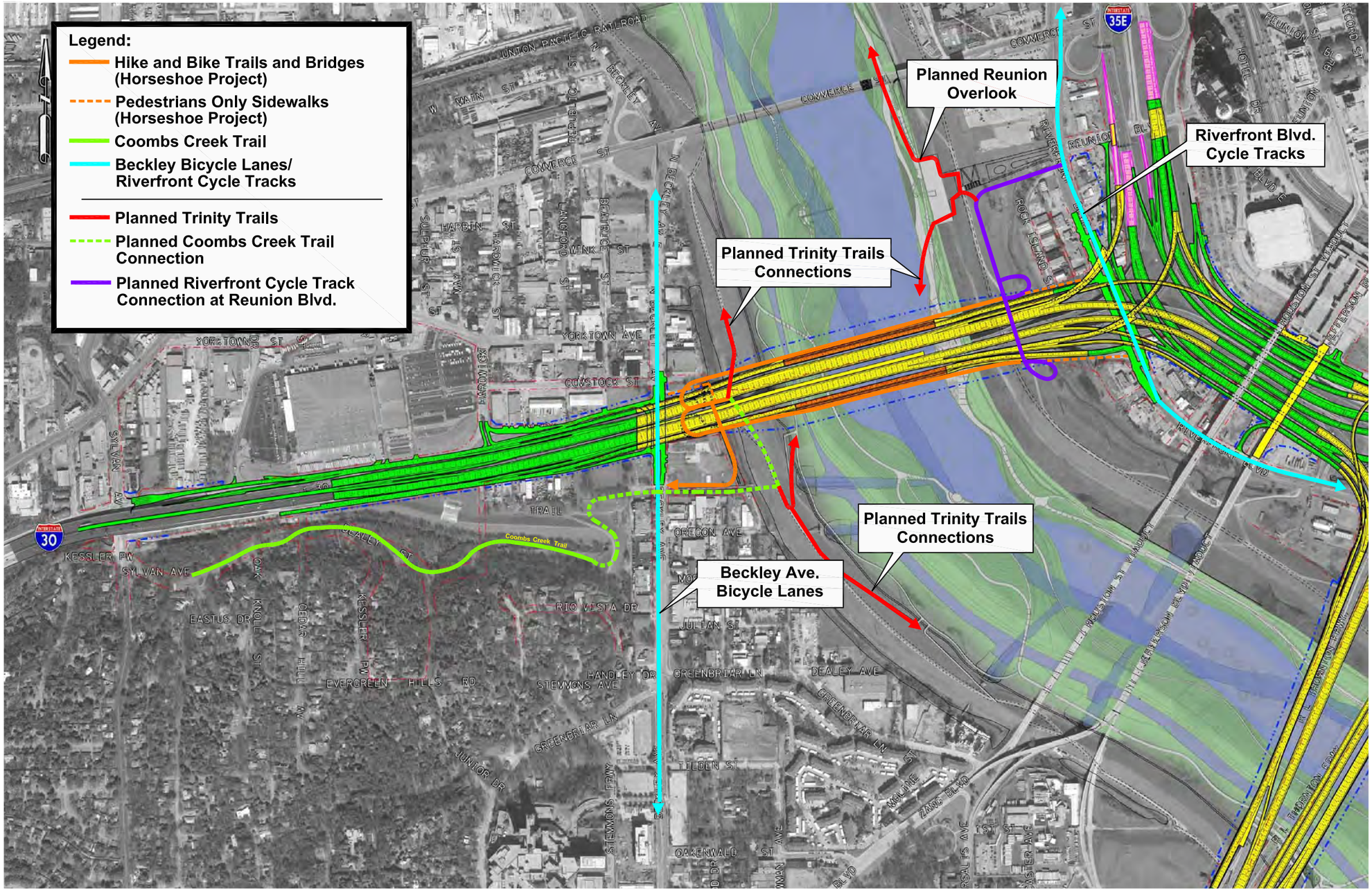
I.H. 30 Tie-Ins to Bicycle Facilities



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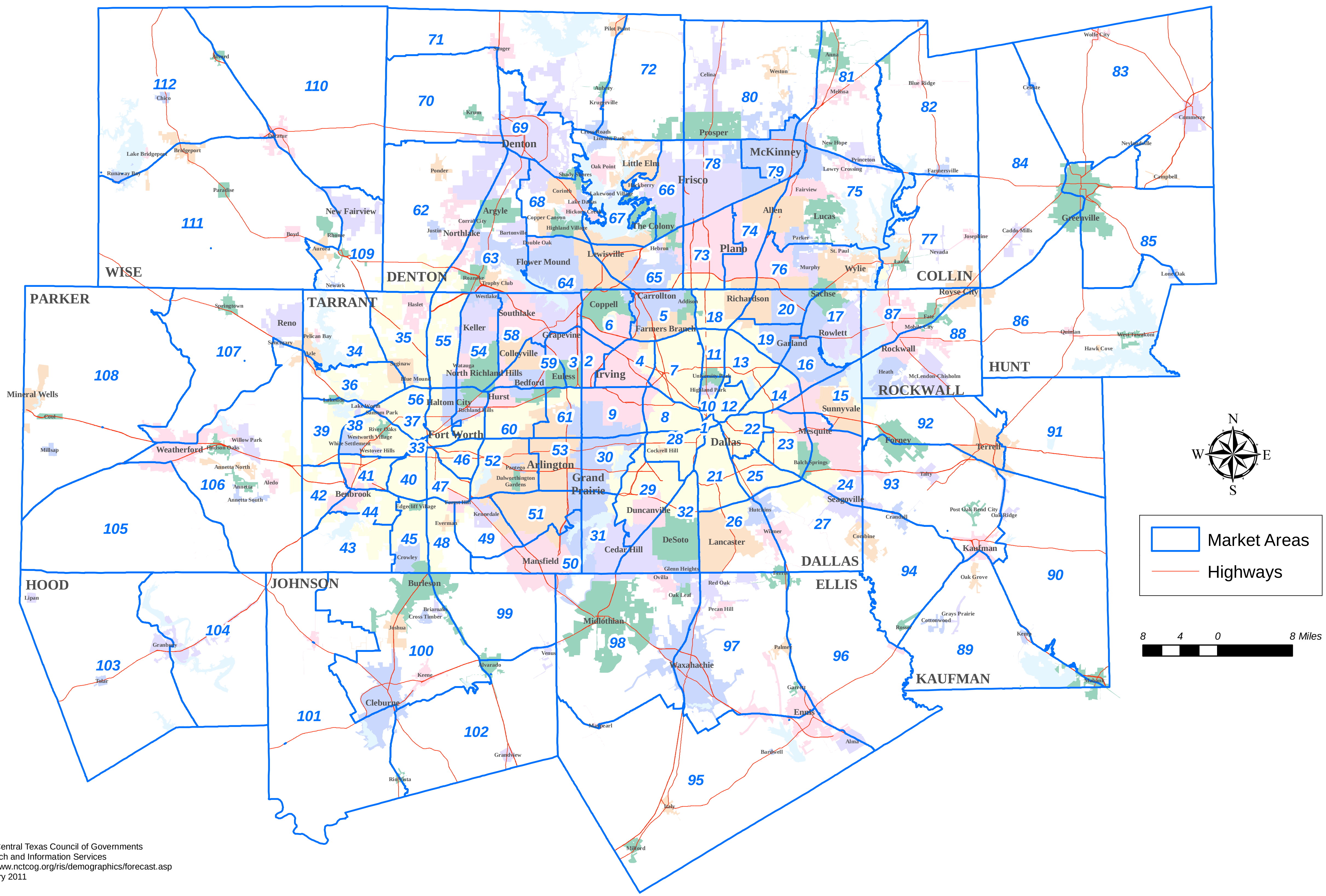
2040 Demographic Forecast Market Areas



North Central Texas Council of Governments
Research and Information Services
http://www.nctcog.org/ris/demographics/forecast.asp
February 2011

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List of Historic-Age Resources Associated with Project Pegasus (2004)

Site No.	Site Name /Address	Property Type/ Subtype	Stylistic Influence	Date	Effect	Integrity Issues	NRHP Eligible
1	Rock Island Railroad Bridge, Stemmons at Elm Fork Creek	Transportation	Double-Intersection Pratt	c. 1910	N/A	Removed in 2003 after DART completed HAER Level 1 documentation	No
2	Stemmons Expressway (IH-35E	Transportation	Modern	1956 to 1960	No Effect	Exempted from NRHP eligibility	No
3	Dupont Flooring Systems, 2451 Stemmons Expressway	Commercial	International	c. 1955	No Effect	Not a good example of curtain wall construction	No
4	Dallas Trade Mart, 2100 Stemmons Expressway	Commercial	International	1959	No Effect	1970s addition dwarfs 1959 construction and alters historic setting	No
5	Stemmons Park Bridge, Stemmons Park, Frontage Road	Transportation	None	c. 1956	No Effect	Common property type and design	No
6	1330 Hi-Line Drive	Commercial	Modern	1958	No Effect	Common property type and design	No
7	La Cabana Hotel Parking Structure	Commercial	Modern	c. 1960	No Effect	Common property type and design	No
8	Greyhound Maintenance Center, Continental	Commercial	Modern	c. 1957	No Adverse Effect	None	Yes
9	Dealey Plaza Historic District	Historic District	Chicago, Early	1935; 1963	No Adverse Effect	None	Listed in the NRHP
10	Concrete road sign structures, Stemmons Expressway and West Commerce	Transportation	Modern	1930s	No Effect	None	No
11	Trinity River Levees, banks of Trinity River	Engineering	None	1928 to 1954	No Effect	1950s alteration to original form	No
12	Oak Cliff Mirror and Glass Dallas-Fort Worth Turnpike	Commercial	Modern	c. 1960	N/A	No longer in project APE	No
13	903 Dallas-Fort Worth Turnpike	Residential	World War II housing	c. 1943	No Effect	Moved from another location	No

Site No.	Site Name /Address	Property Type/ Subtype	Stylistic Influence	Date	Effect	Integrity Issues	NRHP Eligible
14	Kessler Park Historic District, 2nd Extension	Proposed Historic District	International, etc.	c. 1920-1950	No Adverse Effect	None	Yes
15	Houston St. Viaduct, Houston St. and Zang Blvd. at Trinity River	Transportation	Neo-Classical Revival	1911 to 1912	No Adverse Effect	None	Listed in the NRHP 1984
16	Morrison Auto Sales 319 R.L. Thornton Dr.	Commercial	Art Deco	c. 1940	No Effect	Common property type and design, alterations and additions to original building	No
17	920 Dale St.	Residence	Bungalow/ Craftsman	c. 1935	No Effect	Common property type and design	No
18	921 Dale St.	Residence	Bungalow/ Craftsman	c. 1935	No Effect	Common property type and design	No
19	House on 8th St.	Residence	Bungalow/ Craftsman	c. 1935	No Effect	Common property type and design	No
20	Tenth Street Historic District, Oak Cliff	Historic District	Bungalow/ Craftsman, etc.	c. 1890 to 1945	No Adverse Effect	None	Listed in the NRHP 1994
21	413 Eads	Residence	Bungalow/ Craftsman	c. 1935	No Effect	Common property type and design	No
22	Kovandovitch House, 523 Eads Ave.	Residence	Modern	1912	No Adverse Effect	None	Yes
23	Trinity Bottoms Neighborhood, Oak Cliff	Proposed Historic District	Bungalow/ Craftsman, etc.	c. 1890 to 1945	No Effect	Alterations and demolitions due to construction of Trinity River Levees 1928-1930 and construction of IH-35E in the 1960s	No
24	Cadiz Pump Station, Cadiz St.	Civic	Classical Revival	c. 1930	No Adverse Effect	None	Yes
25	Cadiz St. Overpasses and Underpasses, Cadiz St. and Austin RR	Transportation	WPA work	c. 1935	No Adverse Effect	None	Yes

Site No.	Site Name /Address	Property Type/ Subtype	Stylistic Influence	Date	Effect	Integrity Issues	NRHP Eligible
26	Central Wholesale Plumbing Supply, 969 Terminal St.	Commercial	None	c. 1935	No Effect	Common property type and design	No
27	Dallas Music Complex, Cadiz St. and Industrial Blvd.	Commercial	None	c. 1940	No Effect	Common property type and design	No
28	Good Luck Gas Station, Cadiz St. and Lamar St.	Commercial/ Transportation	Art Deco	c. 1935	No Effect	Alterations to original building	No
29	Dallas Life Foundation	Commercial	Art Deco	c. 1935	No Effect	Alterations to original building	No
30	1201 W. Griffin St.	Residence	Victorian/ Queen Anne	c. 1885	No Effect	Clearly visible front/side addition	No
31	1423 W. Griffin St.	Residence	Victorian/ Queen Anne	c. 1885	No Effect	Alterations to front and side of residence	No
32	Ice Cream Plant, 1201 Ervay St.	Commercial	Neo-Classical/ Beaux Arts	c. 1910	No Adverse Effect	None	Yes
33	Old City Park, 1717 Gano St.	Park	N/A	1876	N/A	Alterations to landscape and addition of historic buildings from other locations	No
34	IH-30 (Canyon/R.L. Thornton Highway	Transportation	Modern	c. 1960	No Effect	Exempted from NRHP eligibility	No
35	Ray's Delivery, 1526 Goode-Latimer St.	Commercial	Modern	c. 1955	No Effect	Common property type and design	No
36	Ruibal's Plants of Texas Nursery, IH-30 and Central Expressway	Commercial	Warehouse	c. 1950	No Effect	Common property type and design	No
37	Farmer's Market, IH 30, Harwood St., and Pearl St.	Commercial	Mixed	1913 - 1994	No Adverse Effect	None	Yes
38	Millet the Printer, 1000 S. Ervay St.	Commercial	Modern	c. 1950	No Effect	Common property type and design	No
39	Sara Ellen & Samuel Weisfeld Center, 902 Browder St.	Church/ Theatre	Neo-Classical Revival	1910 - 1912	No Adverse Effect	None	Yes
40	Fire Station No. 4, Cadiz St. and Akard St.	Civic	Modern	c. 1950	No Effect	Common property type and design, better examples elsewhere in city (i.e. Fire Station No. 16)	No

Site No.	Site Name /Address	Property Type/ Subtype	Stylistic Influence	Date	Effect	Integrity Issues	NRHP Eligible
41	Dallas Convention Center, 650 South Griffin St.	Civic	Post-Modern	1957	No Effect	Insensitive alterations to original building	No
42	Railroad Bridge/Trinity Railway Express/ Commuter line to Fort Worth, IH-35 and Continental	Transportation	Modern	1956 - 1960	No Effect	Alterations to original structure	No

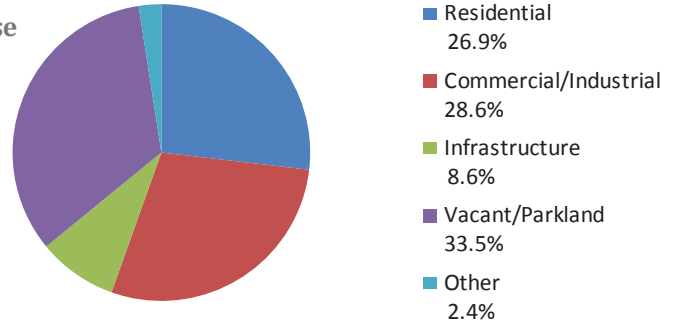
Source: Project Pegasus HRSR (2004) and results of TxDOT-ENV and THC Coordination (November and December 2004).

Roadway Corridor Fact Sheet 8
Project Pegasus Partial Implementation

Project Description

The Pegasus Partial Implementation project near downtown Dallas involves the reconstruction of IH 30 and IH 35E. The project includes the replacement of both corridors' bridges over the Trinity River and will add general purpose freeway lanes, HOV/managed toll lanes, and collector/distributor lanes to interconnect the two Interstate Highways in the downtown Mixmaster.

Land Use



Corridor Information

ROUTE	LIMITS	COST
IH 30	Sylvan Avenue to IH 35E	$444,546,000
IH 35E/IH 30	IH 30 (West) to IH 30 (East)	$500,000,000
IH 35E	IH 30 to 8th Street	cost included above

Demographic Information Within One Mile of Corridor

POPULATION PROFILE	
Population	29,485
Number of Households	8,563
Population Below Poverty	30.8%
Population over 65	7.1%
African American	19.5%
Hispanic	58.8%
Asian/Pacific Islander	0.9%
American Indian/Native Alaskan	0.6%
Total Minority	80.0%

Source: Census 2000

MAJOR EMPLOYERS	
Bank of America	4,568
Dallas County Sheriff's Office	3,000
AT&T	2,900
USPS	2,500
Methodist Medical Center-Dallas	2,054
City of Dallas	1,900
Dallas Morning News	1,700
IRS	1,281

Source: NCTCOG Employment Database, 2010

Legislative Districts Within One Mile of Corridor

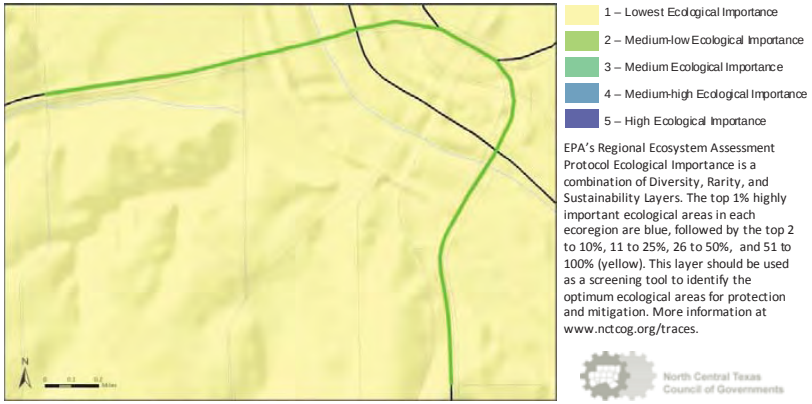
TEXAS SENATE	TEXAS HOUSE OF REPRESENTATIVES	UNITED STATES CONGRESS
Royce West-23	Eric Johnson-100	Eddie Bernice Johnson-30
	Rafael Anchia-103	Pete Sessions-32
	Roberto Alonzo-104	
	Dan Branch-108	
	Barbara Mallory Caraway-110	
	Yvonne Davis-111	

NCTCOG Regional Ecosystem Framework Score* (Range: 14 - 37)

SUBWATERSHED NAME	REF COMPOSITE SCORE
Headwaters Turtle Creek	16
Turtle Creek-Trinity River	22

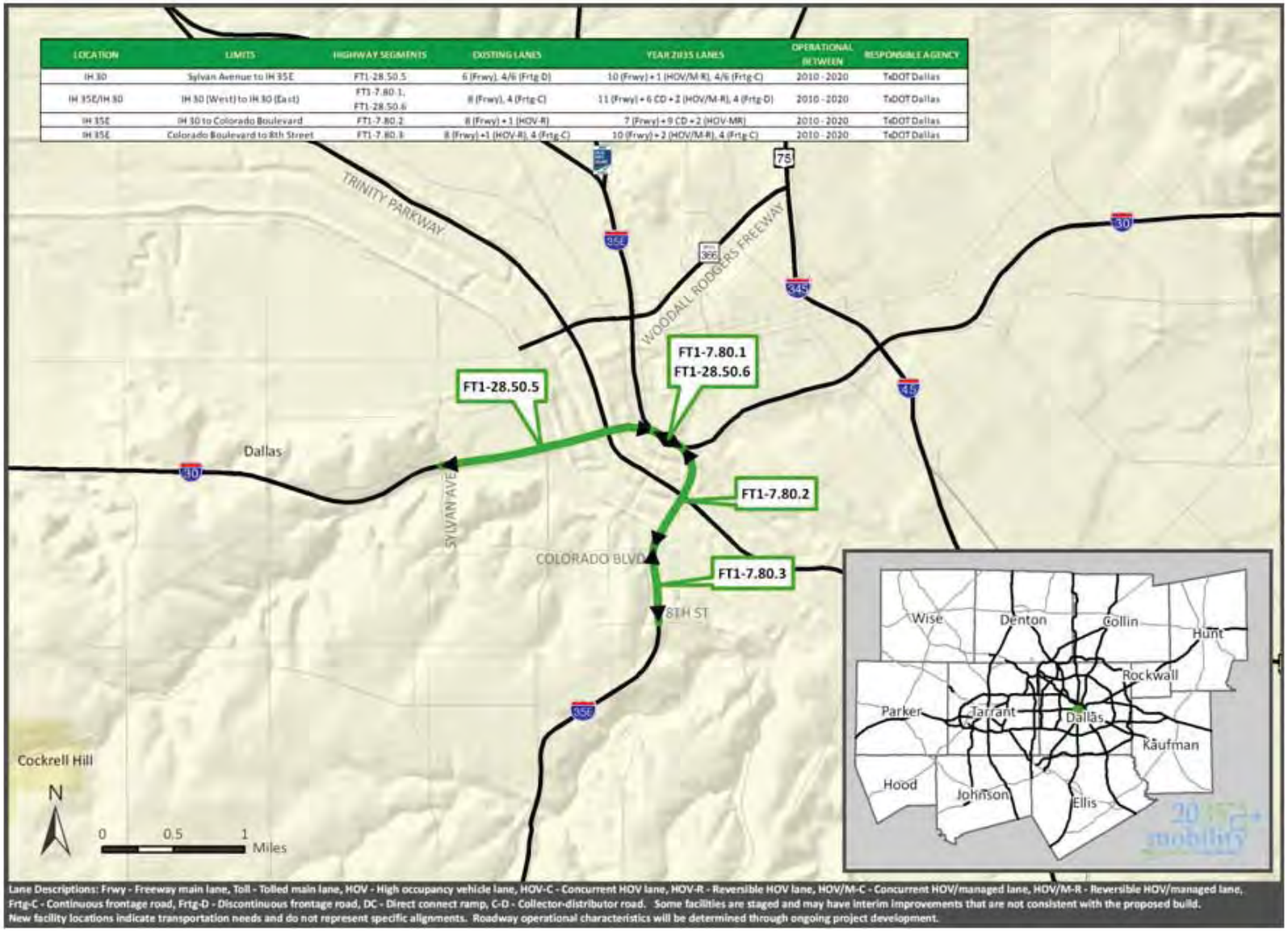
*Lower REF score indicates less resource vulnerability, higher score indicates more resource vulnerability.

Ecological Importance in Corridor



Project Pegasus Partial Implementation

LOCATION	LIMITS	HIGHWAY SEGMENTS	EXISTING LANES	YEAR 2035 LANES	OPERATIONAL BETWEEN	RESPONSIBLE AGENCY
IH 30	Sylvan Avenue to IH 35E	FT1-28.50.5	6 (Frwy), 4/6 (Frtg-D)	10 (Frwy) + 1 (HOV/M-R), 4/6 (Frtg-C)	2010 - 2020	TxDOT Dallas
IH 35E/IH 30	IH 30 (West) to IH 30 (East)	FT1-7.80.1, FT1-28.50.6	8 (Frwy), 4 (Frtg-C)	11 (Frwy) + 6 CD + 2 (HOV/M-R), 4 (Frtg-D)	2010 - 2020	TxDOT Dallas
IH 35E	IH 30 to Colorado Boulevard	FT1-7.80.2	8 (Frwy) + 1 (HOV-R)	7 (Frwy) + 9 CD + 2 (HOV-MR)	2010 - 2020	TxDOT Dallas
IH 35E	Colorado Boulevard to 8th Street	FT1-7.80.3	8 (Frwy) +1 (HOV-R), 4 (Frtg-C)	10 (Frwy) + 2 (HOV/M-R), 4 (Frtg-C)	2010 - 2020	TxDOT Dallas



Lane Descriptions: Frwy - Freeway main lane, Toll - Tolled main lane, HOV - High occupancy vehicle lane, HOV-C - Concurrent HOV lane, HOV-R - Reversible HOV lane, HOV/M-C - Concurrent HOV/managed lane, HOV/M-R - Reversible HOV/managed lane, Frtg-C - Continuous frontage road, Frtg-D - Discontinuous frontage road, DC - Direct connect ramp, C-D - Collector-distributor road. Some facilities are staged and may have interim improvements that are not consistent with the proposed build. New facility locations indicate transportation needs and do not represent specific alignments. Roadway operational characteristics will be determined through ongoing project development.

Administrative Revisions - January 31, 2012

Fact Sheet ID	Project Corridor	Location	Limits	MTP ID	Lane Summary *		Year Operational Between **	Responsible Agency ***	YOE Total Project Cost
					Existing	2035			
4	North Tarrant Express	IH 35W *(Seg 3A)*	SH 183 to SH 121	FT1-5.50.2	6 (Frwy), 4 (Frtg-D)	8 (Frwy) + 4 (HOV/M-C), 4/8 (Frtg-C)	2020 - 2030 **	TxDOT Fort Worth (CDA)	cost included above
4	North Tarrant Express	IH 35W *(Seg 3A)*	SH 121 to IH 30	FT1-5.60.1	8 (Frwy), 4 (Frtg-D)	8 (Frwy) + 4/8 CD + 2 (HOV/M-C), 4/6 (Frtg-D)	2020 - 2030 **	TxDOT Fort Worth (CDA)	cost included above
4	North Tarrant Express	US 287 *(Seg 3A)*	IH 35W to IH 30	FT1-52.10.1	6 (Frwy), 4 (Frtg-D)	6 (Frwy) + 2 (HOV/M-C), 4 (Frtg-D)	2010 - 2020	TxDOT Fort Worth (CDA)	cost included above
5	North Tarrant Express	IH 820 *(Seg 1)*	IH 35W to US 377	FT1-150.20.1	4 (Frwy), 4 (Frtg-D)	6 (Frwy) + 4 (HOV/M-C), 4/8 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$645,014,000
5	North Tarrant Express	IH 820 *(Seg 1)*	US 377 to SH 121/SH 183	FT1-150.20.2	4 (Frwy), 4/6 (Frtg-D)	6 (Frwy) + 4 (HOV/M-C), 4/8 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	cost included above
6	North Tarrant Express	SH 121 *(Seg 2W)*	IH 820 to SH 183	FT1-11.90.1	6 (Frwy), 2/6 (Frtg-C)	6 (Frwy) + 6 (HOV/M-C), 4/8 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$881,816,000
6	North Tarrant Express	SH 121 (Seg 2W)	SH 183 to FM 157/Mid-Cities Blvd.	FT1-11.80.2	6 (Frwy), 4 (Frtg-C)	6, 4/8 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$49,776,000
6	North Tarrant Express	SH 183 *(Seg 2E)*	SH 121 to SH 360	FT1-22.10.1	6 (Frwy), 4 (Frtg-C)	6 (Frwy) + 6 (HOV/M-C), 4/8 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$700,000,000
6	North Tarrant Express	SH 183 *(Seg 2E)*	SH 360 to President George Bush Turnpike - Western Extension *(SH 161)*	FT1-22.20.1	6 (Frwy) + 4 (CD from SH 360 to International Pkwy.), 2/6 (Frtg-C)	8 (Frwy) + 4 (CD from SH 360 to International Pkwy.) + 6 (HOV/M-C), 2/6 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	cost included above
7	North Tarrant Express	IH 820 *(Seg 4)*	SH 121/SH 183 Interchange to SH 121/SH 10 Interchange	FT1-151.10.1	8 (Frwy), 4/6 (Frtg-C)	10 (Frwy) + 2 (HOV/M-C), 4/8 (Frtg-C)	2020 - 2030	TxDOT Fort Worth (CDA)	$249,490,000
7	North Tarrant Express	IH 820 *(Seg 4)*	SH 121/SH 10 Interchange to Randol Mill Road	FT1-151.20.1	4 (Frwy)	8 (Frwy), 2/6 (Frtg-D)	2020 - 2030	TxDOT Fort Worth (CDA)	cost included above
7	North Tarrant Express	SH 121 *(Seg 4)+G29*	IH 820 to Handley Ederville	FT1-11.100.1	6 (Frwy), 4 (Frtg-C)	6 (Frwy) + 2 (HOV/M-C), 4/6 (Frtg-C)	2020 - 2030	TxDOT Fort Worth (CDA)	cost included above
8	Pegasus Partial Implementation	IH 30	Sylvan Avenue to IH 35E	FT1-28.50.5	6 (Frwy), 4/6 (Frtg-D)	10 (Frwy) + 1 (HOV/M-R), 4/6 (Frtg-C)	2010 - 2020	TxDOT Dallas	$444,546,000
8	Pegasus Partial Implementation	IH 35E/IH 30	IH 30 *(West)* to IH 30 *(East)*	FT1-7.80.1 FT1-28.50.6	8 (Frwy), 4 (Frtg-C)	11 (Frwy) + 6 CD + 2 (HOV/M-R), 4 (Frtg-D)	2010 - 2020	TxDOT Dallas	$500,000,000
8	Pegasus Partial Implementation	IH 35E	IH 30 to Colorado Blvd.	FT1-7.80.2	8 (Frwy) + 1 (HOV-R)	7 (Frwy) + 9 CD + 2 (HOV-MR)	2010 - 2020	TxDOT Dallas	cost included above
8	Pegasus Partial Implementation	IH 35E	Colorado Blvd. to 8th Street	FT1-7.80.3	8 (Frwy) +1 (HOV-R), 4 (Frtg-C)	10 (Frwy) + 2 (HOV/M-R), 4 (Frtg-C)	2010 - 2020	TxDOT Dallas	cost included above
8	Pegasus Partial Implementation	Jefferson Memorial Bridge	IH 35E/Colorado Blvd. to Memorial Drive/Hotel Street	NRSA1-DAL-	0	6 (ART)	2010 - 2020	TxDOT Dallas	$75,000,000
9	SH 114/SH 121 DFW Connector	FM 2499	South of Gerault Road to SH 121	FT1-54.10.1	6 (ART)	4 (Frwy), 2/6 (Frtg-D)	2010 - 2020	TxDOT Fort Worth (CDA)	cost included below
9	SH 114/SH 121 DFW Connector	IH 635	SH 121 to Royal Lane	FT1-130.10.1	6 (Frwy)	10 (Frwy)	2010 - 2020	TxDOT Fort Worth (CDA)	$5,119,000
9	SH 114/SH 121 DFW Connector	SH 114	Kimball Avenue to SH 121 *(West)*	FT1-12.30.5	4 (Frwy), 4/6 (Frtg-D)	8 (Frwy), 4/10 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$760,914,000
9	SH 114/SH 121 DFW Connector	SH 114	SH 121 *(West)* to E of International Pkwy.	FT1-12.40.1	8 (Frwy), 4/6 (Frtg-C)	13 (Frwy) + 4 (HOV/M-C), 4/10 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	cost included above
9	SH 114/SH 121 DFW Connector	SH 121	Dallas County Line to FM 2499	FT1-11.50.2	4 (Frwy), 4/6 (Frtg-C)	10 (Frwy), 4/6 (Frtg-C)	2010 - 2020	TxDOT Fort Worth (CDA)	$143,594,000

Recommendations: Freeway/Tollway Interchanges

TxDOT Dallas District

Revised September 29, 2011

MTP ID	Facility	Connection	Staging	Description	Operational Between	Study Reference
IN1-11.21.1	Dallas North Tollway	SH 121 (Full Interchange)	Phase II	Reconstruct	2012 - 2020	SH 121 Collin County Toll Road (0364-04-040)
IN1-21.2.1	Dallas North Tollway	US 380		New Interchange	2012 - 2020	
IN1-30.547.1	IH 20	Falcon's Lair		New Interchange	2012 - 2020	(0095-01-024)
IN1-30.131.1	IH 20	Kleberg Road		New Interchange	2012	
IN1-19.30.1	IH 20	Spur 408/Clark Road		New Interchange	2012	
IN1-30.38.1	IH 20	US 67		Reconstruct	2020 - 2030	
IN1-28.551.1	IH 30	Between SH 205 & FM 549		New Interchange	2012 - 2020	(0009-12-073)
IN1-28.550.1	IH 30	Erby Campbell Blvd.		Grade Separation	2012 - 2020	
IN1-28.548.1	IH 30	FM 3549 (FM 549)		Reconstruct	2012 - 2020	
IN1-28.549.1	IH 30	FM 551		Reconstruct	2012 - 2020	
IN1-28.121.1	IH 30	President George Bush Turnpike - Eastern Extension	Partial Interchange	New Interchange	2012 - 2020	
IN1-15.28.1	IH 30	SH 161	Phase II	New Interchange	2012 - 2020	(1068-04-129)
IN1-7.576.1	IH 35E	Dickerson Parkway		New Interchange	2012 - 2020	(0196-03-180)
IN1-7.552.1	IH 35E	FM 407		Reconstruct	2012 - 2020	
IN1-7.28.1	IH 35E	IH 30		Reconstruct	2012 - 2020	
IN1-3.5.1	IH 35E	IH 35W		Reconstruct	2020 - 2030	
IN1-7.11.1	IH 35E	SH 121		Reconstruct	2012 - 2020	
IN1-27.554.1	IH 45	Fulghum Road		Reconstruct	2012 - 2020	
IN1-27.30.1	IH 45	IH 20		Reconstruct	2012	
IN1-21.130.1	IH 635	Dallas North Tollway		Reconstruct	2012 - 2020	
IN1-7.130.1	IH 635	IH 35E	Phase I (IH 635 Managed Lanes)	Partial Reconstruct	2012 - 2020	
IN1-7.130.1	IH 635	IH 35E	Phase II (Full Interchange)	Reconstruct	2030 - 2035	
IN1-131.577.1	IH 635	Skillman Road		Reconstruct	2012 - 2020	
IN1-32.131.1	IH 635	US 80		Reconstruct	2012 - 2020	
IN1-23.130.1	IH 635	US 75		Reconstruct	2012 - 2020	
IN1-3.100.1	IH 35	Loop 288		Reconstruct	2012 - 2020	
IN1-17.12.1	Loop 12	SH 114		Reconstruct	2012 - 2020	(0581-02-121)
IN1-6.30.1	Loop 9	IH 20		New Interchange	2020 - 2030	

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	ELLIS	0172-08-059	US 287	E,R	ENNIS	TXDOT-DALLAS	**$1,716,538**

LIMITS FROM: AT ENSIGN ROAD IN ENNIS
LIMITS TO:
TIP DESCRIPTION: CONSTRUCT INTERCHANGE
REMARKS: ADD TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 11905
FUNDING CATEGORY: TXDOT PE/ROW
MTP REFERENCE: IN1-1.560.1

Project History:

Total Project Cost Information:

Preliminary Engineering:	$716,538
Right Of Way:	$1,000,000
Construction:	$13,000,000
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$14,716,538**

Cost of Approved Phases: **$1,716,538**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
TXDOT PE:	$0	$716,538	$0	$0	$0	$716,538
TXDOT ROW:	$800,000	$200,000	$0	$0	$0	$1,000,000
Funding by Share:	$800,000	$916,538	$0	$0	$0	**$1,716,538**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DENTON	0196-01-096	IH 35E	C,E,R	VARIOUS	TXDOT-DALLAS	**$149,700,000**

LIMITS FROM: NORTH END OF LAKE LEWISVILLE BRIDGE
LIMITS TO: FM 2181 SOUTH IN CORINTH
TIP DESCRIPTION: RECONST 6 LN TO 8 MAINLANES, 4 CONCURRENT MANAGED/HOV AND 2/3 LANE FRONTAGE ROAD ON EACH SIDE WITH SIDEWALKS
REMARKS: LOCAL CONTRIBUTION FROM PUBLIC/PRIVATE PARTNER

REV DATE: 02/2012
MPO PROJECT ID: 11798.4
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.10.5, FT1-7.10.6

Project History:

Total Project Cost Information:

Preliminary Engineering:	$1,000,000
Right Of Way:	$20,400,000
Construction:	$128,300,000
Construction Engineering	$6,500,146
Contingencies:	$10,111,338
Indirects:	$7,063,492
Bond Financing:	$0
Total Project Cost:	**$173,374,975**

Cost of Approved Phases: **$149,700,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTR:	$0	$0	$37,750,000	$0	$0	$37,750,000
Category 3 - Local Contribution:	$0	$0	$0	$0	$111,950,000	$111,950,000
Funding by Share:	$0	$0	$37,750,000	$0	$111,950,000	**$149,700,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0196-03-205	IH 35E	E,R	DALLAS	TXDOT-DALLAS	**$48,000,000**

LIMITS FROM: AT IH 30
LIMITS TO:
TIP DESCRIPTION: RECONSTRUCT INTERCHANGE WITH 11 MAINLANES, 2 HOV/MANAGED LANES, 6 COLLECTOR DISTRIBUTOR ROADS, AND 2 FRONTAGE ROADS
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 53012
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.1, IN1-7.28.1, FT3-007

Project History: $1,225,000 PROP 14 OBLIGATED FOR PE IN 2009

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$45,500,000
Construction:	$235,585,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$284,935,000**

Cost of Approved Phases: **$48,000,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$38,400,000	$9,600,000	$0	$0	$0	$48,000,000
Funding by Share:	$38,400,000	$9,600,000	$0	$0	$0	**$48,000,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	COLLIN	0091-05-060	SH 289	C	FRISCO	FRISCO	**$2,647,116**

LIMITS FROM: SH 121
LIMITS TO: FM 3537
TIP DESCRIPTION: ADD TURNING BAYS AT INTERSECTIONS; SIGNAL IMPROVEMENTS, ADD ADA COMPLIANT RAMPS AND PEDESTRIAN SIGNALS
REMARKS: REVISE FUNDING SOURCE; RTR 121-CC1 FUNDS

REV DATE: 02/2012
MPO PROJECT ID: 20087
FUNDING CATEGORY: 3,12(S)
MTP REFERENCE: TSM2-001, TSM2-002, BP2-017

Project History:

Total Project Cost Information:

Preliminary Engineering:	$252,013
Right Of Way:	$1,087,969
Construction:	$2,647,116
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$3,987,098**

Cost of Approved Phases: **$2,647,116**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTR:	$0	$0	$988,067	$247,017	$0	$1,235,084
Category 12(S):	$1,129,626	$282,406	$0	$0	$0	$1,412,032
Funding by Share:	$1,129,626	$282,406	$988,067	$247,017	$0	**$2,647,116**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0196-03-205	IH 35E	C	DALLAS	TXDOT-DALLAS	**$235,585,000**

LIMITS FROM: AT IH 30
LIMITS TO:
TIP DESCRIPTION: RECONSTRUCT INTERCHANGE WITH 11 MAINLANES, 2 HOV/MANAGED LANES, 6 COLLECTOR DISTRIBUTOR ROADS, AND 2 FRONTAGE ROADS
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 53012
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.1, IN1-7.28.1, FT3-007

Project History: $1,225,000 PROP 14 OBLIGATED FOR PE IN FY2009

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$45,500,000
Construction:	$235,585,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$284,935,000**

Cost of Approved Phases: **$235,585,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$189,548,000	$47,387,000	$0	$0	$0	$236,935,000
Funding by Share:	$189,548,000	$47,387,000	$0	$0	$0	**$236,935,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0353-02-053	SH 114/U	E,R	ROANOKE	TXDOT-DALLAS	**$250,000**

LIMITS FROM: AT UP RAILROAD UNDERPASS IN ROANOKE DOT NO 795 342V
LIMITS TO:
TIP DESCRIPTION: REPLACE RAILROAD UNDERPASS
REMARKS: ADD PHASES, REVISE FUNDING, AND ADD TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 51060
FUNDING CATEGORY: TXDOT PE/ROW
MTP REFERENCE: MO3-002

Project History:

Total Project Cost Information:

Preliminary Engineering:	$150,000
Right Of Way:	$100,000
Construction:	$10,732,000
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$10,982,000**

Cost of Approved Phases: **$250,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
TXDOT PE:	$0	$150,000	$0	$0	$0	$150,000
TXDOT ROW:	$80,000	$20,000	$0	$0	$0	$100,000
Funding by Share:	$80,000	$170,000	$0	$0	$0	**$250,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DENTON	0353-02-029	SH 114	C,E,R	VARIOUS	TXDOT-DALLAS	**$39,849,822**

LIMITS FROM: WEST OF COUNTY LINE ROAD
LIMITS TO: WEST OF FM 156
TIP DESCRIPTION: WIDEN RURAL 2 TO 4 LANE DIVIDED
REMARKS: REVISE FUNDING; RTR 121-DE1 FUNDS

REV DATE: 02/2012
MPO PROJECT ID: 20221
FUNDING CATEGORY: 3
MTP REFERENCE: RSA1-388.0

Project History:

Total Project Cost Information:

Preliminary Engineering:	$330,000
Right Of Way:	$7,519,822
Construction:	$32,000,000
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$39,849,822**

Cost of Approved Phases: **$39,849,822**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 14:	$264,000	$66,000	$0	$0	$0	$330,000
Category 3 - RTR:	$0	$0	$6,019,822	$1,500,000	$0	$7,519,822
Category 3 - Prop 12:	$25,600,000	$6,400,000	$0	$0	$0	$32,000,000
Funding by Share:	$25,864,000	$6,466,000	$6,019,822	$1,500,000	$0	**$39,849,822**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0442-02-118	IH 35E	E	DALLAS	TXDOT-DALLAS	**$2,500,000**

LIMITS FROM: AT TRINITY RIVER NORTHBOUND AND SOUTHBOUND APPROACHES
LIMITS TO: REPLACE BRIDGE OVER TRINITY RIVER
TIP DESCRIPTION: WIDEN AND RECONSTRUCT 7 MAINLANES, 9 COLLECTOR/DISTRIBUTOR LANES, AND 2 REVERSIBLE HOV/MANAGED LANES
REMARKS: ADD TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 54126
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.2, MO3-002

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$108,185,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$112,035,000**

Cost of Approved Phases: **$2,500,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$2,000,000	$500,000	$0	$0	$0	$2,500,000
Funding by Share:	$2,000,000	$500,000	$0	$0	$0	**$2,500,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0442-02-132	IH 35E	E,R	DALLAS	TXDOT-DALLAS	**$9,000,000**

LIMITS FROM: FROM NORTH AND SOUTH OF TRINITY RIVER
LIMITS TO: EIGHT STREET
TIP DESCRIPTION: WIDEN AND RECONSTRUCT TO 7 MAINLANES, 9 COLLECTOR/DISTRIBUTOR LANES, 2 REVERSIBLE HOV/MANAGED LANES, AND OPERATIONAL IMPROVEMENTS
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 54024
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.2, FT1-7.80.3, MO3-002, FT3-007

Project History: $10M PROP 12(V1) OBLIGATED IN FY 2010

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$6,500,000
Construction:	$70,535,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$80,885,000**

Cost of Approved Phases: **$9,000,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$7,200,000	$1,800,000	$0	$0	$0	$9,000,000
Funding by Share:	$7,200,000	$1,800,000	$0	$0	$0	**$9,000,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0442-02-118	IH 35E	C	DALLAS	TXDOT-DALLAS	$108,185,000

LIMITS FROM: AT TRINITY RIVER NORTHBOUND AND SOUTHBOUND APPROACHES
LIMITS TO: REPLACE BRIDGE OVER TRINITY RIVER
TIP DESCRIPTION: WIDEN AND RECONSTRUCT 7 MAINLANES, 9 COLLECTOR/DISTRIBUTOR LANES, AND 2 REVERSIBLE HOV/MANAGED LANES
REMARKS: ADD TO TIP/STIP; CAT 10 EARMARKS

REV DATE: 02/2012
MPO PROJECT ID: 54126
FUNDING CATEGORY: 6,3,10
MTP REFERENCE: FT1-7.80.2, MO3-002

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$108,185,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$112,035,000**

Cost of Approved Phases: **$108,185,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 6:	$26,400,000	$6,600,000	$0	$0	$0	$33,000,000
Category 3 - Prop 12:	$49,210,299	$12,302,575	$0	$0	$0	$61,512,874
Category 10:	$12,017,701	$3,004,425	$0	$0	$0	$15,022,126
Funding by Share:	$87,628,000	$21,907,000	$0	$0	$0	**$109,535,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0442-02-132	IH 35E	C	DALLAS	TXDOT-DALLAS	$70,535,000

LIMITS FROM: FROM NORTH AND SOUTH OF TRINITY RIVER
LIMITS TO: EIGHT STREET
TIP DESCRIPTION: WIDEN AND RECONSTRUCT TO 7 MAINLANES, 9 COLLECTOR/DISTRIBUTOR LANES, 2 REVERSIBLE HOV/MANAGED LANES, AND OPERATIONAL IMPROVEMENTS
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 54024
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.2, FT1-7.80.3, MO3-002, FT3-007

Project History: $10M PROP 12 (VI) OBLIGATED IN FY2010

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$6,500,000
Construction:	$70,535,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$80,885,000**

Cost of Approved Phases: **$70,535,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$57,508,000	$14,377,000	$0	$0	$0	$71,885,000
Funding by Share:	$57,508,000	$14,377,000	$0	$0	$0	**$71,885,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	VARIOUS	0918-00-975	VA	C	VARIOUS	NCTCOG	$3,271,666

LIMITS FROM: TRAVEL SURVEY AND PEAK PRICING BEFORE AND AFTER STUDY
LIMITS TO:
TIP DESCRIPTION: TRAVEL SURVEY AND CORRIDOR PEAK PRICING BEFORE AND AFTER STUDY FOR SH 161 AND OTHER LOCATIONS; TRAVEL SURVEY AND DATA COLLECTION EFFORT TO PROVIDE TRAVEL INFORMATION USED TO CREATE ANALYTICAL TOOLS FOR ALL PLANNING, AIR QUALITY, AND MANAGEMENT PROJECTS IN THE MPA AND SURVEY AND ANALYSIS OF TRAVELERS' RESPONSE TO VARIOUS TOLL STRATEGIES
REMARKS: CHANGE FUNDING SOURCE AND COMBINE 2964-01-917 AND 0918-00-975 INTO ONE CSJ (0918-00-975) AND MOVE ALL FUNDING TO FY2013

REV DATE: 02/2012
MPO PROJECT ID: 11622
FUNDING CATEGORY: 12(S)
MTP REFERENCE: F3-005, FT1-123.10.1, FT1-15.20.1, FT1-15.30.1, FT3-011

Project History:

Total Project Cost Information:

Preliminary Engineering:	$0
Right Of Way:	$0
Construction:	$3,271,666
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$3,271,666**

Cost of Approved Phases: **$3,271,666**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 12(S):	$2,617,333	$251,666	$0	$402,667	$0	$3,271,666
Funding by Share:	$2,617,333	$251,666	$0	$402,667	$0	**$3,271,666**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0918-47-944	CS	C,E,R	GRAND PRAIRIE	TXDOT-DALLAS	**$1,268,537**

LIMITS FROM: 15TH ST CONNECTION
LIMITS TO: AT IH 30/BELT LINE RD PARK & RIDE FACILITY
TIP DESCRIPTION: ENGINEER AND CONSTRUCT 15TH ST EXTENSION FOR CONNECTION TO FACILITY
REMARKS: REVISE FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 11840
FUNDING CATEGORY: 3
MTP REFERENCE: TDM2-300

Project History:

Total Project Cost Information:

Preliminary Engineering:	$84,900
Right Of Way:	$215,821
Construction:	$967,816
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$1,268,537**

Cost of Approved Phases: **$1,268,537**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTC/Local:	$0	$0	$624,000	$156,000	$0	$780,000
Category 3 - RTR:	$0	$0	$390,830	$97,707	$0	$488,537
Funding by Share:	$0	$0	$1,014,830	$253,707	$0	**$1,268,537**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	COLLIN	1013-01-026	FM 546	E	MCKINNEY	TXDOT-DALLAS	**$400,000**

LIMITS FROM: WEST OF CR 317
LIMITS TO: SH 5
TIP DESCRIPTION: 0 TO 4 LANE DIVIDED FACILITY
REMARKS: ADD ENGINEERING PHASE TO FY2012

REV DATE: 02/2012
MPO PROJECT ID: 54110
FUNDING CATEGORY: TXDOT PE
MTP REFERENCE: NRSA1-DAL-96

Project History:

Total Project Cost Information:

Preliminary Engineering:	$400,000
Right Of Way:	$0
Construction:	$0
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$400,000**

Cost of Approved Phases: **$400,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
TXDOT PE:	$0	$400,000	$0	$0	$0	$400,000
Funding by Share:	$0	$400,000	$0	$0	$0	**$400,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-099	IH 30	E	DALLAS	TXDOT-DALLAS	**$2,500,000**

LIMITS FROM: AT BECKLEY AVE, TRINITY RIVER, AND AT RIVERFRONT BOULEVARD
LIMITS TO:
TIP DESCRIPTION: REPLACE BRIDGES AND APPROACHES WITH 10 MAINLANES, 1 REVERSIBLE HOV/MANAGED, AND 4/6 FRONTAGE ROADS
REMARKS: ADD TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 54127
FUNDING CATEGORY: 3
MTP REFERENCE: IN1-7.28.1, FT1-28.50.5, MO3-002

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$40,650,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$44,500,000**

Cost of Approved Phases: **$2,500,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$2,000,000	$500,000	$0	$0	$0	$2,500,000
Funding by Share:	$2,000,000	$500,000	$0	$0	$0	**$2,500,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0918-45-818	CS	C,E	CARROLLTON	CARROLLTON	**$200,000**

LIMITS FROM: VARIOUS LOCATIONS IN CITY OF
LIMITS TO: CARROLLTON ON-SYSTEM
TIP DESCRIPTION: CITYWIDE SIGNAL SYSTEM UPGRADE TO SIGNAL CONTROLLERS
REMARKS: MOVE PROJECT TO FY2013; PEND AGMT/FPAA; ASSOCIATED WITH 0918-45-817

REV DATE: 02/2012
MPO PROJECT ID: 11428.2
FUNDING CATEGORY: 5
MTP REFERENCE: TSM2-002

NOX (LBS/DAY): 6.07 VOC (LBS/DAY): 24.62

Project History:

Total Project Cost Information:

Preliminary Engineering:	$11,772
Right Of Way:	$0
Construction:	$188,228
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$200,000**

Cost of Approved Phases: **$200,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 5:	$160,000	$40,000	$0	$0	$0	$200,000
Funding by Share:	$160,000	$40,000	$0	$0	$0	**$200,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0918-45-880	CS	C,E	ADDISON	ADDISON	**$796,539**

LIMITS FROM: ADDISON RD AND SURVEYOR BLVD
LIMITS TO: AT DART RR IN ADDISON
TIP DESCRIPTION: INSTALL QUAD GATES AND ALSO RESURFACE AT ADDISON RD
REMARKS: CHANGE FUNDING SOURCE; LOCAL LET; PEND AGMT/FPAA; LOCAL CONTRIBUTION PAID BY ADDISON

REV DATE: 02/2012
MPO PROJECT ID: 11258.8
FUNDING CATEGORY: 12(S),3(LC)
MTP REFERENCE: FP2-350

Project History:

Total Project Cost Information:

Preliminary Engineering:	$34,725
Right Of Way:	$0
Construction:	$761,814
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$796,539**

Cost of Approved Phases: **$796,539**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 12(S):	$504,000	$0	$0	$126,000	$0	$630,000
Category 3 - Local Contribution:	$0	$0	$0	$0	$166,539	$166,539
Funding by Share:	$504,000	$0	$0	$126,000	$166,539	**$796,539**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-099	IH 30	C	DALLAS	TXDOT-DALLAS	**$40,650,000**

LIMITS FROM: AT BECKLEY AVE, TRINITY RIVER, AND AT RIVERFRONT BOULEVARD
LIMITS TO:
TIP DESCRIPTION: REPLACE BRIDGES AND APPROACHES WITH 10 MAINLANES, 1 REVERSIBLE HOV/MANAGED, AND 4/6 FRONTAGE ROADS
REMARKS: ADD TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 54127
FUNDING CATEGORY: 6
MTP REFERENCE: IN1-7.28.1, FT1-28.50.5, MO3-002

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$40,650,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$44,500,000**

Cost of Approved Phases: **$40,650,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 6:	$33,600,000	$8,400,000	$0	$0	$0	$42,000,000
Funding by Share:	$33,600,000	$8,400,000	$0	$0	$0	**$42,000,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-116	IH 30	E,R	DALLAS	TXDOT-DALLAS	**$12,500,000**

LIMITS FROM: EAST OF SYLVAN AVE
LIMITS TO: IH 35E
TIP DESCRIPTION: WIDEN AND RECONSTRUCT 10 MAINLANES WITH 1 REVERSIBLE HOV/MANAGED AND 4/6 FRONTAGE ROADS (MARGARET MCDERMOTT BRIDGE)
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 52564
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-28.50.5, MO3-002

Project History: $5M PROP 14 OBLIGATED FOR PE IN FY2009

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$10,000,000
Construction:	$159,585,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$173,435,000**

Cost of Approved Phases: **$12,500,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$10,000,000	$2,500,000	$0	$0	$0	$12,500,000
Funding by Share:	$10,000,000	$2,500,000	$0	$0	$0	**$12,500,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-148	IH 30	E	GRAND PRAIRIE	TXDOT-DALLAS	**$919,200**

LIMITS FROM: NW 7TH STREET
LIMITS TO: BELTLINE ROAD
TIP DESCRIPTION: CONSTRUCT 3 EB LANE FRONTAGE ROAD; RELOCATE EXIT RAMP AND ADD EB ENTRANCE RAMP
REMARKS: REVISE FUNDING; RTR 121-DA1 FUNDS; LOCAL CONTRIBUTION PAID BY GRAND PRAIRIE

REV DATE: 02/2012
MPO PROJECT ID: 20227
FUNDING CATEGORY: TXDOT PE, 3(LC),3(RTR)
MTP REFERENCE: FT1-28.50.1, FT3-007

Project History:

Total Project Cost Information:

Preliminary Engineering:	$919,200
Right Of Way:	$2,647,600
Construction:	$6,361,770
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$9,928,570**

Cost of Approved Phases: **$919,200**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTR:	$0	$0	$292,960	$73,240	$0	$366,200
TXDOT PE:	$0	$114,000	$0	$0	$0	$114,000
Category 3 - Local Contribution:	$0	$0	$0	$0	$439,000	$439,000
Funding by Share:	$0	$114,000	$292,960	$73,240	$439,000	**$919,200**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	2374-01-171	IH 635	E,R	DALLAS	TXDOT-DALLAS	**$3,200,000**

LIMITS FROM: AT SKILLMAN/AUDELIA INTERCHANGE
LIMITS TO:
TIP DESCRIPTION: INTERCHANGE IMPROVEMENTS AND HOV ACCESS FROM HIGHLAND DRIVE
REMARKS: ADD ENGINEERING, ROW, AND UTILITY PHASE TO FY2012

REV DATE: 02/2012
MPO PROJECT ID: 54111
FUNDING CATEGORY: TXDOT PE/ROW
MTP REFERENCE: IN1-131.577.1, FT3-007

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,000,000
Right Of Way:	$1,200,000
Construction:	$0
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$3,200,000**

Cost of Approved Phases: **$3,200,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
TXDOT PE:	$0	$2,000,000	$0	$0	$0	$2,000,000
TXDOT ROW:	$1,080,000	$120,000	$0	$0	$0	$1,200,000
Funding by Share:	$1,080,000	$2,120,000	$0	$0	$0	**$3,200,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-116	IH 30	C	DALLAS	TXDOT-DALLAS	**$159,585,000**

LIMITS FROM: EAST OF SYLVAN AVE
LIMITS TO: IH 35E
TIP DESCRIPTION: WIDEN AND RECONSTRUCT 10 MAINLANES WITH 1 REVERSIBLE HOV/MANAGED AND 4/6 FRONTAGE ROADS (MARGARET MCDERMOTT BRIDGE)
REMARKS: REVISE SCOPE AND FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 52564
FUNDING CATEGORY: 3,10
MTP REFERENCE: FT1-28.50.5, MO3-002

Project History: $5M PROP 14 OBLIGATED FOR PE IN FY2009

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$10,000,000
Construction:	$159,585,000
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$173,435,000**

Cost of Approved Phases: **$159,585,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$55,664,911	$13,916,228	$0	$0	$0	$69,581,139
Category 10:	$74,768,485	$16,585,376	$0	$0	$0	$91,353,861
Funding by Share:	$130,433,396	$30,501,604	$0	$0	$0	**$160,935,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	1068-04-148	IH 30	R	GRAND PRAIRIE	TXDOT-DALLAS	**$2,647,600**

LIMITS FROM: NW 7TH STREET
LIMITS TO: BELTLINE ROAD
TIP DESCRIPTION: CONSTRUCT 3 EB LANE FRONTAGE ROAD; RELOCATE EXIT RAMP AND ADD EB ENTRANCE RAMP
REMARKS: REVISE FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 20227
FUNDING CATEGORY: 12(S)
MTP REFERENCE: FT1-28.50.1, FT3-007

Project History:

Total Project Cost Information:

Preliminary Engineering:	$919,200
Right Of Way:	$2,647,600
Construction:	$6,361,770
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$9,928,570**

Cost of Approved Phases: **$2,647,600**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 12(S):	$2,218,080	$429,520	$0	$0	$0	$2,647,600
Funding by Share:	$2,218,080	$429,520	$0	$0	$0	**$2,647,600**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	2374-03-077	IH 20	C,E	BALCH SPRINGS	TXDOT-DALLAS	**$4,312,500**

LIMITS FROM: HAYMARKET RD
LIMITS TO: WEST OF US 175
TIP DESCRIPTION: CONSTRUCT 4 LANE FRONTAGE ROADS AND RAMPS CONNECTING IH 20 TO HAYMARKET ROAD IN BALCH SPRINGS
REMARKS: ADD PROJECT TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 54041
FUNDING CATEGORY: TXDOT PE,12(S)
MTP REFERENCE: FT1-30.80.12

Project History:

Total Project Cost Information:

Preliminary Engineering:	$50,000
Right Of Way:	$0
Construction:	$4,262,500
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$4,312,500**

Cost of Approved Phases: **$4,312,500**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
TXDOT PE:	$0	$50,000	$0	$0	$0	$50,000
Category 12(S):	$3,410,000	$852,500	$0	$0	$0	$4,262,500
Funding by Share:	$3,410,000	$902,500	$0	$0	$0	**$4,312,500**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0009-11-226	IH 30	C	DALLAS	TXDOT-DALLAS	**$120,644,987**

LIMITS FROM: IH 35E INTERCHANGE
LIMITS TO: WEST OF IH 45 INTERCHANGE
TIP DESCRIPTION: RECONSTRUCT INTERCHANGE WITH 5 MAINLANES, 6 COLLECTOR DISTRIBUTOR ROADS, AND OPERATIONAL IMPROVEMENTS
REMARKS: REVISE LIMITS AND FUNDING AND ADD PROJECT; RTR 121-DA1

REV DATE: 02/2012
MPO PROJECT ID: 20265
FUNDING CATEGORY: 3,12(S)
MTP REFERENCE: FT1-7.80.1, FT1-28.50.6, IN1-7.28.1; FT3-007

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$120,644,987
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$124,494,987**

Cost of Approved Phases: **$120,644,987**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$58,235,990	$14,558,997	$0	$0	$0	$72,794,987
Category 12(S):	$3,560,000	$890,000	$0	$0	$0	$4,450,000
Category 3 - Prop 14:	$0	$13,300,000	$0	$0	$0	$13,300,000
Category 3 - RTR:	$0	$0	$21,450,000	$0	$0	$21,450,000
Category 3 - Prop 12 V1:	$0	$10,000,000	$0	$0	$0	$10,000,000
Funding by Share:	$61,795,990	$38,748,997	$21,450,000	$0	$0	**$121,994,987**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	COLLIN	0047-04-022	SH 5	E	MELISSA/ANNA	TXDOT-DALLAS	**$2,800,000**

LIMITS FROM: SH 121
LIMITS TO: CR 375
TIP DESCRIPTION: ENGINEERING TO RECONSTRUCT AND WIDEN 2 LANE RURAL TO 4 LANE URBAN
REMARKS: REVISE LIMITS & SCOPE; RTR 121-CC1 & RTR 121-CC2

REV DATE: 02/2012
MPO PROJECT ID: 20085
FUNDING CATEGORY: 3
MTP REFERENCE: RSA1-211.0

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,800,000
Right Of Way:	$0
Construction:	$36,686,154
Construction Engineering	$1,650,877
Contingencies:	$3,301,754
Indirects:	$1,793,953
Bond Financing:	$0
Total Project Cost:	**$46,232,737**

Cost of Approved Phases: **$2,800,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTR:	$0	$0	$2,240,000	$560,000	$0	$2,800,000
Funding by Share:	$0	$0	$2,240,000	$560,000	$0	**$2,800,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DENTON	0081-11-012	FM 426	C	DENTON	TXDOT-DALLAS	**$17,420,598**

LIMITS FROM: 1.4 MILES WEST OF LP 288
LIMITS TO: 1.1 MILES EAST OF LP 288
TIP DESCRIPTION: WIDEN 2 LANE ROADWAY TO 4 LANE DIVIDED URBAN
REMARKS: CHANGE FUNDING SOURCE AND MOVE PHASE TO FY2013; CITY UTILS IMPACT & TIMING; DFW RTR-DE1 FUNDS

REV DATE: 02/2012
MPO PROJECT ID: 11217.1,11217.2
FUNDING CATEGORY: 12(S),3
MTP REFERENCE: NRSA1-DAL-16

Project History:

Total Project Cost Information:

Preliminary Engineering:	$500,000
Right Of Way:	$0
Construction:	$17,420,598
Construction Engineering	$666,920
Contingencies:	$963,329
Indirects:	$724,720
Bond Financing:	$0
Total Project Cost:	**$20,275,566**

Cost of Approved Phases: **$17,420,598**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 12(S):	$4,800,000	$1,200,000	$0	$0	$0	$6,000,000
Category 3 - RTR:	$0	$0	$11,420,598	$0	$0	$11,420,598
Funding by Share:	$4,800,000	$1,200,000	$11,420,598	$0	$0	**$17,420,598**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

DALLAS-FORT WORTH MPO
FY 2011-2014 TRANSPORTATION IMPROVEMENT PROGRAM
DALLAS DISTRICT PROJECTS
FY 2012 (SEPT - AUG)

Attachment 3

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0009-11-226	IH 30	E	DALLAS	TXDOT-DALLAS	**$2,500,000**

LIMITS FROM: IH 35E INTERCHANGE
LIMITS TO: WEST OF IH 45 INTERCHANGE
TIP DESCRIPTION: RECONSTRUCT INTERCHANGE WITH 5 MAINLANES, 6 COLLECTOR DISTRIBUTOR ROADS, AND OPERATIONAL IMPROVEMENTS
REMARKS: REVISE LIMITS AND FUNDING AND ADD PROJECT TO TIP/STIP

REV DATE: 02/2012
MPO PROJECT ID: 20265
FUNDING CATEGORY: 3
MTP REFERENCE: FT1-7.80.1, FT1-28.50.6, IN1-7.28.1; FT3-007

Project History:

Total Project Cost Information:

Preliminary Engineering:	$2,500,000
Right Of Way:	$0
Construction:	$120,644,987
Construction Engineering	$1,350,000
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$124,494,987**

Cost of Approved Phases: **$2,500,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - Prop 12:	$2,000,000	$500,000	$0	$0	$0	$2,500,000
Funding by Share:	$2,000,000	$500,000	$0	$0	$0	**$2,500,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	ROCKWALL	0009-12-074	IH 30	C,E,R	ROYCE CITY	ROCKWALL COUNTY	**$21,910,276**

LIMITS FROM: INTERCHANGE AT ERBY CAMPBELL BLVD
LIMITS TO:
TIP DESCRIPTION: CONSTRUCT INTERCHANGE AT ERBY CAMPBELL BLVD
REMARKS: CHANGE FUNDING SOURCE; DFW RTR-RC1 FUNDS; LOCAL CONTRIBUTION PAID BY ROCKWALL COUNTY & ROYCE CITY; REVISE FUNDING

REV DATE: 02/2012
MPO PROJECT ID: 11714
FUNDING CATEGORY: 3,7,12,11,PE/ROW
MTP REFERENCE: IN1-28.550.1

Project History:

Total Project Cost Information:

Preliminary Engineering:	$1,510,276
Right Of Way:	$1,400,000
Construction:	$19,000,000
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$21,910,276**

Cost of Approved Phases: **$21,910,276**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 7:	$5,000,000	$1,250,000	$0	$0	$0	$6,250,000
Category 3 - RTR:	$0	$0	$1,430,000	$0	$0	$1,430,000
Category 11:	$3,000,000	$750,000	$0	$0	$0	$3,750,000
Category 3 - Local Contribution:	$0	$0	$0	$0	$4,500,000	$4,500,000
Category 12(425):	$2,456,000	$614,000	$0	$0	$0	$3,070,000
TXDOT PE/ROW:	$0	$2,910,276	$0	$0	$0	$2,910,276
Funding by Share:	$10,456,000	$5,524,276	$1,430,000	$0	$4,500,000	**$21,910,276**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DENTON	0081-03-048	US 377	E,R	ROANOKE	TXDOT-DALLAS	**$450,000**

LIMITS FROM: HENRIETTA CREEK RD
LIMITS TO: SH 114 (SECTION 5)
TIP DESCRIPTION: RECONSTRUCT AND WIDEN 2/4 TO 4 LANE DIVIDED URBAN
REMARKS: REVISE LIMITS; RTR 121-DE1 FUNDS

REV DATE: 02/2012
MPO PROJECT ID: 20120
FUNDING CATEGORY: 3
MTP REFERENCE: RSA1-368.01, RSA1-368.02

Project History:

Total Project Cost Information:

Preliminary Engineering:	$125,000
Right Of Way:	$325,000
Construction:	$12,733,749
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$13,183,749**

Cost of Approved Phases: **$450,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 3 - RTR:	$0	$0	$380,000	$70,000	$0	$450,000
Funding by Share:	$0	$0	$380,000	$70,000	$0	**$450,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

AIR RECEIVER LOCATIONS AND CO CONCENTRATIONS
DALLAS HORSESHOE PROJECT

	ETC VALUES (2017)				OUT YEAR VALUES (2035)			
Location Description	**2017 ADT**	**2017 DHV**	**1-hr CO/ % of 1-hr standard**	**8-hr CO/ % of 8-hr standard**	**2035 ADT**	**2035 DHV**	**1-hr CO/ % of 1-hr standard**	**8-hr CO/ % of 8-hr standard**
IH 30 between Beckley Avenue and IH30/IH 35E Interchange	4,170	334	4.50/12.86	2.78/30.89	5,500	440	4.70/13.43	2.90/32.22
	72,990	5,839			95,870	7,670		
	72,180	5,774			94,700	7,576		
	4,580	366			5,990	479		
IH30/IH35E Interchange between Houston St. Viaduct and Jefferson Viaduct Boulevard	2,340	187	4.80/13.71	2.96/32.89	3,050	244	5.00/14.29	3.08/34.22
	45,610	3,649			59,920	4,794		
	58,740	4,699			77,010	6,161		
	31,350	2,508			41,260	3,301		
	51,000	4,080			66,900	5,352		
	6,110	489			8,060	645		
	69,220	5,538			90,960	7,277		
	2,040	163			2,650	212		
	8,860	709			12,480	998		
	1,830	146			2,360	189		
IH 35E between Colorado Boulevard and IH30/IH35E Interchange	30,440	2,435	4.70/13.43	2.90/32.22	39,980	3,198	4.80/13.71	2.96/32.89
	82,460	6,597			107,370	8,590		
	6,110	489			8,060	645		
	64,340	5,147			84,480	6,758		
	53,750	4,300			70,430	5,634		

**Source: TxDOT TP&P Division (November 2011).*

Total ADT in vpd for the IH 30/IH 35E Interchange between Houston St. Viaduct and Jefferson Viaduct Blvd.:	**277,100**	**(Year 2017)**	**364,650**	**(Year 2035)**

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Scott Inglish

From: Texas Natural Diversity Database <txndd@tpwd.state.tx.us>
Sent: Thursday, February 09, 2012 1:51 PM
To: Scott Inglish
Subject: RE: Request for NDD data for IH 30 and IH 35E Improvements
Attachments: inglish_20120201.zip

Mr. Inglish,

The Texas Natural Diversity Database (TXNDD) includes federal, and state listed and tracked Threatened, Endangered, and Rare species. The attached .zip file contains documents that will guide you in appropriate use, restrictions, and shapefile interpretation of Texas NDD data as well as a request for adding data to the TXNDD. Also included is a shapefile of the T&E and Rare species element occurrences, information the TXNDD has available presently, within and touching the requested quads along with a companion EO **report**; areas where EO data are absent **do not mean** absence of occurrence for Threatened, Endangered, and Rare species. Included is an **EO List** of the T&E and Rare species element occurrences that are on the quads adjacent to your request area. The **EO List** is to inform you of other potential federal, and state listed and tracked Threatened, Endangered, and Rare species within the area. To round out your review, please use the Rare, Threatened, and Endangered Species of Texas by County application found here. For questions regarding the application please contact Julie Wicker at julie.wicker@tpwd.state.tx.us or (512)389-4579.

- If your project area is in Travis, Williamson, or Bexar county it is highly recommended that you download the GIS shapefiles for the Karst Zones from the USFWS website http://www.fws.gov/southwest/es/austintexas/ and/or contact Jenny Wilson – USFWS at (512)490-0057 x 231 for a review of the project location. All three counties are known to have multiple important karst features.
- If your information request includes one or more records for **Bald Eagle** or **colonial waterbirds**, contact Brent Ortego at brent.ortego@tpwd.state.tx.us or (361) 576-0022 for more up-to-date information on the **Bald Eagle** or **colonial waterbirds**.
- **For communication towers**, in addition to the USFWS guidelines in the attachment and the links at towerkill.com, there is research identifying a simple way to reduce bird strike and high bird mortality at towers. Gehring J., P. Kerlinger, A.M. Manville II. (2009) Communication towers, lights, and birds: successful methods of reducing the frequency of avian collisions. Ecological Applications: Vol. 19, No. 2, pp. 505-514.doi: 10.1890/07-1708.1
- For **wind energy or transmission related projects**, to obtain the Department's guidelines it is also recommended to contact Kathy Boydston, the Department lead, at kathy.boydston@tpwd.state.tx.us or 512/389-4638. In addition, the U.S. Fish and Wildlife Service's Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, along with other helpful links and information, can be accessed at: http://www.fws.gov/habitatconservation/wind.html.
- If your information request contains records for **Texas trailing phlox** you should contact Jason Singhurst at jason.singhurst@tpwd.state.tx.us or (512) 389-8726.

Absence of information in an area does not mean absence of occurrence. *Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Data from the TXNDD do not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features within your project area. These data cannot substitute for an on-site evaluation by qualified biologists.*

Additional sources of data:
TPWD Annotated County Lists: http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/
USFWS species lists: http://ecos.fws.gov/tess_public/servlet/gov.doi.tess_pulic.servlets.EntryPage
USFWS CRITICAL HABITAT: http://criticalhabitat.fws.gov/
Ecologically Significant Stream Segments: http://www.tpwd.state.tx.us/landwater/land/maps/gis/data_downloads/
Ecologically Significant Stream Segment Information:
http://www.tpwd.state.tx.us/landwater/water/environconcerns/water_quality/sigsegs/

Bob Gottfried
Texas Natural Diversity Database Administrator
Texas Parks and Wildlife - Wildlife Division
4200 Smith School Rd
Austin, TX 78744
512-389-8744

From: Scott Inglish [mailto:SInglish@HNTB.com]
Sent: Wednesday, February 01, 2012 5:38 PM
To: Texas Natural Diversity Database
Subject: Request for NDD data for IH 30 and IH 35E Improvements

I would like to request the NDD information (records, reports, and GIS shapefiles) for six USGS quads for a TxDOT-Dallas District project in Dallas County. The USGS quads needed are Dallas, Irving, Duncanville, Oak Cliff, White Rock, and Hutchins.

The proposed project is for improvements to IH 30 and IH 35E near downtown Dallas in Dallas County, Texas, a distance of approximately five miles. The proposed improvements collectively referred to as the "Dallas Horseshoe Project", include the replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway. The proposed project encompasses the reconstruction of the IH30/IH 35E interchange, locally known as the "Mixmaster," to include general purpose lanes, reversible managed lanes, collector distributor roads, access ramps, and direct connection ramps. Other improvements include operational improvements at the "Canyon", frontage roads improvements and the accommodation of pedestrian and bicycle facilities. Thank you for your assistance.

J. Scott Inglish
Sr. Scientist/Team Leader

The HNTB Companies
5910 W. Plano Parkway, Suite 200
Plano, TX 75093

Tel (972) 628-3138
Fax (972) 661-5614
www.hntb.com

Occurrence List for Quads Surrounding Request Area

Scientific Name:	Common Name:	Occurrence Number:	State Status:	Federal Status:	Eo Id:
Hexalectris warnockii	Warnock's coral-root	5			5234
Juniperus ashei-quercus spp. series	Ashe Juniper-oak Series	16			4433
Quercus buckleyi series	Texas Oak Series	4			2487
Rookery		336			5782
Rookery		475			7731
Rookery		477			6868
Rookery		479			3672
Schizachyrium scoparium-sorghastrum nutans series	Little Bluestem-indiangrass Series	27			588
Schizachyrium scoparium-sorghastrum nutans series	Little Bluestem-indiangrass Series	31			3061
Sterna antillarum athalassos	Interior Least Tern	31	E	LE	7284
Sterna antillarum athalassos	Interior Least Tern	32	E	LE	2874
Ulmus crassifolia-celtis laevigata series	Cedar Elm-sugarberry Series	20			520
Ulmus crassifolia-celtis laevigata series	Cedar Elm-sugarberry Series	25			843
Vireo atricapilla	Black-capped Vireo	14	E	LE	3734
Vireo atricapilla	Black-capped Vireo	63	E	LE	3522

Element Occurrence Record

Scientific Name: Hexalectris warnockii
Occurrence #: 5 **Eo Id:** 5234
Common Name: Warnock's coral-root
Track Status: Track all extant and selected historical EOs
TX Protection Status:
Global Rank: G2G3 **State Rank:** S2
Federal Status:

Location Information:

Watershed:

12030102 - Lower West Fork Trinity

County Name:

Dallas

State:

TX

Mapsheet:

32096-F8, Duncanville

32096-E8, Cedar Hill

Directions:

GREENHILLS ENVIRONMENTAL CENTER

Survey Information:

First Observation: **Survey Date:** **Last Observation:** 1986

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

DALLAS COUNTY ESCARPMENT PRESERVE

GREENHILLS ENVIRONMENTAL CENTER

Reference:

Citation:

Specimen:

Southern Methodist University Herbarium. 1986. B. O'Kennon #861, Specimen # ? SMU.

Element Occurrence Record

Scientific Name: Rookery **Occurrence #:** 337 **Eo Id:** 2952

Common Name: **Track Status:** Track all extant and selected historical EOs

TX Protection Status:

Global Rank: GNR **State Rank:** SNR **Federal Status:**

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-G7, Dallas

Directions:

WILDLIFE REFUGE, WOODED TRACT IN CITY OF DALLAS, RIPARIAN, NO TRIBUTARIES; ADJACENT TO IH-35E

Survey Information:

First Observation: 1973 **Survey Date:** **Last Observation:** 1990

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: HACKBERRY, CEDAR ELM, AND OSAGE ORANGE TREES TO 5-6 METERS; HUMAN DISTURBANCE CAREFULLY CONTROLLED; HERONRY IS A WILDLIFE REFUGE

Comments: COLONY NUMBER 555-050

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE CATTLE EGRET, LITTLE BLUE HERON, GREAT EGRET, BLACK-CROWNED NIGHT-HERON, SNOWY EGRET

Managed Area:

Managed Area Name

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

Mullins, L.M. ET.AL. 1982. An atlas and census of Texas waterbird colonies, 1973-1980. Texas Colonial Waterbird Society.

Specimen:

Element Occurrence Record

Scientific Name: Rookery **Occurrence #:** 468 **Eo Id:** 561

Common Name: **Track Status:** Track all extant and selected historical EOs

TX Protection Status:

Global Rank: GNR **State Rank:** SNR **Federal Status:**

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F6, Hutchins

Directions:

PORTIONS OF DALLAS HUNTING AND FISHING CLUB LAKE AND LANCASTER CLUB LAKE, AS WELL AS ADJACENT STRETCH OF TRINITY RIVER, EAST-SOUTHEAST OF HUTCHINS

Survey Information:

First Observation: 1981 **Survey Date:** **Last Observation:** 1981

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: NESTS NOT SUBJECT TO FLOODING

Comments: COLONY NUMBER 555-059

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE CATTLE EGRET

Managed Area:

Managed Area Name

Reference:

Citation:

TEXAS COLONIAL WATERBIRD SOCIETY AND TEXAS PARKS & WILDLIFE DEPARTMENT. 1981-1985. TEXAS COLONIAL WATERBIRD CENSUS SUMAMRY.

Specimen:

Element Occurrence Record

Scientific Name: Rookery **Occurrence #:** 474 **Eo Id:** 1439

Common Name: **Track Status:** Track all extant and selected historical EOs

TX Protection Status:

Global Rank: GNR **State Rank:** SNR **Federal Status:**

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F7, Oak Cliff

Directions:

INTERSECTION OF SIMPSON STUART AND BONNIE VIEW ROADS INCLUDING FIVEMILE CREEK TRIBUTARY AND SEVERAL PONDS, WEST-NORTHWEST OF HUTCHINS

Survey Information:

First Observation: 1988 **Survey Date:** **Last Observation:** 1990

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: COLONY NUMBER 555-065

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, CATTLE EGRET, BLACK-CROWNED NIGHT-HERON

Managed Area:

Managed Area Name

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

TEXAS COLONIAL WATERBIRD SOCIETY AND TEXAS PARKS & WILDLIFE DEPARTMENT. 1986-1989. TEXAS COLONIAL WATERBIRD CENSUS SUMMARY. SPECIAL ADMINISTRATIVE REPORTS.

Specimen:

Element Occurrence Record

Scientific Name: Rookery **Occurrence #:** 477 **Eo Id:** 6868

Track Status: Track all extant and selected historical EOs

Common Name:

TX Protection Status:

Global Rank: GNR **State Rank:** SNR **Federal Status:**

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F5, Seagoville 32096-F6, Hutchins

Directions:

AT FISH HATCHERIES NORTH OF LOG CABIN ROAD, SOUTH OF KLEBERG

Survey Information:

First Observation: 1990 **Survey Date:** **Last Observation:** 1990

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: COLONY NUMBER 555-068

Protection Comments:

Management Comments:

Data:

EO Data: NESTING COLONY OF THE GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, CATTLE EGRET, WHITE-FACED IBIS

Managed Area:

Managed Area Name

Reference:

Citation:

Martin, Catrina. 1991. Texas Colonial Waterbird Census Summary - 1990. Compiled for Texas Parks & Wildlife Dept. and Texas Colonial Waterbird Society. 13 March 1991.

Specimen:

Element Occurrence Record

Scientific Name: Sterna antillarum athalassos
Occurrence #: 31 **Eo Id:** 7284
Track Status: Track all extant and selected historical EOs
Common Name: Interior Least Tern
TX Protection Status: E
Global Rank: G4T2Q **State Rank:** S1B **Federal Status:** LE

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-E6, Ferris 32096-F6, Hutchins 32096-E5, India 32096-F5, Seagoville

Directions:

GRAVEL MINE NEAR BELT LINE AND POST OAK ROADS IN SOUTHEAST DALLAS, EAST OF I-45

Survey Information:

First Observation: 2000-08-04 **Survey Date:** **Last Observation:** 2000-08-04
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: GRAVEL MINE

Comments: SEE REPORT (U01BOY01TXUS) FOR MORE DETAILS; HIGH PROBABILITY THAT THESE BIRDS ARE THE SAME ONES OR OF THE SAME COLONY AS THOSE OBSERVED AT SOUTHSIDE WASTEWATER TREATMENT PLANT CA. 2 AIR MILES NORTHEAST OF GRAVEL MINE (SEE OCCURRENCE 032)

Protection Comments:

Management Comments:

Data:

EO Data: 4 AUGUST 2000, FIVE ADULTS AND FOUR FLEDGLINGS OBSERVED

Managed Area:

Managed Area Name

Reference:

Citation:

BOYLAN, JEANETTE. 2001. RESULTS OF THE 2000 INTERIOR LEAST TERN MONITORING PROJECT AT THE SOUTHSIDE WASTEWATER TREATMENT PLANT IN DALLAS.

Specimen:

Element Occurrence Record

Scientific Name: Sterna antillarum athalassos
Occurrence #: 32 **Eo Id:** 2874
Common Name: Interior Least Tern
Track Status: Track all extant and selected historical EOs
TX Protection Status: E
Global Rank: G4T2Q **State Rank:** S1B **Federal Status:** LE

Location Information:

Watershed:

12030105 - Upper Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F6, Hutchins 32096-F5, Seagoville

Directions:

SOUTHSIDE WASTEWATER TREATMENT PLANT, SOUTHEAST DALLAS, JUST EAST OF TRINITY RIVER

Survey Information:

First Observation: 1992 **Survey Date:** **Last Observation:** 2000-08-28
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: WASTEWATER TREATMENT PLANT

Comments: MONITORING PROJECT BEGAN FOR THIS SITE IN 1998; MONITORS ARE VOLUNTEERS FROM THE DALLAS COUNTY AUDUBON SOCIETY AND THE DALLAS ZOO; OTHER BIRDS OBSERVED (HIGHEST NUMBER SEEN ON ANY PARTICULAR DAY): WOOD STORKS (150), WHITE-FACED IBIS (25), WHITE IBIS (4), GREEN HERONS (4), ROSEATE SPOONBILLS, BLACK TERNS, AND COMMON MOORHENS; THE REPORT (U01BOY01TXUS) CONTAINS DAILY OBSERVATIONS FROM MAY-AUGUST 2000 INCLUDING OBSERVERS, WEATHER, AND NUMBER OF ADULTS AND EGGS/CHICKS

Protection Comments:

Management Comments:

Data:

EO Data: IN 1998 AND 1999 CA. 4 CHICKS PRODUCED; 30 MAY 2000 BREEDING COLONY DISCOVERED IN MONOFILL (AREA OF PLANT WHERE SLUDGE IS MIXED WITH SAND), HIGHEST NUMBER OF ADULTS SEEN WAS 21 WITH 4-6 NESTS, AFTER SEVERAL HEAVY RAINS TERNS ABANDONED THIS NEST SITE; 23 JUNE 2000 TERNS OBSERVED COURTING IN FIELD A; JUNE-JULY 2000 TERNS SELDOM SEEN, SO SEARCH AREA EXPANDED, OBSERVED POSSIBLE NESTING AT GRAVEL MINE SOUTHWEST OF PLANT (SEE OCCURRENCE 031); 28 AUGUST 2000 TWO JUVENILES AND 6 SUBADULTS OBSERVED FLYING AND FISHING OVER, AND LOAFING ON A SANDBAR IN PULICH POND

Managed Area:

Managed Area Name

Reference:

Citation:

BOYLAN, JEANETTE. 2001. RESULTS OF THE 2000 INTERIOR LEAST TERN MONITORING PROJECT AT THE SOUTHSIDE WASTEWATER TREATMENT PLANT IN DALLAS.

REID, JEFFERY A. 1993. MEMO TO USFWS FIELD SUPERVISOR RE: ABANDONMENT OF BALD EAGLE NEST ON RAY ROBERTS RESERVOIR (INCLUDES MAPS FOR BALD EAGLE AND INTERIOR LEAST TERN NESTING LOCALITIES). MAY 3, 1993.

Specimen:

Element Occurrence Record

Scientific Name: Thamnophis sirtalis annectens **Occurrence #:** 19 **Eo Id:** 432

Common Name: Texas Garter Snake **Track Status:** Track all extant and selected historical EOs

TX Protection Status:

Global Rank: G5T3 **State Rank:** S3 **Federal Status:**

Location Information:

Watershed:

12030105 - Upper Trinity

County Name: Dallas **State:** TX **Mapsheet:** 32096-G6, White Rock Lake

Directions:

WHITE ROCK LAKE, NORTHEAST OF DALLAS

Survey Information:

First Observation: **Survey Date:** **Last Observation:** 1948-07-02

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

Reference:

Citation:

Specimen:

Baylor University, Bryce C. Brown Collection. 1948. L. Curtis, Catalog # 4643 BCB. 2 July 1948.

Element Occurrence Record

Scientific Name: Ulmus crassifolia-celtis laevigata series
Occurrence #: 25 **Eo Id:** 843
Common Name: Cedar Elm-sugarberry Series
Track Status: Track all extant and selected historical EOs
TX Protection Status:
Global Rank: G4 **State Rank:** S4
Federal Status:

Location Information:

Watershed:

12030102 - Lower West Fork Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F8, Duncanville 32096-E8, Cedar Hill

Directions:

TERRACES ALONG JOHN PENN BRANCH, BOTH SIDES OF OLD ROUTE 1382, CA. THREE-QUARTER MILE NORTHEAST OF ENTRANCE TO CEDAR HILL SP

Survey Information:

First Observation: **Survey Date:** 1989-11-10 **Last Observation:** 1989-11-10
Eo Type: **Eo Rank:** C **Eo Rank Date:** 1989-11-10
Observed Area:

Comments:

General Description: DECIDUOUS BOTTOMLAND FOREST WITH BURR OAK, CEDAR ELM, SUGARBERRY; CORALBERRY COMMON IN UNDERSTORY

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: DESCRIPTION AND PLANT LIST IN DLI REPORT, SITE 3

Managed Area:

Managed Area Name

Cedar Hill State Park

Reference:

Citation:

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. CEDAR HILL STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

2012-02-09

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla
Occurrence #: 8 **Eo Id:** 3327
Common Name: Black-capped Vireo
Track Status: Track all extant and selected historical EOs
TX Protection Status: E
Global Rank: G2G3 **State Rank:** S2B **Federal Status:** LE

Location Information:

Watershed:

12030102 - Lower West Fork Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F8, Duncanville

Directions:
GREENHILLS ENVIRONMENTAL CENTER

Survey Information:

First Observation: 1984 **Survey Date:** 1985 **Last Observation:** 1985
Eo Type: **Eo Rank:** A **Eo Rank Date:**
Observed Area:

Comments:

General Description: DWARF WOODLAND; JUNIPER, OAK, SUMAC WITH WELL VEGETATED SHRUB LAYERS

Comments: THREATENED BY HABITAT MODIFICATION AND COWBIRD PARASITISM.

Protection Comments: LEGALLY PROTECTED MIGRANT BIRD - ADEQUATE.

Management Comments: DO NOT GRAZE OR BROWSE HABITAT.

Data:

EO Data: INSECTIVOROUS, FOLIAGE GLEANING VIREO. NEST 0.5 TO 1 METER HIGH IN BRUSH AT END OF LIMB. HIGH FIDELITY TO NEST TERRITORY BY MATED PAIRS. NESTING SUCCESSFUL.

Managed Area:

Managed Area Name

DALLAS COUNTY ESCARPMENT PRESERVE

GREENHILLS ENVIRONMENTAL CENTER

Reference:

Citation:

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1984. INTERIM STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE, BLACK-CAPPED VIREO. USF& WS, ALBUQUERQUE, NM.

RISKIND, DAVID, PH.D. TEXAS PARKS AND WILDLIFE DEPARTMENT 4200 SMITH SCHOOL ROAD AUSTIN, TEXAS 78744 PH-512/479-4897 (WORK)

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1985. STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE (BLACK-CAPPED VIREO). REPORT TO USF& WS, ALBUQUERQUE, NEW MEXICO. 48pp.

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla
Occurrence #: 63 **Eo Id:** 3522
Track Status: Track all extant and selected historical EOs
Common Name: Black-capped Vireo
TX Protection Status: E
Global Rank: G2G3 **State Rank:** S2B **Federal Status:** LE

Location Information:

Watershed:

12030102 - Lower West Fork Trinity

County Name:	State:	Mapsheet:
Dallas	TX	32096-F8, Duncanville 32096-E8, Cedar Hill

Directions:

ON FM 1382 ABOUT 1.6 MILES SOUTH OF INTERSECTION OF 1382 AND IH-20 ON WEST-SOUTHWEST FACING SLOPE ON EAST SIDE OF ROAD; SOUTHWEST DALLAS COUNTY

Survey Information:

First Observation: 1985 **Survey Date:** 1993-04-26 **Last Observation:** 1993-05-04

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments: FOR SALE, ALTHOUGH SITE IS PROBABLY NOT DEVELOPABLE, ADJACENT AREAS ARE DEVELOPABLE; ONLY ONE PAIR FOUND ON RTC PROPERTY, NONE FOUND AT ADJACENT GREENHILLS ENVIRONMENTAL CENTER

Protection Comments:

Management Comments:

Data:

EO Data: TWO BLACK-CAPPED VIREOS LOCATED ALONG EAST BOUNDARY OF TRACT A; POSSIBLY ONE MALE WAS MATED

Managed Area:

Managed Area Name

DALLAS COUNTY ESCARPMENT PRESERVE

Reference:

Citation:

TURNER, PAUL D. 1993. ASSESSMENT OF THE OCCURRENCE OF AN ENDANGERED SPECIES, THE BLACK-CAPPED VIREO, AT MOUNTAIN CREEK ASSET. REOMS # 613198762, FOR THE RESOLUTION TRUST CORPORATION. MAY 1993.

Specimen:

Managed Area Information

Managed Area Name: Cedar Hill State Park **Acres:** 1,810.57

Alias:

County Name:	Mapsheet Name:	Mapsheet Code:
Dallas	Cedar Hill	32096-E8
	Duncanville	32096-F8
	Britton	32097-E1

Description:

LOCATED ALONG THE EASTERN SHORELINE OF JOE POOL LAKE; VARIABLE MIXED EVERGREEN-DECIDUOUS FOREST OR WOODLANDS; GENTLY ROLLING TOPOGRAPHY EXCEPT FOR STEEP WEST-FACING BLUFFS OF THE WHITE ROCK ESCARPMENT

Comments:

LEASED FROM CORPS OF ENGINEERS

Manager:

JERRY HOPKINS
SUPERINTENDENT
BOX 941, HIGHWAY 1382

CEDAR HILL,TX 75104
972 291-3900

Managed Area Information

Managed Area Name: Joe Pool Lake (Uscoe) **Acres:** 1,190.00

Alias: LOYD PARK

Alias: LYNN CREEK PARK

Alias: BRITTON PARK

County Name:	Mapsheet Name:	Mapsheet Code:
Dallas	Britton	32097-E1
Ellis	Arlington	32097-F1
Tarrant	Cedar Hill	32096-E8
	Duncanville	32096-F8

Description:

BRITTON PARK IS A FREE ACCESS TO THE LAKE WITH A BOAT RAMP AND TOILET FACILITIES ONLY

Comments:

LOYD PARK (791 ACRES); LYNN CREEK PARK (270 ACRES); BRITTON PARK (129 ACRES); ALL OWNED BY CORPS OF ENGINEERS AND OPERATED BY TRINITY RIVER AUTHORITY

Manager:

TRINITY RIVER AUTHORITY

817 467-2104

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Stream Data Form #: S-1
Project Name: The Dallas Horseshoe
CSJ: 0196-03-205, etc.

Stream Data Form

Surveyor(s): JSI and JEF
Date of Field Work: 12/1/11
USGS Stream Name: Coombs Creek
County/State: Dallas, TX
USGS Topo Quad Name: Dallas
Stream Number [303(d) List]: N/A
Associated Wetland(s): No
GPS Data: 96 50 6.8270864N 32 46 1.0961304 W

Stream Type: Perennial Characteristics
Manipulated/Altered. Explain: Stream channel is concrete lined.
Bank Stability (e.g. highly eroding, sloughing banks, etc.): Stable
Stream Flow Direction: East
OHWM Width (ft): 18-64
OHWM Height (in): 10
Stream Bottom composition:

☐ Silts ☐ Cobbles ☒ Concrete ☐ Other:
☐ Sands ☐ Bedrock ☐ Muck
☐ Gravel ☐ Vegetation Type: Riparian Percent Cover 0

Aquatic Habitat: Indicate all types present within proposed ROW/project limits.

☐ Sand bar ☐ Sand/Gravel beach/bar ☐ Gravel riffles ☐ Aquatic vegetation
☐ Overhanging trees/shrubs ☐ Deep pool/ hole/ channel ☐ Other:

Stream has the following characteristics:

☐ Bed and banks
☒ OHWM (check all indicators that apply):
- ☐ clear, natural line impressed on the bank
- ☐ changes in the character of soil
- ☐ shelving
- ☐ vegetation matted down, bent, or absent
- ☐ leaf litter disturbed or washed away
- ☐ sediment deposition
- ☒ water staining
- ☐ other (list):
- ☐ the presence of litter and debris
- ☐ destruction of terrestrial vegetation
- ☐ the presence of wrack line
- ☐ sediment sorting
- ☐ scour
- ☐ multiple observed or predicted flow events
- ☐ abrupt change in plant community

Water Quality:

☐ Clear ☒ Slightly Turbid ☐ Turbid ☐ Very Turbid ☐ Oily film ☐ High organic content
☐ Other characteristics (pollutants, etc.)

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.
None observed.

Riparian Vegetation: List species observed.
None observed. The channel bottom and side slopes are concrete lined.

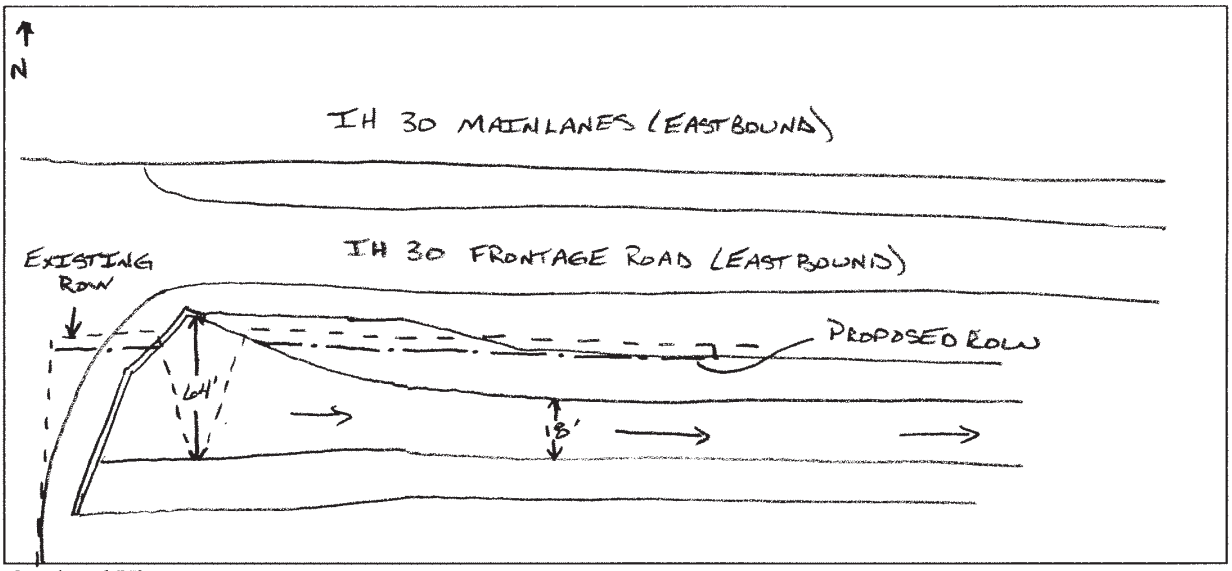
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.
None.

Stream Data Form #:	S-1
Project Name:	The Dallas Horseshoe
CSJ:	0196-03-205, etc.

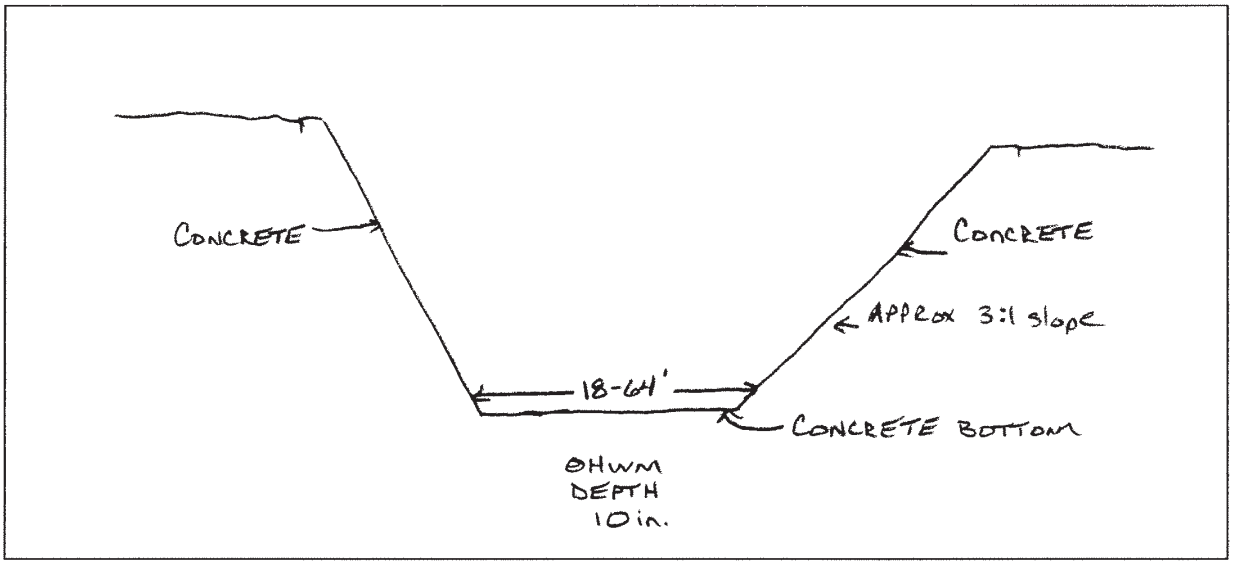
Stream Data Form (continued)
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- Directional arrow;
- Width of channel from top of bank to top of bank;
- Depth of channel,
- Approximate side slope; and,
- Width of stream from water edge to water edge.

Plan View



Sectional View



Hazardous Materials Regulatory Database Summary
Dallas Horseshoe Project

Database	Acronym	Number of Sites Identified	Search Radius
Federal Databases			
Aerometric Information Retrieval System/Air Facility Subsystem	AIRSAFS	**2**	Target Property
Biennial Reporting System	BRS	0	Target Property
Clandestine Drug Laboratory Locations	CDL	0	Target Property
EPA Docket Data	DOCKETS	**1**	Target Property
Federal Engineering Institutional Control Sites	EC	0	Target Property
Emergency Response Notification System	ERNS	**4**	Target Property
Facility Registry System	FRS	**20**	Target Property
Hazardous Materials Incident Reporting System	HMIRS	0	Target Property
Integrated Compliance Information System (formerly DOCKETS)	ICIS	**1**	Target Property
Integrated Compliance Information System National Pollutant Discharge Elimination System	ICISNPDES	0	Target Property
Material Licensing Tracking System	MLTS	0	Target Property
National Pollutant Discharge Elimination System	NPDESR06	0	Target Property
PCB Activity Database System	PADS	0	Target Property
Permit Compliance System	PCSR06	0	Target Property
CERCLIS Liens	SFLIENS	0	Target Property
Section Seven Tracking System	SSTS	0	Target Property
Toxics Release Inventory	TRI	0	Target Property
Toxic Substance Control Act Inventory	TSCA	0	
No Longer Regulated RCRAG Facilities	NLRRCRAG	0	Target Property and Adjoining
Resource Conservation and Recovery Act – Generator Facilities	RCRAG06	**2**	Target Property and Adjoining
Brownfields Management System	BF	**21**	One-half mile
Comprehensive Environmental Response, Compensation, and Liability Information System	CERCLIS	**11**	One-half mile
Land Use Control Information System	LUCIS	0	One-half mile
No Further Remedial Action Planned Sites	NFRAP	**8**	One-half mile
No Longer Regulated RCRA Non-Corracts TSD Facilities	NLRRCRAT	**1**	One-half mile
Open Dump Inventory	ODI	0	One-half mile
Resource Conservation Recovery Act – Treatment Storage and Disposal Facilities	RCRAT	0	One-half mile
Delisted National Priorities List	DNPL	0	One mile
Department of Defense Sites	DOD	0	One mile
Formerly Used Defense Sites	FUDS	0	One mile
No Longer Regulated RCRA Corrective Action Facilities	NLRRCRAC	0	One mile
National Priorities List	NPL	**1**	One mile
Proposed National Priorities List	PNPL	0	One mile
Resource Conservation and Recovery Act – Corrective Action Facilities	RCRAC	0	One mile
Record of Decision System	RODS	**1**	One mile

Database	Acronym	Number of Sites Identified	Search Radius
State (TX) Databases			
Groundwater Contamination Cases	GWCC	**2**	Target Property
Historic Groundwater Contamination Cases	HISTGWCC	0	Target Property
TCEQ Liens	LIENS	0	Target Property
Municipal Setting Designations	MSD	0	Target Property
Notice of Violations	NOV	**1**	Target Property
State Institutional/Engineering Control Sites	SIEC01	0	Target Property
Spills Listing	SPILLS	**2**	Target Property
Dry Cleaner Registration Database	DCR	0	One-quarter mile
Industrial and Hazardous Waste Sites	IHW	**45**	One-quarter mile
Permitted Industrial Hazardous Waste Sites	PIHW	0	One-quarter mile
Petroleum Storage Tanks	PST	**69**	One-quarter mile
Affected Property Assessment Reports	APAR	**12**	One-half mile
Brownfields Site Assesments	BSA	**2**	One-half mile
Closed and Abandoned Landfill Inventory	CALF	**1**	One-half mile
Innocent Owner/Operator Program	IOP	**6**	One-half mile
Leaking Petroleum Storage Tanks	LPST	**79**	One-half mile
Municipal Solid Waste Landfill Sites	MSWLF	**3**	One-half mile
Railroad Commission VCP and Brownfield Sites	RRCVCP	0	One-half mile
Radioactive Waste Sites	RWS	0	One-half mile
Tier II Chemical Reporting Program Sites	TIER II	**71**	One-half mile
Voluntary Cleanup Program Sites	VCP	**22**	One-half mile
Recycling Facilities	WMRF	0	One-half mile
State Superfund Sites	SF	0	One mile
Tribal Databases			
Underground Storage Tanks on Tribal Lands	USTR06	0	One-quarter mile
Leaking Underground Storage Tanks on Tribal Lands	LUSTR06	0	One-half mile
Open Dump Inventory on Tribal Lands	ODINDIAN	0	One-half mile
Indian Reservations	INDIANRES	0	One mile
Total		**388**	

33. The Pegasus Project – IH 30/IH 35E "Mixmaster/Canyon"

Highway Segments: FT1 1045, FR1 1045, FT1 1200, FR1 1200, FT1 1205, FR1 1205, FT1 1210, FR1 1210, HM1 8625, HM1 8630, HM1 8580, HM1 8585, IN1 12051

GENERAL DESCRIPTION

The Pegasus Project encompasses key portions of the IH 30 and IH 35E corridors around downtown Dallas. The project limits are: IH 30 from Sylvan Avenue to IH 45, and IH 35E from SH 183 to 8th Street. The Pegasus Project will reconstruct the IH 30 Canyon, IH 30/IH 35E Mixmaster interchange, and the IH 35E Lower Stemmons corridor to eliminate current bottlenecks, support higher traffic flows, reduce weaving, and improve safety.

Recommendations include construction of a reversible managed facility that connects HOV/managed lanes from the IH 30/US 80 East Corridor Project and the IH 35E/US 67 Southern Gateway Project to downtown Dallas and the IH 35E Lower Stemmons corridor. HOV/managed lanes to be constructed from SH 183 will also connect to the IH 35E Lower Stemmons corridor, and a transition between the two reversible HOV/managed systems will be provided between Motor Street and Wycliff Avenue.

Freeway improvements for IH 30 include reconstruction and widening to 12 general purpose lanes plus a 1-lane reversible HOV/managed facility in the "Canyon" between IH 35E and IH 45. The Pegasus Project also includes a new bridge over the Trinity River west of IH 35E that will carry 8 general purpose lanes, auxiliary lanes, 2 reversible HOV/managed lanes, and frontage roads between Sylvan Avenue and Industrial Boulevard.

Overview Map

Detail Map

Corridor 33

Freeway improvements for IH 35E include reconstruction and widening to between 8 and 12 general purpose lanes, plus 1 to 2 reversible HOV/managed lanes in various sections. Three separate collector-distributor facilities in both directions will be constructed: 1) between Oak Lawn Drive/Dallas North Tollway and the Woodall Rodgers Freeway; 2) between the Woodall Rodgers Freeway and IH 30; and 3) between IH 30 and Colorado Avenue.

All improvements are expected to be completed by 2025. The Texas Department of Transportation Dallas District is the responsible agency for this project.

TxDOT CSJ#: 0009-11-181/0196-03-99/0196-03-205/0442-02-132
Estimated Total Project Cost: **$1.463 billion**

RECOMMENDED IMPROVEMENTS

The Pegasus Project – IH 30 Corridor			
Highway Segments	Limits	Project Description	Cost
FT1 1045 FR1 1045 HM1 8580	IH 35E to Central Expressway	Reconstruct to 12 general purpose lanes + auxiliary lanes. 1 reversible HOV/managed lane (AM – westbound, PM – eastbound). 4/6 frontage road lanes.	$367.0 million
FT1 1045 FR1 1045 HM1 8585	Central Expressway to IH 45	Reconstruct to 12 general purpose lanes + auxiliary lanes. 4 concurrent HOV/managed lanes. HOV/managed access to/from the east at Central Expressway. 4/6 frontage road lanes.	
The Pegasus Project – IH 35E Corridor			
Highway Segments	Limits	Project Description	Cost
FT1 1200 FR1 1200 HM1 8625	SH 183/Trinity Parkway to Inwood Road	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – southbound, PM – northbound). HOV/managed access to/from the north at Inwood Road. 4/6 frontage road lanes (plus auxiliary lanes near ramp locations and cross streets).	$1,095.8 million
FT1 1200 FR1 1200 HM1 8625	Inwood Road to Motor Street	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – southbound, PM – northbound). 4/6 frontage road lanes.	
FT1 1205 FR1 1205	Motor Street to Wycliff Avenue	Reconstruct to 10 general purpose lanes + auxiliary lanes. HOV transitional lanes. 4/6 frontage road lanes.	

The Pegasus Project – IH 35E Corridor			
Highway Segments	Limits	Project Description	Cost
FT1 1205 FR1 1205 HM1 8630	Wycliff Avenue to Market Center Boulevard	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). 4/6 frontage road lanes.	Costs Included Above
FT1 1205 FR1 1205 HM1 8630	Market Center Boulevard to Dallas North Tollway	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). HOV/managed access to/from the south at Market Center Boulevard. 4/6 frontage road lanes.	
FT1 1205 FR1 1205 HM1 8630	Dallas North Tollway to Woodall Rodgers Freeway	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). 6/8 collector-distributor system lanes. 4/6 frontage road lanes.	
FT1 1205 HM1 8630	Woodall Rodgers Freeway to IH 30	Reconstruct to 10 general purpose lanes + auxiliary lanes 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). HOV/managed access to/from the south at Commerce, IH 30, and IH 35E. 4/6 collector-distributor system lanes.	
FT1 1210 HM1 8635 IN1 12051	IH 30 to Colorado Boulevard	Reconstruct 6 to 10 general purpose lanes + auxiliary lanes 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). 10 collector-distributor system lanes. Reconstruct IH 30/IH 35E interchange.	
FT1 1210 FR1 1210 HM1 8635	Colorado Boulevard to 8th Street	Reconstruct to 10 general purpose lanes + auxiliary lanes. 2 reversible HOV/managed lanes (AM – northbound, PM – southbound). 4/6 frontage road lanes.	

APPENDIX F: Agency Coordination

U.S. Department
of Transportation
Federal Highway Administration

Texas Division

October 19, 2011

300 E. 8th Street, Rm 826
Austin, TX 78701
(Tel) 512-536-5900
(Fax) 512-536-5990
www.fhwa.dot.gov/txdiv

In Reply Refer To:
HB-TX

Mr. William Fickel, Jr.
Chief, Environmental Division
CESWF-EV
Department of the Army
Fort Worth District Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Dear Mr. Fickel:

The Federal Highway Administration (FHWA), in cooperation with the Texas Department of Transportation (TxDOT), is initiating an Environmental Assessment (EA) for the IH 30 / IH 35E Interchange in Dallas County, Texas. The study limits also include IH 30 west of the Interchange to Sylvan Avenue, and IH 35E south of the Interchange to Eighth Street, a distance of approximately three miles. The IH 30 and IH 35E sections of the project cross the Trinity River and will require a Section 408 permit due to the proposed reconstruction over the Trinity River levees. Due to your agency's legal jurisdiction over such matters, we are extending an invitation for you to participate in this project as a cooperating agency.

The purpose of the proposed project is to reconstruct the aging infrastructure along the IH 30 and IH 35E corridors, including the Interchange between the two facilities locally known as the "Mixmaster" Interchange. Additional project needs include the increasing capacity, reducing traffic congestion, updating the facilities to current design standards, and improving mobility within the Dallas/Fort Worth metropolitan area. The current transportation network in the project area is insufficient to accommodate the increased capacity projected by TxDOT and the North Central Texas Council of Governments (NCTCOG).

Your agency's involvement should entail those areas under its jurisdiction and no direct writing or analysis will be necessary for the document's preparation. The following are activities we will take to maximize interagency cooperation:

- Invite you to coordination meetings;
- Consult with you on any relevant technical studies that will be required for the project;
- Organize joint field reviews with you;
- Provide you with project information, including study results;
- Encourage your agency to use the above documents to express your views on subjects within your jurisdiction or expertise; and

- Include information in the project environmental documents that cooperating agencies need in order to discharge their National Environmental Policy Act (NEPA) responsibilities and any other requirements regarding jurisdictional approvals, permits, licenses, and/or clearances.

You have the right to expect that the EA will enable you to discharge your jurisdictional responsibilities. Likewise, you have the obligation to tell us if, at any point in the process, your needs are not being met. We expect that at the end of the process the EA will satisfy your NEPA requirements including those related to project alternatives, environmental consequences, and mitigation. Further, we intend to utilize the EA and our subsequent actions (FONSI) as our decision making document and as the basis for the 408 permit application for the project.

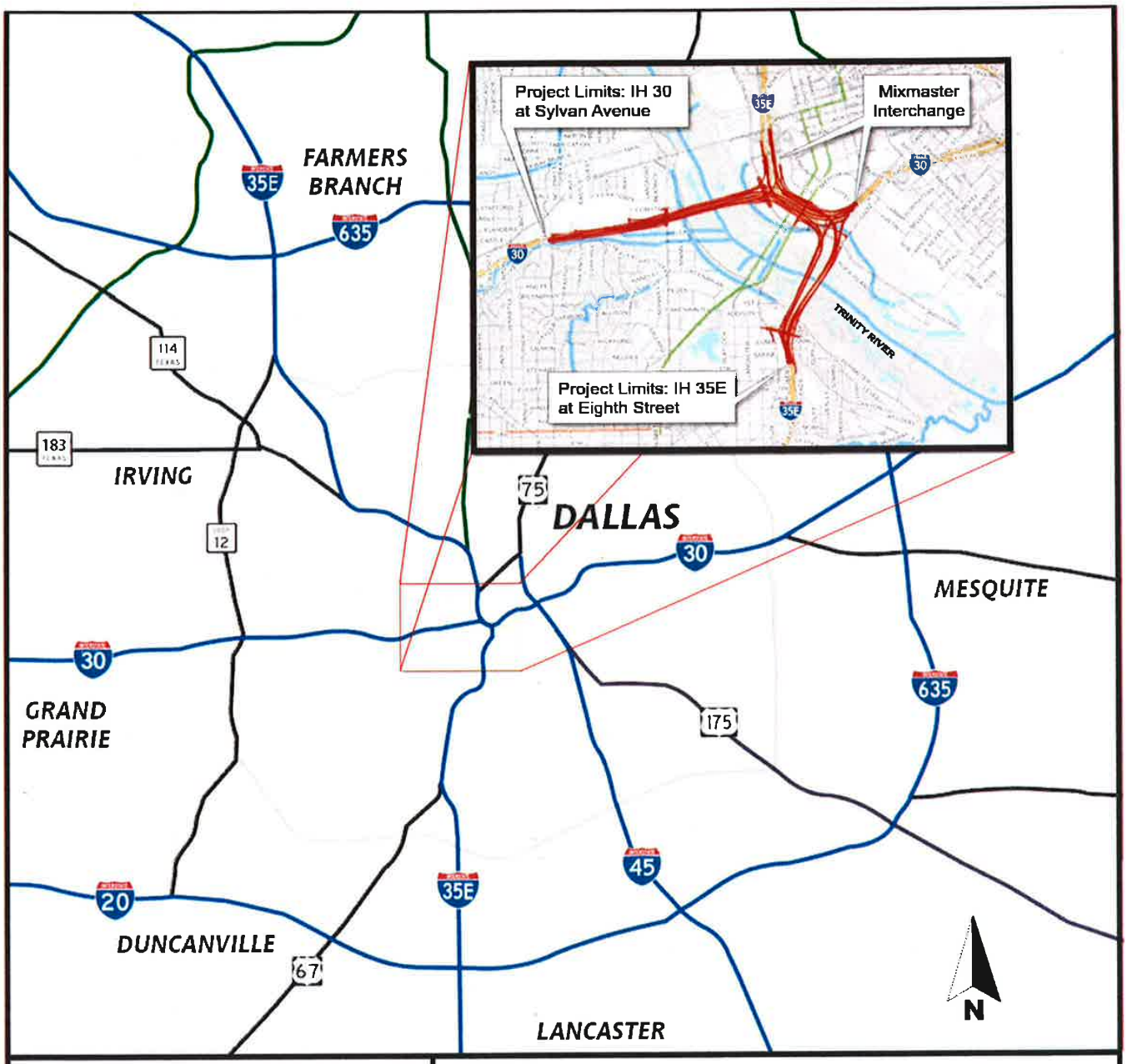
We look forward to your response to this request and your role as a cooperating agency on this project. If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EA, please contact Anita Wilson at (512) 536-5951 or Tom Bruechert (512) 536-5948.

Sincerely,

Salvador Deocampo, P.E.
District Engineer

Enclosure

Cc: Mr. Mark A. Marek, Interim Environmental Affairs Division Director, TxDOT
Mr. William Hale, District Engineer, Dallas District, TxDOT



TEXAS County Map

PROJECT VICINITY AND LOCATION MAP

IH 30 from Sylvan Ave to IH 35E
IH 35E from Eighth St to IH 30
IH 30 / IH 35E Interchange

CSJs: 1068-04-116
0196-03-205
0442-02-132
0442-02-118

Texas Department of Transportation

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DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

December 14, 2011

Planning, Environmental, and Regulatory Division

Mr. Salvador Deocampo
District Engineer
U.S. Department of Transportation
Federal Highway Administration, HA-TX
300 E. 8th Street, Rm 826
Austin, Texas 78701

Dear Mr. Deocampo:

Thank you for your letter dated 19 October 2011 from the Federal Highway Administration (FHWA) requesting the U.S. Army Corps of Engineers (USACE) participate as a coordinating agency on the Environmental Assessment (EA) proposed for the Interstate Highway (IH) 30 / IH 35E Interchange in Dallas County, Texas. The proposed project crosses the Dallas Floodway, a USACE Public Works project, which requires USACE approval under 33 U.S. Code 408 (Section 408). We appreciate the ongoing coordination with your staff and would like to formalize our status as a cooperating agency. Therefore, in conformity with Section 1501.6 of the Council on Environmental Quality regulations for implementing the National Environmental Policy Act, and given USACE's legal jurisdiction over the Dallas Floodway as a USACE Public Works project and as the regulatory agency for Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, we accept the invitation by the FHWA to be a cooperating agency in preparation of the EA.

Our jurisdiction and involvement as a cooperating agency will focus on those activities affecting Section 408 issues and Sections 404 and 10 processes. We are committed to continued cooperation with your agency and the Texas Department of Transportation in this effort. We look forward to our role as a cooperating agency on this project.

Sincerely,

Rob Newman
Acting Chief, Planning, Environmental and
Regulatory Division

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HNTB Corporation
The HNTB Companies
Engineers Architects Planners

5910 W. Plano Parkway,
Suite 200
Plano, Texas 75093

Telephone (972) 661-5626
Facsimile (972) 661-5614
www.hntb.com

March 5, 2012

HNTB

Mr. Tim Hogsett, CPRP
Recreation Grants Branch Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Re.: Request for input regarding potential impacts to resources that received Section 6(f) of the Land and Water Conservation Fund (L&WCF) and the Urban Park and Recreation Recovery Programs funds for inclusion in the Environmental Assessment (EA) for IH 30 and IH 35E (Dallas Horseshoe Project), Dallas County, Texas.

Dear Mr. Hogsett:

HNTB Corporation, on behalf of the Texas Department of Transportation – Dallas District, is currently preparing an EA for proposed improvements to IH 30 and IH 35E in Dallas County, Texas. The proposed improvements collectively referred to as the "Dallas Horseshoe Project," include the replacement of the IH 30 and IH 35E bridge structures that cross the Trinity River and the reconstruction of the IH 30/IH 35E interchange, locally known as the "Mixmaster," as well as associated roadways, frontage roads, ramps, direct connectors, and collector distributor roads. The proposed improvements would include bicycle and pedestrian facilities. The logical termini for the IH 30 section of the Dallas Horseshoe Project consist of Sylvan Avenue to the west and IH 45 to the east. The logical termini for the IH 35E section consist of 8th Street to the south and IH 30 to the north, a distance of approximately 5 miles as depicted in the attached Project Location Map.

The existing facility is composed of two major interstates, a major interchange, bridge structures, ramps, frontage roads, collector distributor roads, direct connectors, HOV lanes, and cross streets that form a complex configuration. The proposed project would traverse the Dallas Floodway, which is a public works project within the U.S. Army Corp of Engineers jurisdiction. It is anticipated, that the proposed project would require the acquisition of right-of-way (ROW), a joint-use agreement, and 11 displacements including: 2 single family residences, 7 commercial establishments (4 occupied and 3 vacant), and 2 billboards. Drainage and temporary construction easements may be required; however, their location has not been determined at this stage of project development (design schematics).

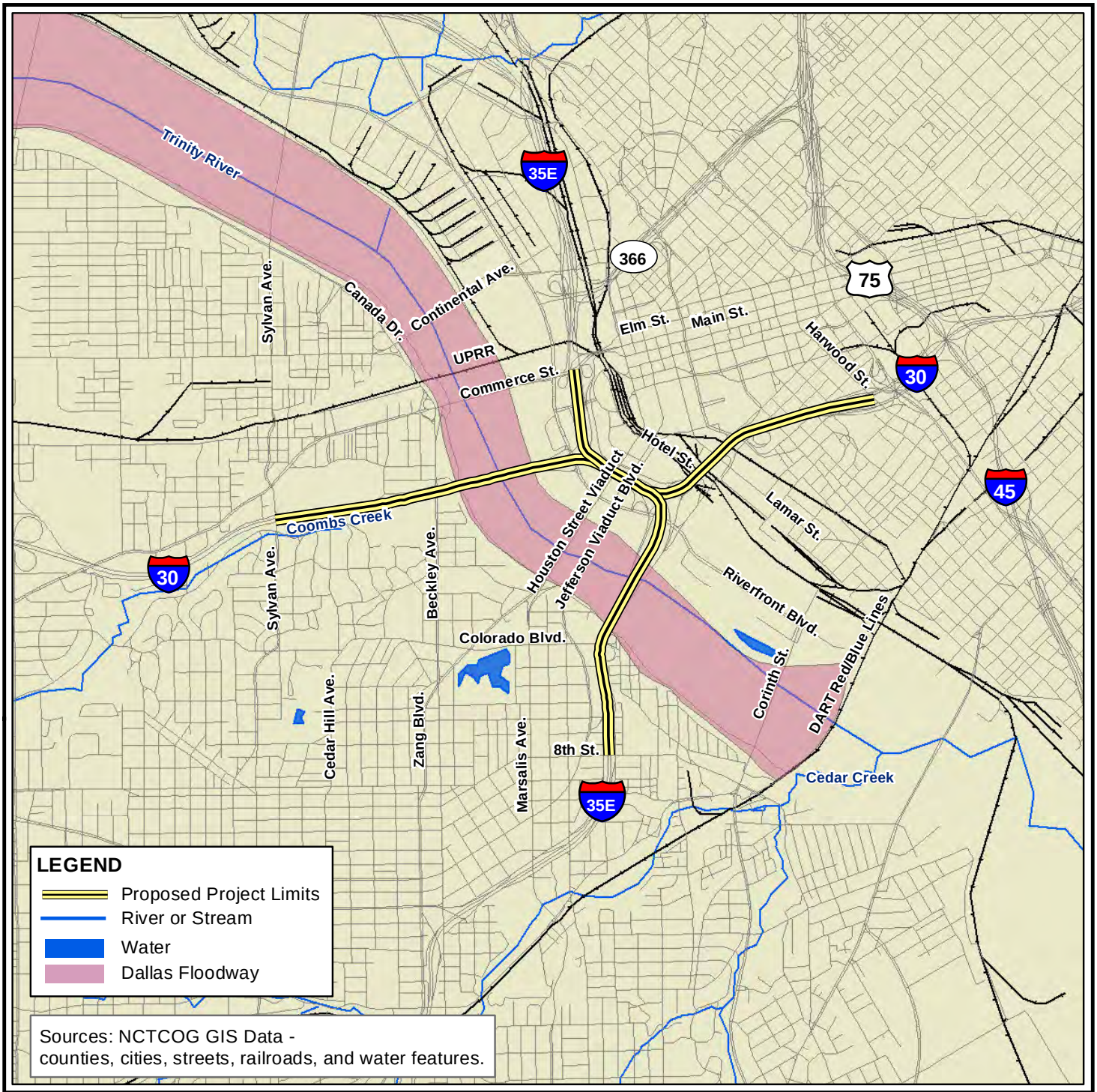
Four parks and one trail were identified to be located adjacent to the proposed project. The parks include: Kessler Parkway Park, Trinity River Greenbelt Park, Reunion Arena Park and Old City Park; the trail includes Coombs Creek Trail. No ROW would be required from these properties.

We respectfully request a review of your files/archives to determine the location of land acquired or developed with funds provided by the L&WCF Act of 1965 (16 USC 4601-4 to 4601-11) and the Urban Park and Recreation Recovery Programs funds or Section 6(f) lands within or adjacent to proposed project limits. If you should need further information concerning this request, please contact me at (972) 628-3167.

Sincerely,

Jennifer Halstead
HNTB Corporation
Texas Environmental Planning Director

Attachment: Project Location Map
cc: Nasser Askari, P.E. (TxDOT Project Manager)
HNTB File – 46215 PL 023



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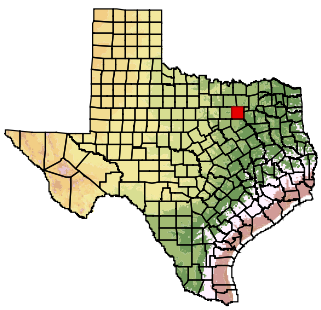

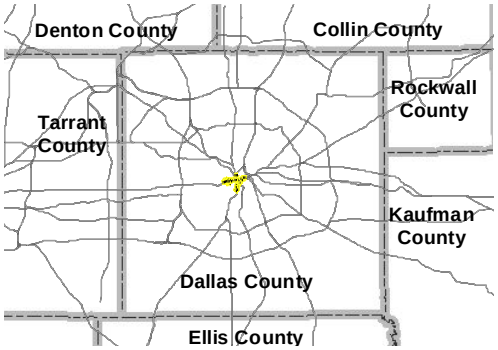

PROJECT LOCATION MAP

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas

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TEXAS PARKS & WILDLIFE

Life's better outside.®

Commissioners

T. Dan Friedkin
Chairman
Houston

Ralph H. Duggins
Fort Worth

Antonio Falcon, M.D.
Rio Grande City

Karen J. Hixon
San Antonio

Dan Allen Hughes, Jr.
Beeville

Bill Jones
Austin

Margaret Martin
Boerne

S. Reed Morian
Houston

Dick Scott
Wimberley

Lee M. Bass
Chairman-Emeritus
Fort Worth

Carter P. Smith
Executive Director

March 14, 2012

Ms. Jennifer Halstead
HNTB Corporation
Texas Environmental Planning Director
5910 W Plano Parkway, Ste 200
Plano TX 75093

Re: IH 30 and IH 35E (Dallas Horseshoe Project), Dallas County, TX

Dear Ms. Halstead:

A review of our records indicates this is the only fund assisted site within the proposed boundaries for the referenced proposal. Please find enclosed a copy of the 6(f)(3) map for the Trinity River Greenbelt Park (LWCF project number 48-000134). At this time, this is the only fund assisted site of concern. Based on your statement that "no ROW would be required from these properties" that includes the Trinity River Greenbelt Park, the proposal will not impact this site.

However, once the drainage and temporary construction easements are determined, if they are proposed on this fund assisted site, the following guideline applies:

> **CHAPTER 8 - LWCF ASSISTANCE PROGRAM MANUAL**
> **I. Requests for Temporary Non-Conforming Uses Within Section 6(f)(3) Areas**
> All requests for temporary uses for purposes that do not conform to the public outdoor recreation requirement must be submitted to and reviewed by the State. The State, in turn, will submit a formal request to NPS describing the temporary non-conforming use proposal. ***Continued use beyond six-months will not be considered temporary***, but will result in a conversion of use and will require the State/project sponsor to provide replacement property pursuant to Section 6(f)(3) of the LWCF Act.

Additional coordination with the National Park Service and the City of Dallas would be required in this instance. Please let us know if you have any additional questions. You can reach our office at 512-389-8224.

Sincerely,

Tim Hogsett, CPRP
Director
Recreation Grants Branch

TH:DL:re

Enclosure

cc: Jared White, Project Coordinator
Dallas PARD

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

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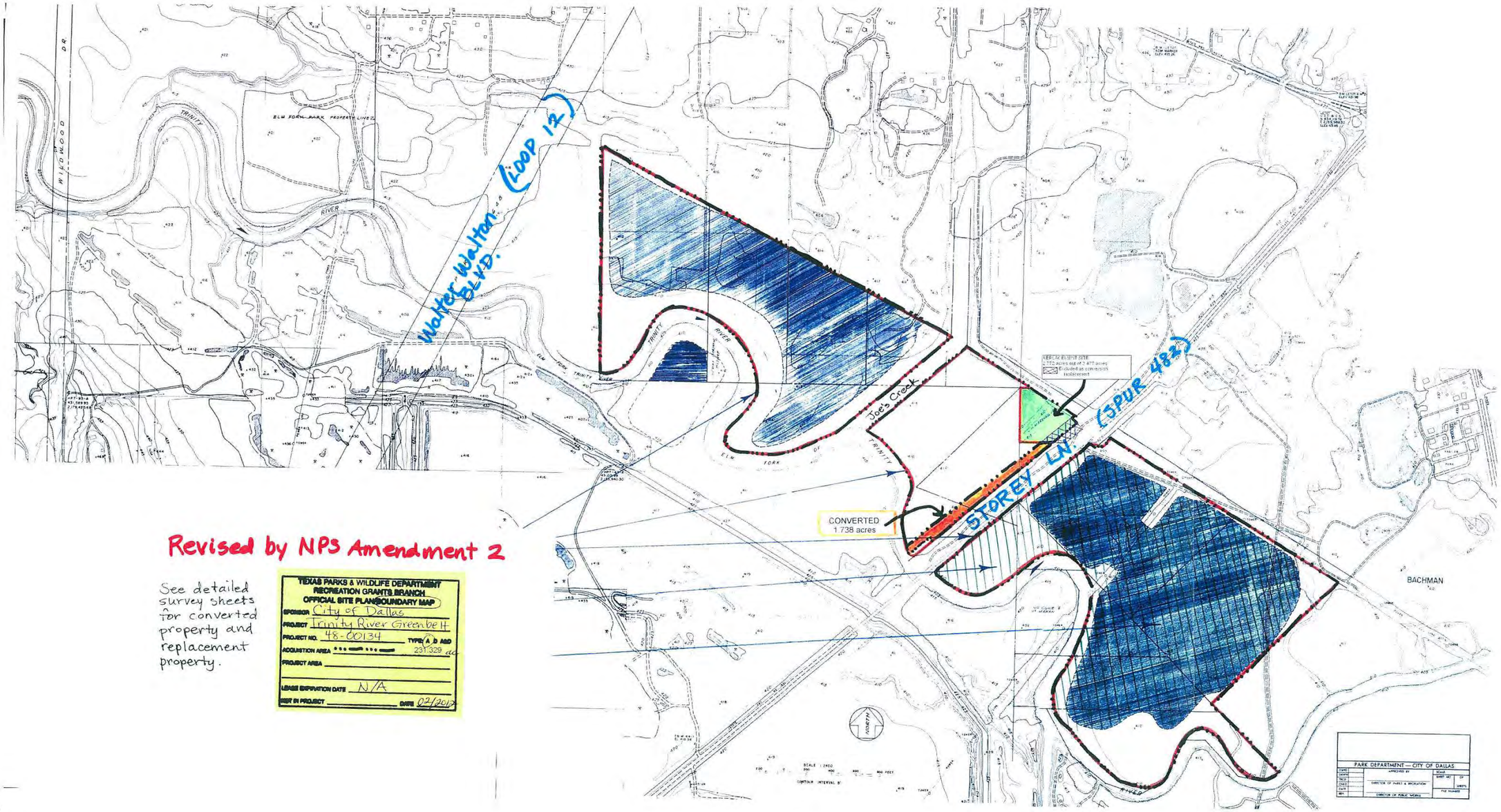

Revised by NPS Amendment 2

See detailed survey sheets for converted property and replacement property.

TEXAS PARKS & WILDLIFE DEPARTMENT
RECREATION GRANTS BRANCH
OFFICIAL SITE PLAN/BOUNDARY MAP

SPONSOR City of Dallas
PROJECT Trinity River Greenbelt
PROJECT NO. 48-00134 TYPE A, D AND
ACQUISITION AREA 231.329 ac
PROJECT AREA
LEASE EXPIRATION DATE N/A
SIGN IN PROJECT DATE 02/2019

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Texas Department of Transportation
DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

November 17, 2004

SECTION 106: DETERMINATION OF NRHP ELIGIBILITY AND EFFECTS
Dallas County
CSJ#s 0009-11-181, 0196-03-199, 0196-03-205, 0442-02-132, and 1068-04-116

Project Pegasus: IH 30 from Sylvan Avenue to IH 45 and IH 35E from Eight Street to Empire Central

Mr. Bob Brinkman, History Programs Division
Ms. Quana Childs, Division of Architecture
Texas Historical Commission
PO Box 12276
Austin, Texas 78711

Dear Mr. Brinkman and Ms. Childs:

In accordance with 36 CFR 800 and the Programmatic Agreement (PA) between the Texas Department of Transportation (TxDOT), the Federal Highways Administration, the Advisory Council on Historic Preservation, and the Texas Historical Commission, this letter initiates Section 106 consultation for the above referenced project. We hereby initiate coordination on the results of a historic structure survey of the project area to identify properties potentially eligible for listing in the National Register of Historic Places (NRHP), and the effects of the proposed undertaking on those properties.

Introduction

The Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA) propose to reconstruct and widen IH 30 and IH 35E near downtown Dallas in Dallas County, Texas. The primary purposes of the project are to improve safety and traffic operations and reduce traffic congestion along IH 30, IH 35E, and the interchange of IH 30 and IH 35E near downtown Dallas.

Description of the Existing Facility

The proposed improvements, collectively referred to as Project Pegasus, extend along 11 miles of urban freeway, specifically:

- IH 30 from Sylvan Avenue on the west to IH 45 on the east; and
- IH 35E from Eighth Street on the south to Empire Central on the north; improvements on the northern end also include SH 183 from IH 35E to Empire Central.

Project Pegasus focuses on the IH 30/IH 35E interchange on the western edge of downtown Dallas, locally known as the "Mixmaster," the depressed portion of IH 30 south of downtown, locally known as the "Canyon," and the portion of IH 35E from the Mixmaster to SH 183, also referred to as "Lower Stemmons." The project encompasses all interconnecting cross-streets and associated direct connections and access ramps, including IH 30 interchanges with IH 45, and IH 35E, and IH 35E interchanges with Spur 366, Dallas North Tollway (DNT), and SH 183.

IH 30 from IH 45 to IH 35E is a six-lane freeway with four to six collector-distributor (C-D) lanes and a one-lane reversible high-occupancy vehicle (HOV) facility from IH 45 to South Central Expressway. From IH 35E to Sylvan Avenue, IH 30 is a 10-lane freeway with four to six lanes of discontinuous frontage roads. IH 35E, from Eighth Street to IH 30 is an eight-lane freeway with a one-lane reversible HOV and 4-lane discontinuous frontage roads; from IH 30 to SH 183, IH 35E is a 10-lane freeway with four to six lane discontinuous frontage roads. The condition of the existing freeways is unsatisfactory as they:

- Do not provide adequate capacity for current and forecasted travel demand;
- Do not meet current vehicle operation and safety design standards;
- Inhibit efficient detouring of traffic around accident and incident sites;
- Do not properly provide for all major traffic movements -- including complex lane movements;
- Do not offer adequate access to and from the Dallas Central Business District (CBD) and other major employment and activity centers;
- Fail to optimize connections with other travel modes in Dallas such as HOV lanes, light rail transit, and commuter inter-city rail;
- Contribute to slow travel speeds, extended hours of congestion, and increased air pollution;
- Cause traffic to back up for many miles along other freeways feeding into downtown; and
- Fail to adequately accommodate bicycle and pedestrian facilities.

Description of the Proposed Facility

The proposed project generally includes widening and reconstruction of IH 30 and IH 35E and construction of HOV/M lanes, C-D roads, and frontage roads. The number of lanes for the Build Alternative is shown in **the table below.** Freeway main lanes would be 12 feet wide with 10-foot inside and outside shoulders. Frontage roads would be 12 feet wide with 2-foot curb offsets.

CSJ/Limits	Description
CSJ 0009-11-181: IH 30 from IH 45 to IH 35E	Reconstruction, Safety and Capacity Improvements with HOV Lanes (letting date 2010)
CSJ 0196-03-199: IH 35E from IH 30 to SH 183	Widen and Reconstruct Roadway (letting date 2010)
CSJ 0196-03-205: IH 35E at IH 30	Reconstruct Interchange with HOV Lanes and C-D Roads (letting date 2010)
CSJ 0442-02-132: IH 35E from Eighth to IH 30	Widen Mainlanes. Add C-D Roads and HOV
CSJ 1068-04-116: IH 30 from Sylvan to IH 35E	Lane Additions (letting date 2006)

Cultural Resources Survey

In accordance with 36 CFR 800, TxDOT personnel has undertaken a cultural resources survey to identify properties potentially eligible to the NRHP. The project area encompasses dense commercial areas, expressway components including bridges, levees, historic districts, and scattered residential homes. *Forty-four pre-1960 buildings and structures were identified within the area of potential effects (APE)*, which for this project was determined to be 150 feet beyond the existing/proposed right-of-way, except in two sections where it is extended to 500 feet beyond the existing/proposed ROW: IH 30 from the Trinity River west to Sylvan Avenue (south side only), and IH 35E from the Trinity River south to Eighth Street (both sides). In a letter dated July 11, 2002, the THC concurred with TxDOT's determination of the extent of the APE (see-attached). *Please note that Site No. 1 is deleted from the survey as it is not within the APE.*

Properties Determined NOT ELIGIBLE

I have evaluated these 44 properties through application of the Criteria of Eligibility for listing in the NRHP, and I have determined that 37 structures found within the APE are **not eligible** for listing in the register. Among these, the following merit to be highlighted:

Stemmons Expressway (IH 35E) and Components (Site No. 2):
They are **not eligible** for listing in the NRHP because the design of these components does not represent a unique design solution to the needs of the interstate highway system, but rather reflect a typical engineering response based on standard highway department practices of the time. As you are aware, FHWA and the Advisory Council are in the process of evaluating the interstate highway system and the eligibility of its components. According to preliminary information, the potentially eligible components of this system will be those representing the earliest dates of that system (1944-1956) and those that possess engineering significance. The components documented in the survey are not eligible for NRHP listing, as neither their design, length, rail type nor method of construction contributes to their engineering significance, and they do not date to the earliest phases of the interstate highway system.

Trinity Bottoms Neighborhood (Site No. 23):
It is located in Oak Cliff, just north of the Tenth Street Historic District, east of IH-35E, south of the Trinity River, and west of N. Denley Street. It is an African-American neighborhood mostly comprised of residences situated along parallel streets dating from the early to mid-20th century. An intensive survey of the neighborhood was conducted to provide additional research for the context of historic ethnic enclaves along the Trinity River, a justification of the boundaries, registration criteria to identify minimum requirements for integrity, the area's association with the Tenth Street Historic District, and an evaluation of the district against NRHP criteria for significance and integrity. *The intensive survey is included in Appendix D of the survey.*
Although the early 20th century Trinity Bottoms Neighborhood is associated with several areas of significance, including early development, suburban development, and ethnic heritage, it is not directly associated with the Tenth Street Historic District which dates to the turn of the century and is more closely associated with other residential areas. Loss of features through the construction of the Trinity River levee system, the construction of IH-35E, and general attrition and neglect has substantially impaired the district's integrity. Originally consisting of roughly an eleven-block area, currently only 3 blocks remain fully intact from the original platting. The survey indicates that as much as 60% of the

building fabric from 1945 or earlier has been destroyed. In addition, recent developments have adversely affected the cohesiveness of the residential suburban area. Thus, the Trinity Bottoms Neighborhood is **not eligible** for NRHP listing.

ELIGIBLE Historic Properties

The remaining properties are **eligible** for listing in the NRHP, three of which are already **listed** in the register: Dealey Plaza Historic District (Site No. 9), the Houston Street Viaduct (Site No. 10), and the Tenth Street Historic District (Site No. 20). The other eligible properties discussed below were found to meet the criteria for listing in the NRHP through their associations with significant themes in history and retention of historical integrity.

Greyhound Dallas Maintenance Center (Site No. 8):
It represents one of five regional maintenance centers that were established in the late 1950s as part of Greyhound's corporate response to the new Interstate Highway System. This was a highly transitional period for interstate bus services, and for Greyhound in particular, as it struggled to adapt to the new transportation system and the increase in personal automobile use prevalent in post-World War II America. Streamlining maintenance activities through five new regional centers was a critical and lasting change that facilitated Greyhound's continued post-World War II success. Therefore, the Center is **eligible** for the NRHP under Criterion A, as an example of influence that the interstate highway system had on transportation and commerce on a national level. It is also eligible under Criterion C, Architecture, at the local level of significance.

Kessler Park Historic District, 2nd Extension (Site No. 14):
It was home to some of Dallas' most influential politicians and business leaders, and has remained an affluent Oak Cliff neighborhood, with mostly owner-occupied houses. The 2nd extension features a high degree of architectural and design integrity, and represents a continuation of George Kessler's design concepts and theories of community planning.
The Kessler Park Historic District, 2nd Extension was part of the original plat of Oak Cliff and is located along the present day IH-30. Situated in the southwestern part of the project area, the district represents an excellent collection of 1930s to 1950s bungalows, large revival houses, and post-war housing stock with minimal changes or alterations. The area was platted in the 1920s, and features large, irregular shaped lots in the eastern and older portion of the neighborhood juxtaposed to the newer neighborhood featuring smaller regular shaped lots on flatter ground. Mature trees and gentle landscaping add cohesion and a park-like setting to the neighborhood.
The Kessler Park Historic District and 1st Extension were previously **listed** in the NRHP at the local level of significance under Criterion C Architecture, for the period of significance ranging from 1923 to 1944 and 1928 to 1944, respectively. The 2nd Extension was evaluated during the current study and found **eligible** for NRHP listing under Criterion C, Architecture, for the period of significance ranging from 1930 to 1955. The boundaries of the 2nd Extension District are Coombs Creek to the north, Beckley Ave. to the east, Sylvan Drive to the west, and Kidd Springs Park and the area immediately north of Kings Highway to the south.

Kovandovitch House (Site No. 22):
It was designed by owner Joseph Kovandovitch and is locally referred to as the "Concrete House." Two subjects that intrigued Kovandovitch were architecture and concrete. When the operations of Southwestern States Portland Cement Company began in 1909, Kovandovitch built two structures with concrete. Constructed in 1914, his house on Eads was the second to be built. Kovandovitch chose the site for its commanding view of the city across the flood plain of the Trinity River. The house is **eligible** for NRHP listing at the local level of significance under Criterion C Architecture, as the only example of a poured concrete house from the early 20th century in Dallas.

Cadiz Pump Station (Site No. 24):
It is located on Cadiz Street, north of the Trinity River and southeast of the Mixmaster. The first waterworks were opened in the city in 1882, during a period of growth and city improvements associated with the coming of the railroad and related industries. Utility plants such as these were instrumental in handling growth and development as Dallas' population soared and the city expanded. The Cadiz Pump Station consists of two buildings, one constructed ca. 1915 and one constructed ca. 1930. The pump station is **eligible** for listing in the NRHP at the local level of significance under Criterion A Event, for its civic importance in the development of Dallas, and under Criterion C Architecture, as a set of excellent examples of municipal buildings with Neo-Classical influences.

Cadiz Street Overpasses and Underpasses (Site No. 25):
They are situated at the intersection of Cadiz Street and Industrial Boulevard, north of the Trinity River and southeast of the Mixmaster. Built in the 1930s by the City of Dallas and the WPA, they were constructed of poured concrete and feature arches between the piers along the balustrade. The Cadiz Street Overpasses and Underpasses are recommended **eligible** for NRHP listing at the local level of significance under Criterion C, Engineering, as some of the few remaining transportation elements in the City of Dallas that were constructed in the 1930s and with assistance from the WPA.

Ice Cream Plant (Site No. 32):
It was constructed ca. 1915 in the Cedars area when industry was displacing residences. The building is **eligible** for NRHP listing at the local level of significance under Criterion C, Architecture, as an excellent example of a Neo-Classical Revival commercial building in the early 20th century.

Farmer's Market (Site No. 37):
It represents a continuous cultural and commercial activity that evokes Dallas' heritage as a distribution hub for agricultural products from surrounding areas. The practice of farmers gathering in this location to sell their agricultural products began informally in 1913, and continued for 17 years before the City began organizing the area and building permanent structures. In all, the farmers market has been a tradition in this location for 90 years. The complex of sheds and public spaces is **eligible** for the NRHP under Criterion A, for its association with early and late 20th century agricultural and commercial themes.

Sara Ellen & Samuel Weisfeld Center (Site No. 39):
It was originally the home of the First Church of Christ, Scientist. Members of the church came to Dallas from Boston in 1894, as a result of the efforts of Dallasites Mr. and Mrs. Sam P. Cochran, and they became the nucleus of the local Christian Science movement. The church was built on land that

was acquired and donated by church members in 1910. The cornerstone was laid in August 1910, and the first service was held January 1912.
Designed in the Neo-Classical Revival style by the well-known Dallas architectural firm Hubbell and Greene, the structure's design mirrors that of the mother church in Boston, with its rooftop dome and Adamesque interior. Over the years membership declined as the area around the Cedars disintegrated. In 1999, developer Herschel Alan Weisfeld took note of the old church. Specializing in restoration and adaptive-use of old buildings, Weisfeld purchased the property from the congregation and began converting the church into a theater. The Sara Ellen & Samuel Weisfeld Center is **eligible** for NRHP listing at the local level of significance under Criterion A Event, as the first church in Dallas to represent the local Christian Science movement, and Criterion C Architecture, as an excellent example of Neo-Classical architecture designed by the renowned local architecture firm, Hubbell and Greene.

Determination of Effects

The Criteria of Effect and the Criteria of Adverse Effect were applied to the eligible sites within the APE, and I have determined that the proposed undertaking will have **no adverse effect** on the historical associations and architectural features for which these properties were found to be significant.

No *new right-of-way will be taken from any of the NRHP listed or eligible properties.* The historic associations and integrity of the properties will remain intact, since the contexts of the properties have long included highway traffic. Details about the effects assessment for each of the historic properties are provided below, and they are graphically presented in the attached schematics:

NRHP listed or eligible properties	Distance from Current Facility to Historic Property	Distance from Proposed Facility to Historic Property	Construction Activities and Station #s	Comments
No. 8 – Greyhound Maintenance Facility	200'	175'	5137+00 No new ROW; new on-ramp and reconfigured cloverleaf across Continental Street.	The Greyhound Maintenance Facility has historically included freeway elements, including elevated cloverleafs and mainlanes. The proposed construction does not introduce visual, audible, or atmospheric changes that would diminish the property's integrity.
No. 9 – Dealey Plaza	650'	550'	5108+00 – 5120+00 New reconfigured on-ramp (Main Street); demolition and reconstruct cloverleaf	The reconfigured on-ramp would introduce a freeway element that will be approximately 100' closer to the district than the current elements. *However, this ramp does not introduce a new traffic feature, as it merely reconfigures an existing ramp.* The proposed construction does not introduce visual, audible, or atmospheric changes that would diminish the property's integrity.
No. 14 – Kessler 2nd Addition	Adjacent	Adjacent	1058+00-1020+00 North of the historic district boundary at Coombs Creek, 20' of	The district boundary extends to Coombs Creek ensuring that there is a vegetative buffer between the district properties and the expressway. In the schematic, the

			new ROW from Sylvan to Hardwick, then 75' new ROW to Beckley Ave.	buildings south of IH 30 (Sites 43,44,45) marked "to be displaced" are all non-historic commercial/light industrial buildings built between 1954-1979. They are not connected to the historic district, either physically or by association.
No. 15 – Houston St. Viaduct			5081+00 1103+00 Nearly 200' of new ROW will be acquired to the west, and 50' new ROW to the east to introduce travel lanes under 3 arches of the Viaduct; rehabilitation of viaduct railing; removal of modern stairway; installation of modern concrete barriers adjacent to viaduct piers.	Currently, the roadway system uses five openings (see "Existing Conditions" images). The proposed project will add three openings to the roadways system; *two of these are currently part of a parking lot and the third crosses over an existing road embankment.* These changes will not significantly alter the urban and trafficked setting of the viaduct from what the setting has been for the past 50+ years. The replacement and rehabilitation of the Viaduct's railing will be done in accordance with the standards set forth in a 1996 Section 106 agreement document that called for the work (see-attached correspondence), and the removal of the stairway and repair of the railing in that area will be done to the same standards. No alteration of the columns or piers will be needed, and any protective/safety barriers will be free-standing and will not require physical alteration of the historic structure. The barriers will actually protect the base of the historic arches, as well as the traveling public.
No. 20 – 10th St. District	N/A	No change	5000+00. Small amt. of new ROW north of 8th Street *beyond* the northern boundary of district.	The District is *beyond* project limits to the south, and no physical alterations will be made in the immediate vicinity of the District. The proposed construction will not diminish the District's integrity
No. 22 – Kovandovitch House	80'	40'	5010+00 510+00 The access road will be reconfigured (at-grade) and 40' of new ROW will be acquired in the direction of the property.	The setting of the Kovandovitch House has long included freeway elements, including surface-level access roads and mainlanes. The access road will remain at-grade, and will come closer to, but will not require acquisition of any of the property. The new freeway mainlanes will be *slightly lower* than at-grade with the historic property, due to the removal of the underpass for Fleming Street.
No. 24 – Cadiz Pump Station	130'	140'	1121+00 No new ROW. The access road will be reconfigured *from 10 feet above grade* to at-grade or slightly below grade.	The setting of the Pump Station has long included freeway elements, including mainlanes and surface access roads. The proposed construction is *further* away from the property and at grade.
No. 25 – Cadiz Over- and Underpasses	230'	195	Reconstruction RR bridge /tunnel to the n. of Cadiz Overpass/Underpass at station 1128+00.	The Cadiz Overpasses and Underpasses are *beyond* project limits to the east, and no physical alterations will be made in the immediate vicinity of the structures

No. 32 – Ice Cream Plant	No change	No change	1159+00 Widen Ervay St. north of Griffin St.; conversion of Ervay St. from one-way to 2-way.	The setting of the Pump Station has long included freeway elements, including mainlanes and surface access roads.
No. 37 – Farmer's Market	300'	300'	1174+00 Demolition of existing access roads and ramps and replacement with reconfigured Central Expressway (with one less level in height).	The removal of the freeway features from such close proximity to buildings 1 through 4 will improve the setting, feeling, association, and use of the Farmer's Market area. Although the Central Expressway feature may be wider than its current configuration, the Market's setting has long included freeway elements.
No. 39 – Weisfeld Ctr.	110'	60'	1153+00 No additional ROW; Conversion of south strip of adjacent parking lot as part of the reconfiguration of the frontage road (at-grade).	The reconfiguration of frontage and surface roads has been closely coordinated with the owner of the Weisfeld Center and the City of Dallas. Browder Street, on which the property fronts, will not be open to the frontage road, thereby not increasing the traffic flow next to the building.

Conclusion

Specifications for the railing repair work at the Houston Street Viaduct, as previously agreed in 1996 coordination (see-attached correspondence), and as discussed in the effects chart above, will be submitted for your review prior to construction.

We request your written concurrence with these determinations of eligibility and effects within 30 days of receiving this letter. If you have any questions or comments concerning these determinations, please call me at 416-2770.

Sincerely,

Mario Sanchez, R.A., Ph.D.
Historical Architect
Environmental Affairs Division

Attachments

CONCUR

Name: _____ Date: _____
State Historic Preservation Officer

cc. Sandy Wesch-Schulze, Carter-Burgess, Inc.
Susan Lassell, Hicks and Co.

bcc. Dallas District, Dan Perge
Dallas District, Timothy Nesbitt
ENV/PM, Elvia Gonzalez
ENV/CRM, Mario L. Sanchez

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TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

November 23, 2004

Mario Sanchez
Environmental Affairs Division
Texas Department of Transportation
125 E. 11th St.
Austin, TX 78701

Re: *Project review under Section 106 of the National Historic Preservation Act of 1966*
Project Pegasus: IH 30 from Sylvan Avenue to IH45 and IH 35E from eight Street to Empire Central, Dallas, Dallas County (TXDOT/106)

Dear Mr. Sanchez:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Quana Childs, has completed its review of the project documentation provided and has the following suggestions and comments:

Sites eligible for listing in the NRHP

- Site 8 1957 Greyhound Dallas Maintenance Center — No Adverse Effect
- Site 14 1920s-1950s Kessler Park Historic District, 2nd Extension — No Adverse Effect.
- Site 22 1912 Kovandovitch House — No Adverse Effect
- Site 24 c.1915/30 Cadiz Pump Station — No Adverse Effect
- Site 25 c.1935 Cadiz St. overpasses and underpasses — No Adverse Effect
- Site 32 c.1910 Ice Cream Plant — No Adverse Effect
- Site 37 1913-94 Farmer's Market Criterion A — No Adverse Effect
- Site 39 1910-12 Weisfeld Center A&C — No Adverse Effect

Sites already listed in the NRHP

- Site 9 Dealy Plaza Historic District — No Adverse Effect
- Site 15 Houston St. Viaduct From the section drawing provided, it appears changes are being proposed for the concrete piers. Yet in your letter you state, "No alteration of the columns or piers will be needed . . ." Please provide more information as to which pillars are changing, how they are changing, and why. Also, you've written the interim HOV lane is to be removed, yet in the concept drawing it still appears. Please clarify.
- Site 20 Tenth St. Historic District. — No Adverse Effect

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www.thc.state.tx.us

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Quana Childs at 512/463-9122.**

Yours truly,

Quana Childs, Architect
for: F. Lawerence Oaks, State Historic Preservation Officer

cc: Dallas County Historical Commission
FLO/QC

TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

RICK PERRY, GOVERNOR
JOHN L. NAU, III, CHAIRMAN
F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

December 14, 2004

Mario Sanchez
Environmental Affairs Division
Texas Department of Transportation
125 E. 11th St.
Austin, TX 78701

COPY

Re: *Project review under Section 106 of the National Historic Preservation Act of 1966*
Project Pegasus: IH 30 from Sylvan Avenue to IH45 and IH 35E from eight Street to Empire Central, Dallas, Dallas County (TXDOT/106)

Dear Mr. Sanchez:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Quana Childs, has completed its review of the project documentation provided and has determined the project as proposed would have NO ADVERSE EFFECT on National Register listed or eligible properties.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Quana Childs at 512/463-9122.**

Yours truly,

Quana Childs, Architect
for: F. Lawerence Oaks, State Historic Preservation Officer

cc: Dallas County Historical Commission
FLO/QC

TxDOT - ENV
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December 30, 2011

Salvador Deocampo
District Engineer
U.S. Department of Transportation
Federal Highway Administration
Texas Division
300 E 8th Street, Rm 826
Austin, Texas 78701

Re: Project review under Section 106 of the National Historic Preservation Act of 1966, Trinity River Parkway Corridor Determination of Eligibility for Dallas Floodway, Dallas County (FHWA)
TxDOT CSJ # 0918-45-121

Dear Mr. Deocampo:

Thank you for the information provided in your November 29, 2011 letter. This letter serves as a comment from the State Historic Preservation Officer (SHPO), the Executive Director of the Texas Historical Commission (THC).

Based on the information you have provided and the information in the *Intensive Engineering Inventory and Analysis of the Dallas Floodway* report provided by the City of Dallas and the U.S. Army Corps of Engineers (USACE), we do not concur with your determination that the Dallas Floodway is not eligible for listing in the National Register of Historic Places (NRHP). A review of the report by THC staff leads our staff to the conclusion that the Dallas Floodway is eligible for listing in the National Register of Historic Places, at the local level of significance, in the areas of Engineering and Community Planning and Development, under criterion A.

You noted several changes that took place after the historic period and diminish integrity of location, materials, design, workmanship, setting, feeling, and association. We concur that there has been a loss of historic integrity based on these changes, but we do not concur that it is sufficient to render the floodway ineligible for listing in the NRHP. The floodway retains the essential physical features that made up its character or appearance during the period of significance. We base our conclusion on the following considerations:

- National Register Bulletin 15 states "a basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today." Based on historic photos and the documentation of the existence and condition of key character-defining features from the historic period (the levees, overbank, diversion channel, old river channels, pumping plant buildings, pressure sewers, and other historic structures) in the report, it is certainly recognizable.
- For infrastructure properties to retain eligibility under Criterion A, integrity of materials and workmanship is not as essential as location, design, feeling, and association. Therefore, while the replacement of equipment and bricked window openings at the historic pumping plant buildings do detract from integrity of materials and workmanship,

these aspects of integrity are not as essential in the consideration of eligibility to the NRHP.

- Past coordination between the International Boundary and Water Commission and THC regarding levees in South Texas that were considered eligible for listing in the National Register of Historic Places resulted in a determination that adding soil to levees does not constitute an adverse effect to this type of resource. Therefore, we do not consider post-historic modifications to the slope and crowns of the levees to detract from the eligibility of the floodway.
- From previous coordination of complex infrastructure resources, such as irrigation systems and floodways, we have found that there is a hierarchy of significance for features within the system. The majority of the key character-defining features of this system are extant and operable; few have been demolished or modified to the extent that they are no longer recognizable to the historic period. The replacement of equipment at the pumping plants and modifications to gates, sluices, and culverts are minor changes and only have a small impact on the integrity of the larger system.
- Because of the evolution of technology, non-historic components should be expected at still-functioning infrastructure resources. Despite the addition of newer plant buildings at the pumping plants, the retention of the historic pumping plant buildings allows the floodway to continue to convey its significance from the historic period. Similarly, the non-historic dam, pressure sewers, and outlet gate structures do not detract from the integrity of the system. In general, these "new" features meet the *Secretary of the Interior's Standards for Rehabilitation* as these features are differentiated from the old (most often by the use of new technology) and are often compatible with the massing, size and scale of adjacent construction and certainly with the floodway as a whole.
- Regarding underground features, you refer to National Register Bulletin 15 where it states "properties eligible under Criteria A, B, and C must not only retain their essential physical features, but the features must be visible enough to convey their significance. This means that even if a property is physically intact, its integrity is questionable if its significant features are concealed under modern construction." Although we recognize the challenge that underground features represent, we do not agree with your application of this standard to them, as it is specifically meant for features that were visible during the period of significance, but are no longer visible. Components of the floodway that were historically underground and still are underground in the same location cannot detract from the integrity of the system. For the purpose of comparison with another resource type with underground features, we referred to National Register Bulletin No. 42, "Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties." According to the National Park Service, underground components of mining properties "need not be inspected for National Register integrity." Instead, design integrity for these features should be evaluated by the information gathered in review of written records that document any changes to them. Your letter identifies that improvements and upgrades took place underground in the areas of the pumping plant complexes, but the documentation of these changes in the report provided by the City of Dallas and USACE is not sufficient to support a determination that changes to underground components have resulted in a net loss of integrity that would make the Dallas Floodway not eligible. Without knowing what all of these changes and upgrades are, it is difficult to apply the *Secretary of the Interior's Standards for Rehabilitation* and evaluate whether they adversely affected the floodway.
- You note that alterations to many of the pumping plants have changed the function of the plants. We do not concur that the function of these plants has been changed. Rather, their capacity has increased by the equipment upgrades and construction of larger, adjacent

pump stations. Neither do we agree that a change in function would, by itself, make a building or structure ineligible for listing in the NRHP.

- Regarding your evaluation that the power lines, new bridges and parks pose a severe adverse effect to the setting of the floodway, we disagree. Instead, we support the characterization of the USACE report: "neither the power lines nor the bridges create a physical or visual barrier in the floodway system, and as a result, these features have not diminished the historic character of the floodway or its ability to convey its historic significance." Some changes in setting must be expected in an urban area.

Thank you for your consideration of our comments. Based on this review, we anticipate that neither the construction of additional bridges across the floodway in future projects nor the construction of alternatives 2A or 2B of the Trinity Parkway project have the potential to adversely affect the historic floodway. Alternatives 3C and 4B have a greater potential for effect. We would not consider the construction of roads on the overbank alone to be an adverse effect; however, other considerations in the design, such as floodwalls, may increase the potential for adverse effect. We look forward to working with your office regarding the resolution of our concerns and completion of coordination. If you have any questions concerning this review or if we can be of further assistance, please contact Adrienne Campbell at 512/936-7403.

Sincerely,

Mark Wolfe
State Historic Preservation Officer

Cc: Theresa Claxton, FHWA
Anita Wilson, FHWA
Joseph Murphey, USACE
Bruce Jensen, TxDOT
Dr. Mario Sanchez, TxDOT

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Texas Department of Transportation
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June 15, 2012

SECTION 106 -- DETERMINATION OF ELIGIBILITY AND EFFECTS: Submittal of *Non-Archeological Historic-Age Resources Reconnaissance Survey Report, "Dallas Horseshoe Project"* (June 2012)

Dallas County: IH 30 and IH 35E
CSJ # 0196-03-205

Ms. Linda Henderson
History Division
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Dear Ms. Henderson:

In accordance with 36 CFR 800 and the Programmatic Agreement (PA) between the Texas Department of Transportation (TxDOT), the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, and the Texas Historical Commission (THC), this letter *resumes* Section 106 consultation for the above referenced project. We hereby present the results of a report on the eligibility and effects of the proposed undertaking on properties listed and eligible to the National Register of Historic Places (NRHP).

Previous Coordination (Project Pegasus):

In 2004, a historic-age resources reconnaissance survey report was coordinated with the THC for Project Pegasus (CSJ: 0009-11-181 etc.), an 11-mile-long undertaking which extended further along IH 30 and IH 35E than the current Horseshoe Project. That survey report documented 42 historic-age resources based on a 1960 cut-off date. Of those resources, three were listed in the NRHP and nine were determined eligible to the NRHP (see Appendix E). On November 17, 2004, TxDOT historians determined there would be no adverse effect to the listed and eligible resources. THC concurred with that finding in a letter dated December 14, 2004 (see Appendix B).

Since that time, project plans have been reduced and the current Horseshoe Project extends along a shorter five-mile alignment on IH 30 and IH 35E than the original Project Pegasus.

Project Location:

Proposed improvements are located near downtown Dallas along IH 30 and IH 35E. Construction activities along IH 30 extend from Sylvan Avenue to west of IH 45, and along IH 35E from 8th Street to IH 30 (see location map Appendix A: Exhibit 1). Bridge replacement activities require the project to traverse portions of the Dallas Floodway.

Project Description:

The Dallas Horseshoe Project focuses primarily on the replacement of the deteriorated IH 30 and IH 35E bridges crossing the Dallas Floodway. Also included in the project scope of work is the reconstruction of the IH30/IH 35E interchange ("Mixmaster"), the extension of current HOV lanes along IH 35E, Houston Street Viaduct modifications, frontage road improvements, and the incorporation of pedestrian and bicycle facilities throughout the project limits. The project would be constructed with the acquisition of 17.4 acres of new right-of-way (ROW).

***Non-Archeological Historic-Age Resources Reconnaissance Survey Report, "Dallas Horseshoe Project"* (June 2012):**

The attached report updates and supplements the findings of the 2004 reconnaissance-level survey. Resources not documented in the previous survey, specifically those determined to be historic-age based on a new 1967 cut-off date, are included in the report. Survey findings were field verified within an area of potential effects (APE) extending 150 feet from the edge of the existing ROW or proposed ROW. Additional historic-age resources within the APE not originally identified at the time of the Pegasus report are also included in the current survey.

As a result of the new survey effort, 72 historic-age resources with a cut-off date of 1967 were identified on 43 parcels in the APE (see Table 6, page 31). In addition, 22 properties identified in the Pegasus report still remain within the APE of the current project (see Table 7, page 31-32).

Appendix C includes an inventory chart with the 2012 surveyed properties identified by letter, while Appendix E includes all the previously recorded resources from the 2004 report, which are identified by their original numbers. Appendix A, Exhibit 2 locates all of these resources (including historic districts), and delineates the existing and proposed ROW, study area and APE.

The surveyed area lies within an urban context just south of downtown in Central Dallas. Property types include domestic, commercial, industrial, transportation and flood control resources, the majority of which date from the early to mid-20th century. The properties were evaluated under a broad number of themes ranging from the founding of Dallas to the advent of automobile-related urban development in the 1930s and 1940s, as well as to efforts to safeguard Dallas from destructive flooding (see "Historic Contexts," pages 16-27).

Based on field research, no additional project area was found to have sufficient integrity, cohesion or significance to qualify as an NRHP-eligible historic district, besides those identified in the 2004 survey. Several properties designated as City of Dallas Historic Landmarks are included in the document.

Determinations of Eligibility:

Based on the 2012 survey the following properties are determined to be **eligible** to the NRHP:

-Res. A, 712 Fort Worth Ave., Alamo Plaza Hotel Court sign, c. 1959, **eligible** under Criteria A, Transportation/Commerce, and under C, Design, at the local level of significance.
-Res. C, 620 Yorktown St., industrial manufacturing facility with Art Deco central entryway, c. 1948, **eligible** under Criteria A, Industry, and under C, Architecture, at the local level of significance.
-Res. I 1-3, 1727 N. Beckley Ave., baked goods manufacturing facility with folded plate roof construction, c. 1965, **eligible** under Criteria A, Industry/Commerce, and under C, Architecture, at the local level of significance.
-Res. M 1-7, 9-10, varied resources of the Dallas Floodway (levees, overbank, sumps, culverts, main diversion channel), 1932-1959, **eligible** under Criteria A, Community Planning and Development, at the local level of significance, *as originally determined in a THC letter dated December 30, 2011.*

While the survey found the eligibility of the Old Trinity River Channel (M 8) and its associated culverts (M 11-17) to be "undetermined," in my meeting with you and Mr. Gregory Smith of the THC on June 8, 2012 regarding this issue, a consensus was reached that these resources were **not eligible** to the NRHP. The old channel (M 8) is a remnant of a natural feature and it is not a designed feature of the engineered floodway. Due to their association with this natural feature, culverts M 11-17 are also **not eligible** to the NRHP.

Based on the 2004 survey, the following properties are still found within the Horseshoe APE, and they are identified as **listed** and **eligible** to the NRHP:

-Res. 9, Dealey Plaza National Historic Landmark District (bounded by Pacific, Commerce and Jackson sts.), 1935-1963, **listed** 1993, under Criteria A, Government/Politics, B, association with John F. Kennedy, and C, Architecture, at the national level of significance.
-Res. 14, Kessler Park Historic District 2nd Extension (bounded by IH 30, Beckley Ave., Sylvan Ave., and Kidd Springs Park), 1920-1950, **eligible** under Criterion C, Architecture, at the local level of significance.
-Res. 15, Houston St. Viaduct, 1912, **listed** 1978, under Criterion C, Engineering, at the local level of significance.
-Res. 22, Kovandovitch House, 523 Eads Ave., 1914, **eligible** under Criterion C, Architecture, at the local level of significance.
-Res. 24, Cadiz St. Pump Station, 1915, 1930, **eligible** under Criteria A, Community Development, and under C, Architecture, at the local level of significance.
-Res. 30, 1201 W. Griffin St., c. 1885, **eligible** under Criterion C, Architecture, at the local level of significance.
-Res. 32, 1201 Ervay, c. 1915, **eligible** under Criterion C, Architecture, at the local level of significance.
-Res. 37, IH 30, Harwood and Pearl sts., Farmer's Market, c. 1935-1954, **eligible** under Criterion A, Agriculture/Commerce, at the local level of significance.

-**Res. 39**, 902 Browder, Weisfeld Center, c. 1912, **eligible** under Criteria A, Religious Event, and under C, Architecture, at the local level of significance.

In regard to the four IH 30 and IH 35E steel stringer/steel plate girder main span bridges to be replaced, they are exempt from NRHP eligibility as Interstate resources. These c. 1957 structures are not included in the Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System, which was published in the Federal Register on December 19, 2006.

Determination of Effects:

The Criteria of Effect and the Criteria of Adverse Effect were applied to the listed and eligible resources within the APE, and I have determined that the proposed undertaking will have **no adverse effect** on the historical associations, architectural and engineering features and integrity of the properties identified as historically significant.

Comments about effects for historic properties are provided below in separate charts for the Horseshoe and Pegasus properties. Additional information for these properties is provided in the survey's "Determination of Effects" section in pages 49-52. In that section, the discussion of effects to the Old Trinity River channel and its associated culverts is now moot due to the lack of eligibility of these resources. For a number of resources, construction activities are illustrated in the Proposed Improvements Sheets 1-7 (PI) attached at the end of the survey.

HORSESHOE PROJECT: Effects to Listed and Eligible properties (2012 survey)

NRHP listed or eligible properties	NRHP Status	Location of Proposed Work to Hist. Property	Proposed Construction Activities	Effects/Comments
Res. A, 712 Fort Worth Ave.	Elig. A, C	Improvements at 800 ft. distance to rear of resource	Reconstruct WB frontage rd; add sidewalk (see Appendix A, Exhibit 3, sheet 1).	**No adverse effect**; no new ROW; proposed work along IH 30 frontage rd located 800 ft. from resource.
Res. C, 620 Yorktown St.	Elig. A, C	Improvements at 700 ft. distance to rear of resource	Reconstruct WB frontage rd; add sidewalk (see Appendix A, Exhibit 3, sheet 1).	**No adverse effect**; no new ROW; proposed work along IH 30 frontage rd located 700 ft. from rear of property.
Res. I, 1727 etc. Beckley Ave	Elig. A, C	Improvements at 100 ft. distance across street from resource	12 ft-wide hike and bike trail connection on Della St located across the street from resource (see Appendix A, Exhibit 3, sheet 2).	**No adverse effect**; no new ROW; proposed work across on Della St. located 100 ft. from resource.
Res. M 1, Dallas Floodway (2-pipe culvert W. of west Levee)	Elig. A	Improvements at approx. 75 ft. to south of resource	New WB IH 30 frontage road bridge (see PI 6 of 7).	**No adverse effect**; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 2, Dallas Floodway (linear sump W. of West Levee)	Elig. A	Bridges span over resource	Spans of new WB, EB IH 30 main lane bridges (see PI 6 of 7).	**No adverse effect**; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.

Res. M 3, Dallas Floodway (hexagonal culvert. W. of West levee)	Elig. A	Improvements at 400 ft. distance to north of resource	None (see PI 6 of 7)	**No adverse effect**; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 4, Dallas Floodway (West Levee)	Elig. A	Bridges span over resource	Spans and piers of new IH 30, IH 35E main lane and frontage road bridges (see PI 6 of 7, 7 of 7).	**No adverse effect**; new piers embedded in the levees similar to bridges to be replaced and to other existing floodway bridges; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 5, Dallas Floodway (Overbank)	Elig. A	Bridges span over resource; swale to south of new IH 30 bridge	Spans and piers of new IH 30, IH 35E main lane and frontage road bridges; 800 ft. long, 100 ft. wide, 4 ft. deep earthen swale (see PI 6 of 7, 7 of 7).	**No adverse effect**; new piers embedded in the overbank similar to bridges to be replaced and to other existing floodway bridges; additional width of replacement bridges and earthen swale will not impact the 11-mile-long, 2000 ft.-wide overbank; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 6, Dallas Floodway (Main Diversion Channel)	Elig. A	Bridges span over resource	New IH 30, IH 35E main lane and frontage road bridges will span over the channel (see PI 6 of 7, 7 of 7).	**No adverse effect**; long central spans of new bridges ensure there are no piers embedded in the channel; proposed work will not affect the engineered water drainage function of the 7-mile-long channel and 11-mile-long Dallas Floodway.
Res. M 7, Dallas Floodway (East Levee)	Elig. A	Bridges span over resource	Spans and piers of new IH 30, IH 35E main lane and frontage road bridges (see PI 6 of 7, 7 of 7).	**No adverse effect**; new piers embedded in the levees similar to bridges to be replaced and to other existing floodway bridges; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 9, Dallas Floodway (culvert E. of East Levee)	Elig. A	Bridges span over resource	Spans of new WB, EB IH 30 main lane bridges (see PI 6 of 7).	**No adverse effect**; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.
Res. M 10, Dallas Floodway (culvert E. of East Levee)	Elig. A	Bridges span over resource	Spans of new WB, EB IH 30 main lane bridges (see PI 6 of 7).	**No adverse effect**; proposed work will not affect the engineered water drainage function of the 11-mile-long Dallas Floodway.

PEGASUS PROJECT: Effects to Listed and Eligible properties in the Horseshoe APE

Res. 9, Dealey Plaza NHL District	Listed A, B, C	200 ft. from western boundary	Reconstruct NB exit ramp to Commerce St. (see PI 1 of 7).	**No adverse effect**; no new ROW required; exit ramp located at sufficient distance from district boundary.
Res. 14, Kessler Park Hist. District 2nd Extension	Elig. C	Immediately N of district boundary at Coombs Creek	Reconstruct EB frontage road; add sidewalk (see Appendix A, Exhibit 3, sheet 1).	**No adverse effect**; frontage road existing; trees alongside Coombs Creek provide vegetative buffer to district properties.
Res. 15, Houston St. Viaduct	Listed C	Along current and new travel lanes between bents	In-kind replacement of missing segment of historic viaduct railing; removal of non-historic	**No adverse effect**; changes will not significantly alter the urban, trafficked setting of the viaduct that has existed for the last 50 years. In-kind replacement of

			stairway; regrading at base of 8 bents; non-historic interim HOV crossover structure to be removed (see Appendix A, Exhibit 3, sheet 3; Exhibit 4, sheets 1-3; survey pages 10-13; Fig. 3, page 13).	the railing will fulfill Sept. 24, 1996 Section106 Mitigation Agreement; stairway removal will correct a non-historic alteration to the structure; regrading at six bents to be 2 ft. or less; regrading at proposed 8 bents will not significantly alter or structurally compromise the distinctive arched support system of the viaduct.
Res. 22, 523 Eads Ave.	Elig. C	West of resource	Reconstruct NB IH 35 E frontage road; add sidewalk (see PI 2 of 7).	**No adverse effect**; frontage road currently exists at same location; freeway setting part of the property's established surroundings.
Res. 24, Cadiz Pump Station	Elig. A, C	North and rear of the property	Improve existing IH 30 EB direct connector (see PI 3 of 7).	**No adverse effect**; improvements at rear of the property; improved connector will increase in height 2-3 ft. from the current one.
Res. 30, 1201 W. Griffin St.	Elig. C	None	None (see PI 5 of 7).	**No adverse effect**; no construction activities in the vicinity of this resource.
Res. 32, 1201 Ervay	Elig. C	None	None (see PI 5 of 7).	**No adverse effect**; no construction activities along or near Ervay St.
Res. 37, Farmer's Market	Elig. A	300 ft. south from property boundary	WB slip ramp west of Harwood St. (see PI 4 of 7).	**No adverse effect**; proposed ramp at considerable distance and located across several streets from resource.
Res. 39, Weisfeld Center	Elig. A, C	150 ft. south from resource	Reconstruct currently closed exit ramp between Ervay and Akard sts. (see PI 5 of 7).	**No adverse effect**; ramp to be reconstructed already existing; IH 30 at this segment below grade.

Effects to Historic Houston Viaduct:

Two of the proposed construction activities associated with the viaduct will restore its historic appearance. Removal of the interim IH 35E crossover structure will delete this 1996 addition directly attached to the viaduct (see Fig.1, page 11). As a result, a 32 ft. segment of the historic rail removed in 1996 will be replaced in-kind thus fulfilling the terms of the September 24, 1996 Mitigation Agreement signed at the time of the crossover installation. In addition, a non-historic metal stairway will be removed with an ensuing in-kind replacement of the historic rail taken out at the time of the stairway's construction (see Fig. 2, page 12). These activities will enhance the viaduct and will have **no adverse effect**.

Modifications due to road regrading activities are planned to the existing ground elevation adjacent to the substructure of 8 bents. These amount to 15% the total 51 arches that compose the 5,800 ft.-long structure (see Fig. 3, page 13). Part of the regrading includes the addition of travel lanes under three of the arched openings (bents 1-3) now used for parking facilities. Five of the openings (bents 3-8) currently include travel lanes.

Roadway regrading will also include free-standing concrete traffic barriers alongside the bents in order to protect both the structure and the traveling public. As discussed in survey pages 12-13, fill will either be added or removed adjacent to the eight bents listed below (see Exhibit 4, sheet 1-3).

-Bents 1, 4, 5, 6: minor modifications involving less than 2 ft. of added or removed fill
-Bent 2, 3: excavation ranging from 2-7 ft. with retaining wall added to the north side of both bents
-Bents 7, 8: 2-3 ft. of fill at base of bent 7, and 5-7 ft. of fill at south base of bent 8.

Grading modifications at the base of the eight bents will not compromise the structural integrity of the viaduct. Its distinctive, rhythmic arched system will remain unchanged. Regrading at the majority of the eight bents involves a 2-3 ft. change in grade. Required traffic barriers and retaining walls will be free standing and not attached to the viaduct's support system. The largest amount of fill at the base of bent 8 will merely fill in about 25% of the double arches comprising that bent. The area of the proposed regrading is already highly trafficked under and adjacent to the viaduct. The majority, or 85% of the bents, will remain undisturbed and left in their original appearance and setting. As a result, we determine that the proposed modifications will have **no adverse effect** to the Houston Viaduct.

Effects to Historic Districts:

Assessment of potential effects to the NRHP-listed Dealey Plaza National Historic Landmark District is included in the attached survey (page 49, and Proposed Improvements Sheet 1). The proposed work will not compromise the historical integrity or historical significance of this district and, as a result, we determine the project will have **no adverse effect** upon them. Improvements adjacent to the district are limited to the reconstruction of the northbound exit ramp to Commerce St. from IH 30 and IH 35E at a distance of 200 ft. from the district's western boundary. No new ROW is required from the district, and the proposed work will have **no adverse effect** upon this listed resource.

Improvements to the **eligible** Kessler Park Historic District 2nd extension are limited to the existing frontage road located beyond its northern boundary at Coombs Creek. No construction activities extend to the **listed** Lake Cliff Historic District and Tenth Street Historic District (see Appendix A, Exhibit 2).

Indirect Effects/Cumulative Impacts:

There will be no indirect or cumulative impacts as there are no adverse direct or indirect effects resulting from this project. There is no reasonable or foreseeable development or growth induced by this project that could adversely impact the physical appearance of these historic resources either later in time, or in distance. There are no direct or indirect effects that could contribute to cumulative impacts.

Section 4(f) Applicability:

The Horseshoe Project traverses various historic components of the Dallas Floodway, including levees, overbank, main diversion channel, and several culverts and sumps. In accordance with the Supplemental Appropriations Act, 2010, Section 405. (b), FHWA is exempt from the requirements of Section 4(f) of the US Department of Transportation Act of 1966 for any highway project to be constructed "in the vicinity of the Dallas Floodway." TxDOT requested and received FHWA confirmation on June 15, 2012 that the Section 4(f) exemption applies to the Dallas Floodway components, as well as to any other historic resource included in the Horseshoe APE that falls "within the zone of impact (i.e. flood risk) for which the levees protect from a 100-year flood event."

Conclusion:

We request your written concurrence with these determinations of eligibility and effects within 20 days of receiving this letter. If you have any questions or comments concerning these determinations, please call me at 416-2770.

Sincerely,

Mario L. Sanchez, R.A., Ph.D.
Historical Architect
Environmental Affairs Division

Attachments

CONCUR
Dallas Horseshoe Project
(CSJs -- 0196-03-205 etc.)
NO ADVERSE EFFECT TO HISTORIC PROPERTIES/DISTRICTS

Name: _____ Date: 26 June 2012
State Historic Preservation Officer

cc. City of Dallas Historic Preservation Office, Mark Doty
Preservation Dallas, Katherine Seale
Dallas Co. Historical Commission, Ann Spillman

MEMORANDUM

Texas Department of Transportation

TO: 850 File, IH 30 and IH 35E--Dallas Horseshoe Project (Pegasus Partial Implementation), IH 30 from Sylvan Avenue to west of IH 45 and IH 35E from 8th St. to Commerce Street; CSJ: 0196-03-205, 0442-02-118, 0442-02-132, 1068-04-099, 1068-04-116, 0009-11-226; Dallas County, Dallas District

re: No Effect

FROM: Barbara J Hickman **DATE:** 28 March 2012

SUBJECT: Internal review under the Programmatic Agreement (PA) Among the Federal Highway Administration, Texas State Historic Preservation Office, Advisory Council on Historic Preservation, and the Texas Department of Transportation; and the Memorandum of Understanding (MOU) Between the Texas Historical Commission and the Texas Department of Transportation

The above referenced proposed project would use federal funds to improve Interstate Highway (IH) 30 and IH35E near downtown Dallas in Dallas County, Texas, a distance of approximately 5 miles. In accordance with the terms of the PA and MOU, we are initiating documentation for internal review of this project.

The proposed improvements are referred to collectively as the "Dallas Horseshoe Project," and include the replacement of the IH 30 and IH 35E bridge structures that cross the Trinity River. The proposed project would allow replacement of the IH 30 and IH 35E bridge structures crossing the Dallas Floodway, reconstruction of the IH 30/IH 35E interchange, locally known as the "Mixmaster," and associated roadways, frontage roads, ramps, direct connectors, and collector distributor roads. The proposed bicycle and pedestrian facilities along IH 30 would potentially connect to this trail network (specifically the Coombs Creek Trail and proposed Trinity Levee Trail near or at Beckley Avenue). The proposed project would require the acquisition of right-of-way (ROW), a joint-use agreement, and 11 displacements including two single family residences, seven commercial buildings, and two billboards. It is anticipated that approximately 55 parcels would be associated with the ROW acquisitions for the proposed project.

The Dallas Horseshoe Project was originally part of a larger project. The Dallas Horseshoe Project is a breakout of Project Pegasus (CSJ (CSJ 0009-11-181, 1068-04-116), 1068-04-116) and focuses primarily on the replacement of the IH 30 and IH 35E bridge structures, which require replacement because of deteriorating condition. Project Pegasus proposed the reconstruction of IH 30 from Sylvan Avenue on the west to IH 45, IH 35E from 8th Street to Empire Central Drive, and SH 183 from IH 35E to Empire Central. Project Pegasus encompassed all cross streets and associated direct connections and access ramps, including IH 30 interchanges with IH 45, and IH 35E; and the IH 35E interchanges with Spur 366 (Woodall Rodgers Freeway), Dallas North Tollway (DNT), and SH 183. In addition to the highway improvements, Project Pegasus proposed improvements to High Occupancy Vehicle (HOV) lanes, Intelligent Transportation Systems (ITS), and bicycle-pedestrian improvements for streets crossing the highways. The total length of Project Pegasus was approximately 11 miles. Project Pegasus received a Finding of No Significant Impact (FONSI) from FHWA in 2005.

Geo-Marine, Inc. submitted a background study and reconnaissance report for the Pegasus project to TxDOT in 2003 entitled, *Assessing the Potential for Intact Archeological Deposits within the Pegasus Project: Reconstruction of the IH-30/IH-35E Corridor (Canyon/Mixmaster/Lower Stemmons) in Dallas*

County, Texas by Melissa Green and Duane Peter. In the report, Green and Peter argued that the potential for encountering intact prehistoric archeological deposits was very low. However, GMI saw more potential for buried historic features sealed under fill in the APE. They recommend avoidance of the historic Houston Street Viaduct, historic site 41DL377, with monitoring near 41DL377. THC concurred with GMI's recommendations on 3 July 2003. TxDOT made a commitment to have GMI present during earthmoving activities. Section 106 consultation with federally recognized Native American tribes with a demonstrated historic interest in the area was completed on 16 January 2004. No objections or expressions of concern were received within the comment period.

The area of potential effects comprises the existing ROW within the project limits and any areas of new ROW or easements. The APE extends to a maximum depth below the modern ground surface. Thus the APE for archeological resources would cover a 4.87 mile alignment with an average width of approximately 150 feet. The existing ROW consists of a total of 95.2 acres, while the proposed new ROW has a total area of 108.24 acres. The maximum vertical APE would extend between 75 to 85 feet deep for the proposed drill shaft locations, based on current engineering practices.

On 22 December 2011, Barbara Hickman (TxDOT ENV) and Melissa Green (GMI) discussed plans for a subsurface investigation of the project area with Michelle Dippel and Lupe Pettit of HNTB Corporation in a conference call. Ms. Green stated that based on previous work she completed at the depository building, there could be items within 10 feet of the surface and that there is potential for historic archeological resources along the bluff edge. However, because there has been extensive disturbance within these areas Ms. Green suggested looking at geotechnical borings to determine if intensive survey (backhoe trenching) was needed for the Horseshoe Project.

Ms. Green stated that she would need the geotechnical borings map and proposed design files from HNTB to superimpose on historical maps in order to help determine which borings to analyze. After analyzing the borings, GMI and TxDOT would determine whether backhoe trenching was warranted.

The attached report details the geotechnical study conducted by GMI during February 2012. Examination of the core samples indicated that the cores reflected a river channel or near-channel environment rather than deposition associated with terracing above the river. Indeed the Trinity River is known to have several meander channels within the project area as well as the twentieth century artificial relocation of the river further south of downtown Dallas (the current "floodway"). The scattered fragments of nineteenth and twentieth century concrete and brick suggest discarded debris rather than indicating historic-age intact cultural deposits. It is likely that the historically mapped structures lie outside the Horseshoe Project APE.

Pursuant to Stipulation VI of the PA-TU, TxDOT finds that the APE does not contain archeological historic properties (36 CFR 800.16(l)), and thus the proposed undertaking would not affect archeological historic properties. The project does not merit further field investigations. Project planning can also proceed, in compliance with 13 TAC 26.20(2) and 43 TAC 2.24(f)(1)(C) of the MOU. 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 and MOU.

The proposed project can proceed to construction.

Approved by _____ Date March 29, 2012
For FHWA and TxDOT
Attachments

Original for 850: Lindsey Kimmitt, ENV PM
Cc w/ attachments: PA project file; ETS Data Entry; Robert Hall, Dallas District Environmental Coordinator
Cc w/out attachments: Barbara Hickman, ENV Archeologist

GMI
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14 March 2012

Ms. Barbara Hickman, Staff Archeologist
Archeological Studies Program
TxDOT–Environmental Affairs Division (ENV)
125 E. 11th Street
Austin, Texas 78701

Re: IH-30 and IH-35E—Dallas Horseshoe Project, Dallas District, Dallas County, Texas (CSJs: 0196-03-205, 0442-02-118, 0442-02-132, 1068-04-099, 1068-04-116, 0009-11-226).

Dear Barbara,

The Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT) propose improvements to Interstate (IH)-30 and IH-35E near downtown Dallas in Dallas County, Texas, along a stretch of approximately 5 miles as displayed in Figure 1. The proposed improvements, collectively referred to as the "Dallas Horseshoe Project," include the replacement of the IH-30 bridge structures that cross the Trinity River as well as the reconstruction of the IH-30/IH-35E interchange, locally known as the "Mixmaster," and associated roadways, frontage roads, ramps, direct connectors, and collector distributor roads. The Dallas Horseshoe Project is a breakout project of "Project Pegasus," an 11-mile-long project. Project Pegasus received a Finding of No Significant Impact from FHWA in 2005.

During the preparation of the Project Pegasus environmental assessment, Geo-Marine, Inc. (GMI), prepared an archeological background investigation titled *Assessing the Potential for Intact Archeological Deposits within the Pegasus Project: Reconstruction of the IH-30/IH-35E Corridor (Canyon/Mixmaster/Lower Stemmons) in Dallas County, Texas* (Green and Peter 2003). The report included a thorough background review that encompassed the Dallas Horseshoe Project. The report recommended no archeological investigations within the Trinity River floodplain but stated that intact historical deposits may exist on the terrace or bluff edges above the floodplain, which are buried under fill. GMI recommended archeological monitoring at these locations. In 2003, TxDOT-ENV and the Texas Historical Commission (THC) concurred with this recommendation. To date, a Project Coordination Request for archeological studies and analysis of geotechnical cores have been completed for the Dallas Horseshoe Project.

Due to the proximity of the Mixmaster to the historic landscape prior to being predominantly leveled by modern industrial development (Figure 2; Appendix A), GMI proposed a methodology to determine whether backhoe trenching would be warranted prior to construction of the proposed project. TxDOT-ENV agreed with this approach during a December 22, 2011, coordination call between TxDOT consultants and TxDOT-ENV. During the call, the following process was identified: (1) based on the proposed design and historic maps, GMI would determine which geotechnical core samples would need to be analyzed; (2) GMI would analyze the geotechnical core samples identified; (3) based on the geotechnical core sample analysis, GMI would determine if an intensive survey (backhoe trenching) is recommended; and (4) GMI would hold a conference call with TxDOT-ENV to discuss final determinations.

This letter summarizes the results of the analysis of geotechnical core samples extracted from the Mixmaster project area (northeast portion of the Dallas Horseshoe Project) as shown in Figure 3.

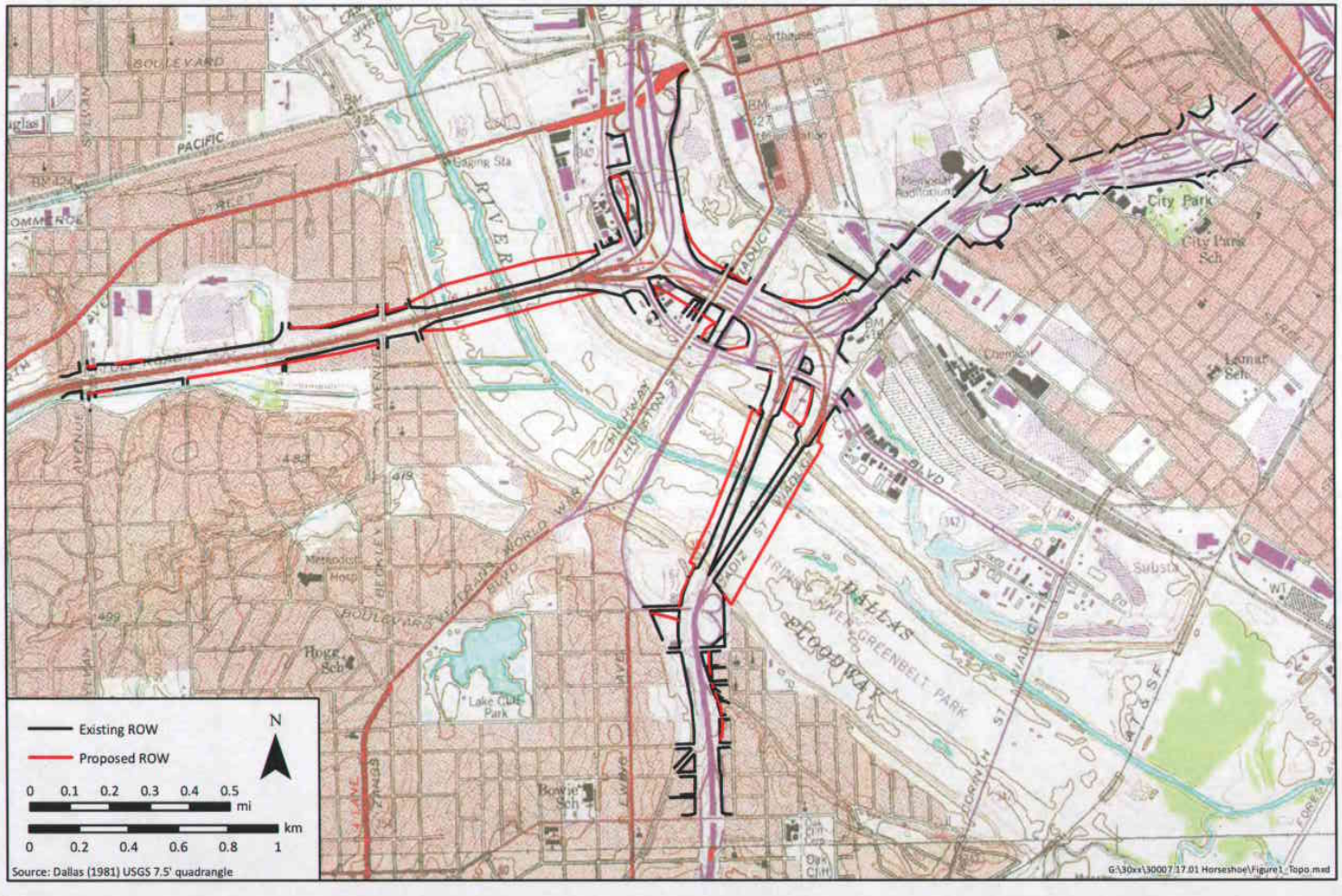


Figure 1. Topographic map of the project area.

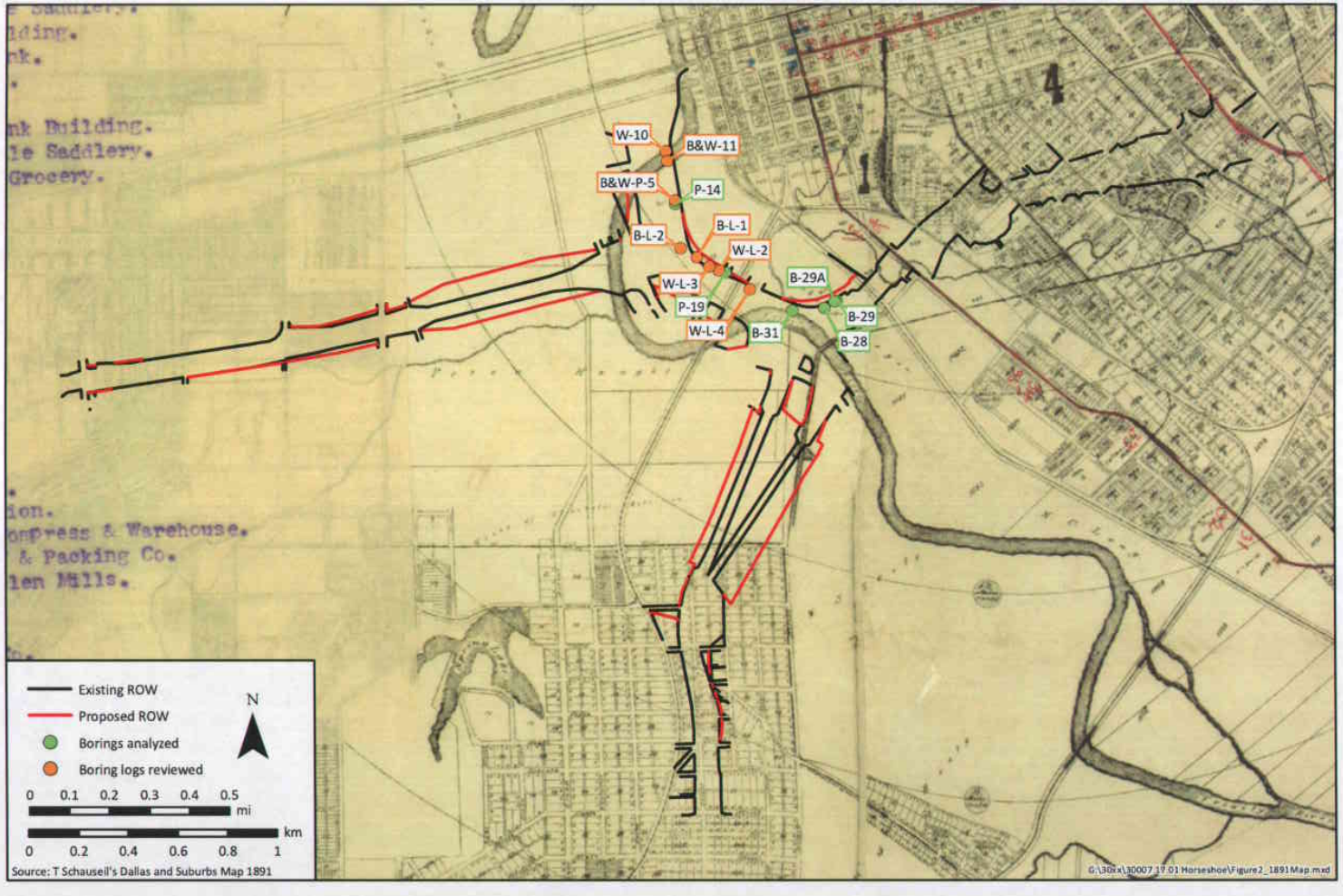


Figure 2. Historic 1891 Schauseil *Dallas and Suburbs* map, with plotted locations of the project area and boring locations.

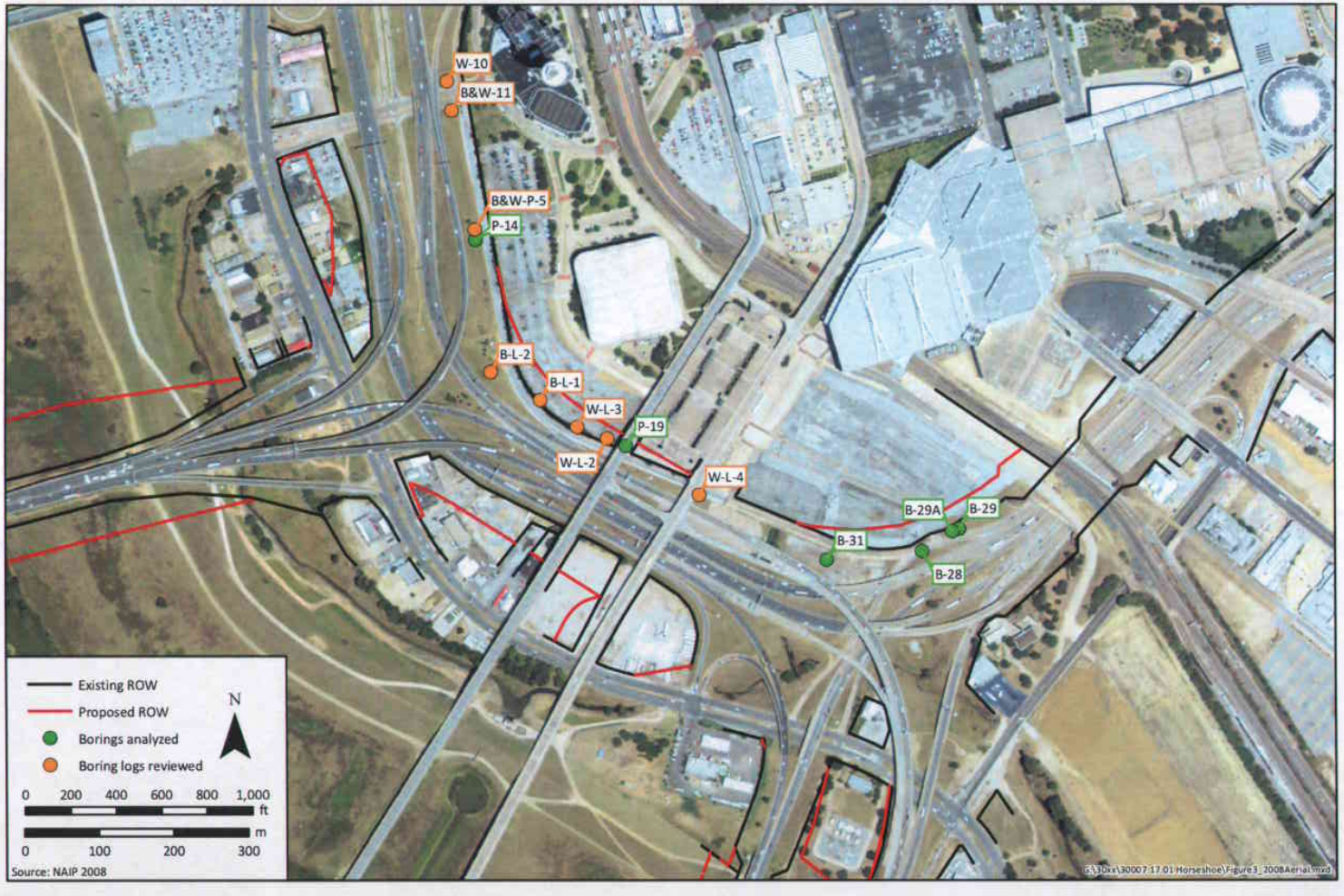


Figure 3. Aerial imagery of the project area and boring locations.

Methodology

Prior to analysis of the geotechnical core samples, the proposed project was superimposed on a series of historic maps to determine its association with the historic bluff or terrace edge. Based on the data overlay, it was assumed that the Dallas Horseshoe Project is located within what has always been known as the floodplain of the Trinity River. Analysis of the core samples would be used to confirm this assumption. In total, 12 geotechnical core samples (B-29, B-31, P-14, P-19, B-L-1, B-L-2, B&W-P-5, B&W-11, W-10, W-L-2, W-L-3, W-L-4) were identified for geoarcheological analysis. Of these 12, six were considered "historic" samples (previously collected) and were not available for geoarcheological analysis, though the geotechnical logs were available for review. Two additional cores, P-29A and B-28, were also available for analysis for a total of 14 core samples or logs reviewed.

On February 13 and 22, 2012, Principal Investigator Melissa Green observed the collection of five (B-29A, B-28, B-31, P-19 and P-14) of the six cores as part of this investigation (Photos 1–4). Each sample was taken at 1 to 2-foot (ft) intervals and placed in plastic bags for geoarcheological analysis. The results of this analysis are presented in detail below. Photographs documenting the drilling process and each sample collected (minimal depths 10 feet [ft] to maximum depths of 25 ft) were taken. The samples were then boxed and sent to the drillers' warehouse until February 29, 2012, when they were closely examined.

Geoarcheological Core Samples

On February 29, 2012, GMI Project Geoarcheologist Ben Fullerton examined six geotechnical core samples (B-28, B-29, B-29A, B-31, P-14, and P-19) that were excavated in association with the proposed Dallas Horseshoe Project (see Figures 1 and 3). The goal of this geoarcheological examination was to determine the potential of these deposits to contain intact archeological materials along the historic bluff. For the current analysis, sediments from each bag excavated between the ground surface and the onset of gleyed deposits or excavation to termination depth (305 centimeters below surface [cmbs]) in samples B-29A, P-14, and P-19), whichever came first, were sampled and described according to Schoeneberger et al. 2002. The results of this analysis are presented in Table 1.

In addition, drilling logs from six previous geotechnical core samples excavated by TxDOT in 2009 were also reviewed for comparative purposes. These core samples were excavated along the same proposed Dallas Horseshoe Project route (see Figure 2) and fill in the gaps between the six core samples analyzed during the current project. The sediments from the 2009 cores were not available to GMI to examine and were originally described at a coarser scale framed for engineering purposes. As a result, comparisons between the 2009 and 2012 borings are also conducted at a coarse scale.

The upper portion of each of the six 2012 core samples consisted of historic and modern construction fill ranging from 61 cmbs in B-31 to 210 cmbs in B-28 (Photo 5). The fill material consisted of a mixture of asphalt, concrete, bricks fragments, gravels, and varying sediment textures. Below these depths, intact sediments were found to be present; however, the sediments appear to have been deposited in a highly active depositional environment that would not have been conducive to the formation of stabile surfaces prior to modern levee control of the Trinity River. For example, the deposits encountered in core samples B-28, B-29, and B-29A are

Photo 1. Collection of core sample P-14.

consistent with near-channel deposits. According to an 1891 *Dallas and Suburbs* map (Schauseil 1891), the locations at which these core samples were excavated appear to have at one point been in proximity to the peak of a historic meander of the Trinity River (see Figure 2). The three core samples contained predominantly fine to coarse yellowish brown sandy deposits with gravels and limestone bedrock fragments underlain by gleyed deposits (see Table 1). Thus, it is likely that the areas where B-28, B-29, and B-29A were excavated were once located within the channel or on a natural levee immediately adjacent to the channel. It is also possible that these areas were located on a sand bar on the interior of a meander at some point prior to when the survey for the 1891 *Dallas and Suburbs* map was conducted. No archeological materials or intact buried surfaces were found within the core sediments sampled.

The deposits encountered in core samples B-31, P-14, and P-19 are consistent with floodplain deposits away from the active channel. For example, below historic and modern fill deposits, the soil observed in these three core samples consisted of very compact very dark grayish brown, yellowish brown, and brown clay deposits with redoximorphic characteristics and calcium

Photo 2. Removal of extracted core from drill tube at P-19.

Photo 3. Extracted 4–6- and 6–8-ft core samples from P-19 prior to wrapping.

Photo 4. Labeling extracted core sections from B-29A.

carbonate masses and concretions (see Table 1). In core samples P-14 and P-19, these deposits continued to 305 cmbs, at which point excavations were ended, and in B-31 continued to 762 cmbs, at which point gleyed deposits were encountered. Given the location of B-31 at the peak of the meander on the 1891 *Dallas and Suburbs* map and the proximity of B-31 to B-29 and B-29A, which both resemble near-channel deposits, deposits resembling a low-energy floodplain environment are not necessarily expected. However, given the dynamic nature of high-order river systems such as the Trinity River, it is difficult to explain microtopographic variations without a finer-scale spatial resolution than was available for the current project. Although the B-31 core location is shown on the meander of the earliest historic map available, earlier channel locations are not known. The location of these core samples within the active Trinity River floodplain suggests that the sediments accumulated in a constantly aggrading depositional environment where stabile surfaces could not develop. The presence of redoximorphic features throughout the profiles indicates constant rewetting of the matrix, a characteristic that is not conducive to the preservation of intact archeological materials. Again, no archeological materials or buried surfaces were found within the core sediments sampled.

The six 2009 geotechnical core samples were each located west of B-31 (see Figures 2 and 3), and a review of the drilling logs tends to support the above-stated conclusions that this area was aggraded within a highly active floodplain environment. Dark brown clay was found to extend to approximately 610 cmbs in each of the borings. The clay was then underlain by increasingly more coarse sediments, primarily sand and gravels, until the onset of shale bedrock. Given the direct contact of sand and gravels with Cretaceous-age shale bedrock, it is likely that the sand and gravels are Pleistocene in age and that the overlying clay was deposited primarily in the Holocene when the energy of floodplain deposition slowed. None of the 2009 core samples was excavated near core samples B-28, B-29, and B-29A, which were described above as near-channel deposits.

Table 1
Summary of Core Samples Analyzed from the Dallas Horseshoe Project

Core Sample Designation	Depth (cmbs)	Description
B-28	0–7	Asphalt and limestone gravels (Fill material)
	7–15	10YR* 5/6 coarse sand mixed with limestone gravels (Fill material)
	15–30	10YR 4/3 sandy loam mixed with limestone gravels (Fill material)
	30–60	10YR 3/3 clay mixed with 7.5YR 4/4 sand and 10YR 7/3 silt pockets, asphalt fragments and 2.5YR 4/6 brick fragments (Fill material)
	60–80	7.5YR 4/6 clay with small limestone fragments (Fill material)
	80–90	7.5YR 5/6 friable sandy clay (Fill material)
	90–137	10YR 4/4 sandy clay mixed with 10YR 3/2 clay (Fill material)
	137–210	10YR 5/6 sandy loam with few asphalt fragments (Fill material)
	210–220	10YR 5/6 sandy loam mixed with 10YR 4/3 and 7/5YR 4/3 sand
	220–244	10YR 5/6 sandy loam with 10YR 8/3 silt pockets and abundant gravels
	244–305	10YR 4/4 and 10YR 5/6 mixed, coarse, loose sandy matrix mixed with limestone gravels and natural chert fragments
	305–425	10YR 4/6 sandy loam with abundant limestone gravels and limestone bedrock fragments
	425–456	Gley 1 4/10GY
	456–1067	Gleyed deposits
B-29	0–16	10YR 3/2 loam with abundant limestone fragments and organic matter (Fill material)
	16–30	10YR 4/2 compact loam with limestone fragments and small asphalt fragments; small brick fragments (Fill material)
	30–92	10YR 3/2 clay with 10YR 5/3, 10YR 6/6, and 7.5YR 4/6 mottles (Fill material)
	92–137	10YR 3/2 clay with less prominent mottles of 10YR 5/3 and 7.5YR 4/6; very small limestone fragments and small amounts of organic matter (Fill material)
	137–229	10YR 3/2 clay mixed with 10YR5/4 clay and 10YR 8/2 clay
	229–274	10YR 6/6 fine compact sand; no gravels observed
	274–365	10YR 5/6 coarse sandy loam with small limestone fragments
	365–411	10YR 4/4 coarse sand with abundant (60–70 percent) polished limestone gravels and fragments and polished quartz gravels
	411–458	10YR 4/4 moist coarse sand with abundant fragmented polished limestone gravels and small hematite nodules
	458–488	Gley 1 5/N
	+488	Gleyed deposits

Table 1 (cont'd)

Core Sample Designation	Depth (cmbs)	Description
B-29A	0–14	10YR 3/2 clay loam mixed with 10YR 7/3 with asphalt fragments, polished limestone gravels, and organic matter (Fill material)
	14–50	10YR 3/2 clay mixed with 10YR 4/6 clay with limestone gravels and organic matter; unidentified modern iron fragment noted (Fill material)
	50–55	10YR 4/6 coarse sand mixed with limestone bedrock fragments (Fill material)
	55–96	10YR 4/3 silty clay with 5YR 5/6, 7/5YR 4/4, and 10YR 5/6 mottles and 10YR 6/1 compact silt pockets; limestone fragments, concrete chunks, asphalt fragments, and brick fragments (Fill material)
	96–170	10YR 3/2 clay with 7.5YR 3/4, 10YR 8/1, and 10YR 5/5 mottles
	170–275	10YR 5/4 and 10YR 6/6 compact fine sand
	275–305	10YR 6/6 fine sand mixed with 10YR 7/4 silt
	+305	Not excavated
B-31	0–8	Wooden stake
	8–30	10YR 3/2 clay with 7.5YR 4/6 and 10YR 7/2 mottles with organic matter, small asphalt fragments, and small polished limestone gravels (Fill material)
	30–35	10YR 4/3 fine sand (Fill material)
	35–61	10YR 3/2 clay with 7.5YR 4/6 and 10YR 7/2 mottles with organic matter, small asphalt fragments, and small polished limestone gravels (Fill material)
	61–91	10YR 3/1 clay with 7.5YR 3/4 coatings on root pores; many calcium carbonate nodules
	91–121	Missing
	121–152	10YR 3/1 clay with many slickensides and few calcium carbonate nodules
	152–183	Missing
	183–213	10YR 3/2 clay with 10YR 4/4 mottles; few snail shell fragments and organic matter
	213–304	10YR 3/2 clay with 7/5YR 4/4 mottles
	304–427	Missing
	427–457	10YR 4/3 clay with 10YR 5/6 mottles
	457–579	Missing
	579–610	10YR 5/4 clay with 10YR 5/3, 7.5YR 4/6, 10YR 7/1, and 10YR 2/2 mottles
	610–732	Missing
	732–762	10YR 5/4 clay with 10YR 5/3, 7.5YR 4/6, 10YR 7/1, and 10YR 2/2 mottles
	+762	Gleyed deposits

Table 1 (cont'd)

Core Sample Designation	Depth (cmbs)	Description
P-14	0–10	10YR 2/4 clay loam with organic matter
	10–76	10YR 4/2 clay with 10YR 6/8 and 10YR 7/2 mottles and organic matter (Fill material)
	76–107	10YR 2.1 compact clay with calcium carbonate nodules (Fill material)
	107–119	10YR 4/6 and 10YR 7/1 very compact, friable, sandy clay (Fill material)
	119–149	10YR 4/3 clay with 10YR 3/1 mottles
	149–305	10YR 5/4 clay with 10YR 3/2 and 7.5YR 4/4 mottles with calcium carbonate nodules
	+305	Not excavated
P-19	0–13	Missing
	13–20	4/3 sandy clay with 10YR 4/2 mottles; limestone and asphalt fragments (Fill material)
	20–32	10YR 5/6 coarse sandy clay loam (Fill material)
	32–50	10YR 3/3 sandy clay mixed with 10YR 3/1clay with 7.5YR 4/6 gritty pocket (likely a brick fragment) (Fill material)
	50–75	10YR 4/3 sandy clay with 10YR 7/2 silt coatings on concrete fragments (Fill material)
	75–121	10YR 2/1 moist clay with few 7.5YR 4/4 mottles
	121–213	10YR 3/1 clay
	213–305	2.5Y 3/2 clay with slickensides and few calcium carbonate masses
	+305	Not excavated

Source: Geoarcheological analysis February 29, 2012
**Munsell Soil Color Charts* 2000: Y=Yellow, R=Red, N=Neutral'

Photo 5. Example of fill material in B-28 core sample. Note concrete and brick fragments observed in the right end of the sample.

Conclusion

The proximity of the six 2009 and six 2012 geotechnical core samples to old meanders of the Trinity River and considerable distance from the historic structures visible on historic maps and aerial images suggests a low probability for the presence of intact cultural materials. The deposits encountered in the six 2012 core samples confirmed that these areas are in a low-lying setting within a dynamic depositional environment that would not have been attractive for occupations in the past. Intact archeological materials are more likely to be present on the terraces to the northeast, outside of the project area. No historic properties as defined under 36 CFR 60.4, 13 TAC 26.5(6), 13 TAC 26.5(32), and 13 TAC 26.8 were identified during the geotechnical core sample analysis within the current project. Consequently, and in accordance with 36 CFR 800.4(d)(2) and 13 TAC 26.2, it is recommended that no additional archeological investigations are warranted for the Dallas Horseshoe Project.

Sincerely,

Melissa M. Green
Principal Investigator

GMI Ref #: 30007.17.01

REFERENCES CITED

Green, M. M., and D. E. Peter

2003 *Assessing the Potential for Intact Archeological Deposits within the Pegasus Project: Reconstruction of the IH-30/IH-35E Corridor (Canyon/Mixmaster/Lower Stemmons) in Dallas County, Texas*. Miscellaneous Reports of Investigations No. 291. Geo-Marine- Inc., Plano, Texas.

Munsell Soil Color Charts

2000 Determination of Soil Color. GretagMacbeth, Windsor, New York.

Schauseil, T.

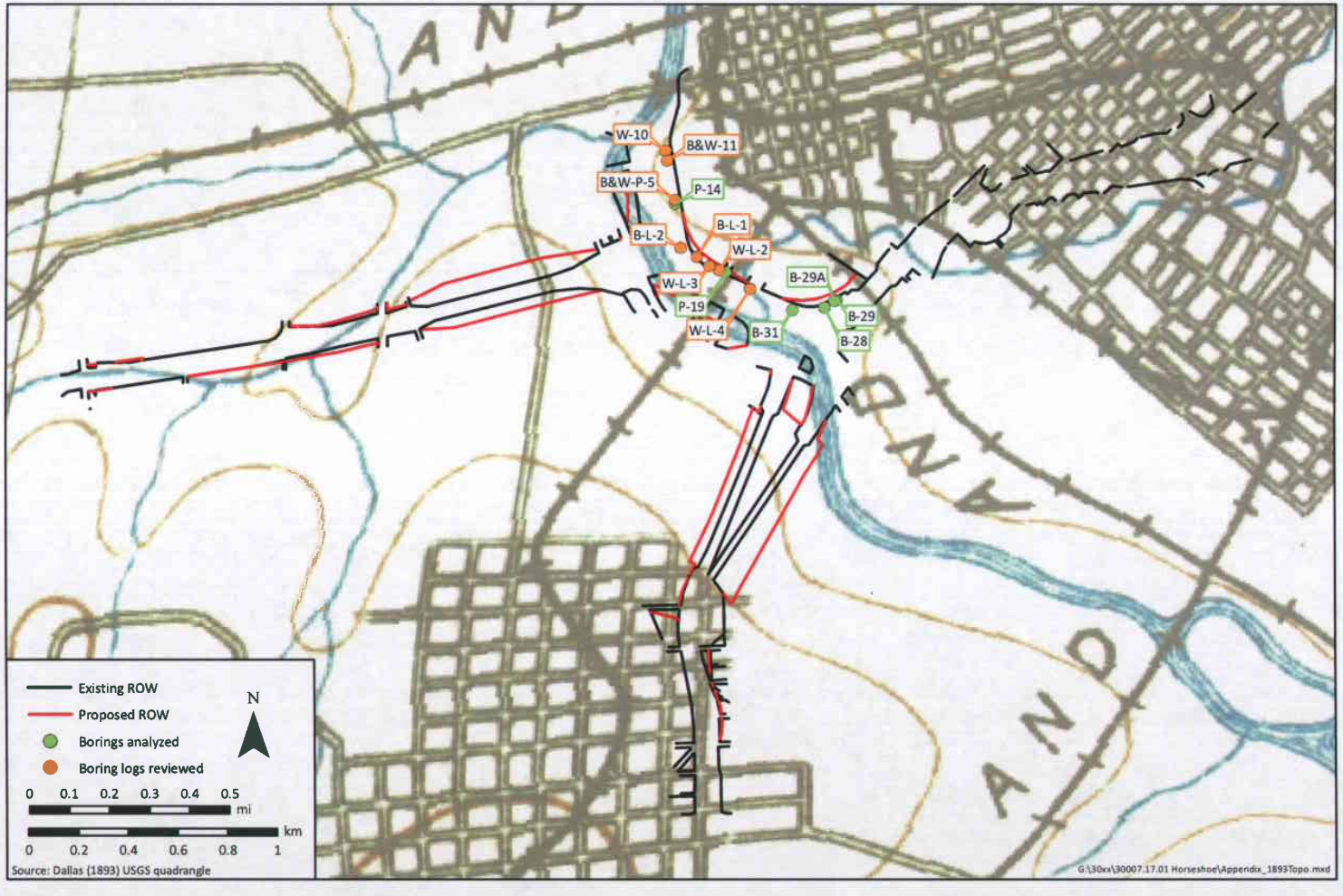
1891 *Official Map of the City of Dallas and Suburbs, revised.* J. P. Murphy and C. Bolanz and Investment Bankers, Dallas, Texas.

Schoeneberger, P. J., D. A. Wysocki, E. C. Benham, and W. D. Broderson

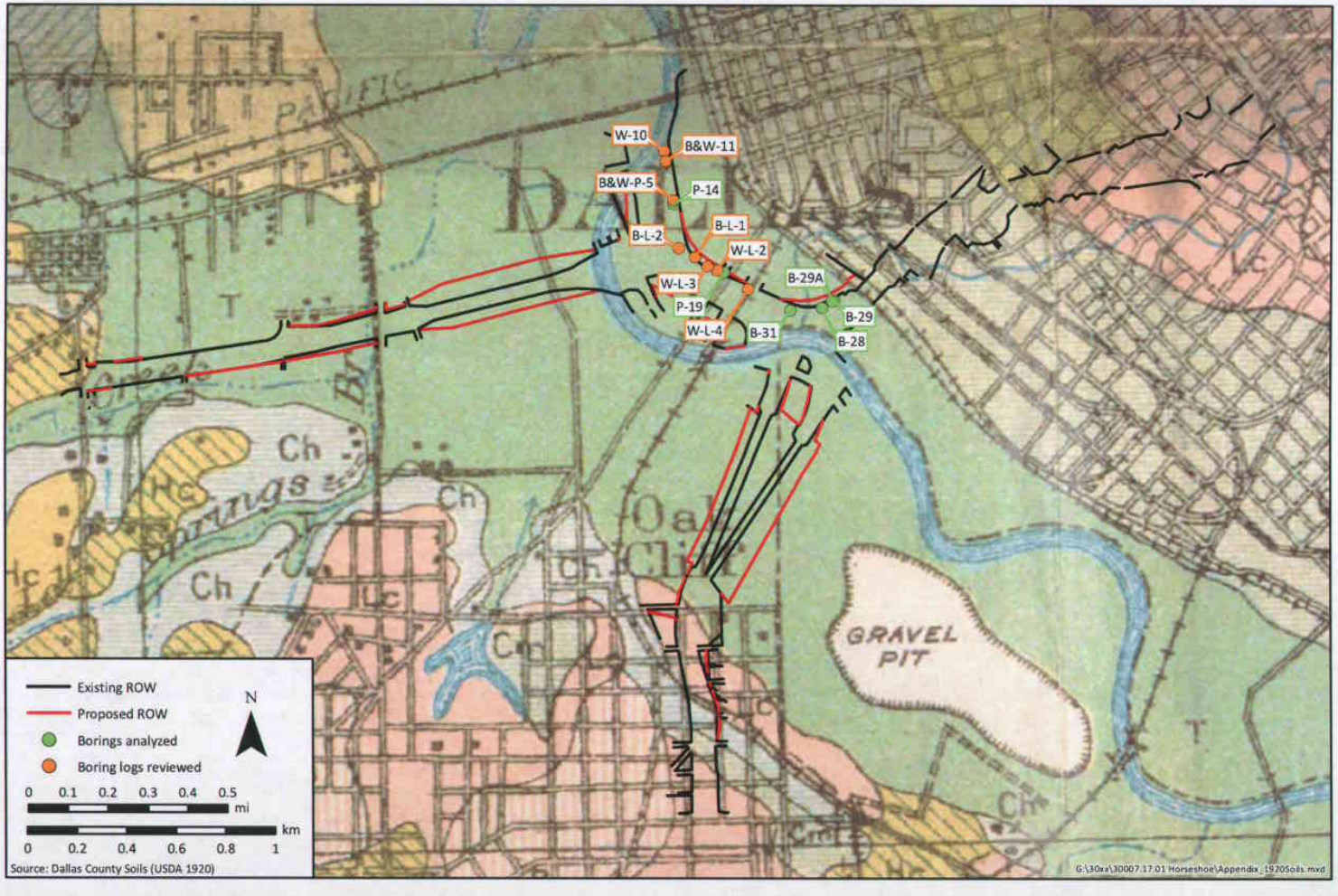
2002 *Field Book for Describing and Sampling Soils*, Version 2.0. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

APPENDIX A

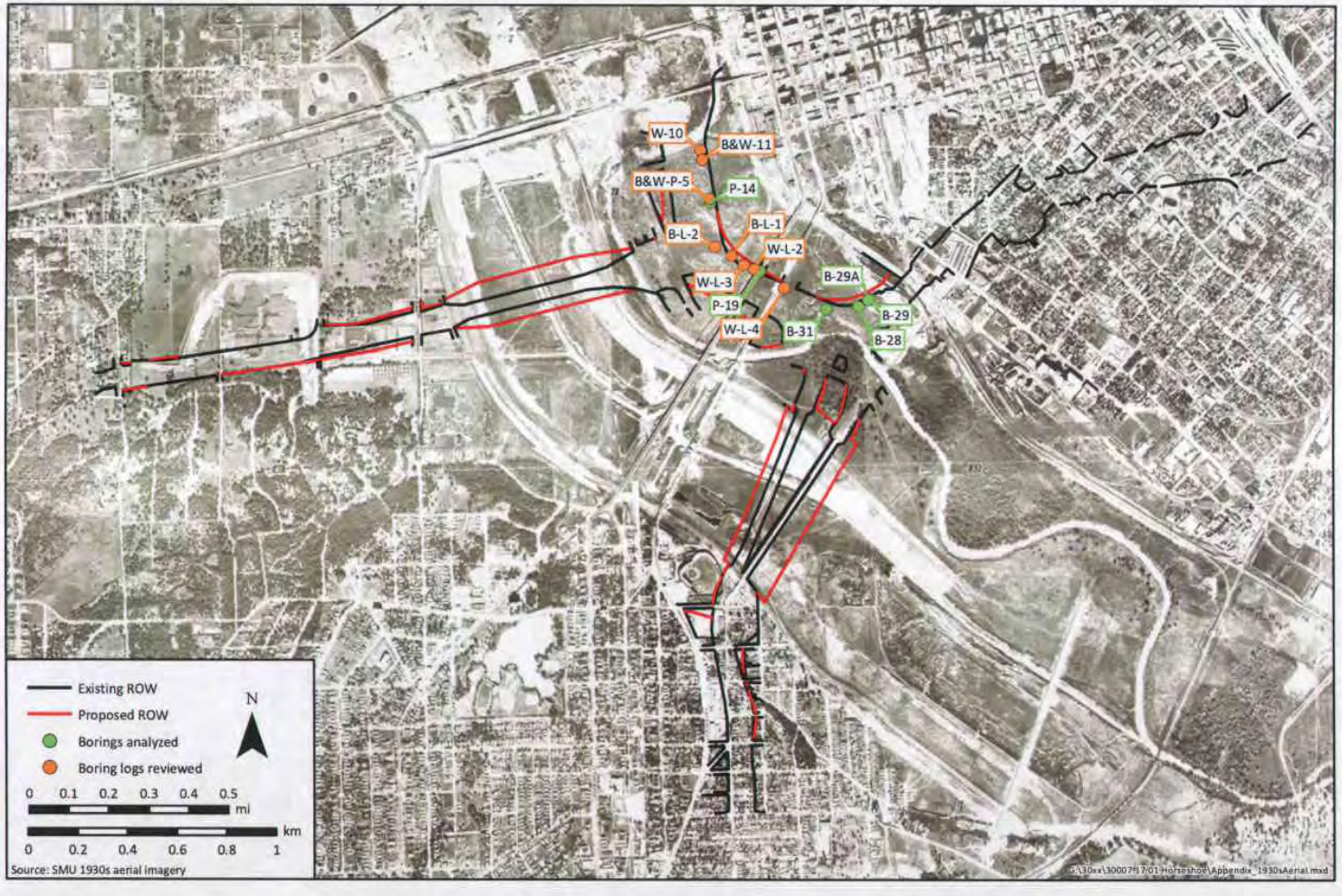
Historic Maps of the Dallas Horse Project Area



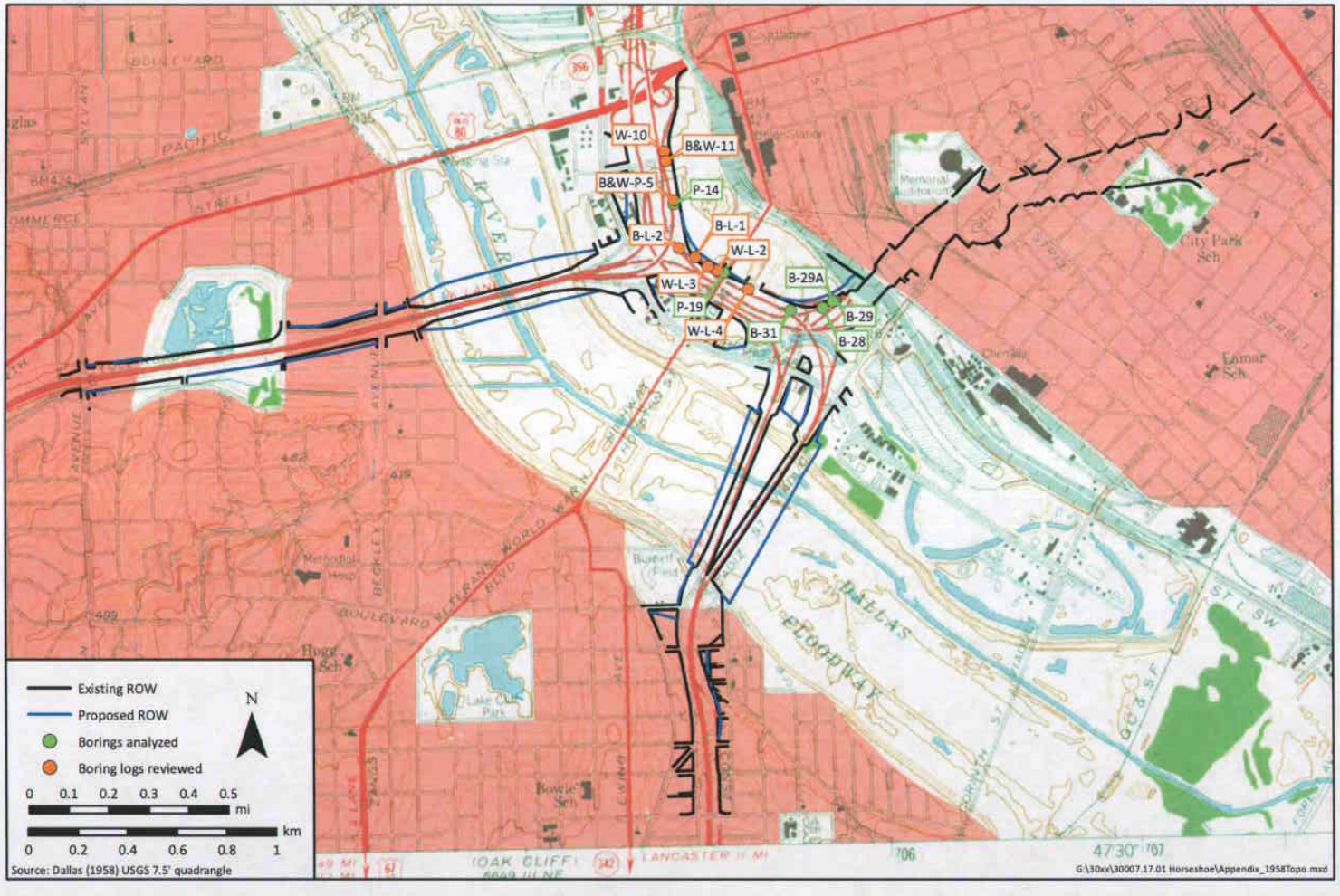
1893 topographic map.



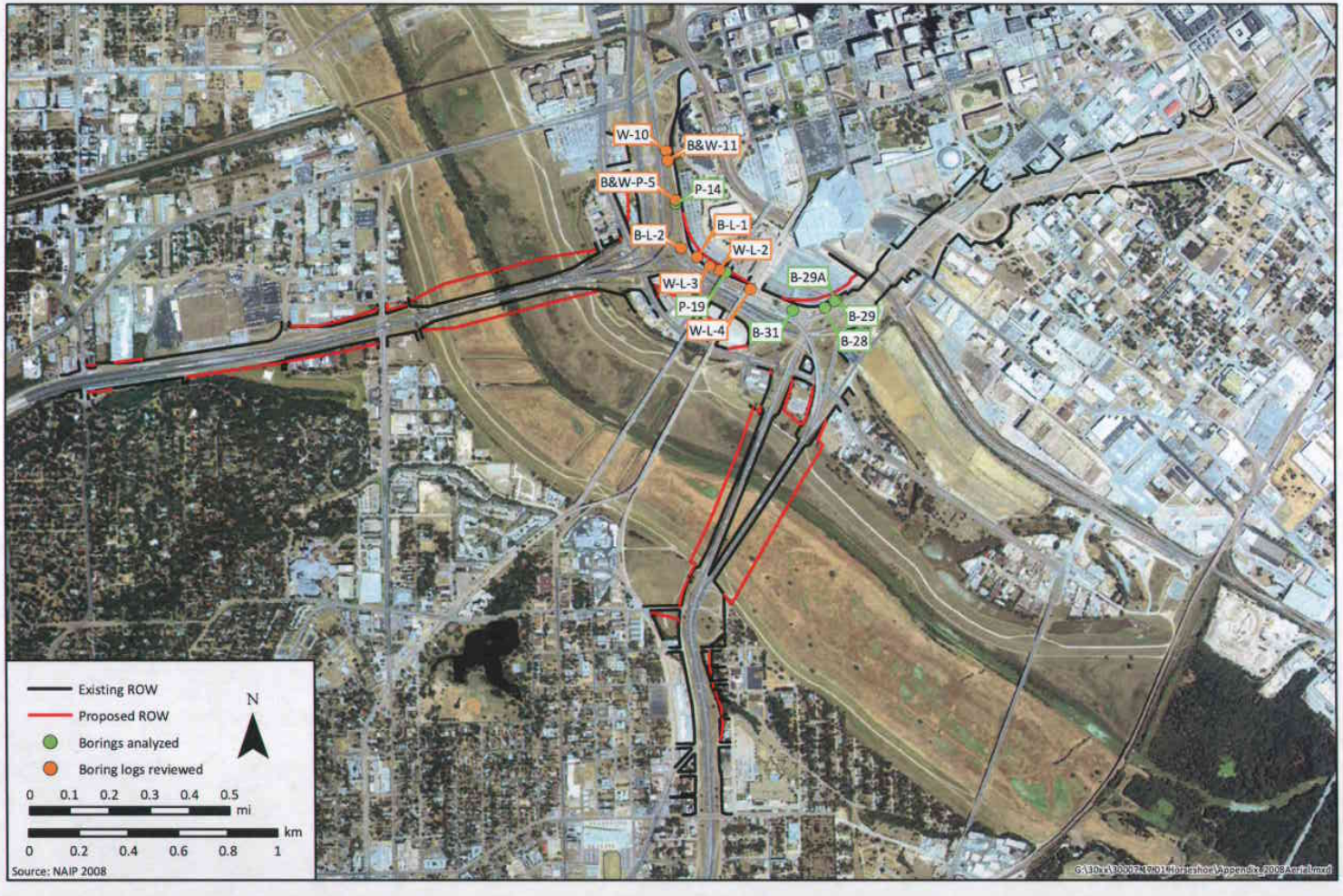
Dallas County Soils 1920



1930s aerial imagery.



1958 USGS topographic map.



2008 aerial imagery.

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May 1, 2012

Stirling J. Robertson, Ph.D.
Biological Resources Management Branch
Environmental Affairs Division
Texas Department of Transportation
125 East 11th Street
Austin, TX 78701-2483

RE: Draft Environmental Assessment for Dallas Horseshoe Project: IH 30 and IH 35E at Trinity River, Dallas County (CSJs 0196-03-205, 0442-02-118, 0442-02-132, 1068-04-099, 1068-04-116, and 0009-11-226)

Dear Dr. Robertson:

The Texas Parks and Wildlife Department (TPWD) has reviewed the Draft Environmental Assessment (EA) for the project referenced above. The proposed project involves replacement of the IH 30 and IH35E bridges over the Trinity River/Dallas Floodway and the reconstruction of the IH 30/IH 35E interchange, locally known as the "Mixmaster". The project would address flow and congestion problems through reconfiguring portions of the facility with improvements such as adding lanes and bike paths, creating continuous frontage roads, adding collector distributor roads, utilizing direct connectors, and relocating ramps. The existing 252-acre right-of-way (ROW) for the project would be expanded by 17.6 acres for a total of 269.6 acres.

State-listed Species

No adverse impacts are anticipated for state-listed species for Dallas County, other than the mussels discussed below.

TxDOT conducted a Phase I habitat survey and a Phase II presence/absence survey for mussels in January 2012 which revealed occurrences of freshwater mussels including the state-threatened Texas pigtoe (*Fusconaia askewi*) within the Trinity River at the IH 35E bridge location. No state-threatened species were observed at the IH 30 bridge location, however the draft report (*Habitat Assessment and Presence/Absence Survey for Protected Mollusks in the Trinity River at IH 30 and IH 35E, City of Dallas, Dallas County*) stated that additional sampling at each site would likely yield more species at both sites, including the state-listed and rare species for Dallas County.

The EA indicates that measures would be taken to prevent demolition and construction materials from falling into the Trinity River. Because this project is a contracted design-build project, the EA also indicates that any temporary or permanent fill or work occurring directly in this water would require coordination

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with TxDOT. The EA indicates that mitigation for construction impacts may require relocation of mussels to an approved location outside the project area. If mussels are relocated, then monitoring would be required over a five year period and a monitoring plan would be submitted to TxDOT for approval to document the survival rate of relocated mussels throughout the five-year monitoring period.

Recommendation: TPWD concurs with the EA and the mussel survey report and recommends that relocation of state-listed mussels be provided because of anticipated turbidity and sedimentation threats during construction. TPWD also recommends mussels relocation where temporary or permanent fill material would be placed within the Trinity River for the project. TPWD recommends prior coordination with TxDOT, as well as TPWD, for determining the appropriate relocation strategy and monitoring plan.

Recommendation: In addition to relocation, TPWD recommends the use of best management practices (BMPs) to minimize impacts on mussels as well as fish species which are the mussel larval host. BMPs would include measures such as: 1) minimizing direct impact to the river through a minimal footprint, 2) minimizing construction during fish and mussel spawning periods, and 3) use of double silt fences and doubling soil stabilization measures along the banks to avoid increasing turbidity in the creek.

On November 5, 2009, the Texas Parks and Wildlife Commission acted to place 15 native freshwater mussel species on the state-threatened species list. Within Dallas County, the Louisiana pigtoe (*Pleurobema riddellii*) and Texas heelsplitter (*Potamilus amphichaenus*) are state-listed threatened. Both have been petitioned for federal listing, though the USFWS is conducting a 12-month finding and the status has not been finalized. Via the EA and the mussel survey report for this project, TxDOT revealed occurrences of the state-threatened Texas pigtoe, which currently is not identified on the TPWD Annotated County List of Rare Species for Dallas County. As a result of these findings, TPWD will add the Texas pigtoe to the Dallas County list.

Mature Trees and Riparian Vegetation

The project area is highly urbanized, and the Dallas Floodway is routinely maintained by mowing and selective woody vegetation removal. Impacts to vegetation primarily would occur within the Dallas Floodway including a narrow wooded riparian corridor, maintained grasslands, herbaceous wetlands, and scattered large trees. The EA indicates the proposed project would impact 0.86 acre of riparian woodland habitat, 16 large trees, 0.34 acre wetlands, and 14.23 acres temporary impact to herbaceous wetlands.

Recommendation: TPWD recommends that TxDOT provide replacement trees and riparian vegetation for impacts associated with this project through direct plantings or in-lieu fee mitigation to support tree planting on properties

for which ROW was obtained and trees were removed or for riparian restoration work at a local park or preserve.

If you have any questions, please contact me at (903) 322-5001.

Sincerely,

Karen B. Hardin
Wildlife Habitat Assessment Program
Wildlife Division

kbh/ERCS-183

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U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard
Hale Boggs Federal Building

500 Poydras Street, Room 1313
New Orleans, LA 70130-3310
Staff Symbol: dpb
Phone: (504) 671-2128
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D8DPBALL@uscg.mil

16591C
April 11, 2012

MEMORANDUM

From: David M. Frank
CGD EIGHT (dpb)

To: Hector Garcia, Assistant Bridge Engineer
Federal Highway Administration

Subj: SURFACE TRANSPORTATION AUTHORIZATION ACT CONCURRENCE

1) You have determined by letter dated March 29, 2012 the proposed improvements to IH 30 and IH 35 over the Trinity River, Dallas County, Texas, meets the criteria and qualifies for the exemption under the Surface Transportation Authorization Act (STAA) from Coast Guard permitting. We concur with your findings.

2) Section 144(h) of Title 23 U.S. Code was enacted in 1978 to reduce paperwork and related cost in the executive of the Coast Guard's bridge permit programs. This section has been amended by the Act of April 2, 1987 (Public Law 100-17), to further reduce paperwork and related costs in the permitting of bridges funded by this Act. By reason of this provision, certain bridges – which are constructed, reconstructed, rehabilitated, or replace with federal assistance imposed under Title 23 U.S. Code – are no longer subject to the permitting requirements imposed under 33 U.S.C. 401 and 525(b). The bridges which fall into this excluded category are those that cross waterways:

   (1) which are not used and are not susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce; and

   (2) which are: nontidal; or if tidal, used by vessels less than 21 feet in length.

3) Based on your statement that no significant nighttime navigation occurs at these sites and pursuant to Title 33 of the Code of Federal Regulations, Part 118.40, the proposed project is hereby exempt from Coast Guard navigational lighting requirements. The later statute requires the establishment, maintenance, and operation of Coast Guard required lights and signals on fixed structures, including bridges. These exemptions are subject to review and revocation in the future provided conditions change or are found to differ significantly from those indicated in your request.

4) If we could be of further assistance, please contact this office.

#

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From: Parker, Steve [mailto:stephen.parker@dallascityhall.com]
Sent: Monday, January 30, 2012 10:19 AM
To: Daniel Chapman; High, Kelly
Cc: Ceason.Clemens@txdot.gov; Duane.Milligan@txdot.gov; Jennifer Halstead; George Cisneros; Lupe Pettit; Nasser.Askari@txdot.gov; 46215_Dallas_Horseshoe_Project
Subject: RE: Dallas Horseshoe Project CDC Exemption
Importance: High

Hi, Dan.

The CDC process will not be applicable for this project. USACE approval of the hydraulic analysis will suffice. Please send me a copy of the report.

Steve Parker
Program Manager, Floodplain Management

-----Original Message-----
From: Daniel Chapman [mailto:dchapman@HNTB.com]
Sent: Wednesday, January 25, 2012 4:05 PM
To: Parker, Steve; High, Kelly
Cc: 'Ceason.Clemens@txdot.gov'; 'Duane.Milligan@txdot.gov'; Jennifer Halstead; George Cisneros; Lupe Pettit; 'Nasser.Askari@txdot.gov'; 46215_Dallas_Horseshoe_Project
Subject: Dallas Horseshoe Project CDC Exemption

Steve/Kelly:

As you will recall, the City exempted the Sylvan Bridge Project from the CDC permit because the hydraulic analysis was reviewed and approved by the USACE under the Section 408 permit process.

The same process will be followed for the Dallas Horseshoe Project (IH 30 and IH 35E over the Dallas Floodway). Consequently, we respectfully request that you reply to this e-mail to confirm the City will exempt the Horseshoe Project contingent upon USACE approval of the hydraulic report.

The purpose of this request is to document in the environmental assessment that the CDC permit is not required because of the Section 408 review.

If you have questions or require additional information regarding this request, please reply or call.

Best regards, Dan

Daniel J. Chapman, P.E.
Vice President

HNTB Corporation
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Suite 100
Dallas, Texas 75201
(972) 632-9556 (Mobile)
(972) 628-3041 (Office)
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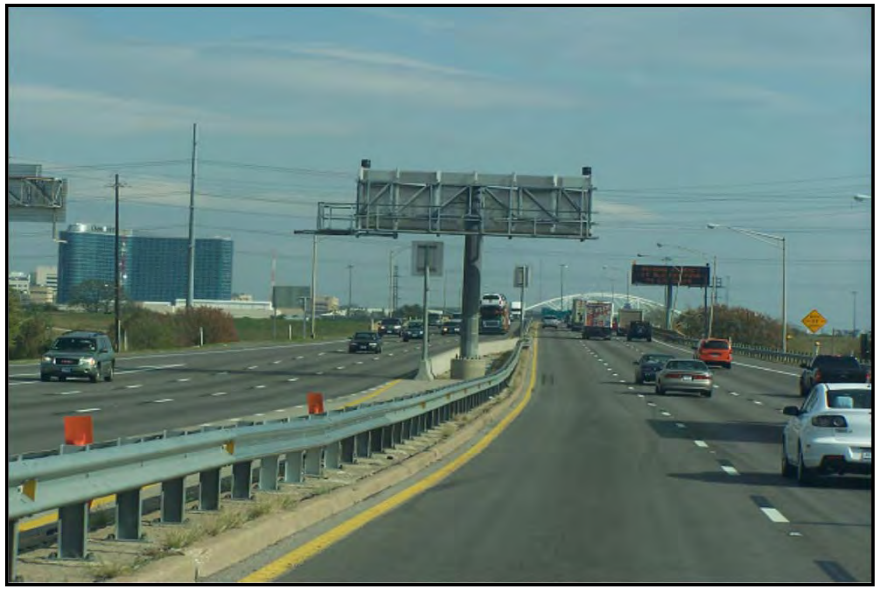
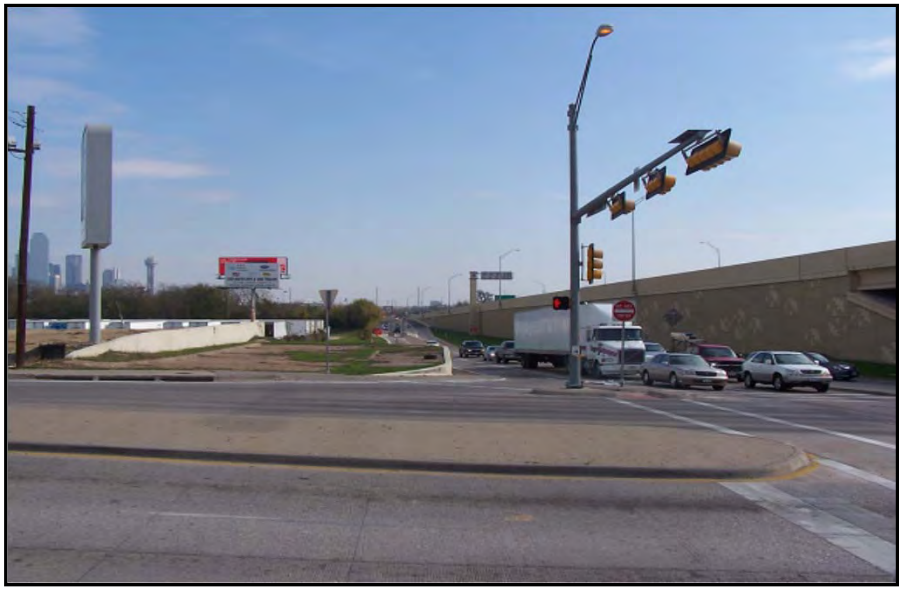
APPENDIX G: Project Photographs



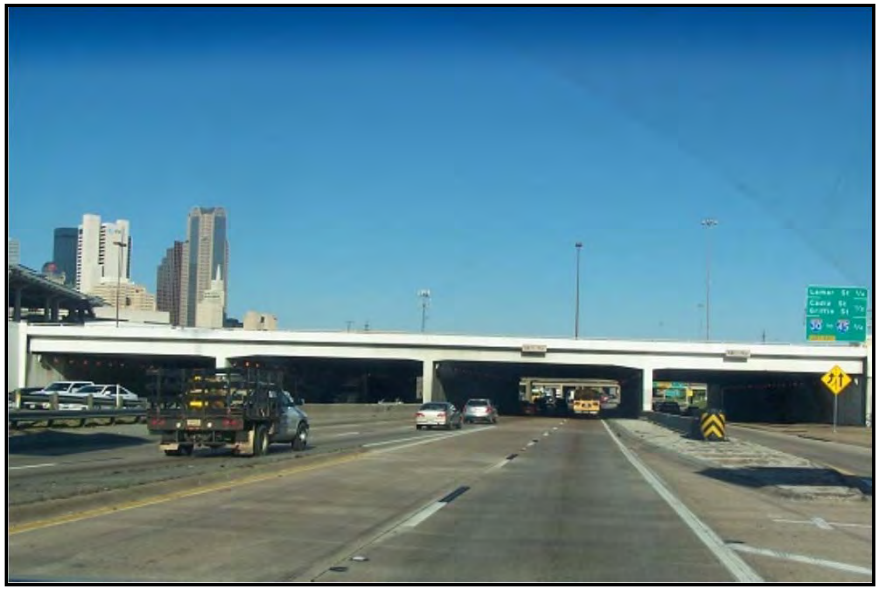
1. East of Sylvan Avenue looking east along IH 30.



2. From Sylvan Avenue looking east along IH 30 westbound frontage road.

3. From Sylvan Avenue looking east along IH 30 eastbound frontage road.

4. Looking west along eastbound IH 30 from the East Levee of the Dallas Floodway.

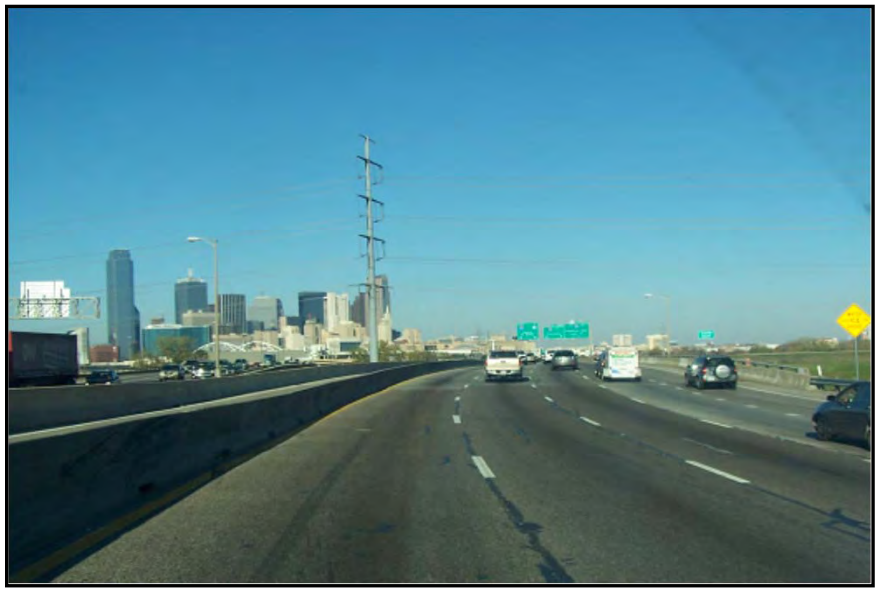


5. Looking east along IH 30 eastbound toward project end near Hotel Street.

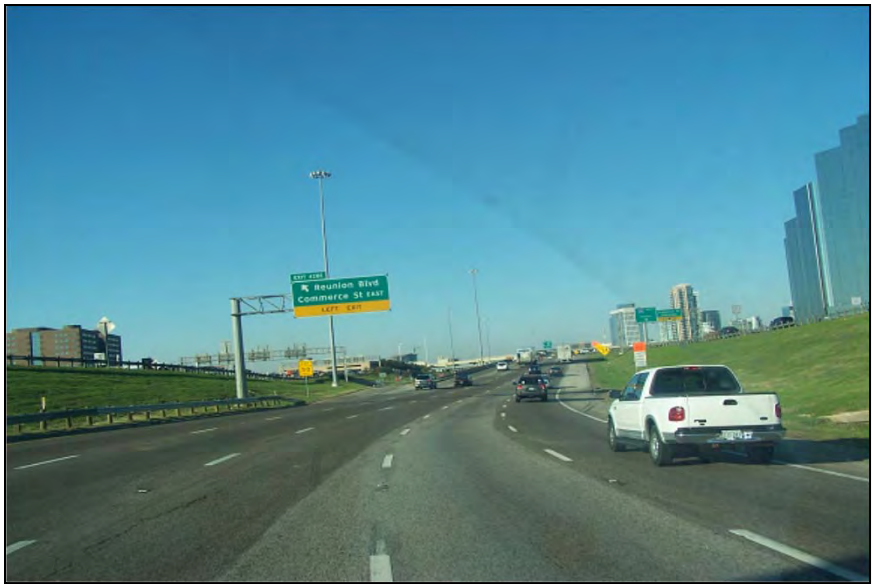
6. Looking south at northbound IH 35E and Colorado Boulevard.

7. Looking westerly at the Trinity River under northbound IH 35E.

8. Looking north between IH 35E northbound and southbound from the West Levee of the Dallas Floodway.



9. Looking north along northbound IH 35E over the Dallas Floodway.



10. Looking north along IH 35E northbound toward project end at Commerce Street.

11. Looking northeast at the IH 35E northbound bridge north abutment cap that exhibits a large crack variable in width from 5 inches at the top of the cap to 4.5 inches at the bottom of the cap.

12. Looking north at cracked concrete piles at the northeast wingwall of the IH 35E northbound bridge.

13. Northeast at the bearing area for the east exterior sidewalk beam at the north abutment of the IH 35E northbound bridge. The bearing area has been reduced by approximately 6 inches due to cracking of the abutment cap.

14. Looking north at the damaged railing along the IH 35E northbound bridge. The horizontal rail pipe along the east side of the pedestrian railing has moderate collision damage. Additionally, the horizontal rail is bent and one post is missing.

15. Looking northwest at the spalled underside deck of the IH 35E southbound bridge located at the northeast corner of span 40. The deck has moderate fire damage over a 6-ft by 10-ft area of slab and exposed rebar.

16. Looking southeast at the east side of the IH 35E southbound bridge for which four sections of horizontal rail pipe are missing.

17. Looking southwest at the caps of bents 7 and 21 of the IH 35E southbound bridge which have widespread moderate spalls and exposed rebar.

18. Looking southwest at the IH 35E southbound bridge column for bent 43. The column exhibits moderate cracks and spalls with exposed rebar.

19. Looking southwest at the moderate spalling with exposed steel at the north deck overhang of the IH 30 eastbound bridge. There is also minor transversal cracking with efflorescence in the deck soffit.

20. Looking southwest at map cracking and spalling along the beam in the deck soffit of the IH 30 eastbound bridge.

21. Looking northwest at the spalling and roughness of asphaltic pavement at the joint over bent 13 of the IH 30 eastbound bridge.

22. Looking southwest at an IH 30 eastbound bridge rail previously repaired. The rail height is uneven because of the retrofit steel pedestal utilized.

23. Looking west at a slight deflection of beam 2 (span 5) of the IH 30 eastbound bridge. The damage was caused by camp fires.

24. Looking southwest at moderate erosion of the west channel bank of the Trinity River and drift at the IH 30 eastbound bridge (bent 19).

25. Looking southwest at the IH 30 eastbound bridge south end of the west riprap which has settled and cracked due to erosion/undermining of the Trinity River west embankment.

26. Looking south at the IH 30 westbound bridge spalling with exposed steel in soffit at the north deck overhang.

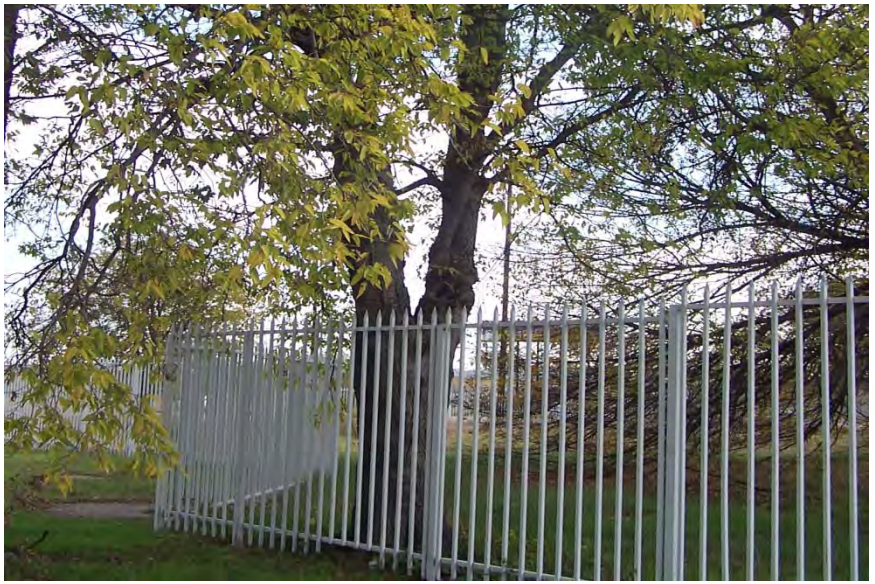
27. Looking southeast at the minor longitudinal and transversal cracking of the IH 30 westbound bridge pavement over an expansion joint.

28. Looking northwest at minor spalling and exposed steel on column 3 of bent 13 of the IH 30 westbound bridge.

29. Looking south from IH 30 eastbound frontage road west of Beckley Avenue at pecan tree with an approximately 24 inch DBH.

30. Looking west along IH 30 eastbound frontage road west of Beckley Avenue at American elm tree with an approximately 22 inch DBH.

31. Looking east along IH 30 eastbound frontage road west of Beckley Avenue at sugar hackberry tree with an approximately 20 inch DBH.



32. Looking southeast along IH 30 eastbound frontage road west of Beckley Avenue at sugar hackberry tree with an approximately 22 inch DBH.

33. Looking west along the IH 30 eastbound frontage road west of Beckley Avenue at an American elm tree with an approximately 20 inch DBH.

34. Looking east between northbound and southbound IH 35E immediately north of the East Levee at two pecan trees and five cottonwood trees each with a DBH greater than 20 inches.

35. Looking north along southbound IH 35E from the West Levee at a cottonwood tree with an approximately 44 inch DBH.

36. Looking north between IH 35E northbound and southbound IH 35E at a cottonwood tree with an approximately 40 inch DBH.

37. Looking north along northbound IH 35E from the West Levee at a cottonwood tree with a DBH greater than 20 inches.

38. Looking west along IH 30 eastbound at riparian corridor adjacent to the Trinity River.