

CHAPTER 5
MITIGATION MEASURES AND COMMITMENTS

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MITIGATION MEASURES AND COMMITMENTS

5.0 INTRODUCTION

Throughout the process of developing transportation projects, one of the chief considerations is to reduce adverse impacts to the environment. One of the methods used to reduce overall impacts is referred to as “mitigation.” Federal policy on mitigation is specified in the CEQ regulations implementing NEPA. Federal agencies shall to the fullest extent possible:

[U]se all practicable means consistent with the Act [NEPA] and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions on the quality of the human environment [40 CFR 1500.2(f)].

Mitigation of impacts and enhancement of resources must be considered for all impacts, whether or not the impacts are significant. All relevant, reasonable mitigation measures that could improve the project are to be identified and included in the project. The CEQ regulations (40 CFR 1508.20) define mitigation to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- Compensating for the impact by replacing or providing substitute resources or environments.

It is FHWA’s policy that measures necessary to mitigate adverse impacts be incorporated into the proposed action. This policy emphasizes the identification and implementation of measures to rehabilitate, restore, or replace impacted resources. In addition, mitigation measures can be eligible for federal funding if:

- The impact for which the mitigation was proposed actually resulted from the project; and
- The proposed mitigation represented a reasonable public expenditure, considering, among other things, the extent to which the proposed measures would assist in complying with a federal statute, EO, or other administration [FHWA] regulation or policy.

The mitigation recommendations presented herein are appropriate for the Trinity Parkway based on experience developing other transportation projects and on general recommendations made by various local, state, and federal agencies in response to preliminary discussions and correspondence concerning the proposed action. For those areas analyzed in **FEIS Chapter 4** but not listed here, no adverse impacts are expected.

Should a Build Alternative be selected in the anticipated ROD, specific mitigation measures would be considered and developed in greater detail through final project design and during refinements of the mitigation and enhancement measures on this project, and coordination between the FHWA/TxDOT/NTTA and other agencies would continue.

5.1 SOCIAL ENVIRONMENT

5.1.1 Compliance with Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and Other Approval Standards

5.1.1.1 Right-of-Way Acquisition

As summarized in **FEIS Section 4.4**, Alternative 3C would require ROW acquisition that would cause relocations and displacements. The ROW acquisition process follows the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The process provides for fair and equitable treatment of occupants of the properties to be acquired. The process includes initial property appraisal, determination of just compensation, negotiations, payment, and rights under eminent domain.

5.1.1.2 Displacements and Relocation

It is the policy of the FHWA/TxDOT/NTTA that no person be displaced due to ROW acquisition until comparable decent, safe, and sanitary replacement housing is available. The available housing must also be open to persons regardless of race, color, religion, or national origin. All relocation efforts would be consistent with the requirements of the Civil Rights Act of 1964 and

1968 (U.S. Congress, 1964), the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, and the Housing and Urban Development Act of 1974. Adequate replacement housing must be within the financial means of displaced families or individuals. There would be three residential displacements from Alternative 3C (see **FEIS Section 4.4.1.2**). These residential displacements occur at the southern terminus of the project between Lamar Boulevard and SH-310.

Residential displacements are to be provided a decent, safe, and sanitary comparable replacement dwelling that is functionally equivalent to their present dwelling. Although replacement dwellings may not be necessarily identical to their present dwellings, the replacements must have comparable attributes, including a similar number of rooms and living space and comparable size to accommodate the occupants. All replacement housing would meet the minimum requirements established by the State of Texas and conform to applicable housing and occupancy codes. If a comparable decent, safe, and sanitary dwelling is not available for all affected persons, Housing of Last Resort may be provided (see **FEIS Appendix C**).

The NTTA/City of Dallas would assist each displaced person in securing comparable replacement housing. The NTTA/City of Dallas would also provide assistance to displaced businesses and nonprofit organizations to aid in their satisfactory relocation with a minimum of delay of services or loss of earnings. The NTTA/City of Dallas would also maintain contact and exchange information with other agencies rendering services useful to persons and organizations that must relocate. Such agencies include social welfare agencies, redevelopment authorities, public housing authorities, the Small Business Administration, the Federal Housing Administration, and the Veterans Administration.

Contact may be maintained with local sources of information on available replacement housing, including real estate brokers, real estate boards, property managers, apartment owners and operators, and home building contractors. The occupants of business establishments and nonprofit organizations may be entitled to receive moving costs and related expenses incurred in relocating their personal property. These related expenses include loss of tangible personal property/purchase of substitute personal property, and expenses involved in searching for a replacement site.

To assure the public has adequate knowledge of the relocation program, the services and benefits available will be discussed at the public hearing to be held for the proposed action,

presented in a brochure available in both English and Spanish. The public hearing date and location will be announced in the news media and through posted notices.

Qualified eligible residential displacees may be provided with Relocation Assistance Program benefits intended to assist in purchasing or renting comparable replacement housing. They would also receive either an actual moving cost payment or payment of a fixed moving cost based on an eligible room count. Other payments to which they may be entitled are the costs, which are incidental to selling property to the state, costs incidental to purchasing a replacement dwelling, and an increased interest differential payment.

Alternative 3C would result in the displacement of 27 commercial/industrial buildings. The Non-residential Relocation Assistance Program provides assistance to businesses, farms, and non-profit organizations in locating suitable replacement property and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program provides current lists of properties offered for sale or rent, suitable for the specific relocation needs of a particular business. The types of payments available to eligible businesses, farms, and non-profit organizations are moving and searching expenses and, possibly, reestablishment expenses; or a fixed in lieu payment instead of any moving, searching, and reestablishment expenses.

Construction of any segment of the mainlanes of the Trinity Parkway would not be authorized by the FHWA until:

- ROW has been cleared for that segment of the project in accordance with federal regulations;
- All individuals and families have been relocated to decent, safe, and sanitary housing or comparable replacement housing has been made available to relocatees in the immediate area as required by regulation; and
- Displaced businesses have been assisted in obtaining and becoming established in suitable replacement locations.

Additional details concerning relocation assistance are provided in **FEIS Appendix C**.

5.1.1.3 Loss of Employment Opportunities

Another notable impact related to the displacement of businesses is the short-term (and possibly long-term) loss of employment opportunities. As discussed in **FEIS Section 4.5**, according to information obtained from Dun & Bradstreet by the City of Dallas, Office of Economic

Development, Research & Information Division (January 2010), the estimated number of businesses displaced by Alternative 3C is approximately 15 to 20, resulting in approximately 72 to 203 jobs affected by business displacement. In the short-term, there would be some local jobs created by construction of the tollway; long term operation of the tollway would likewise generate a limited number of jobs related to facility and ROW maintenance. However, many of the jobs could be permanently lost if displaced businesses are unable to relocate within the same geographic area or decide for other reasons to cease operations and employees are unable to find similar work. Mitigation for potential job losses would be implemented through proactive use of services available from the TWC and Workforce Solutions for both business owners and employees.

Texas Workforce Commission

The TWC is the state government agency charged with overseeing and providing workforce development services to employers and job seekers for the state of Texas. For employers, the TWC offers recruiting, retention, training and retraining, and outplacement services as well as valuable information on labor law and labor market statistics. For job seekers, the TWC offers career development information, job search resources, training programs, and unemployment benefits as appropriate. While targeted populations receive intensive assistance to overcome barriers to employment, all Texans can benefit from the services offered by the TWC and its network of workforce partners.

The TWC is part of a local/state network dedicated to developing the workforce of Texas. The network is comprised of the statewide efforts of the Commission coupled with planning and service provision on a regional level by 28 local workforce boards. This network gives customers access to local workforce solutions and statewide services in a single location; that is, Texas Workforce Centers (TWC, 2013).

Workforce Solutions Greater Dallas

The Texas Workforce Center that serves Dallas County is the Workforce Solutions Greater Dallas ("Workforce Solutions"). Workforce Solutions is the local organization mandated to implement services to enhance economic development within Dallas County. The organization's mission is to ensure competitive solutions for employers through quality people and for people through quality jobs.

The NTTA is committed to coordinate available programs provided by Workforce Solutions to those employees affected by the businesses potentially displaced as a result of the proposed project at the future FEIS public hearing. The NTTA will invite the Workforce Solutions Manager

and staff to attend the FEIS public hearing for the proposed project to answer questions or present services information on behalf of Workforce Solutions.

The Workforce Solutions has employer services representatives in each workforce center to match the most qualified candidates with the right employers. Services provided to employers include:

- Personal attention from one of the account managers;
- Recruiting assistance/placement;
- “Work in Texas” internet-based job posting and matching system;
- Job fairs on location or in one of the workforce centers;
- Fee-based customized training to meet employer needs;
- Current labor market information; and
- Outplacement services for companies who are restructuring, downsizing, or closing operations.

Services provided by the Workforce Solutions to all job seekers include:

- Determination of eligibility to receive potential services;
- Initial registration and orientation to available information and services;
- Initial assessment of skill level, aptitude, abilities, and supportive service needs;
- Job search, placement assistance, and career counseling (as appropriate);
- Job search workshops and seminars;
- Resource room services (e.g., access to telephone, fax, copier, resource library, computer, internet, and resume assistance);
- Employment and labor market information;
- Job listings via “Work In Texas” and other on-line employment resources;
- Job referrals;
- Target occupations – required skills and earnings in those occupations;
- Eligible Training Provider System and training program information;
- Performance statistics of our local area;
- Supportive service information (e.g., child care and transportation);
- “How to” information and filing unemployment claims;
- Assistance in establishing eligibility for non-Workforce Investment Act funded training and education programs; and
- Follow-up services (as appropriate).

While it is to be expected that the redevelopment of land may create new jobs for the community that may exceed the quantity and salaries of current positions, this potential beneficial offset for the community would not lessen the need to make Workforce Solutions services available to those persons who could still lose their jobs in existing businesses. Accordingly, the types of services offered by Workforce Solutions will be presented during the future FEIS public hearing for the Trinity Parkway to raise community awareness of this resource.

5.1.2 Measures to Minimize Impacts to Neighborhoods

Design details that minimize intrusion into community environments will be considered and would be incorporated into the design of the Trinity Parkway and its associated structures where practicable. With respect to visual intrusion and increased noise levels, noise barriers and visual screens would be considered where warranted, reasonable, and feasible to minimize the impacts upon local residents. The construction of sidewalks along portions of neighborhoods or across busy intersections would be considered to improve pedestrian access in and around the areas, on a case by case basis. Access/service roads would be provided for any areas affected by the discontinuation of an existing street, or where property access must be restored.

5.1.2.1 Affordable Housing

The City of Dallas has in place both the Trinity River Corridor Comprehensive Land Use Plan and various affordable housing programs. The Trinity River Corridor Comprehensive Land Use Plan establishes general principles that would direct preparation of detailed plans for smaller neighborhoods, and provides guidance about the appropriate land uses and development patterns for the corridor. In particular, the plan mentions retaining and enhancing the residential character of many adjacent neighborhoods, and improving neighborhoods through streetscape improvements and pedestrian amenities. Throughout the development of the plan, neighborhoods and the public at large were consulted about future zoning preferences that support the vision of the corridor. As the Trinity River Corridor Comprehensive Land Use Plan is undergoing the implementation process, the City of Dallas has set up a separate public involvement process whereby an ad hoc sub-committee of the Planning Commission would conduct a minimum of four meetings in each of the adjacent neighborhoods to provide opportunity for further refinement and approval of the proposed zoning mentioned in the Plan. Procedural steps exist through the Dallas Planning and Zoning Commission variance approval process, which allows potential developments that do not conform to zoning or building codes to be evaluated on a case by case basis.

The City of Dallas also administers eight affordable housing programs designed to enhance and protect the amount of affordable housing stock within the city. In addition, the city oversees five home repair financial assistance programs, a mortgage assistance program for first-time buyers, and a Neighborhood Investment Program, which is a vehicle for focusing housing department programs, public improvements, building code enforcement, and other resources to targeted areas within the City of Dallas. According to the City of Dallas, both the CHDO Program (provides community-based housing development organizations with loans/grants for operating assistance and development funding) and the City of Dallas Urban Land Bank program (allows the city to acquire vacant tax-delinquent lots for re-sale at below market pricing to nonprofit and for-profit developers of single-family homes for low-to-moderate income homebuyers) have been frequently used to stabilize and improve declining neighborhoods. It should also be noted that, while the Trinity River Corridor Comprehensive Land Use Plan and City of Dallas programs exist to facilitate planned development and protect residential neighborhoods, four areas/districts adjacent to the proposed Trinity Parkway (Cedars, Fort Worth Avenue, Design District, and Oak Cliff Gateway) are designated as Tax Increment Finance (TIF) districts that are intended to finance public improvements to infrastructure with a goal of attracting private development, and thereby raise property values in their communities. Each TIF board of directors is comprised of members of the community who participate in the decision-making process.

5.1.2.2 Context-Sensitive Solutions

Impacts to neighborhoods could be further minimized by considering the concepts of FHWA's CSS approach in developing project-specific mitigation. CSS provides community benefits as it seeks to:

- Incorporate feedback from the local populace affected by proposed transportation facilities;
- Encourage collaboration between neighborhoods and local, state, and federal public officials;
- Enhancements to the roadway and considerations for the bicycle and pedestrian communities;
- Encourage assessments and design of alternatives consistent with local needs; and
- Help effectively merge transportation, engineering, architectural, historical, and natural environmental systems into transportation decision-making.

CSS contributes to community, safety, and mobility and considers the total context within which a transportation improvement project will exist. It is a collaborative and interdisciplinary approach to developing and redesigning transportation facilities that fit into their physical and human environment while preserving its aesthetic, historic, community, and environmental values. Coordination with City of Dallas planning departments has been ongoing and will continue to occur throughout the planning process to develop strategies for minimizing overall neighborhood disruptions and isolation of specific neighborhood areas (FHWA, 2013).

5.1.2.3 Noise Impacts

A noise barrier analysis was performed for traffic noise impacted areas of Alternative 3C. Based on the analysis, four noise barriers were determined to be both feasible and reasonable and are proposed for incorporation in the proposed project. **FEIS Plate 4-10, Sheets 1 through 6** shows the receiver areas and the proposed noise barriers. Additional public involvement would occur through future noise workshops to determine if the noise barriers are wanted and if so, to assist in their aesthetic design.

Future recreational facilities are proposed to be constructed by the City of Dallas within the Trinity River Greenbelt Park in the project area. These future facilities are being planned by others concurrently with the roadway project. The noise analysis included specific areas within the park where amenities are proposed, considered reasonable and feasible noise mitigation, and included noise impact contour data for undeveloped areas in the park. These efforts would guide local officials responsible for land use control programs to ensure, to the maximum extent possible, that new recreational activity areas within the park are planned or constructed with the predicted future noise environment in mind.

5.1.2.4 Visual Impacts

The NTTA has developed *System-Wide Design Guidelines for the Dallas North Tollway System* (NTTA, 2012), which establishes a framework of aesthetic design elements. In 2009, NTTA developed the *Trinity Parkway DCM*, which presents technical and aesthetic design parameters for structures, elements, and landscape, and provides direction for final design teams to make informed decisions regarding the design character of the proposed project. Such elements elevate the aesthetic character of the proposed project and surrounding landscape, thereby functioning to mitigate, to the extent practicable, visual impacts resulting from implementation of the proposed roadway alignment. For example, when applied appropriately, landscape design of a roadway contributes to the overall well-being and sense of character of the community that is

traversed; and landscape plantings serve both to screen visually undesirable objects and to add interest to the scenery. Various visual mitigation measures are detailed below. Note that final materials, details, location, and quantity of elements as presented in the *Trinity Parkway DCM* are subject to change in the final design Plans, Specifications, and Estimates (PS&E).

Landscape Design and Plantings

Within the *Trinity Parkway DCM*, proposed landscape areas are concentrated at pre-selected “focus areas” which are typically located at high visibility locations along the roadway or at important interfaces with the surrounding communities, including bridge underpasses, overpasses, gantry areas, and interchanges. Plant selection includes low and large ornamental grasses, ornamental and large trees, and vines located along walls. Turf planting and/or rock riprap would be used at slopes, under bridges, and other areas for slope stabilization and erosion control. Landscaping in accordance with the *Trinity Parkway DCM* would occur in areas where NTTA controls maintenance of the area. **FEIS Plates 4-3B and 4-3C** present examples of plantings in the southern section of the Trinity Parkway near Lamar Street and SH-310 (i.e., the South Trinity Gateway Zone focus area in the *Trinity Parkway DCM*). The *Trinity Parkway DCM* mentions the possibility of additional landscaping in this South Trinity Gateway Zone where historic neighborhoods adjacent to the proposed project may benefit from additional landscaping. This is just one example of plantings anticipated to occur along the Trinity Parkway.

The proposed plant palette serves as the basic means of unifying the proposed Trinity Parkway. According to the *Trinity Parkway DCM*, “The plant materials selected for the Parkway have been selected for their hardiness to the North Texas climatic extremes and their ability to tolerate drought conditions. The plant materials have been selected for low water requirements, native or adaptive qualities, and seasonal interest. A wide range of plants are utilized within these palettes for flexibility in the different zones or site constraints.”

Wall Enhancements

In the event Build Alternative 3C is selected in the ROD, wall enhancements would be incorporated into the final design and construction plans. Per the DCM, “The Trinity Parkway is unique in that many portions of the corridor will be contained inside an elevated separation wall. In order to soften the appearance of the separation wall, a raised barrier-height planter will be installed along the length of the wall. In these areas, the landscape treatment may vary from a typical focus area oriented design, allowing the walls to receive landscaping outside of the typical focus area dimensions.”

Separation, security, and retaining walls are shown to be finished with an aesthetic wall treatment. The separation walls are anticipated to be topped with an aesthetically designed coping. The side of the separation walls that face the proposed project are planned to contain a wall planter in certain areas. The security walls facing the Trinity Park may be cast in place, or a modular block system with ashlar stone face finish could be used. The security walls would be a gravity wall that would remain upright by the force of its own weight and would not rely on the supported soil behind the wall for stability. Where possible in areas outside the Dallas Floodway, retaining walls are anticipated to consist of Mechanically Stabilized Earth Wall (MSE) “flat panels” that visually break the evenness of the walls. Additionally, in order to take advantage of the high visibility of the walls at cut conditions, vines are anticipated be planted to “soften” the visual impact of the walls themselves. **FEIS Plate 4-3A** presents conceptual drawings of example wall enhancements.

Downtown Overlook

The impact of views from the top of the levee towards the Trinity Park, is somewhat mitigated for by the downtown overlook (i.e., the Reunion Gateway - see **Table 4-32** of **FEIS Section 4.7.3.2**), which would provide unobstructed views to the Trinity Park. The proposed project includes construction of the super structure support for the downtown overlook deck, to be constructed by others. See **FEIS Plate 4-3A** for a conceptual drawing of the downtown overlook.

General Mitigation Methods and Means

The following describes general methods and means that are recommended to mitigate for the impacts of the toll road construction (many of which are covered in the *Trinity Parkway DCM* described above):

- Contour grading of earthen fill slopes, especially interchange areas, to reduce their massiveness and to provide a more compatible appearance with adjacent landforms. Where feasible, the bottom of fill slope edges would be rounded to blend with the existing terrain.
- Reduce the vertical alignment of structures, where practicable and feasible, to the lowest height allowable.
- Native plantings, indigenous to the area, planted along the right-of-way to mitigate visual impacts of the new construction.

- A subsequent landscape contract implemented immediately following completion of toll road construction to mitigate visual impacts in remaining areas. Plantings placed within the more developed areas consisting of a mixture of container grown native and/or approved ornamental trees, shrubs, and grass species.
- Establish a general landscape palette using native plants typically found in the project area or similar species. Utilize the palette where appropriate throughout the alignment, tailored to harmonize with the surrounding landscape. The goal of this mitigation measure is to establish a coherent aesthetic landscape design for all slopes and bridge structures throughout the length of the project by using plant species possessing good survival characteristics.
- Remove all existing pavement to be abandoned and revegetate with native or approved ornamental plantings and native grasses.
- Develop a coherent building materials palette of architectural elements as part of the project development process, based on colors, textures, patterns, and materials used in the corridor area. Apply architectural elements selected from the palette to bridge over crossings and under crossings, retaining walls, drainage facilities, and sound walls. The result would be an integrated design with visual consistency, rather than a patchwork of unrelated materials.
- Use non-reflective materials for all visible metal structures and elements.

Continued local input would be sought to ensure that the toll road would be as aesthetically appealing as possible. Tree removal impacts may be reduced by identifying trees that can be relocated or incorporated into a highway planting plan instead of removal. The ROW corridor would be professionally landscaped, with an equal or greater number of trees being replaced than removed. Trees would be monitored for a specified period (two to five years) to ensure survivability. Landscaping would commence when practicable after major construction operations have been completed. Mitigation measures, such as landscaping and vegetation, within the Dallas Floodway would be subject to review and approval by the USACE and FEMA.

5.1.2.5 Environmental Justice

The development of the proposed project alternatives involved minimizing residential displacements and community cohesion impacts where feasible. In addition, during the DEIS and SDEIS process, both NTTA and the City of Dallas led public outreach efforts to involve potentially affected minority and low-income populations, share information with the public, and listen to potential issues of concern (see **Table 4-8** of **FEIS Section 4.3.2.2**). As discussed in **Section 4.3.2.2**, public outreach activities were used to inform the public regarding the proposed project,

provide an opportunity for participation in the planning process, and identify impacts or issues of concern. These activities also served as a forum to obtain input concerning potential mitigation measures for the project. Since publishing the DEIS in February 2005, major revisions of the EIS have been primarily the result of design-related concerns raised by the USACE with regard to the Dallas Floodway and not the result of issues or concerns raised by members of the adjacent neighborhoods. For this reason, outreach activities since 2005 have included public hearings held in March 2005, May 2009, and May 2012, all of which received active participation from members of the project area neighborhoods. As part of future outreach efforts, dialog with affected low-income and minority neighborhoods would continue through the EIS process.

As previously mentioned, potential impacts to neighborhoods and EJ populations could be further minimized by implementing the concepts of CSS. The NTTA has developed specific design guidelines for the proposed Trinity Parkway in cooperation with the City of Dallas (i.e., the *Trinity Parkway Design Criteria Manual* [2009]), to address vegetation, lighting, and other aesthetic considerations. See **FEIS Section 5.4.2.4** for examples of such conceptual enhancements, as well as **FEIS Plates 4-3 (A-C)**.

The NTTA/City of Dallas would provide relocation advisory assistance to any person, business, or non-profit organization displaced as a result of the acquisition of real property for public use. Those displaced would be relocated with assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. More information about how this would be accomplished is provided in **FEIS Section 4.4.2** and **FEIS Appendix C**. Affordable housing programs sponsored by the City of Dallas would play a role in safe-guarding against potential development pressures to convert low-income housing to some other use.

The NTTA is committed to coordinate available programs provided by Workforce Solutions to those employees affected by the businesses potentially displaced as a result of the proposed project at the future FEIS public hearing. The NTTA will invite the Workforce Solutions Manager and staff to attend the FEIS public hearing for the proposed project to answer questions or present services information on behalf of Workforce Solutions.

The noise analysis determined that four noise barriers would be reasonable and feasible and are proposed for incorporation into the project. A noise workshop would be held to provide property owners the opportunity to comment and vote on the proposed noise barriers. The adjacent neighborhoods contain a high percentage of minority and low-income residents. If noise barriers are implemented with the coordination of adjacent residents, then disproportionately high and adverse noise impacts to these EJ populations would be avoided.

Due to the greater economic burden of paying a toll, low-income motorists would likely be more reluctant to utilize the Trinity Parkway and instead use other non-tolled alternative routes. As discussed in Non-Toll Alternatives under **FEIS Section 4.3.2**, there are existing alternative non-tolled routes on major highways that would serve the motorists traveling between the northwest and southeast Trinity Parkway project area limits. For motorists who utilize the non-tolled alternative routes, the difference in travel times would likely be highest during peak hours of travel when traffic congestion would be the greatest. As described in **FEIS Chapter 1**, the Trinity Parkway is intended to provide one component of a transportation solution to better manage traffic congestion and improve safety in the area of the Dallas CBD, particularly congestion in the IH-30/IH-35E (Mixmaster) interchange on the west edge of downtown Dallas; the depressed segment of IH-30 (Canyon) south of the CBD; and the segment of IH-35E from the Mixmaster north to the DNT (Lower Stemmons). These major roadways make up critical segments of the non-tolled alternative routes likely to be utilized by low-income motorists traveling through the project area. These congestion management improvements would benefit all motorists, including low-income motorists.

Additionally, the network of non-tolled major roadways (IH-35E, IH-30, IH-45, and US-175) offer benefits to neighborhoods because these existing roadways connect to the same general endpoints as the proposed Trinity Parkway in the northwest and southeast portions of the project area, and would not require venturing onto frontage roads or side streets within neighboring residential and commercial areas should motorists elect not to use the proposed Trinity Parkway. It should be noted that the most southern mainlane toll gantry would occur north of IH-45. This allows non-tolled movements between IH-45 and the US-175/SH SH-310 intersection at the south project terminus, and would minimize tolling impacts for communities near the proposed Trinity Parkway southern terminus and further removed along IH-45 and US-175.

The MTP identifies regional planning efforts and outlines a number of measures that would be considered to minimize potential disproportionate impacts on low-income populations from tolled lanes. Some of these measures would require cooperation between or among various governmental entities or agencies and do not constitute current commitments, but possible solutions that may be developed further at a regional level and implemented after appropriate study and consideration. Measures may include but are not limited to:

- Improvements to non-tolled roadway facilities and alternative transportation modes;
- Increased public transit access through improved headways and/or routes;
- Increased efforts to promote ridesharing and vanpooling;
- Improvements in transportation systems management, through measures such as improved signal timing, additional left/right turn bays, and additional bus bays;

- Funding of alternative transportation infrastructure (e.g., rail transit, bicycle and pedestrian facilities); and
- Funding of non-toll projects within the current transportation plan which would add capacity to non-tolled general purpose lanes.

These are measures that would contribute to facilitating travel for low-income persons who may be unable to afford traveling on tolled lanes. **FEIS Section 4.27** contains additional discussion regarding the regional tolling analysis performed by NCTCOG to assess the significance of regional impacts and address the potential need for mitigation of the tolled components of the long-range metropolitan transportation plan.

Also, in an effort to enhance opportunities for utilization of its toll facilities, NTTA offers toll-tag registration online (in Spanish and English) and at various types of facilities located throughout City of Dallas neighborhoods. Such facilities include grocery stores, city offices, and over 150+ ACE Cash Express businesses located throughout the DFW Metroplex. The ACE Cash Express locations provide the following services: ZipCash® payments, new cash-backed TollTag® accounts, and cash TollTag® account replenishment.

To ensure all options being considered meet NEPA requirements and are in compliance with EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) (1994) and Title VI of the Civil Rights Act of 1964, as amended, the NTTA would take any reasonable actions needed to ensure this project would not allow for disproportionately high adverse human health or environmental effects on minority and low-income populations and would achieve a non-discriminatory result.

5.2 MEASURES TO MINIMIZE IMPACTS TO WATER QUALITY

State regulations pertaining to construction site management form the main source of mitigation relating to soil erosion and sedimentation of water bodies. Pertinent aspects of the TCEQ's water quality regulatory program are discussed in **FEIS Sections 3.5.5** and **4.13**. The TCEQ is also the agency with primary responsibility for adopting and enforcing state water quality standards under Section 401 of the CWA. As discussed in **Section 5.4**, the TCEQ conducts Section 401 certification reviews of Section 404 permit applications to preserve aquatic resources and the functions they perform in maintaining human and aquatic uses of state waters.

In addition to erosion/sedimentation control, efforts to avoid and/or minimize adverse impacts to wetlands and water bodies would be taken to retain the important functions these aquatic

resources provide for maintaining and improving water quality. Design features such as spanning over jurisdictional waters and installation of stormceptor systems are a few examples of water quality enhancements that would be evaluated in final design.

5.2.1 Texas Pollutant Discharge Elimination System

As construction of the proposed project would disturb more than 5 acres of ground surface, this project requires compliance with TCEQ's TPDES General Permit for Construction Activities. A SW3P is required for each construction project or site covered under this permit. To comply with the TCEQ's requirements, the SW3P prepared for this project would include the following:

- **Site Description** - The project site description and site map.
- **Controls** - A description would be provided concerning appropriate control measures (e.g., Best Management Practices [BMPs]) that may be implemented as part of the construction activity to control pollutants in storm water discharges. The SW3P would clearly describe the control measures and the general timing (or sequence) during the construction process that would be implemented. These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration.
- **Maintenance** - All erosion and sediment control measures and other protective measures identified in the SW3P and used in the project would be maintained in effective operating condition.
- **Inspections** - Qualified personnel would inspect disturbed areas of the construction site in accordance with the SW3P.

It should be noted that at least one SW3P should be developed for each construction project or site covered by the TPDES General Permit. The TCEQ indicates that for more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort is encouraged for the different operators at a site to prepare and participate in a comprehensive SW3P. Individual operators at a site may but are not required to develop separate SW3Ps that cover only their portion of the project, provided reference is made to other operators at the site. In instances where there is more than one SW3P for a site, coordination would be conducted between the permittees to ensure the storm water discharge controls and other measures are consistent with one another.

The minimum BMPs that would be employed for construction of the proposed project are found in FHWA's Standard Specifications (FHWA, 1996b) and FHWA's policies addressing restorative

landscaping (FHWA, 1994). The proposed project would also consider the recommended practices included in NCTCOG's *Storm Water Quality Best Management Practices for Construction Activities* (NCTCOG, 2000b). This USEPA-approved construction BMP manual presents a comprehensive approach to addressing regional storm water quality issues associated with construction activities. The recommended practices included in this manual are tailored to the type of conditions experienced in the north central Texas region. These controls are characterized by their effectiveness, applicability, and cost in order to define a performance-based standard for each control measure. Both structural and non-structural BMPs would be considered to address post-construction storm water management for the proposed action. Non-structural BMPs would include some or a combination of:

- a. Ponds (e.g., dry extended detention pond or wet pond);
- b. Infiltration practices (e.g., infiltration basin, infiltration trench or porous pavement);
- c. Filtration practices (e.g., bioretention, sand, and organic filters);
- d. Vegetative practices (e.g., storm water wetland, grassed swale, or grassed filter strip);
- e. Runoff pretreatment practices (e.g., catch basin or in-line storage); and
- f. Better site design (e.g., buffer zones, open space design, or urban forestry).

Structural BMPs would include some or a combination of:

- a. Runoff pretreatment practices (manufactured products for storm water inlets - e.g., hydrodynamic separator, modular treatment system, or water quality inlet);
- b. Experimental practices (e.g., alum injection);
- c. On-lot treatment; and
- d. Better site design (e.g., conservation easements, infrastructure planning, eliminating curb and gutters, green parking, alternative turnarounds, or alternative pavers).

5.2.2 TCEQ Permit for Municipal Separate Storm Sewer System (MS4)

As discussed in **FEIS Section 4.13.1.4**, the NTTA would construct the proposed project in accordance with its TCEQ-approved MS4 permit as well as the Phase 1 City of Dallas MS4. Compliance with the MS4 program requires additional safeguards to minimize the discharge of pollutants from construction sites as well as from routine operational activities such as road sanding or deicing during cold weather and from application of pesticides, herbicides, and fertilizers.

5.3 WILDLIFE AND VEGETATION RESOURCES

5.3.1 General Revegetation of Disturbed Areas

Unavoidable impacts to wildlife habitat are mitigated by minimization, restoration, or replacement, where permissible and practicable. Temporary impacts to vegetation would be minimized by limiting construction activities to the minimum area needed to complete the necessary improvements to the tollway. A pre-construction conference and field review involving NTTA staff and construction contractors would be held prior to the start of project construction to establish and review the locations and boundaries of construction. Subsequent to the pre-construction conference and field review, a report would be prepared that identifies areas to be avoided during project construction and identifies any other special provisions to be followed by the contractor. The limits of construction staging areas would be surveyed and staked in the field prior to construction. The perimeter would be fenced or flagged during construction.

A revegetation plan would be developed prior to project construction that specifies the areas to be revegetated, species of plants to be used for revegetation, and the techniques to be used to revegetate disturbed areas. The revegetation plan would also identify the special techniques to be used to establish vegetation on steep slopes (i.e. slopes with a grade steeper than 3:1) or alternative techniques and measures to prevent erosion. The revegetation plan would be developed in consultation with TPWD and the USFWS, as necessary, and would specify the use of plant species that are native to the project area and that would enhance the quality of habitat within the proposed ROW.

Revegetation and appropriate landscaping are required and would satisfy highway safety and local standards. All revegetation and landscaping activities would comply with EO 13112 (Invasive Species), which requires preventing the introduction and spread of invasive (non-native) plant and animal species, as well as the City of Dallas tree ordinance. Preventative measures would include the inspection and cleaning of construction equipment, commitments to ensure the use of invasive-free mulches, topsoil, and seed mixes, and eradication strategies should invasive plants occur. Any seed mixes used to reestablish vegetation would be consistent with TxDOT-approved seeding specifications, meeting the requirements for Texas Seed Law and EO 13112 (Invasive Species).

In consideration of the *Executive Memorandum on Beneficial Landscaping* (FHWA 1994), landscaping activities would utilize techniques that complement and enhance the local environment and seek to minimize the adverse effect that the landscaping may have on it. In

particular, this means using regionally native plants and employing landscaping practices and technologies that conserve water and prevent pollution. Environmentally beneficial landscaping would include seeding and replanting the ROW with native species of plants, where cost-effective and to the extent practicable.

5.3.2 Measures to Minimize Habitat Fragmentation

The Trinity Parkway may cause habitat fragmentation and reduction in wildlife habitat connectivity as a result of roadway construction. The following are mitigation measures that would be considered to address this potential impact:

- Creation of replacement habitat by conversion of less sensitive upland habitat into wetlands by excavation and planting (e.g., creation of drainage swales planned for the north end of the project area);
- Minimize the crossing of flowing streams and utilize bridge spans to the greatest extent possible to minimize impacts on riparian and aquatic communities; and
- Bridge spans would also act as wildlife corridors, allowing unrestricted movement of wildlife;
- Potentially dangerous wildlife crossings (e.g., where culverts and bridge spans are not practicable) could be fenced in areas outside the Dallas Floodway to divert wildlife through wooded areas along the ROW to culverts or bridge spans where crossings can be more safely made.

5.3.3 Compensatory Mitigation for High Quality Habitat

In addition to the general measures outlined above for minimizing impacts to habitat and wildlife in the design and construction of the proposed project, further mitigation has been considered to compensate for the unavoidable loss of habitat of particular importance to wildlife. In accordance with the TxDOT-TPWD MOU and MOA, and at the TxDOT Dallas District's discretion, the following types of habitat may be given consideration for non-regulatory compensatory mitigation during transportation project planning:

1. Habitat for federal candidate species if mitigation would assist in the prevention of the listing of species;
2. Rare vegetation series (S1 - critically imperiled in state, extremely rare, very vulnerable to extirpation, five or fewer occurrences; S2 - imperiled in state, very rare, vulnerable to

- extirpation, 6 to 20 occurrences; or S3 - rare or uncommon in state, 21 to 100 occurrences) 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 hardwood, native prairies, and riparian areas; and
 5. Any other habitat feature considered to be locally important.

Compensatory mitigation for the first three types of habitat from the list above would be unnecessary for the proposed project because neither critical habitat for federally-listed rare species nor rare vegetation communities are found within the project area (USFWS, 2012; Diamond, 1993). Alternative 3C would impact two types of habitat found within the fourth category from the list above: riparian forest and forested wetland (i.e., bottomland hardwood). As indicated in **Table 4-30**, approximately 49.1 acres of riparian forest and approximately 1.4 acres of forested wetland would be impacted. In addition, impacts to emergent wetlands from Alternative 3C are expected to affect 50.3 acres. Mitigation for impacts to emergent wetlands would be appropriate for consideration under the TxDOT-TPWD MOU either as a type of riparian area or as a locally important habitat feature. In light of the predominance of non-native species in the grassland areas and the diminished habitat value resulting from periodic mowing of floodplain grasslands, such areas are not considered to be a locally important habitat feature and consideration of compensatory mitigation for permanent impacts to this type of habitat are not warranted. Moreover, mitigation in the form of restoring plant cover in borrow areas and temporarily disturbed ROW areas with native grasses as outlined above would result in an improvement of habitat as compared to prevailing nonnative grassland conditions. The impacts to open water habitat would be approximately 3.7 percent of open water resources in the project area. Accordingly, consideration of compensatory mitigation for impacts to open water habitat would not be warranted.

Compensatory mitigation would be appropriate to address impacts to riparian forests and aquatic habitats (i.e., forested wetlands and emergent wetlands). Stands of riparian forests affected by construction would be replaced by replanting similar species within the Trinity River floodplain in accordance with the City of Dallas Vegetation Ordinance, through in-lieu fee payment to the City of Dallas, or through the acquisition of property with an existing stand of mature trees along the Trinity River Corridor. Any planting of trees within the Dallas Floodway would be subject to approval by the USACE and City of Dallas because the introduction of trees into floodplain areas may adversely affect floodwater hydraulics. This consideration may require replacement tree planting to be located within the Trinity River floodplain downstream of the project area. Compensatory mitigation for the loss of aquatic resources would be addressed via in-lieu fee

payment in accordance with a Section 404 Mitigation Plan, which is discussed further in **FEIS Section 5.4**.

5.3.4 Avoidance of Adverse Effects/Impacts to Rare Species

A plan to avoid and minimize effects/impacts to federal/state threatened or endangered species would be developed prior to project construction. The plan would be developed in consultation with TPWD and USFWS and would focus on avoiding potential effects/impacts to the federal/state-listed interior least tern, and state-threatened mollusk species, alligator snapping turtle, and timber/canebrake rattlesnake (see **FEIS Section 4.9.3**). A pre-construction wildlife survey would be conducted in collaboration with the resource agencies to determine presence of these species and identify habitat areas of particular sensitivity to these species. The surveys would also serve to determine the presence of other species that may require special treatment. The locations of any tern nesting areas and important roost sites would be discussed with the construction team and flagged for avoidance. If protected mollusk species are found in water bodies subject to mechanical disturbance, a plan would be developed for the removal of mussels and relocation to a site approved by the TPWD.

5.3.5 Preventing Adverse Impacts to Migratory Birds

As discussed in **FEIS Sections 3.4.7.5** and **4.9.3.3**, taking steps to avoid harm to migratory birds is necessary to ensure compliance with the MBTA. Prior to construction, a survey of areas likely to contain migratory bird nests (e.g., forests, and bridge structures) would be conducted to verify if any migratory birds or nests are located in the project area. Additionally, the bird nest survey should include habitat suitable for ground nesting birds, such as preferred habitat for the interior least tern (i.e., open sandy/gravelly or similar areas). The construction contractor would remove all old migratory bird nests between October 1 and February 15 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. In the event migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

5.4 WATERS OF THE U.S., INCLUDING WETLANDS

As discussed in **FEIS Sections 3.4.3** and **4.8**, Section 404 of the CWA and EO 11990 (Protection of Wetlands) require impacts to waters of the U.S., including wetlands, to be avoided if practicable, or otherwise minimized. Build Alternative 3C would require an Individual Permit or RGP 12 authorization under CWA Section 404 and would also require issuance of a permit under RHA Section 10, and would be subject to the mitigation requirements of the applicable regulatory programs. These requirements include the selected fill or dredged material disposal sites in accordance with Section 404(b)(1) guidelines and the development of a mitigation plan to address unavoidable impacts to aquatic resources. The information required for USACE Section 404 review is included in **FEIS Appendix G**. In conjunction with the Section 404 permit process, Individual Permit applications are reviewed by the TCEQ to receive Water Quality Certification in compliance with Section 401 of the CWA (see **FEIS Appendix G-2**). Under RGP 12, projects that result in the loss of greater than 0.5 acre of waters of the U.S. would require a Section 404(b)(1) analysis and a Water Quality Certification during the Section 408 process.

In accordance with the CWA Section 404(b)(1) guidelines, wetland mitigation is identified as avoidance, minimization, and compensatory mitigation. These guidelines focus on the avoidance of adverse impacts to wetlands with the goal of no overall net loss of wetland functions. Consideration for avoidance and minimization of impact to wetlands would be given throughout the design and construction process. In addition, design features such as construction alternatives (e.g., retaining walls and steeper side slopes) would be considered to avoid or minimize impacts to waters of the U.S., including wetlands. Specific measures to protect waters of the U.S., including wetlands, and to reduce erosion and maintain water quality may include the following:

- **Temporary exclusion fencing** – identify all waters of the U.S., including wetlands, in the vicinity of construction staging areas that are proposed to be avoided or preserved; include the placement of temporary construction fencing in the final design.
- **Incremental grading** – phase construction areas to remove vegetation only in areas that are actively under construction; maintain vegetation coverage for as long as possible to reduce secondary impacts that may occur as a result of stormwater runoff from the areas of bare ground.

- **Soil stockpiling** – identify temporary soil disposal sites to avoid any unauthorized placement of fill within waters of the U.S., including wetlands; develop soil management plan which outlines construction phasing and soil stockpiling.
- **Compensatory mitigation** – provide compensatory mitigation in accordance with the compensatory mitigation plan included in **FEIS Appendix G-3**.

In those instances where avoidance is not possible across an entire alignment, mitigation often includes compensating unavoidable impacts. Compensation would include restoration, enhancement, creation of wetlands, or mitigation banking. Regulatory policy regarding compensatory mitigation requires the applicant to first consider mitigation bank credits and in-lieu fee program credits over applicant-responsible mitigation (33 CFR Part 332).

The primary means of assuring appropriate mitigation for impacts to waters of the United States, including wetlands is the CWA Section 404 permit process. As mentioned above, several key components that are part of that process have been included as appendices to this document. **FEIS Appendix G-1** contains a preliminary analysis of the USACE Section 404(b)(1) guidelines that includes an analysis regarding impacts and mitigation for a variety of attributes for waters of the U.S., including wetlands. **FEIS Appendix G-2** presents the responses to the TCEQ CWA Section 401 water quality certification questionnaire. **FEIS Appendix G-3** sets out a preliminary CWA Section 404 mitigation plan. This plan provides details about specific impact avoidance and minimization measures that would be employed, the expected direct and indirect impacts of Alternative 3C on waters of the U.S., including wetlands, and a description of mitigation banking credit determination methodology to adequately compensate for unavoidable adverse impacts to waters of the U.S., including wetlands.

5.5 FLOODPLAINS

To comply with EO 11988 (Floodplain Management), the proposed project must be designed to avoid floodplain impacts where practicable and to adequately mitigate unavoidable impacts. In accordance with the EO and the FHWA floodplain regulations (23 CFR Part 650, Subpart A), practical measures to minimize harm to floodplains are incorporated in the Trinity Parkway design. If Alternative 3C is selected, there would be floodplain modifications required to minimize floodplain impacts. Little or no change to existing drainage patterns would be expected within or downstream from the project area. Impacts to floodplains are minimized by following standard stream crossing design criteria, avoiding direct impacts on stream channels, and adjusting the alignment where possible. Bridge and roadway designs seek to minimize impacts to floodplains

in compliance with the FHWA requirements, including efforts to span 100-year floodplains. Final designs would adhere to the FHWA drainage criteria for both minor and major hydraulic structures, as well as following all FEMA requirements. **FEIS Section 4.14** discusses floodplain impacts and the results hydraulic modeling of the Trinity River are presented in **Tables 4-42** and **4-43**. Specific measures may include the following:

- Continued coordination with federal, state, and local governments concerning issues related to floodplain encroachment;
- Installation of detention basins, infiltration beds, or other structural controls to reduce and minimize the effects of increased runoff due to substantial increases in impervious surfaces;
- Cut and fill balance within the floodplain to preserve flood carrying capacity of the Dallas Floodway;
- Bridging over drainage sumps to avoid impacts to floodplains in developed areas; and
- Vegetation management to achieve the desired roughness for floodwater conveyance.

The FHWA regulations implementing EO 11988 (Floodplain Management) require that an “only practicable alternative” finding be prepared for projects that result in a significant floodplain encroachment (23 CFR Part 650, Subpart A). These requirements further require that, in the absence of a practicable alternative without significant floodplain encroachment, the FHWA must select the least environmentally damaging alternative if there is more than one alternative with significant floodplain encroachments. The analysis of EO practicability included in **FEIS Section 2.8** concludes that Alternatives 2A and 2B are not practicable and that Alternative 3C, when compared to Alternative 4B, is the practicable alternative that would result in the least amount of adverse effects to floodplains.

5.5.1 Potential Mitigation Measures

Both direct and indirect construction impacts may be avoided by use of approved bridge and levee construction methods and temporary water quality/quantity BMPs, such as, but not limited to the following:

- Bridge superstructures would be constructed a minimum of 1 foot above the 100-year flood elevation where necessary;
- Bridge piers required to fall within the Trinity River (although not anticipated) would be designed to minimize obstruction of flow and constructed during periods of low water; and

- A backwater analysis would be done before final bridge and/or roadway design (using the USACE and FEMA computer models). This would ensure that construction techniques proposed would not decrease the channel-carrying capacity, increase the 100-year floodplain elevation, and/or create erosive velocities more than that allowed by the CDC requirements.

Other considerations may include:

- Aligning new bridge piers with nearby remaining piers;
- Employing long bridge spans (to minimize the number of piers involved);
- Increasing the channel cross-sectional area through reshaping the stream bank(s);
- Compensatory channel conveyance improvements (to offset floodplain conveyance loss);
and
- Minimize construction impacts beyond the ROW footprint within the floodplain.

Many of the listed mitigation measures are steps that would be taken during the final design of the proposed project. However, minimizing impacts resulting from floodplain encroachment has been a major area of emphasis throughout Trinity Parkway project development. Ongoing coordination has been occurring with the USACE and the City of Dallas to ensure that schematic design of Alternative 3C is compatible with the flood conveyance mission of the Dallas Floodway. Iterative hydraulic modeling has been conducted to ensure that proposed embankments are offset by excavations and other design aspects so that the project will either meet the 1988 ROD criteria or be sufficiently close to those criteria to warrant consideration of a variance. The siting of Alternative 3C has been modified twice over the years of project development to increase compatibility with floodway levees, and project design elements have been added to enhance the security of the floodway (e.g., addition of diaphragm walls). Where applicable, the placement of new bridge piers are aligned with existing bridge piers within floodplain areas (e.g., ramps connecting to IH-45).

5.5.2 U.S. Army Corps of Engineers

The Dallas Floodway is a federal project with oversight from the USACE. Prior to construction, the proposed project would require USACE review and approval, by the Chief of Engineers, of any modifications to the Dallas Floodway lands. The following paragraph is from an October 23, 2006 Memorandum (USACE, 2006) describing Policy and Procedural Guidance for the Approval of

Modification and Alteration of Corps of Engineers Projects pursuant to Section 408. The memorandum is located in **Appendix E**.

“Any proposed modification to an existing Corps projects (either federally or locally-maintained) that go beyond those modifications required for normal O&M require approval under 33 USC Section 408. 33 USC Section 408 states that there shall be no temporary or permanent alteration occupation or use of any public works including, but not limited to levees, sea walls, bulkheads, jetties, and dikes for any purpose without the permission of the Secretary of the Army. Under the terms of 33 USC Section 408, any proposed modification requires a determination by the Secretary that such proposed alternation or permanent occupation or use of a federal project is not injurious to the public interest and will not impair the usefulness of such work. The authority to make this determination and to approve modifications to federal works under 33 USC Section 408 has been delegated to the Chief of Engineers.”

5.5.3 City of Dallas Fill Permit

Encroachment into a non-federal floodway is prohibited within the City of Dallas unless a professional registered engineer certifies that encroachment would not increase the design flood elevation and:

1. The applicant meets the permitting requirements of FEMA;
2. The encroachment complies with the City of Dallas requirements governing fills in floodplains; and
3. Floodplain encroachment must not result in any increase in the elevation of the design flood within the Dallas Floodway levee system.

Proposed projects requiring fill in the floodplain cannot proceed without a fill permit approved by the Dallas City Council. The applicant for a fill permit must submit an application to the Trinity Watershed Management Department – Floodplain and Drainage Management, and must fulfill both the city and FEMA’s criteria.

The application must be accompanied by a hydraulic engineering analysis and maps prepared by a licensed professional engineer, including a landscape and erosion control plan (with a tree survey of all trees greater than 6-inch caliper in the floodplain), and also an environmental impact study, where applicable. Additionally, the applicant is required to obtain any other permits, which

could include a USACE Section 404 permit dealing with wetlands. Copies of the application are sent to the Director of Planning and Development and the Director of Park and Recreation for their review and approval and determination of city interest in acquiring the property proposed for fill.

The engineering analysis must prove that the proposed fill meets the city's criteria for filling in the floodplain, which include the following:

- The proposed fill must not increase the 100-year water surface elevation or the stream's erosive velocities and must preserve part of the natural ability of the stream to store portion of the floodwater (called valley storage). This can be achieved by compensating for the proposed fill with excavation of a piece of land, the size of which is determined by the mathematical computer/hydraulic models engineers use; and
- A landscape plan needs to be prepared showing which trees would be preserved and also the size, type, and location of all proposed trees, as specified in the city's floodplain ordinance.

The Trinity Watershed Management Department (formerly Public Works and Transportation Department) engineers review the submitted engineering analysis and all maps and plans, and if they meet the established city criteria, the most important of which are outlined above, the fill permit application goes to the City Council for approval. A public notice and a notice to adjacent municipalities are sent approximately two weeks prior to the public hearing held by the City Council. Once the City Council has approved a fill permit, the Trinity Watershed Management Department issues authorization to the applicant. When the applicant obtains a fill permit, the fill project must be completed according to the plans submitted and then have a certified surveyor prepare an as-filled survey of the property. A copy of the as-filled survey is then submitted to the City of Dallas.

The process described above to obtain a fill permit from the City of Dallas for the proposed action would be initiated during final design. As previously mentioned, minimizing impacts from floodplain encroachment has been a major area of emphasis throughout project development. Ongoing coordination has occurred with the USACE and the City of Dallas, which has resulted in design refinements and iterative hydraulic modeling to ensure that the project will either meet applicable requirements for the floodway or be sufficiently close to warrant consideration of a variance.

5.5.4 Corridor Development Certificate

The proposed action may require a CDC permit, which would be processed and issued by the City of Dallas. As described in **FEIS Section 3.5.6.4**, participating municipalities review applications for floodplain fill permits according to a common set of permit criteria. The CDC calls for the maximum allowable loss in valley storage for the 100-year flood and SPF discharges to be 0 percent and 5 percent, respectively.

5.5.5 Summary

Floodplain mitigation for this project includes avoidance, minimization, and engineering controls. Bridges, retaining walls, and other measures have been incorporated into the project design to minimize encroachment. Should Alternative 3C be selected in the anticipated ROD, final design would comply with the FHWA floodplain regulations (23 CFR Part 650, Subpart A), and all other federal, state, and local regulatory requirements.

5.6 CULTURAL RESOURCES AND PARKLANDS

5.6.1 Cultural Resources

Alternative 3C would have an adverse effect on the NRHP-eligible Continental Avenue Viaduct; therefore, under Section 106 of the NHPA, the FHWA and TxDOT are required to explore potential mitigation measures. Measures may be on-site or off-site, depending on need and an analysis of how to best serve preservation and historical interests. On-site measures could include ensuring the replacement bridge section compliments the historic bridge, or providing an interpretive plaque discussing the historic viaduct. Off-site measures could include Historic American Engineering Record (HAER) documentation of the viaduct. In the event Alternative 3C is selected in the anticipated ROD, an official course of action to mitigate adverse effects will be developed and included in a MOU produced from coordination between the FHWA, TxDOT, and the SHPO. The Section 106 MOU would be executed prior to the signing of the ROD.

5.6.2 Parks and Recreational Areas

Mitigation for impacts to public parks and recreational areas for this project initially involved the development of alternative alignments that avoided or minimized impacts to these resources.

Any new park/recreational use that may be affected by proximity or indirect impacts can be planned and designed to avoid or minimize those impacts.

FEIS Section 4.7.3 discusses the proposed project noise impacts. Based on the noise analysis, no existing parks would be noise impacted by Alternative 3C. Future recreational facilities are proposed to be constructed within the Trinity River Greenbelt Park. These future facilities are being planned by others concurrently with the roadway project. The noise analysis included specific areas within the park where amenities are proposed, considered reasonable and feasible noise mitigation, and included noise impact contour data for undeveloped areas in the park. These efforts would guide local officials responsible for land use control programs to ensure, to the maximum extent possible, that new recreational activity areas within the park are planned or constructed with the predicted future noise environment in mind.

Alternative 3C would require ROW from the Trinity River Greenbelt Park (Dallas Floodway), and acreage impacts would be approximately 222 acres. This would not constitute a direct use (take) of parkland because the deed for this property includes a conveyance for transportation facilities (see correspondence in **Appendix A-1, Pages 33-43** and **54-65**).

As previously mentioned, the NTTA is participating in a cooperative planning effort with all agencies involved with proposed recreational and non-recreational developments planned for the Dallas Floodway (Trinity River Greenbelt Park) and DFE (Great Trinity Forest Park) portions of the project area. **FEIS Section 1.6.1.2** presents details on the cooperative planning efforts of the implementing agencies on the various projects within the Dallas Floodway. The NTTA will continue to work closely with these agencies in order to maximize these multi-project planning efforts and, thereby, work to minimize any potential adverse impacts that may result from the Trinity Parkway.

5.7 HAZARDOUS WASTE SITES

Avoiding hazardous waste sites would be a priority during the final design stage. Site assessments would be carried out to the degree necessary to identify the levels of contamination and, if necessary, to evaluate the options to remediate, along with the associated costs. Resolution of any concerns associated with contamination would be coordinated with the appropriate regulatory agencies prior to ROW acquisition, and appropriate action would be taken.

Any required mitigation of identified hazardous material concerns would include those for proper management and disposal of hazardous wastes encountered during construction and precautions

for worker health and safety. In the event hazardous materials are unexpectedly encountered during construction, a contingency plan or other health and safety procedures would be in place establishing procedures for temporary stoppage of work, securing of the area, notification of the discovery, and proper management of such materials. All procedures would be consistent with NTTA's guidelines and federal, state, and local laws and regulations. Alternative 3C would encounter 24 identified hazardous sites.

The demolition and removal of all structures would include procedures for the identification, abatement, handling, and disposal of lead-based paint and asbestos, as well as worker health and safety. All procedures would be consistent with NTTA's guidelines and all federal, state, and local laws and regulations.

5.8 MEASURES TO MINIMIZE CONSTRUCTION IMPACTS

Construction activities may result in several impacts that may cause inconvenience. These impacts can be categorized as follows:

- Airborne dust due to clearing, grubbing, hauling, and construction activities;
- The use of local and regional streets and arterials to haul materials and equipment to and from the site;
- Temporary materials and equipment on-site storage;
- Increase in noise levels due to construction activities and equipment;
- Temporary utility rerouting;
- Temporary traffic detours; and
- Soil and water runoff due to rain and dust control.

Construction impacts are mitigated on two levels, direct intervention methods, and construction procedures that effectively lessen construction impacts below the levels that would occur if these procedures were not employed.

Direct intervention methods are typically active measures required in permits, FHWA's Standard Specifications, or local ordinances pertaining to the mitigation of construction impacts. Mitigation recommendations for erosion and sedimentation, water pollution, and noise impacts are included in this chapter. Unforeseen construction impacts would be handled through a review process, BMP's, and implementation of other procedures, if necessary.

Traffic impacts during construction would be addressed by implementation of a Traffic Management Plan (TMP). TMPs include the following:

- Staging of construction activities;
- Providing detours around construction areas;
- Limiting work on arterial streets to off-peak hours;
- Confining haul routes to designated streets; and
- Providing a public relations and media campaign to inform residents and motorists of upcoming activities.

5.8.1 Pedestrian/Vehicular Safety During Construction

To ensure pedestrian safety, ample width for construction activities would be provided, properly equipped machinery would be employed, temporary or permanent fencing would be erected, and guidelines for equipment operators and supervisors would be enforced. Steps would be taken to control access to construction zones by pedestrians, especially children. Particular consideration would be given to areas likely to have the most pedestrian activity. In addition, the use of flag persons, signs, barricades, and the general restriction of construction activities to daylight hours, when feasible or appropriate, should substantially reduce the risk of vehicular accidents during the construction period. Construction would normally occur during daylight hours, although some construction might also occur at night.

5.8.2 Construction Air Quality Impacts

Impacts to ambient air quality would occur as a result of construction activities. Fugitive dust and particulate matter, including emissions, would be generated during project excavation and filling. Construction equipment and off-site vehicles used for hauling debris and supplies would also produce emissions during construction. The pollutants of primary concern include fugitive dust, PM₁₀, reactive organic gases, NO_x, CO, and to a lesser extent, sulfur dioxides. The degree of air quality impact due to construction emissions is difficult to predict and depends on many variables such as the type of weather, construction vehicles, and the timing and phasing of construction activities. However, project construction would be conducted in accordance with all federal, state, and local regulations that govern construction activities and emissions. Specific mitigation measures that can be utilized would be identified in a dust control plan prepared prior to project construction. These mitigation measures would comprise some or a combination of the following:

- Stabilize construction roads and dirt piles with water and/or chemicals;
- Limit speeds on unpaved construction roads;
- Remove dirt spilled onto paved roads daily;
- Periodic watering on dirt roads to reduce dust;
- Cease grading and excavation activities when wind speeds exceed 25 mph and during extreme air pollution episodes;
- Require covering of all haul trucks;
- Phase grading to minimize the area of disturbed soils;
- Phase construction to minimize daily emissions;
- Ensure proper maintenance of construction vehicles to maximize efficiency and minimize emissions;
- Revegetate road medians and slopes promptly; and
- Implement an aggressive mitigation plan to minimize impacts to ambient air quality and the nuisance impacts to the public in proximity to the project corridor.

5.8.3 Construction Noise Impacts

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 activity normally occurs during daylight hours, some construction activity may be required at night. Construction noise levels could be minimized by the use of one or a combination of the general methods listed below. These noise reduction measures would be considered where they are reasonable, feasible and practicable. Factors such as space limitation, equipment efficiency, construction timing and other particular construction problems would limit the use of any of these methods.

- Noise barriers that are proposed for traffic noise abatement could be constructed prior to other project-related construction. This would allow the walls to help protect noise-sensitive areas from construction noise.
- Locate stationary equipment such as compressors, generators, and other diesel-powered equipment as far away from nearby noise sensitive areas as possible.
- Shut off idling equipment when not in use.
- Schedule construction operations near noise sensitive areas during daylight hours. Operating limitations can be particularly effective when the construction site is near schools or churches, where a quiet environment is essential during certain hours of the day.

- Route construction equipment and vehicles into areas that would cause the least disturbance to nearby receptors.

5.8.4 Value Engineering

Title 23 CFR Part 627 requires the application of value engineering (VE) to all federal-aid highway projects on the National Highway System (NHS) with an estimated cost of \$25 million or more. The FHWA defines VE as “the systematic application of recognized techniques by a multi-disciplined team to identify the function of a product or service, establish a worth for that function, generate alternatives through the use of creative thinking, and provide the needed functions to accomplish the original purpose of the project, reliably, and at the lowest life-cycle cost without sacrificing safety, necessary quality, and environmental attributes of the project” (23 CFR Section 627.3). Accordingly, a VE analysis is required for the proposed project to improve project quality, foster innovation, eliminate unnecessary and costly design elements, and ensure efficient investments.

5.9 MITIGATION COMMITMENTS

The FHWA/TxDOT/NTTA and the City of Dallas have the responsibility to ensure the mitigation and enhancement measures committed to in the environmental document, as well as those contained in applicable permits, are completed satisfactorily. Similarly, it is also the FHWA policy that all environmental commitments be properly maintained and operated. The FHWA is required to assure compliance as part of its program management responsibilities [23 CFR 771.109(b)]. This includes review of designs, plans, specifications, estimates, and construction inspections.

The mitigation measures described below are potential commitments made by the NTTA and would be finalized prior to or immediately following publication of the anticipated ROD. The NTTA and its agents would be responsible for implementing the project commitments and monitoring construction activities; and the FHWA would be responsible for overseeing the implementation of mitigation measures identified in the environmental documents.

The commitment to develop project specific “mitigation plans” is included in the mitigation measures discussed below. These plans would be developed after consideration from the City of Dallas and the various resource agencies having jurisdictional responsibilities within the project area. In some instances, the mitigation plans for specific resources overlap with measures to mitigate other impacts (e.g., mitigation of impacts to visual resources and vegetation). Thus,

measures to mitigate impacts for any particular resource may be addressed within more than a single parameter mitigation plan.

It may be necessary to revise and refine the mitigation plans as additional information is collected and details are developed during final design. Input from City of Dallas and approval by resource and regulatory agencies including FHWA would be obtained before substantive revisions are made.

5.9.1 Environmental Oversight and Monitoring

The NTTA would develop a construction oversight and environmental monitoring program specific to the Trinity Parkway, which is similar to the environmental oversight program implemented for the President George Bush Turnpike (Segment IV). The purpose of the oversight and monitoring program would be to outline the activities to be implemented by the NTTA during design and construction to ensure that environmental commitments are met and mitigation measures are properly implemented.

5.9.2 Temporary Impacts to Vegetation

Temporary impacts to vegetation would be minimized by limiting construction activities to the minimum area needed to complete the necessary improvements to the tollway. A pre-construction conference and field review involving NTTA staff and construction contractors would be held prior to the start of project construction to establish and review the locations and boundaries of construction. Subsequent to the pre-construction conference and field review, a report would be prepared that identifies areas to be avoided during project construction and identifies any other special provisions to be followed by the contractor. The limits of construction staging areas would be surveyed and staked in the field prior to construction. The perimeter would be fenced or flagged during construction.

5.9.3 Water Quality

Impacts to water quality would be avoided and/or mitigated by the following measures.

- A SW3P would be prepared in accordance with the TPDES permit requirements. The SW3P would identify specific measures and techniques to prevent excessive silt and/or chemical contaminants from being washed into perennial streams and ephemeral drainages during storm events.

- The NTTA would construct the proposed project according to the requirements of its MS4 stormwater permit, as well as the Phase 1 City of Dallas MS4.

5.9.4 Revegetation Plan

A revegetation plan would be developed prior to project construction that specifies the areas to be revegetated, species of plants to be used for revegetation, and the techniques to be used to revegetate disturbed areas. The revegetation plan would also identify the special techniques to be used to establish vegetation on steep slopes (i.e. slopes with a grade steeper than 3:1) or alternative techniques and measures to prevent erosion. The revegetation plan would be developed in consultation with TPWD and USFWS, as necessary, and would specify the use of plant species that are native to the project area and that would enhance the quality of habitat within the ROW. In addition to general mitigation methods and techniques, the revegetation plan would include the specific provisions relating to mitigation for loss of riparian forests be replaced by replanting similar species within the Trinity River floodplain in accordance with the City of Dallas Vegetation Ordinance, through in-lieu fee payment to the City of Dallas, or through the acquisition of property with an existing stand of mature trees along the Trinity River Corridor.

5.9.5 Protected Species

A plan to avoid and minimize effects/impacts to federal/state threatened or endangered species would be developed prior to project construction. The plan would be developed in consultation with TPWD and USFWS and would focus on avoiding potential effects/impacts to the federal/state-listed interior least tern, and state-threatened mollusk species, alligator snapping turtle, and timber/canebrake rattlesnake. The plan would include a pre-construction wildlife survey to determine presence of these species and identify habitat areas of particular sensitivity to these species. The locations of any tern nesting areas and important roost sites would be discussed with the construction team and flagged for avoidance. If protected mollusk species are found in water bodies subject to mechanical disturbance, a plan would be developed for the removal of mussels and relocation to a site that would be approved by the TPWD.

5.9.6 Migratory Birds

To ensure compliance with the MBTA, a pre-construction survey of areas likely to contain migratory bird nests (e.g., forests, and bridge structures) would be conducted to verify if any migratory birds or nests are located in the project area. The construction contractor would remove all old migratory bird nests between October 1 and February 15 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. In the event migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

5.9.7 Waters of the U.S., Including Wetlands

Impacts to waters of the U.S., including wetlands, would be avoided and/or mitigated by the following measures.

- Construction of new structures that involves dredging and filling in waters of the U.S. would be conducted in accordance to the requirements of Section 401 and Section 404 of the CWA. Coordination with the USACE and TCEQ would continue through project design to ensure the CWA BMP requirements are included in construction plans. Oversight and monitoring of project construction by the NTTA would be provided to ensure that the SW3P, Section 401, and Section 404 permit requirements are followed. An oversight and monitoring plan would be developed in collaboration with the USACE and TCEQ.
- To avoid unnecessary wetland impacts during construction, staging areas and borrow areas would avoid wetlands where practicable. Wetlands receiving only temporary impacts would be returned to pre-construction contours and re-vegetated with appropriate native plants for the site. A wetland mitigation plan would be prepared prior to project construction. This plan would be developed in collaboration with the USACE and resource agencies. Once approved, the wetland mitigation plan may be modified prior to construction with the approval of the USACE. The mitigation plan would include avoiding unnecessary wetland impacts during construction by locating staging areas and borrow areas to avoid wetlands where practicable. Heavy equipment would avoid all wetland areas that are not included as impacts areas in the Section 404 permit. The mitigation plan would compensate for the loss of aquatic functions associated with the waters of the U.S. impacts through the purchase of mitigation banking credits. The project area is located within the service area of several mitigation banks including the Bunker Sands Mitigation Bank, South Forks Trinity River Mitigation Bank, Mill Branch Mitigation Bank and Trinity River Mitigation Bank. As such, the applicant proposes to purchase the appropriate number of credits from one of the available banks, or a combination thereof, depending on which bank has the required number of credits available at the time of the purchase. However, if sufficient mitigation bank credits are not available from one or more mitigation banks, then additional NEPA documentation

may be needed during the Section 408 review process to address the compensatory mitigation activities that would be included in a modified Section 404 Mitigation Plan (see **Appendix G-3**).

5.9.8 Floodplains

Impacts to floodplains would be avoided and/or mitigated by the following measures.

- In accordance with the 1988 Trinity Regional EIS ROD criteria, the selection of a Build Alternative within the Dallas Floodway would be reviewed by FEMA, City of Dallas, NCTCOG, and USACE as part of the CDC process to ensure there would be no loss of valley storage of floodwater. Such review would rely on a detailed hydraulic analysis of the Dallas Floodway's ability to convey the 100-year and SPF floods as modeled with proposed design features in place and as measured against specific hydraulic criteria originally established by the 1988 ROD. Similarly, USACE implements its regulatory authority over construction and operations within the Dallas Floodway through national flood control regulations (33 CFR Section 208.10) as well as through local floodway guidance issued by the USACE Fort Worth District. USACE approval of any construction within the Dallas Floodway is conditioned on demonstrating design, construction phasing, and mitigation measures that meet specific USACE guidelines for ensuring continuous protection of flood conveyance capacity. If Alternative 3C is selected in the FEIS ROD, it is likely that a variance to the 1988 ROD criteria pertaining to rises in the water surface elevation for a 100-year flood event would be required from the Fort Worth USACE District Commander. If approved, the variance would be issued as part of the Section 408 authorization process.
- Planning and design of all drainage structures would adhere to the FHWA design criteria to achieve compliance with EO 11988 (Floodplain Management) and would be coordinated with the Regulatory and Operation Branches of the USACE pursuant to Section 404 of the CWA. All conditions and requirements of Section 404 authorization for drainage crossings would be complied within their entirety during the final design phase of the project to ensure that floodplain capacity is not reduced and that floodplain management or development plans are not impaired.

5.9.9 Continental Avenue Viaduct

If Alternative 3C is selected in the anticipated ROD, an official course of action to mitigate adverse effects to the Continental Avenue Viaduct will be developed and included in a MOU

produced from coordination between the FHWA, TxDOT, and the SHPO. A mitigation plan would be prepared with the overall goal of preservation and protection of the historic architectural resource. General design guidelines would include the following:

- Every effort would be made to retain historic material, setting, workmanship, and design.
- To the extent practicable, new construction or additions/alterations would be distinctive from the original historic bridge and be reflective of the original design and intent, but not mimic it.
- Secondary elements associated with the bridge would be preserved or enhanced to the extent practicable as elements such as lighting, railing, and support structures are important architectural components of the overall bridge.

5.9.10 Community Impacts

Impacts to the individual property owners and the general communities affected by the project would be mitigated by the following measures:

- The acquisition of residences, structures, property, and any resulting relocations of persons and businesses would be conducted in accordance with federal and state laws including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and Title VI of the Civil Rights Act of 1964, as amended.
- Community enhancements may include sidewalks and access considerations, lighting, landscaping, trail/park access, and noise barriers.
- Emergency medical service providers would be consulted during the design phase to develop an emergency response plan that would provide continuous and acceptable service during project construction.
- Access to roadside businesses, side roads, and driveways would be maintained throughout construction.
- Noise workshops would be conducted with property owners where noise barriers have been determined to be reasonable and feasible. The workshops would determine if the noise barriers are wanted and if so what types of aesthetic treatments are preferred.

5.9.11 Hazardous Materials

A hazardous material mitigation plan would be developed to investigate and characterize the ROW and construction areas. The site characterization and closure plans would be overseen by the TCEQ.

[END OF CHAPTER]