Environmental Assessment

Proposed Baker Pumping Plant Improvements
Dallas, Texas

US Army Corps of Engineers®
Fort Worth District

February 2012

City of Dallas

This Page Intentionally Left Blank

DRAFT FINDING OF NO SIGNIFICANT IMPACT
PROPOSED IMPROVEMENTS TO THE
BAKER PUMPING PLANT
DALLAS, TEXAS

Description of Action. The United States Army Corps of Engineers (USACE) has prepared an Environmental Assessment (EA) to assess the potential environmental consequences resulting from implementation of proposed improvements to the Baker Pumping Plant in the City of Dallas, Texas. Section 5141 of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat.1041) provides authorization for improvements to interior drainage for the Dallas Floodway. The proposed improvements to the Baker Pumping Plant would be implemented in compliance with 33 United States Code § 408. The City of Dallas ("the City") is the action proponent

The purpose of the Proposed Action is to provide 100-year, 24-hour storm event flood risk management for the area served by the Baker Pumping Plant. The City needs to implement Baker Pumping Plant improvements because people and property in the Hampton – Oak Lawn Basin (which is drained by the Baker Pumping Plant) are currently subject to stormwater flooding impacts. By improving the Baker Pumping Plant, the City would be able to provide improved flood risk management to people and property in the Hampton – Oak Lawn Basin.

Under the Proposed Action, the City would construct a new approximately 13,000-square foot (ft) pump station (Baker No. 3) consisting of four, 175,000-gallons per minute (gpm) pumps, and one, 6,000-gpm low-flow pump. Discharge from the new pumps would flow through four 84-inch diameter pipes to the existing six 10 ft by 10 ft culverts under the levee and into the Trinity River. The existing New Baker Pump Station would operate in concert with the proposed new Baker No. 3 Pump Station. The Old Baker Pump Station would be decommissioned and its connections to the stormwater drainage system closed.

The City would also temporarily remove sections of the existing sump liner in the area immediately adjacent to the proposed Baker No. 3 Pump Station to improve drainage underneath the sump and allow for utility line maintenance and relocation. Additionally, the City would improve the existing New Baker Pump Station to increase the service life and minimize future maintenance. The improvements would include repairs to trash racks, handrails, stairs, service bridge, and surface erosion.

Anticipated Environmental Effects. Through the planning process, the City identified four feasible alternatives to address flood risk management needs within the project area and the no action alternative. Under the no action alternative, no flood risk management measures would be implemented. If no action were taken, current flood risk would likely continue and gradually worsen. The lack of protection from a 100-year, 24-hour storm event would likely result in loss of property and threat to human life. Other alternatives addressed various options for sump expansion, use of pressure sewers, and increasing pumping capacity by constructing new pumps and potentially demolishing the existing pump station. Three of the four remaining alternatives were eliminated from further consideration because either they did not meet flood risk management objectives of the proposed project or had potential for significant impacts if implemented.

The Proposed Action would not have any significant impacts on the social, economic, or human and natural environments. No adverse impact on any species, which are proposed or listed as threatened or endangered under the Endangered Species Act, is expected. No significant transportation, noise, land use, environmental justice, or hazardous waste concerns were identified within the project area. The existing Old Baker Pump Station is eligible for listing on the National Register of Historic Places. Consultation with the Texas State Historic Preservation Officer determined the proposed action would have no adverse effect on the Old Baker Pump Station. Contractors would be required to have erosion control, traffic control, and hazardous spill prevention plans in place. Proposed construction measures and operation and maintenance features of the project would meet the criteria for Nationwide Permit 13 - "Bank Stabilization."

Facts and Conclusions. Based on a review of the information contained in this EA, it is concluded that the implementation of the Baker Pumping Plant improvements in Dallas, Texas is not a major federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended.

_____ _____

Richard J. Muraski, Jr. Date
Colonel, Corps of Engineers
District Commander

ENVIRONMENTAL ASSESSMENT

Lead Agency for the EA:	United States Army Corps of Engineers, Fort Worth District
Cooperating Agency:	City of Dallas, Texas
Title of Proposed Action:	**Proposed Baker Pumping Plant Improvements, Dallas, Texas**
Designation:	Environmental Assessment

Abstract

The United States Army Corps of Engineers (USACE) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (42 United States Code [USC] §§ 4321, et seq.), the Council on Environmental Quality regulations found in 40 Code of Federal Regulations (CFR) Parts 1500-1508, and USACE regulations found in 33 CFR Part 230. This EA describes the potential environmental consequences resulting from implementation of proposed improvements to the Baker Pumping Plant in the City of Dallas, Texas (i.e., the "Proposed Action"). The purpose of the Proposed Action is to provide flood risk management for the 100-year, 24-hour storm event for the Baker Pumping Plant service area within the Hampton-Oak Lawn Basin. The City of Dallas needs to implement Baker Pumping Plant improvements because people and property in the Hampton-Oak Lawn Basin are currently subject to stormwater flooding impacts. By improving the Baker Pumping Plant, the City of Dallas would be able to provide improved flood risk management to people and property in the Hampton-Oak Lawn Basin.

Section 5141 of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat.1041) provides authorization for improvements to interior drainage for the Dallas Floodway. The proposed improvements to the Baker Pumping Plant would be implemented in compliance with 33 United States Code § 408. The City of Dallas is the action proponent.

Prepared By: United States Army Corps of Engineers
Fort Worth District

Point of Contact: United States Army Corps of Engineers
Fort Worth District
Attn: Marcia Hackett
819 Taylor Street, Room 3A14
Fort Worth, Texas 76102-0300
E-mail: Marcia.R.Hackett@usace.army.mil
Tel: (817) 886-1373
Fax: (817) 886-6499

February 2012

This Page Intentionally Left Blank

EXECUTIVE SUMMARY

The United States Army Corps of Engineers (USACE) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] §§ 4321, et seq.), the Council on Environmental Quality regulations found in 40 Code of Federal Regulations (CFR) Parts 1500-1508, and USACE regulations found in 33 CFR Part 230. This EA describes the potential environmental consequences resulting from implementation of proposed improvements to the Baker Pumping Plant in Dallas, Texas. The Baker Pumping Plant is located adjacent to the east levee of the Dallas Floodway near the intersection of Sylvan Drive and Irving Boulevard, in the City of Dallas, Texas.

The City of Dallas manages interior drainage by allowing the stormwater runoff to pool in sumps (low areas) in interior areas before pumping or gravity feeding it into the Dallas Floodway. The Baker Pumping Plant manages stormwater drainage in the Hampton-Oak Lawn Basin and currently consists of sump ponds, two pump stations ("Old Baker" and "New Baker"), and associated infrastructure. The existing pump stations have a combined pumping capacity of 614,000-gallons per minute (gpm).

Over the last 50 years, improvements to the Baker Pumping Plant have not kept up with changes in area hydrology or technology. The Baker Pumping Plant is not capable of managing predicted 100-year, 24-hour storm event water levels, resulting in increased flood potential and associated threats to people and property in the Hampton-Oak Lawn Basin. In March 2006, the need for improving the Baker Pumping Plant was demonstrated when a storm caused widespread flooding in the City of Dallas, resulting in one fatality and significant property damage.

The purpose of the Proposed Action is to provide 100-year, 24-hour storm event flood risk management for the area served by the Baker Pumping Plant. The City of Dallas needs to implement Baker Pumping Plant improvements because people and property in the Hampton-Oak Lawn Basin are currently subject to stormwater flooding impacts. By improving the Baker Pumping Plant, the City of Dallas would be able to provide improved flood risk management to people and property in the Hampton–Oak Lawn Basin.

Section 5141 of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat.1041) provides authorization for improvements to interior drainage for the Dallas Floodway. The proposed improvements to the Baker Pumping Plant would be implemented in compliance with 33 United States Code § 408. As the lead agency for this NEPA document, the USACE Fort Worth District must determine the technical soundness and environmental acceptability of this WRDA-authorized project, as documented in this EA. The City of Dallas is the action proponent for this EA, and has approved the proposed improvements to the Baker Pumping Plant with the passing of the 2006 Bond Program in an election held on November 7, 2006.

Implementation of the Proposed Action would reduce predicted 100-year, 24-hour storm event water levels to elevations at or below the established City of Dallas design water levels, reducing the potential flooding impacts to people and property in the Hampton–Oak Lawn Basin. In addition, proposed improvements would modernize and extend the service life of New Baker Pump Station for at least another 50 years; Old Baker Pump Station would be decommissioned.

The USACE analyzed two action alternatives in this EA: the Proposed Action and the No Action Alternative. Under the Proposed Action, the City of Dallas would construct a new pump station ("Baker No. 3") with a total pumping capacity of 700,000-gpm and associated infrastructure. Baker No. 3 Pump Station would use the existing six, 10-feet (ft) by 10-ft gravity sluices to convey stormwater to the Trinity River. The City of Dallas would also decommission the Old Baker Pump Station and complete minor improvements to the New Baker Pump Station.

ENVIRONMENTAL ASSESSMENT
PROPOSED BAKER PUMPING PLANT IMPROVEMENTS
CITY OF DALLAS, TEXAS

TABLE OF CONTENTS

APPENDICES

List of Figures

List of Tables

Acronyms and Abbreviations

ACM	asbestos containing materials
ADT	average daily traffic
AQCR	Air Quality Control Region
BMPs	Best Management Practices
CAA	Clean Air Act
CWA	Clean Water Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
dB	decibel
dBA	A-weighted decibels
DCLID	Dallas County Levee Improvement District
DFP	Dallas Floodway Project
DSHS	Department of State Health Services
EA	Environmental Assessment
EDR	Environmental Data Resources
EFCS	Eagle Ford Clay Shale
EIS	Environmental Impact Statement
EO	Executive Order
EWLIDS	East and West Levee Interior Drainage Systems
ft	foot/feet
FHWA	Federal Highway Administration
GHGs	greenhouse gases
gpm	gallons per minute
IH	Interstate Highway
LBP	lead based paint
NAAQS	National Ambient Air Quality Standards
NCTCOG	North Central Texas Council of Governments
NEPA	National Environmental Policy Act
NO_x	nitrogen oxides
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O_3	ozone
OSHA	Occupational Safety and Health Administration
PCN	Pre-Construction Notification
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ROI	Region of Influence
RONA	Record of Non-Applicability
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Officer
SH	State Highway

TCEQ	Texas Council on Environmental Quality
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Division
TRFCD	Trinity River Flood Control District
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOCs	volatile organic compounds
WRDA	Water Resources Development Act

CHAPTER 1
PURPOSE AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The United States Army Corps of Engineers (USACE) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] Section 4321, et seq.), the Council on Environmental Quality (CEQ) regulations found in 40 Code of Federal Regulations (CFR) Parts 1500-1508, and USACE regulations found in 33 CFR Part 230. This EA describes the potential environmental consequences resulting from implementation of proposed improvements to the Baker Pumping Plant in the City of Dallas, Texas.

1.2 PROJECT AREA

The City of Dallas is located adjacent to the Trinity River, just downstream of the confluence of the West and Elm Forks of the Trinity River. The Baker Pumping Plant is part of the East and West Levee Interior Drainage Systems (EWLIDS), which currently includes six pumping plants, associated sumps, seven pressure sewers, and numerous gravity sluices that, in total, serve much of the City of Dallas metropolitan area (Figure 1-1). The EWLIDS are discrete stormwater flood risk management systems separated by geography that are not hydrologically connected. The Baker Pumping Plant is located adjacent to the east levee of the Dallas Floodway off Pump Plant B Road, approximately 1,000-feet (ft) west of the intersection of Sylvan Avenue and Irving Boulevard (Figure 1-2).

The approximately 3,418-acre Hampton-Oak Lawn Basin defines the project area; however, this EA focuses on the potentially disturbed area associated with proposed improvements at the Baker Pumping Plant.

1.3 BACKGROUND

1.3.1 Dallas Floodway and Stormwater Drainage Systems

The Trinity River was vital to the early development of the City of Dallas. However, numerous large floods, including the catastrophic flood of 1908, led the City of Dallas to seek protection from Trinity River floodwaters. Between 1928 and 1931, the Dallas County Levee Improvement District (DCLID) constructed levees to protect the City of Dallas from riverine flooding. The DCLID relocated the confluence of the West and Elm Forks, and filled the remnant channel or set it aside for sump storage. In 1932, the DCLID had completed construction of the original components of the EWLIDS.

In the mid-1940s, major storms, compounded by continued urbanization in the watershed, resulted in severe flooding in the project area. To reduce flooding within the City of Dallas area, Congress authorized the flood control project termed the "Dallas Floodway" in 1945 and again in 1950. The USACE completed building the authorized Dallas Floodway project in 1958, which included significant improvements to the levees and the EWLIDS.

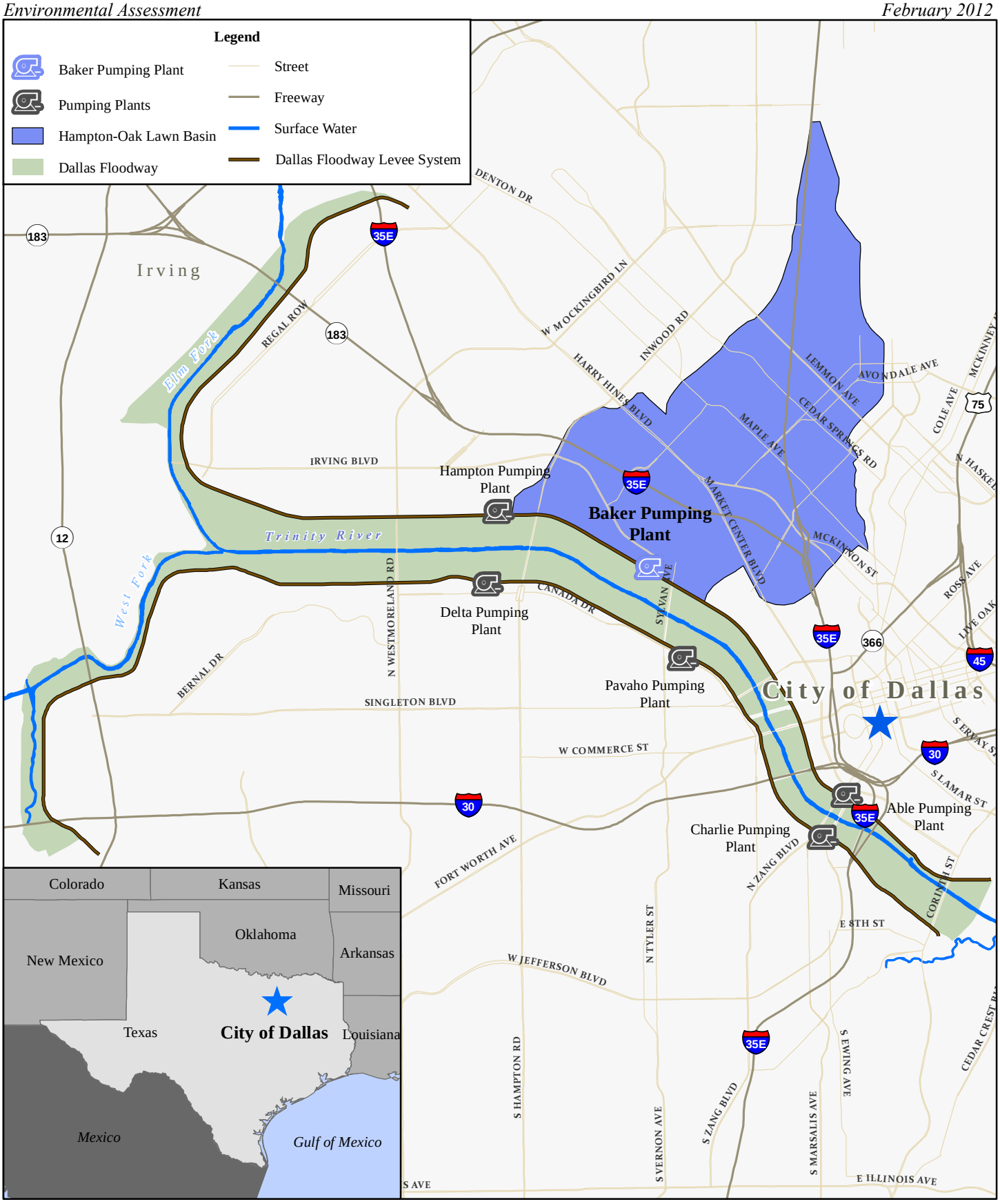


Figure 1-1
Regional Vicinity Map

Figure 1-2
Baker Pumping Plant and Sump

The same levees that protect the City of Dallas from Trinity River flooding also block local stormwater runoff from the interior (developed) side of the levee from reaching the Trinity River. This stormwater runoff on the developed side of the levee is referred to as "interior drainage." Thus, the City of Dallas manages interior drainage by allowing the stormwater runoff to pool in sumps (low areas) in interior areas before pumping or gravity feeding it into the Dallas Floodway. For the last 75 years, the City of Dallas (in cooperation with the USACE) has employed this strategy for managing stormwater in the EWLIDS.

The City of Dallas Trinity River Flood Control District (TRFCD) operates and maintains the Dallas Floodway and EWLIDS under the regulatory control of the USACE (City of Dallas 2008b). The City of Dallas TRFCD uses a sophisticated Supervisory Control and Data Acquisition (SCADA) system to control and monitor the operation of the pumping plants. As part of the system, the City of Dallas TRFCD incorporates a network of closed-circuit TV cameras and an Automated Local Evaluation in Real Time reporting system that provides real-time measurements of precipitation and stream and sump levels throughout the watershed.

In March 2006, the need for improving the EWLIDS was demonstrated when a significant local storm caused widespread stormwater flooding in the City of Dallas, resulting in one fatality and substantial property damage. During this storm, City of Dallas Police and Fire-Rescue Departments responded to hundreds of emergency rescue calls from stranded motorists and residents, several of which were in the Hampton-Oak Lawn Basin.

1.3.2 Storm Terminology

This document describes storms by their intensity and associated ability to affect the project area. By understanding the range of reasonably foreseeable floods and associated flood water levels that could affect the project area, responsible authorities can plan, design, and construct appropriately sized infrastructure to reduce the potential for injury and/or damage from flooding.

Using historical storm data, hydrologists describe the range of potential storm intensities and durations that could reasonably affect an area. This range or "recurrence interval," is the probability that a given storm will be equaled or exceeded in any given year. Thus, a storm event with a recurrence interval of 2 years would have a 50 percent chance of occurring in any year; a storm event with a recurrence interval of 500 years would have a 0.2 percent chance of occurring in any year. In this document, the storm used for modeling and engineering purposes in the project area is the "100-year, 24-hour storm event." This storm corresponds to the estimated amount of rain that would fall within a 24-hour period that has a 1 percent chance of occurring in any given year in the project area.

As a point of comparison, rainfall data collected in the EWLIDS basin during the March 2006 storm revealed the storm had an estimated recurrence interval of 40 years (2.5 percent chance of occurring in any given year).

1.4 BAKER PUMPING PLANT

1.4.1 Hampton-Oak Lawn Sump Ponds

The Baker Pumping Plant drains an area of approximately 3,418 acres. Sump storage for the Hampton-Oak Lawn Basin consists of the old Trinity River channel and levee borrow ditches generally located between Inwood Road and Oak Lawn Avenue (refer to Figure 1-2).

1.4.2 Baker Pumping Plant

The Baker Pumping Plant originally consisted of a single pump house that was constructed in 1928 as part of the DCLID. The original pump station, Old Baker, consists of four, 52,000-gallons per minute (gpm) pumps. In 1975, the City of Dallas constructed another pump station at Baker Pumping Plant (New Baker) consisting of five, 80,000-gpm pumps, and one, 6,000-gpm pump. In the 1980s, the City of Dallas installed six, 10 ft by 10 ft gravity sluices. When the Trinity River stage is low, stormwater flow gravitates via concrete sluices beneath the East Levee into the Trinity River. When the Trinity River rises, the City of Dallas closes the sluice gates and pumps the stormwater into the Trinity River. The Baker Pumping Plant outfall is located in the Dallas Floodway.

1.4.3 Storm Event Water Levels and Associated Potential Flooding Risk

This section presents the predicted 100-year, 24-hour storm event water levels; the City of Dallas design 100-year, 24-hour storm event water levels; and the number, type, and value of structures potentially subject to flooding impacts in the Hampton-Oak Lawn Basin. These model predictions and the subsequent comparison to existing conditions identified problems in the existing Baker Pumping Plant system and aided in the development of potential measures to address stormwater-flooding concerns (City of Dallas 2006, 2009a).

1.4.3.1 Predicted and Design 100-year, 24-hour Storm Event Water Levels

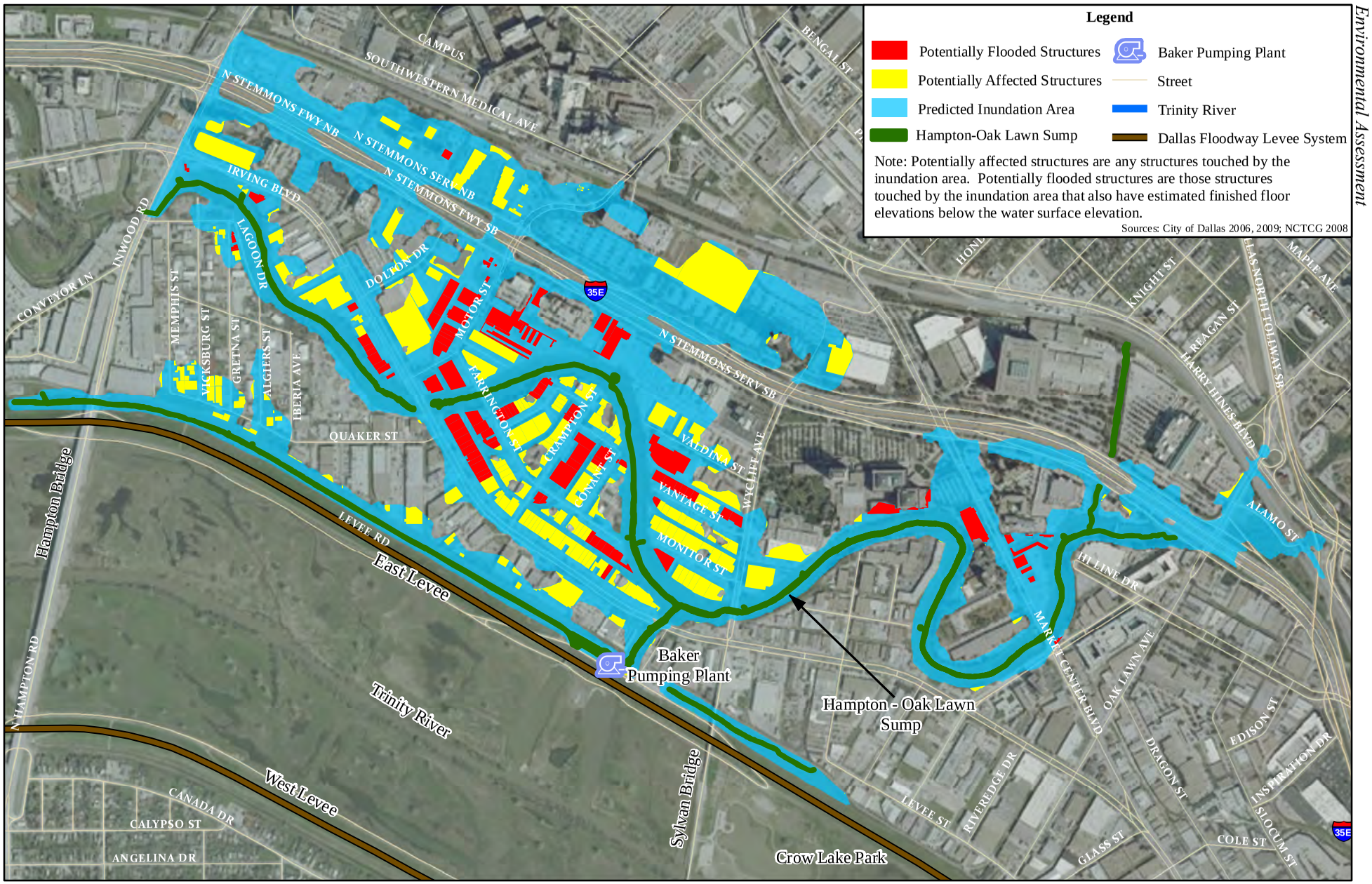
The predicted and design 100-year, 24-hour storm event water levels for the Hampton-Oak Lawn sumps are 403.7 ft and 402.5 ft, respectively. The design water level corresponds to original (1960s and 1970s-era) 100-year, 24-hour storm events, which reflected stormwater basin conditions at that time. Primarily due to changes in the stormwater basins, the design storm event water level no longer reflects current stormwater basin conditions (City of Dallas 2006, 2009a). As the predicted 100-year, 24-hour storm event water levels are greater than the original design storm event water levels, the Baker Pumping Plant is undersized to handle the predicted volume of stormwater, and flooding in areas adjacent to the Hampton-Oak Lawn sumps is likely.

1.4.3.2 Predicted Flooding Risk

A 2006 survey predicted that 141 structures are potentially subject to flooding from a 100-year, 24-hour storm event in the Hampton-Oak Lawn Basin (City of Dallas 2006). Flooded structures are those structures touched by the inundation area that have finished floor elevations below the predicted water surface elevation. Recent flooding (in 2006) of the Hampton-Oak Lawn sumps demonstrated that the Baker Pumping Plant does not have sufficient capacity to dewater the sumps in a timely manner.

According to currently available data, geographic information system (GIS) analysis indicates that flooding associated with the modeled 100-year, 24-hour storm event has the potential to affect 329 structures within the Hampton-Oak Lawn Basin. A "potentially affected structure" is any structure touched by the predicted inundation area. Thus, of these 329 structures, 104 are subject to flooding (City of Dallas 2008a). The potentially affected structures are primarily industrial or commercial with some residential properties (for demographic information, refer to Section 3.9.1). As of 2006, the total market value of these structures was $300,021,730 (City of Dallas 2009b).

Figure 1-3 depicts the predicted flood inundation area and the potentially affected structures during a modeled 100-year, 24-hour storm event in the Hampton-Oak Lawn Basin, based on current conditions. As a point of comparison, the 100-year, 24-hour storm event has the potential to affect 1,644 structures in the entire EWLIDS (City of Dallas 2009b).



Meters
0 75 150 225 300
0 250 500 750 1,000
Feet

Figure 1-3
Predicted Inundation Areas and Potentially Affected Structures Resulting from Modeled 100-Year, 24-Hour Storm Event under Existing Conditions

N

1.5 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to provide 100-year, 24-hour storm event flood risk management for the area served by the Baker Pumping Plant. The City of Dallas needs to implement Baker Pumping Plant improvements because people and property in the Hampton-Oak Lawn Basin are currently subject to stormwater flooding impacts. By improving the Baker Pumping Plant, City of Dallas would be able to provide improved flood risk management to people and property in the Hampton-Oak Lawn Basin.

1.6 PROJECT AUTHORITY

Section 5141 of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat.1041) provides authorization for improvements to interior drainage for the Dallas Floodway. The proposed improvements to the Baker Pumping Plant would be implemented in compliance with 33 United States Code § 408. The City of Dallas is the action proponent for the proposed modifications. The federal interests in property are currently owned and maintained by the City of Dallas as part of the Dallas Floodway. As the lead agency for this NEPA document, the USACE Fort Worth District must determine the technical soundness and environmental acceptability of the proposed project, as documented in this EA. This analysis takes into consideration the potential environmental aspects of the action alternatives. The information will be made available to the public before reaching a decision, pursuant to CEQ requirements for public involvement (40 CFR § 1506.6).

The City of Dallas approved the proposed improvements to the Baker Pumping Plant with the passing of the 2006 Bond Program in an election held on November 7, 2006. The proposed improvements were included in the 2006 Bond Program under Proposition 2 – Flood Protection and Storm Drainage Facilities.

1.7 USACE ENVIRONMENTAL OPERATING PRINCIPLES

The USACE has identified core "Environmental Operating Principles" that guide the USACE in its planning, coordination, and project implementation efforts. A description of these core Environmental Operating Principles follows:

Environmental Sustainability. The USACE will strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.

Understand Interdependence. The USACE recognizes the interdependence of life and the physical environment and will proactively consider environmental consequences of USACE programs and act accordingly in all appropriate circumstances.

Seek Balance. The USACE will seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

Accept Responsibility. The USACE will continue to accept corporate responsibility and accountability under the law for activities and decisions under USACE control that impact human health and welfare and the continued viability of natural systems.

Recognize the Big Picture. The USACE will seek ways and means to assess and mitigate cumulative impacts to the environment. The USACE will do this by applying systems approaches to the full life cycle of USACE processes and work.

Build Awareness. The USACE will build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of proposed USACE actions.

Listen and Learn. The USACE will respect the views of individuals and groups interested in USACE activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

The USACE strives to incorporate these principles into their projects when applicable. In doing so, the USACE and project stakeholders can work together to ensure proposed projects maximize the "public good" and minimize recognized negative impacts. The USACE has incorporated these Environmental Operating Principles into this NEPA document.

1.8 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

As part of the NEPA process, the USACE has reached out to government agencies and the public in an attempt to solicit input on the Proposed Action. The following paragraphs describe how the USACE has coordinated with government agencies and involved the public.

1.8.1 Agency Coordination

On May 25, 2010, the USACE mailed letters to over 20 federal and state agencies notifying them of the USACE's intent to prepare an EA for proposed improvements to the Baker Pumping Plant (Appendix A). None of the agencies contacted via this initial mailing responded.

1.8.2 Public Involvement

A public scoping meeting for the Dallas Floodway Project (DFP) Environmental Impact Statement (EIS) was held on November 17, 2009, that included information on the proposed changes to the Baker Pumping Plant. None of the comments received during and after the meeting was relevant to the proposed improvements to the Baker Pumping Plant.

On January 20, 2012, the USACE made copies of the EA and draft FONSI available to the public for review at the Dallas Public Library, the Oak Lawn Branch Library, and online at http://www.swf.usace.army.mil/pubdata/notices/DallasFloodway/. The USACE published a Notice of Availability (NOA) in the *Dallas Morning News* from January 20 through January 22, 2012; in the *Dallas Weekly* the week of January 19, 2012; and in the January 21, 2012 edition of the weekly Spanish publication, *Al Día*. The USACE also mailed copies of the NOA to over 300 agencies, officials, and individuals on the USACE mailing list. The EA review period ended on February 20, 2012. The USACE received four comment letters; none of which resulted in any change to the Proposed Action. Summaries of the four letters are provided in the following paragraphs. All public and agency review documentation and comments are presented in Appendix B.

The Federal Emergency Management Agency responded via a letter that stated in its entirety, "*We would request that the local floodplain administrators be contacted for the review and possible permit requirements for this project. If federally funded, we would request project to be in compliance with [Executive Order (EO)] 11988 and EO 11990.*" In response to this comment, the USACE has enhanced the discussion of the floodplain in the water resources, biological resources, and cumulative impact sections (see Sections 3.5, 3.6, and 4.1.3, respectively).

The U.S. Fish and Wildlife Service (USFWS), Texas Commission on Environmental Quality (TCEQ), and the Texas Parks and Wildlife Department (TPWD) also responded during the review period. None of these agencies objected to the Proposed Action, and no modification of the analysis resulted from these comments. The USFWS responded via a letter that stated in its entirety, "*Your letter indicates you have determined that the proposed action would have no effect on federally listed species. Therefore, no action is required from this office*." The TPWD responded via a letter that stated in its entirety, "*Based on the project description, the Wildlife Habitat Assessment Program does not anticipate significant adverse impact to rare, threatened or endangered species, or other fish and wildlife resources.*" The TCEQ submitted a letter indicated that the TCEQ had no object the project as proposed, including the use of Best Management Practices (BMPs) to protect water quality during and after construction. The TCEQ indicated that, should concerns over water quality arise from other comments, then the TCEQ would submit a follow-up comment letter. No other comments regarding water quality were received.

1.9 IMPACT ANALYSIS CRITERIA

The USACE has identified a broad spectrum of general and project-specific criteria with which to analyze the potential effects of the action alternatives and will use these "impact analysis criteria," to assess the potential impacts stemming from implementation of the action alternatives. The following criteria serve as the basis for the impact analysis presented in Chapter 4:

- Institutional Criteria
- Public Criteria
- Technical Criteria
- Scientific Criteria

1.9.1 Institutional Criteria

Institutional Criteria include those criteria required by NEPA for federal agencies to take into consideration when assessing the potential environmental consequences of a proposed action in their decision-making process. Additionally, the NEPA assessment process is iterative in nature, and if potential impacts are deemed "significant" (as defined at 40 CFR § 1508.27), then the level of analysis may be heightened and an EIS, rather than an EA would be prepared. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. The USACE has prepared this EA in accordance with the requirements as outlined in the following sections.

- NEPA (42 USC §§ 4321, et seq.)
- CEQ Regulations (40 CFR Parts 1500-1508)
- USACE Engineering Regulation 200-2-2, Environmental Quality, Procedures for Implementing NEPA (33 CFR Part 230)
- National Historic Preservation Act
- Clean Air Act (CAA)
- Endangered Species Act
- Clean Water Act (CWA)
- Migratory Bird Treaty Act
- Safe Drinking Water Act
- Native American Graves Protection and Repatriation Act
- Resource Conservation and Recovery Act
- Comprehensive Environmental Response, Compensation, and Liability Act

- Historic Sites Act of 1935
- Rivers and Harbors Act
- EO 11988 - Floodplain Management
- EO 11990 - Protection of Wetlands
- EO 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations
- EO 13045 - Protection of Children from Environmental Health Risks and Safety Risks
- EO 13148 - Greening the Government through Leadership in Environmental Management
- EO 13175 - Consultation and Coordination with Indian Tribal Governments
- EO 13186 - Responsibilities of Federal Agencies to Protect Migratory Birds

1.9.2 Public Criteria

Public Criteria include those criteria deemed important by the public. These criteria include things such as flood protection, visual/aesthetic corridors, and recreational opportunities. As part of the public involvement process, the USACE shall solicit input from the public during the EA public review period.

1.9.3 Technical Criteria

Technical Criteria include those criteria that demonstrate consistency with the technical aspects of the USACE mission, namely, flood risk management. These criteria assist in determining the "technical soundness" of the project. These criteria include:

- Levee Stability
- Operational Costs
- Hydrologic Impacts
- Structure Stability

These criteria are reflected in the Trinity River and Tributaries Regional Environmental Impact Statement (TREIS) (USACE 1987) and associated Record of Decision (USACE 1988). The USACE Fort Worth District prepared the TREIS to address the proposed increases in floodplain development occurring in the upper Trinity River basin during the Dallas-Fort Worth Metroplex development boom in the mid-1980s (USACE 1988b). Two major conclusions were drawn from the TREIS:

1. A widespread lack of SPF protection existed.
2. Different USACE and local community permitting strategies have a significant impact on the extent of increase of this lack of SPF protection (USACE 1988b).

The ROD prepared for the TREIS specified criteria that the USACE would use to evaluate future permit applications in the Trinity River Basin; specifically, projects located within the SPF floodplain of the Elm Fork, the West Fork, and the Mainstem of the Trinity River. The TREIS ROD established criteria for actions that require a USACE permit to address hydrologic and hydraulic impacts and mitigation of habitat losses (USACE 1988b). The Baker Pumping Plant is within the SPF floodplain of the Mainstem, and thus the following specific design criteria apply:

1. No rise in the 100-year or SPF elevation for the proposed condition will be allowed.
2. The maximum allowable loss in storage capacity for 100-year and SPF discharges will be 0 percent and 5 percent, respectively.
3. Alterations of the flood plain may not create or increase an erosive water velocity on-or off-site.

4. The flood plain may be altered only to the extent permitted by equal conveyance reduction on both sides of the channel.

1.9.4 Scientific Criteria

Scientific Criteria include those criteria that represent the recognized scientific or environmental qualities specific to the project area that would assist in determining the "environmental acceptability" of the project. These include criteria that are important to local and state interests.

- Texas Endangered Species
- North Central Texas Council of Governments Certification
- Section 26 of the Texas Water Code
- State of Texas Water Quality Certification
- No Net Negative Impact to Fish and Wildlife
- Acceptable Environmental Cost/Benefit Ratio
- Environmental Value
- Global System
- Environmental Stewardship
- Green Design

1.10 DOCUMENT FRAMEWORK

The organization of this EA is as follows: Chapter 1 defines the purpose of and need for the Proposed Action. Chapter 2 describes the action alternatives. Chapter 3 presents a discussion of existing conditions and potential environmental consequences for each resource area. Chapter 4 presents an analysis of the potential cumulative effects of the Proposed Action. Chapter 5 provides a summary of impacts. Chapter 6 addresses various other considerations required by NEPA. Chapter 7 contains all references cited in the EA and Chapter 8 provides the list of preparers. In addition, there are five appendices. Appendix A presents the letters used to notify federal and state agencies of the USACE's intent to prepare and EA. Appendix B includes documents created and received in the course of the Public Review Process. Appendix C documents USACE coordination regarding the applicability of a Nationwide Permit (NWP) for the Proposed Action. Appendix D documents correspondence and coordination for cultural resources. Appendix E documents the geotechnical analysis of the project area. Appendix F includes the data analysis associated with air quality review, and the associated Record of Non-Applicability (RONA).

This Page Intentionally Left Blank

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

In order to identify action alternatives to carry forward for analysis to satisfy the purpose and need, the City of Dallas followed a two-step screening process: 1) Courses of Action Development (Section 2.2) and 2) Action Alternative Development (Section 2.3). The following sections describe this two-step process, the resulting Action Alternatives (Section 2.4), and the Project Timeline (Section 2.5).

2.2 COURSES OF ACTION DEVELOPMENT

In this initial screening step, the City of Dallas analyzed potential courses of action to address existing stormwater flooding concerns in the Hampton-Oak Lawn Basin. The City of Dallas did this by reviewing recently completed engineering studies that identified potential courses of action (step one). Those courses of action that were deemed feasible and warranted further screening were included for additional assessment in this EA (step two) (City of Dallas 2009a).

2.2.1 Potential Courses of Action

The City of Dallas identified the following potential courses of action to address existing stormwater flooding concerns in the area served by the Baker Pumping Plant:

- Increase Sump Storage Capacity
- Alter Sump Inflow Hydrographs
- Increase Pumping Capacity
- Construct Pressure Sewers

These potential courses of action could work independently, or in combination with one or more other courses of action, to address existing stormwater flooding concerns in the Hampton-Oak Lawn Basin (City of Dallas 2009a). In addition, the City of Dallas identified the following associated actions that do not provide additional stormwater flood protection, but are nonetheless associated with the Proposed Action and therefore are included for consideration. A description of each of these potential courses of action follows.

2.2.1.1 Increase Sump Storage Capacity

A potential approach to managing stormwater is to increase the size of the retention basins, or sumps. When land is readily available, agencies can consider increasing the size of sumps to increase the amount of available volume for stormwater storage; as the size of the sump increases, the required pumping capacity decreases.

The City of Dallas examined the Hampton-Oak Lawn Sumps for expansion potential, but found that only in a few locations was this feasible, and only at a relatively small scale. In these locations, the amount of available land would not substantially increase the volume of sump storage capacity. Furthermore, the developed nature of the area surrounding the existing sumps limits their potential for large-scale expansion. In the project area, the City of Dallas would have to acquire substantial amounts of private property to augment existing sump storage capacity, and displacing residents and/or businesses is not a

desired approach (City of Dallas 2006). Therefore, the City of Dallas eliminated the Increase Sump Storage Capacity course of action from further analysis.

2.2.1.2 Alter Sump Inflow Hydrographs

Decreasing the magnitude or altering the timing of the inflow of stormwater to the sump is possible by increasing the amount of detention storage. When land is readily available, agencies can increase the size of detention storage, which provides the capability to decrease the magnitude of peak water levels (alter the hydrograph) (City of Dallas 2006).

The City of Dallas investigated the feasibility of increasing the amount of stormwater detention storage to a sufficient level to alter the hydrograph, but did not identify any areas that would be feasible, primarily for the same reasons as presented in the preceding section for the potential Increase Sump Storage Capacity Course of Action discussion (City of Dallas 2006). Therefore, the City of Dallas eliminated the Alter Sump Inflow Hydrograph course of action from further analysis.

2.2.1.3 Increasing Pumping Capacity

Increasing the capacity of the pumping plants to handle stormwater is possible through rehabilitating existing pump stations, constructing new pump stations at existing pumping plants, and/or constructing new pumping plants.

The City of Dallas determined that increasing the pumping capacity of the Baker Pumping Plant is a feasible course of action for addressing existing stormwater flooding concerns in the Hampton-Oak Lawn Basin (City of Dallas 2006). Therefore, the City of Dallas included the Increasing Pumping Capacity course of action for detailed analysis.

2.2.1.4 Construct Pressure Sewers

Constructing new pressure sewers to collect and convey stormwater to the Dallas Floodway is possible under certain conditions: a potential pressure sewer basin must be capable of generating enough hydraulic head to generate sufficient pressure, and the station must be large enough to contribute a significant amount of flow to the sump to make the system economically viable.

The City of Dallas investigated potential areas, but did not identify any areas that could provide enough hydraulic head and area to contribute a sufficient amount of flow at a reasonable cost (City of Dallas 2006). Therefore, the City of Dallas eliminated the Pressure Sewer Construction course of action from further analysis.

2.2.2 Potential Courses of Action Summary

As shown in Table 2-1, the City of Dallas has determined that increasing the pumping capacity of the Baker Pumping Plant is the selected course of action for addressing existing stormwater flooding concerns in the Hampton-Oak Lawn Basin. In addition, as required by CEQ regulations, the No Action Alternative is also a potential course of action. The other potential courses of action have been eliminated from further analysis in this EA, as discussed above. Section 2.3 presents a discussion of the development, and identification of the measures associated with the selected course of action.

Table 2-1. Potential Courses of Action Summary

Potential Course of Action	Eliminated	Included
Increase Sump Storage Capacity	✓	
Alter Sump Inflow Hydrographs	✓	
Increase Pumping Capacity		✓
Construct Pressure Sewers	✓	

2.3 ACTION ALTERNATIVE DEVELOPMENT

In the second part of their two-step approach, the City of Dallas identified potential measures at the Baker Pumping Plant to address existing stormwater flooding risks. This section evaluates the potential improvement measures to determine which, if any of the proposed improvement measures (other than the No Action) would constitute the Proposed Action. Those determined feasible are included as part of the Proposed Action, while those that are not feasible are excluded from further analysis.

Potential improvement measures for the Baker Pumping Plant focus on increasing pump capacity to 700,000-gpm (i.e. the capacity needed to address the Standard Project Flood). The estimated cost for these improvements would be $35.8 million (City of Dallas 2006).

The existing New Baker Pump Station provides stormwater-pumping capacity and, with improvements, can continue to provide pumping capacity for years to come. Thus, demolition of the New Baker Pump Station is not a preferred measure. The existing Old Baker Pump Station is a historic property eligible for inclusion on the National Register of Historic Places (NRHP) under Criterion A and C (refer to Appendix D). Therefore, the construction of Baker No. 3, renovation of New Baker, and decommissioning of Old Baker pump stations have been identified as constituting the Proposed Action analyzed in this EA.

2.4 ACTION ALTERNATIVES

2.4.1 Proposed Action

2.4.1.1 Overview

Implementation of the Proposed Action would reduce predicted 100-year, 24-hour storm event water levels to heights in the Hampton-Oak Lawn Basin at or below the established City of Dallas water levels, resulting in a substantial reduction in the number of structures potentially affected by flooding in the Hampton-Oak Lawn Basin. This risk reduction would serve to reduce potential stormwater flooding impacts to people and property in the City of Dallas. In addition, proposed improvements would modernize and extend the service life of existing facilities for at least another 50 years. Proposed construction activities would last approximately 800 days. Upon completion, the City of Dallas would continue to follow the current Baker Pumping Plant operations and maintenance procedures. Figure 2-1 depicts the locations of the Proposed Action components. The limit of construction associated with the Proposed Action covers 5.08 acres. The following paragraphs provide detailed descriptions of these components.

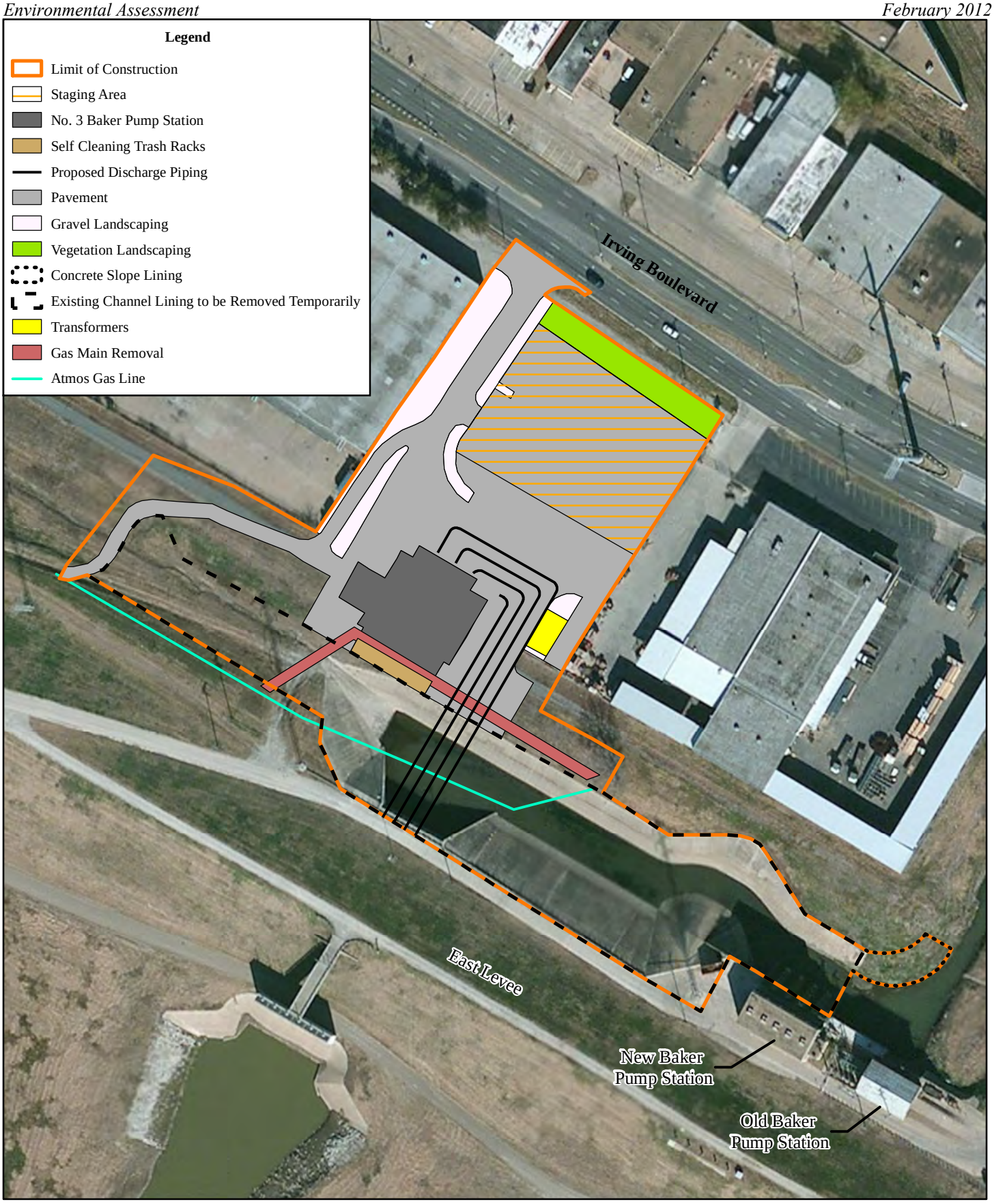


Figure 2-1
Proposed Improvements to the Baker Pumping Plant

2.4.1.2 Baker No. 3 Pump Station

Under the Proposed Action, the City of Dallas would construct a new approximately 13,000-square ft pump station consisting of four, 175,000-gpm pumps (700,000-gpm total pumping capacity), and one, 6,000-gpm low-flow pump. A retaining wall would protect the sides of the building. In addition, the proposed Baker No. 3 Pump Station would include one new driveway access point off Irving Boulevard and one off the existing levee maintenance road. Eight-inch thick reinforced concrete pavement would surround the proposed Baker No. 3 Pump Station (refer to Figure 2-1). Discharge from new pumps would flow into four 84-inch diameter pipes to the existing six 10 ft by 10 ft culverts under the levee and into the Trinity River. The individual discharge piping would be increased from 84-inch to 102-inch diameter through the existing 10-ft by 10-ft gravity sluices. When the pumps are operational, the City of Dallas would continue to close the sluice gates.

2.4.1.3 Improvements to the Existing Baker Pump Stations

Under the Proposed Action, the City of Dallas would implement minor improvements to the existing New Baker Pump Station to increase the service life and minimize future maintenance. The improvements would include repairs to the trash racks, handrails, stairs, service bridge, and surface erosion. Maintenance activities would also include electrical repairs and improvements; roof replacement; bird screen replacement; heating, ventilation, and air conditioning system replacement; and cleaning and repair of all brick facing. The existing New Baker Pump Station (400,000-gpm pumping capacity) would operate in concert with the proposed Baker No. 3 Pump Station. Thus, the total capacity of that Baker Pumping Plant would be 1,100,000-gpm.

The existing Old Baker Pump Station would be decommissioned. The decommissioning process includes dismantling the major power connection and leaving the lighting facilities in place. The City of Dallas may elect to close the Old Baker outfall structure as well. The Old Baker Pump Station building is a NRHP eligible building, and would be maintained as a cultural resource of the City of Dallas.

2.4.1.4 Improvements to the Hampton-Oak Lawn Sump

Under the Proposed Action, the City of Dallas would temporarily remove sections of the sump liner in the area immediately adjacent to the proposed Baker No. 3 Pump Station to improve drainage under the sump and to allow for access to an existing Atmos Energy 24-inch diameter gas line (refer to Figure 2-1). The gas line currently runs along the north boundary of the sump and is being relocated as part of an unrelated action.

2.4.1.5 Schedule of Improvements

The construction of the proposed Baker No. 3 Pump Station and the completion of the proposed sump improvements would be the first priority of the Proposed Action. Once all elements associated with the construction of Baker No. 3 Pump Station and adjacent sump are completed, tested, and approved by the City of Dallas, then the proposed improvements and repairs to the New Baker Pump Station would begin. The Old Baker Pump Station would not be decommissioned until the City of Dallas tests and accepts the proposed improvements to the New Baker Pump Station. Work would begin in early 2012 and last approximately 24 months.

2.4.1.6 Resource Conservation Measures

The City of Dallas would implement the following Resource Conservation Measures as part of the Proposed Action to avoid or minimize potential effects to environmental resources:

1. All disturbed soils would be immediately stabilized following the completion of work and be re-planted with native grass and shrub species. Before approval of the final design, the contractor would obtain City of Dallas approval of a soil layering plan, seed mixes, planting/seeding, and monitoring methods proposed for use in revegetation. Noxious weeds would be controlled by hand weeding or herbicide application.
2. Before the start of construction the project boundary (i.e., limit of construction) would be clearly marked with flagging, fencing, stakes, or lath.
3. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure site stabilization. An Erosion Control Plan would be prepared and implemented. The Erosion Control Plan would include BMPs that could include rock stabilization at the construction site entrance, inlet protection barriers at the Baker Pumping Plant inlet, and the use of rock filter dams within the sump. The contractor would also be required to use silt fences throughout the construction area wherever there is the potential for erosion. The City of Dallas would finalize the Erosion Control Plan upon final design approval of the proposed improvements, and all erosion control measures would be field adjusted for site conditions.
4. Fugitive dust controls would be monitored and maintained during construction. A Fugitive Dust Control Plan would be prepared and implemented. The Fugitive Dust Control Plan would include BMPs that could include watering exposed soils, soil stockpiling, and soil stabilization. The City of Dallas would finalize the Fugitive Dust Control Plan in concert with the Erosion Control Plan upon final design approval of the proposed improvements, and all dust control measures would be field adjusted for site conditions.
5. The contractor would implement a Traffic Control Plan approved by the City of Dallas prior to construction. The Traffic Control Plan would include requirements to cover any excavated pavement exposed to traffic with anchored steel plates during non-working hours; provide 48-hour notice of intended lane closures; install appropriate signage for construction periods; and install a temporary concrete traffic barrier before constructing the proposed discharge pipe shoring wall.
6. The Proposed Action would permanently impact 0.03 acre of jurisdictional waters of the United States (U.S.). The Proposed Action has been determined to fall under CWA Section 404 NWP 13 "Bank Stabilization" (Appendix C). No TCEQ water quality permit would be required, as the NWP 13 is sufficient for water quality permitting processes. The contractor would implement any measures to minimize and/or mitigate impacts as required by the NWP. As stipulated by NWP 13, because the temporary impacts would be less than 500 linear ft of shoreline to jurisdictional waters, Pre-Construction Notification (PCN) to the USACE District Engineer would not be required.
7. The construction contractor would survey for all pre-existing utilities in the area to avoid and/or minimize any temporary interruption of utility service(s).
8. Hazardous wastes would be handled in accordance with applicable federal, state, and local regulations. If an unknown or unidentified waste is encountered during construction, the City of

Dallas personnel would be notified and all construction in the area would stop until the hazardous situation is remedied. Chapters 9 and 10 of AR 200-1, Environmental Protection and Enhancement (2007), outline USACE policy for hazardous materials and waste management. In addition, ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects provides guidance for consideration of issues and problems associated with Hazardous, Toxic, and Radiological Waste (HTRW) which may be located within project boundaries or may affect or be affected by USACE Civil Works projects. The guidance is intended to provide information on how these considerations are to be factored into project planning and implementation. A Contingency Action Plan reflecting the guidance of AR 200-1 and ER 1165-2-132 would be prepared before implementing the Proposed Action. The City of Dallas would finalize the Contingency Action Plan upon final design approval of the proposed improvements, and all hazardous material control measures would be field adjusted for site conditions.

9. Drainage elements to allow the rapid percolation of water away from the structural elements of the Proposed Action would be incorporated into construction designs. These elements include, at a minimum:

    a. Constructing drains behind the retaining walls beneath the foundation mat adjacent to the gravity drainage structure proposed at the west end of the sump.

    b. Constructing drains beneath the concrete sump liner adjacent to both Baker No. 3 and New Baker pump stations; this will require replacement of significant portions of the sump liner and slope pavement east of the New Baker Pump Station.

    c. Including drainage behind the clay backfill behind the existing retaining wall located just west of New Baker; this will require excavation below the access road and levee slope south of the retaining wall, which can be tied with the excavation needed for the proposed retaining wall extension to the west of the existing wall. Such an excavation may result in the need for temporary riverside levee protection augmentation during excavation into the landside levee slope and drain construction.

    The functionality of these drainage measures will be monitored to determine their success.

2.4.2 No Action

Under the No Action Alternative, no improvements would be made to the Baker Pumping Plant. Existing public safety and property concerns in the Hampton-Oak Lawn Basin would persist. The No Action Alternative is not a reasonable action alternative because it does not meet the purpose and need for the Proposed Action. However, as required under CEQ regulations (40 CFR § 1502.14[d]), it does provide a meaningful measure of baseline conditions against which the impacts of the action alternatives can be compared, as well as describe potential future conditions in the absence of the Proposed Action. In this EA, the No Action Alternative represents the baseline conditions described in Chapter 3, Affected Environment.

2.5 PROJECT PLANNING TIMELINE

To address existing 100-year, 24-hour stormwater flood risk management concerns in the Hampton-Oak Lawn Basin, the City of Dallas is proactively moving forward in their planning and analysis of proposed Baker Pumping Plant improvements. Proposed improvements to the Baker Pumping Plant were initially included as part of the on-going DFP EIS, which includes proposed improvements to the entire EWLIDS. However, due to pressing safety concerns as identified in Section 1.4.3, most notably potential flooding impacts within the Hampton-Oak Lawn Basin, the proposed improvements to the Baker Pumping Plant have been extracted from the DFP EIS in order to expedite the analysis of proposed stormwater flood risk management actions in the Hampton-Oak Lawn Basin. The on-going DFP EIS will include an analysis of the proposed Baker Pumping Plant improvements in the cumulative impact section.

CHAPTER 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 APPROACH TO ANALYSIS

The affected environment discussion below provides a description of the existing conditions for each of the following resource areas deemed pertinent to the Proposed Action: land use, noise, geology and soils, water resources, biological resources, cultural resources, visual resources, socioeconomics and environmental justice, air quality, utilities, hazardous materials and wastes, transportation, and public safety. In this EA, the No Action Alternative represents the baseline conditions described in the Existing Conditions discussion. The environmental consequences discussion below describes the potential impacts the action alternative would have on each environmental resource area.

3.2 LAND USE

3.2.1 Existing Conditions

The Baker Pumping Plant is situated at the western border of the Downtown-Lakes District of the Trinity River Corridor Comprehensive Land Use Plan, and includes the Residential Riverside and the Irving Community Corridor (combined Mixed Use-B/Adaptive Reuse) development modules (City of Dallas 2005a). The Baker Pumping Plant straddles two zoning districts: Agricultural and Industrial Research. The Agricultural zoning district is for lands that are presently used for agricultural purposes and to which urban services are not yet available. The uses permitted in the Agricultural district are intended to accommodate normal farming, ranching, and gardening activities. The Industrial Research district is intended to provide for research and development, light industrial, office, and supporting commercial uses in an industrial research park setting (City of Dallas 2009b). The 2005 North Central Texas Council of Governments (NCTCOG) land use data identified the Baker Pumping Plant as "Dedicated Flood Control." The properties to the west, north, and east of the Baker Pumping Plant are designated "Industrial" land uses (NCTCOG 2007). The project site is currently used for storage of wholesale construction materials by CMC Construction Services.

In 2009, the USACE and City of Dallas developed a protocol for reviewing construction projects with the potential to encroach upon the levees. Any construction projects within 250 ft of the levee toe trigger a heightened review and permitting process by the City of Dallas Development Services. A building applicant must submit full site plans, technical specifications, and a geotechnical report of the proposed site to Development Services and to the USACE for review and consultation. Development Services requires proof of consultation from the applicant before issuing a permit (City of Dallas 2010a).

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Implementation of the Proposed Action would be consistent with the existing zoning and land use designations. The Proposed Action does not represent any intensification of use, but only a change in the existing authorized use. In addition, the Proposed Action would be implemented in accordance with any measures identified as part of the review and permitting process by the City of Dallas Development Services. Furthermore, by using the existing gravity conduits through the East Levee, the Proposed

Action would avoid any unique or special design challenges associated with construction adjacent or through the East Levee. Therefore, implementation of the Proposed Action would result in no impacts to land use.

3.2.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.2.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to land use.

3.3 NOISE

3.3.1 Existing Conditions

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. The human environment is generally characterized by a certain consistent noise level that varies by area. This is called ambient, or background noise. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance of the noise and its appropriateness in the setting; time of day and type of activity during which the noise occurs, and sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and intensity. "Frequency" describes the sound's pitch and is measured in cycles per second, or hertz (Hz). "Intensity" describes the sound's loudness and is measured in decibels (dB). A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually as pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. Decibels are measured using a logarithmic scale; thus, the average person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness. This relation holds true for sounds of any loudness.

The normal human ear can detect sounds that range in frequency from about 20 Hz to 20,000 Hz. However, not all sounds in this wide range of frequencies are heard equally well by the human ear, which is most sensitive to frequencies in the range of 1,000 Hz to 4,000 Hz. This frequency dependence can be taken into account by applying a correction to each frequency range to approximate the human ear's sensitivity within each range. This is called A-weighting and is commonly used in measurements of community environmental noise. The A-weighted sound pressure level (abbreviated as dBA) is the sound level with the "A-weighting" frequency correction.

Noise-sensitive receptors are those locations where activities that could be affected by increased noise levels and include locations such as residences, motels, churches, schools, parks, and libraries. Typical noise levels range from approximately 40 dBA for an urban setting to approximately 100 dBA for loud power equipment at close range. Noise impacts can result from any sound that interferes with communication, is intense enough to damage hearing, or is otherwise annoying (Federal Interagency Committee on Noise 1992).

The City of Dallas considers "offensive noise" a criminal offense, subject to both criminal and civil penalties. As defined in Dallas City Code Section 30-2.8, noise relating to construction activity is offensive when it is outside the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 7:00 p.m. on Saturdays and holidays, unless the Director of Public Works and Transportation has specifically authorized activity deemed necessary for the public health, safety, or welfare.

Vehicular traffic from Irving Boulevard and air traffic in the vicinity of the Baker Pumping Plant represent the primary sources of ambient noise at the project site. In addition, when pump stations and/or trash screens are operating, these activities represent a minor contributor to the local noise environment immediately adjacent to the Baker Pumping Plant.

On September 14-16, 2009, baseline noise levels were recorded for 5-minute intervals throughout the Dallas Floodway and the Interior Drainage System to characterize baseline noise conditions. Ambient noise measured at the sump culvert adjacent to Irving Boulevard ranged from 55.3 to 65.6 dBA. At the time of the data collection, the Baker Pumping Plant was not operating; however, the Able Pumping Plant and trash screens were operating. The noise levels recorded at Able Pumping Plant (66.3 dBA to 73.1 dBA at a distance of 30 ft) are considered representative of the Baker Pumping Plant when their pumps and trash screeners are operational. There are no identified sensitive noise receptors within the Baker Pumping Plant Region of Influence (ROI); the area surrounding the pumping plant is a mixture of commercial and industrial uses.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

Under the Proposed Action, construction and ground-disturbing activities would create localized, temporary noise impacts from construction equipment/vehicles, and the construction of the proposed Baker No. 3 Pump Station. These vehicles and equipment can typically generate noise levels of approximately 80 to 85 dBA at approximately 50 ft (U.S. Environmental Protection Agency [USEPA] 1974). These noise levels would be slightly higher than baseline noise levels measured from Irving Boulevard; however, the project site is located approximately 200-300 ft from nearby businesses and is approximately 500 ft from the roadway. The space between the noise source and receptors would act as a buffer, thus reducing the perceived noise levels. Similarly, any solid obstructions (e.g. walls or berms) in the path of the noise source would also reduce perceived noise levels. There are no sensitive receptors in the nearby area.

Prior to implementation of the Proposed Action, the City of Dallas would notify nearby property owners of the construction schedule. In addition, all construction activities would occur between the hours of 7:00 A.M. and 7:00 P.M. on weekdays and staging areas would be sited to minimize noise impacts to surrounding areas per Dallas City Code Section 30-2.8.

During high stormwater levels, the pumps at the proposed Baker No. 3 Pump Station would start to pump the water to the Dallas Floodway and the trash screeners would become operational. This operation would not be a constant occurrence and would only last until stormwater levels subside. This currently occurs at the existing New Baker Pump Station. Because of the addition of more pumps in the same location, noise levels potentially could be marginally higher, but because the pumps would be housed inside a building, and pump and trash screen activity occur infrequently and for short periods of time, implementation of the Proposed Action would not have a substantial effect on the overall noise environment. Therefore, construction and implementation of the Proposed Action would result in adverse, but less than significant impacts with respect to noise.

3.3.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.3.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no noise impacts.

3.4 GEOLOGY AND SOILS

3.4.1 Existing Conditions

The Baker Pumping Plant is situated in Quaternary-age alluvial soils and terrace alluvial soils overlying gray shale of the Cretaceous Eagle Ford formation. The alluvial deposits typically consist of medium to very stiff clays, and loose to medium dense sands with some gravel and silt content. More specifically, the site soils are of the Trinity-Frio unit. These soils are deep, level, clayey soils found in floodplains; they are moderately alkaline, somewhat poorly drained- and well-drained that have slopes of 0 to 1 percent, and have very high shrink-swell potentials and low permeability (USDA 1980, City of Dallas 2011). The weathering profile over the shale includes weathered shale and residual clays. The unweathered bedrock consists of gray to dark gray shale (Eagle Ford Clay Shale [EFCS]), which classifies as a weak rock, on a rock strength basis (City of Dallas 2011). Beneath alluvial soils, the upper gray shale is often found to be softer than the deeper shale, likely from mechanical weathering resulting from surface saturation and erosion of overburden materials over time. North-central Texas is located in an area of low seismic activity (CH2M Hill 2009). No unique geologic features or geologic hazards are present within the proposed project area.

In 2009, the City of Dallas authorized a full geotechnical analysis in order to determine the feasibility of performing any improvements to the Baker Pumping Plant. The results of the field and laboratory tests are included in a Geotechnical Data Report prepared by HNTB (Appendix E). This analysis included reviewing the subsurface conditions in test borings at selected locations and developed geotechnical recommendations for design and construction of the proposed pump station structure, retaining walls, discharge pipes, and associated facilities. The analysis measured the bedrock's compressive strength (i.e. the amount of stress the bedrock can absorb without breaking) and its depth of weathering. Generally speaking, the deeper weathering is found, the weaker the bedrock is.

The soils in the vicinity of the Baker Pumping Plant include levee fill, alluvial and terrace clays and sands, weathered shale, and gray shale. Fill soils were also encountered at several locations. The soils were measured for moisture content, dry unit weight, liquid and plastic limit, to determine soil strength. The conditions of the sump soils were also analyzed. The analysis included seepage and slope stability evaluations for landside levee and sump slopes to assess performance of levee and sump slopes to demonstrate whether existing landside levee and sump slopes meet seepage and slope stability performance criteria, and, if not, to develop conceptual mitigation measures that would satisfy these criteria (City of Dallas 2011).

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

Soils would be disturbed during grading activities associated with proposed construction activities. In addition, planned construction activities would minimally increase impervious surfaces, which would increase stormwater runoff and erosion rates. However, these relatively minor increases would be minimized through engineering measures during construction activities and using BMPs as outlined in the Erosion Control Plan included as part of the Proposed Action. The plan would include silt fences, rock

filter dams, inlet protection, and vegetation removal. The City of Dallas would remove constructed erosion control elements upon the final stabilization of the site. Disturbed areas that are seeded or sodded would be checked periodically to verify that grass coverage is properly maintained, and would be watered, fertilized, and reseeded or sodded if necessary.

The soil analysis indicated that the soils provided little resistance to horizontal (i.e. surface) sliding of an un-anchored building foundation. However, the results of the bedrock analyses indicated that the EFCS would provide for adequate foundation-bearing capacity for the proposed Baker Pumping Plant improvements (City of Dallas 2011). To improve stability of the proposed features, the gravity sluices, discharge facilities, and building supports would be anchored to the EFCS bedrock.

A retaining wall would be added to prevent erosion and protect the sides of the proposed Baker No. 3 Pump Station, which would help reduce erosion. Dust abatement is addressed in Section 3.10.2.1. As no unique geologic features or geologic hazards are located within the proposed project area, no impact to these geological resources would occur. Therefore, implementation of the Proposed Action would result in less than significant impacts relative to geology and soils.

3.4.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.4.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts relative to geology and soils.

3.5 WATER RESOURCES

3.5.1 Existing Conditions

The majority of surface water features in the Dallas Floodway have been substantially modified from their natural conditions. These changes began in the late 1920s when the City of Dallas began a major effort to control flooding of the Trinity River in and around the downtown area. The most substantial change involved the diversion of the Trinity River (old river channel) to its current location within the Dallas Floodway.

The Hampton-Oak Lawn sump ponds north of the pump stations are the remains of the original Trinity River course prior to channelization. Between the pump stations and the levee, the sumps are remnant levee borrow ditches that run adjacent to the levee and serve to store stormwater. Surveys of waters surrounding the Baker Pumping Plant in 2010 identified jurisdictional waters of the U.S. (the historic Trinity River Channel) and the non-jurisdictional sump and drainage ditch within the proposed project area (Halff 2011). The sump section within the Proposed Action area is entirely lined with concrete. The 100-year floodplain follows the lined sump and the historic Trinity River Channel to the east of the Proposed Action area (Figure 3-1).

When water levels in the Hampton-Oak Lawn Sumps reach preprogrammed elevations, the pumps transfer water under the East Levee and into the Trinity River. After being pumped or drained to the Floodway, stormwater is conveyed to the Trinity River through a channel aligned perpendicular to the West Levee and the Trinity River channel. During intense rain events, flooding can overwhelm stormwater drainage control measures and threaten structures, people, and water quality in the Hampton-Oak Lawn Basin. Flooding occurs most often in the floodplains adjacent to sump ponds.

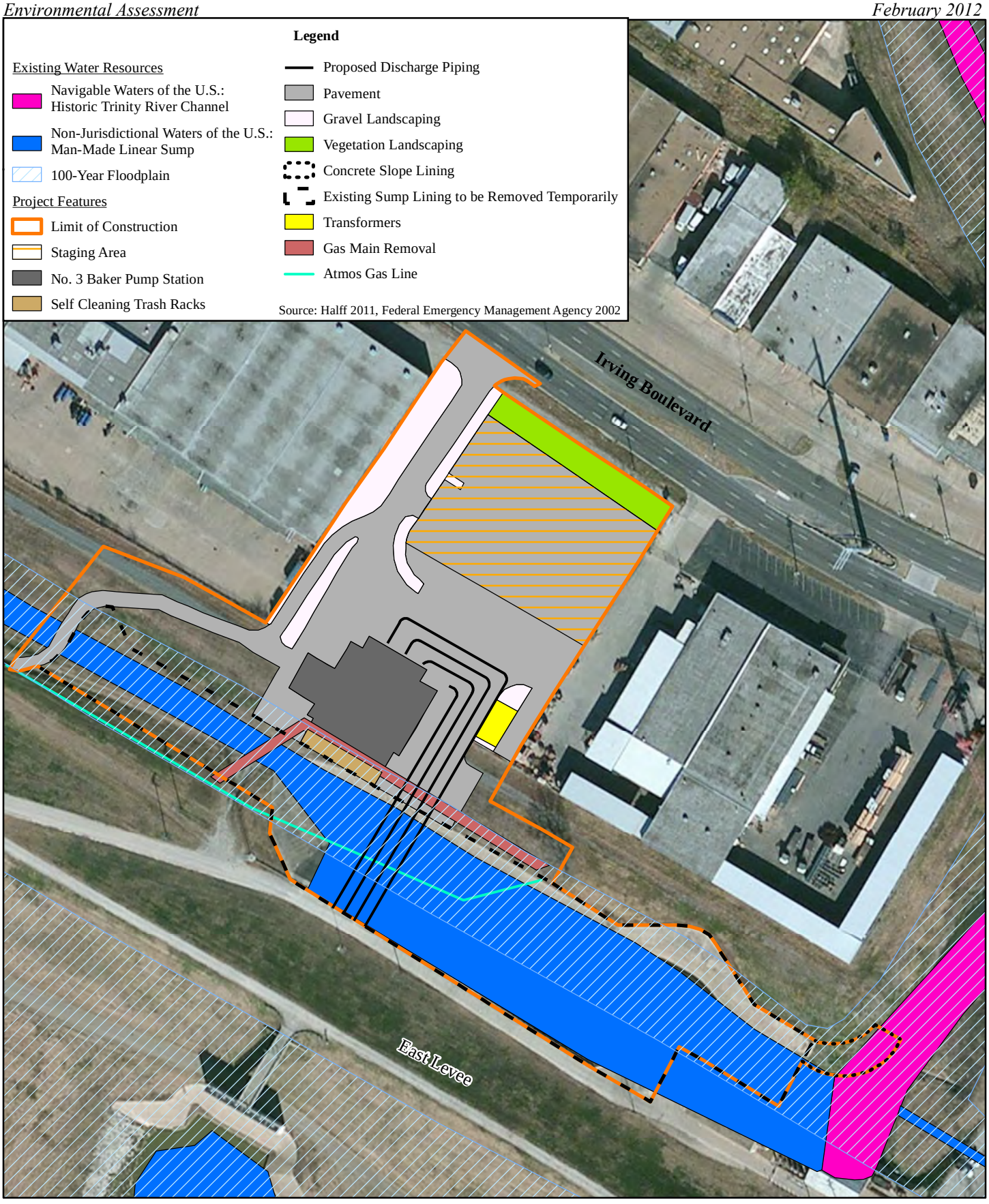


Figure 3-1
Water Resources within the Proposed Project Area

Because the study area is highly urbanized, stormwater quality associated with runoff in an urban setting is affected greatly. Urban stormwater carries pollutants from many sources, including oil and grease, heavy metals, chemicals, toxic substances, solid waste (trash and debris), wastewater, effluence, bacteria, erosion, and other waste streams. The amounts of pollutants and chemicals in stormwater can vary depending on factors such as surrounding land use (commercial vs. residential), frequency of rain events and the intensity of rain events.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Implementation of the Proposed Action would greatly increase the ability of the Baker Pumping Plant to draw down stormwater levels within the sumps, and thus reduce the risk of stormwater flooding. The majority of the activity associated with sump liner would occur within the 100-year floodplain. EO 11988 requires agencies to minimize impacts to the natural values of floodplains and to ensure that proposed activities within the 100-year floodplain would not increase the risk to human safety from flooding. USACE ER 1165-2-26 contains the USACE's policy and guidance for implementing EO 11988, and details factors to be considered when evaluating practicability. The factors are the same as those resources analyzed under NEPA, and serve to ensure full analysis of floodplain resources in the event a detail EA or EIS is not required.

The implementation of the Proposed Action is intended to decrease the risk to human safety from flooding. The activities within the floodplain focus on improving the structure and function of the sump liner by minimizing water seepage under the liner. Doing so would improve the stability of the liner, as well as that of adjacent structures (including the proposed Baker No. 3 Pump Station), resulting in beneficial impacts to floodplain resources. Potential impacts to the natural values of floodplains are discussed in Section 3.6, Biological Resource.

Potential impacts to jurisdictional and non-jurisdictional waters are discussed in Section 3.6, Biological Resources. Erosion control measures incorporated in both the sump and the Dallas Floodway would minimize erosion, increase bank stability, and improve water quality by reducing particulates and suspended solids in the area water. Therefore, implementation of the Proposed Action would result in less than significant impacts to water resources.

3.5.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.5.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to water resources.

3.6 BIOLOGICAL RESOURCES

3.6.1 Existing Conditions

For the purpose of this EA, biological resources are divided into three categories: habitat types (including aquatic and terrestrial vegetation); fish and wildlife including migratory birds; and special status species including state and federally listed species, candidate species, and other species of local or regional concern listed by the TPWD. The ROI for biological resources corresponds to the 5.08-acre limit of construction associated with the proposed Baker Pumping Plant improvements.

Habitat Types

The existing Baker Pumping Plant is located in a developed (urban) area consisting of the pumping plant, utility lines, and a dirt road surrounded by mowed short grassland. The vegetation at the sump, drainage channel, and outfall channel consists of aquatic habitat surrounded by non-native mowed grasslands. The adjacent sump area is used for flood control purposes; it is not meant to provide wetland habitat. Similarly, the channels draining to the sump area were developed for flood control purposes. These channels and sump area are all within the 100-year floodplain. The habitat types and urban areas are presented on Figure 3-2 and described below.

Acreages for each habitat type and developed (urban) areas are presented in Table 3-1 (USACE 2007, Halff 2011).

Table 3-1. Habitat Types and Associated Acreages in the Region of Influence

Habitat Type	Acres
Aquatic	
Non-Jurisdictional Waters of the U.S.	1.47
Jurisdictional Navigable Waters of the U.S.	0.03
Terrestrial	
Grassland	1.41
Urban	2.17
Total	**5.08**

Sources: USACE 2007, Halff 2011.

Habitat Descriptions

Non-Jurisdictional Waters of the U.S. The sump adjacent to the existing Baker Pumping Plant consists of approximately 1.47 acre of a man-made lined sump and drainage channel in the ROI (Halff 2011).

Jurisdictional Navigable Waters of the U.S. The historic Trinity River channel, a jurisdictional water of the U.S., occurs on the east side of the ROI and totals 0.03 acre (Halff 2011).

Grassland. There are approximately 1.41 acres of mowed grasslands dominated by Bermuda grass (*Cynodon dactylon*), perennial ryegrass (*Lolium perenne*), johnsongrass (*Sorghum halepense*), Queen Anne's lace (*Daucus carota*), and southern dewberry (*Rubus trivalis*) in the ROI (USACE 2007).

Urban. There are approximately 2.17 acres of urban areas including the existing Baker Pumping Plant, roads, the concrete lining for the sump, and disturbed areas devoid of vegetation in the ROI (USACE 2007).

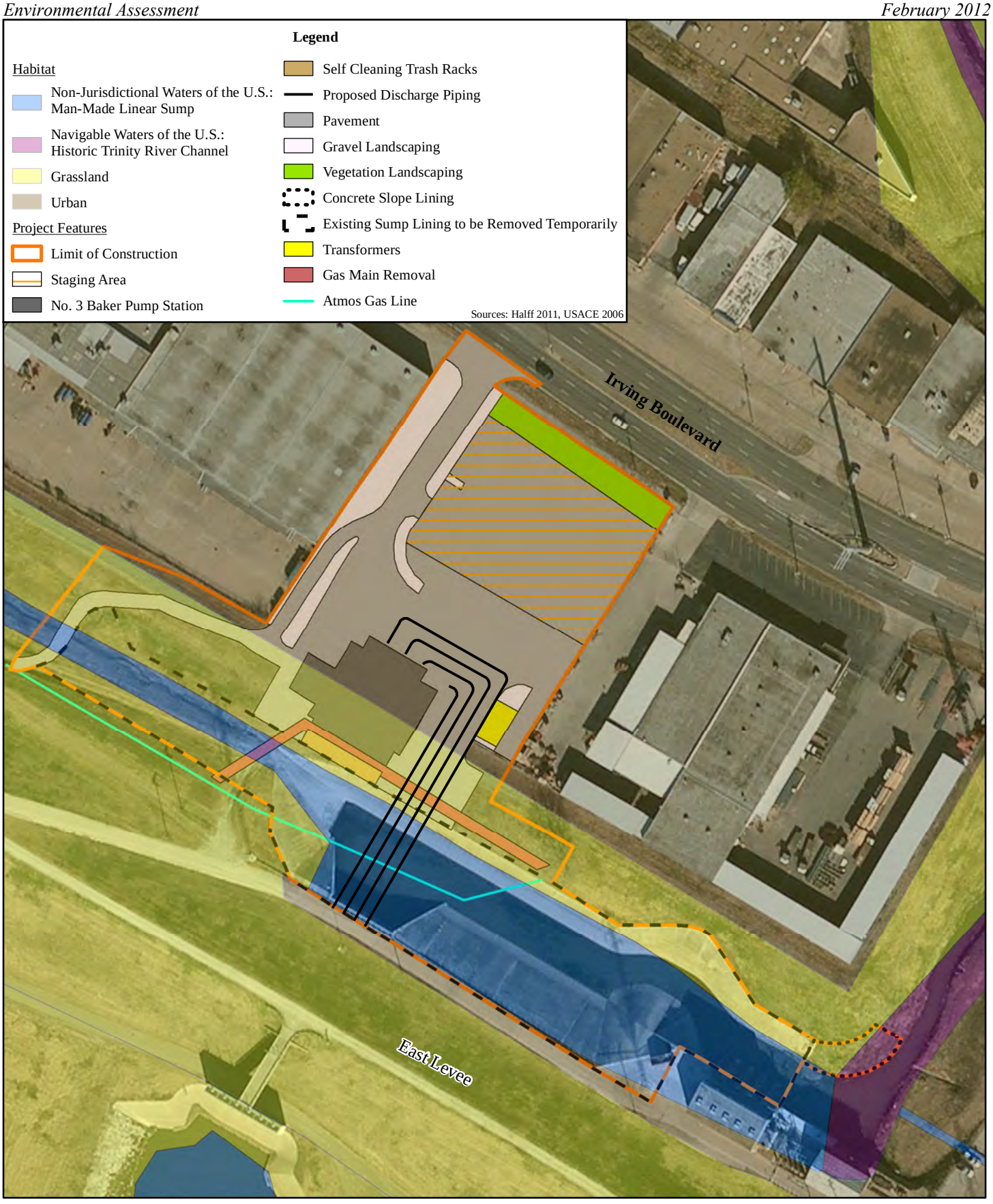


Figure 3-2
Habitat Types within and Adjacent to
the Region of Influence for Biological Resources

Fish and Wildlife

The habitat surrounding the Baker Pumping Plant consists of maintained grasslands that provide limited habitat for wildlife. Utility lines provide roosting and foraging areas for birds. Common terrestrial wildlife has the potential to be transitory through the ROI. Common rodent species are expected within the proposed project area. Mourning doves (*Zenaida macroura)* were observed on the utility lines and a great blue heron (*Ardea herodias*) was observed in the historic river channel at the site on September 15, 2009 (TEC 2009). Other common birds likely to transit the area include common grackle (*Quiscalus quiscula*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris)*, and American crow (*Corvus brachyrhynchos*). Common waterbirds likely to temporarily use the sump include little blue heron (*Egretta caerulea*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), cattle egret (*Bubulcus ibis*), and killdeer (*Charadrius vociferous*). Turtles including red-eared slider (*Trachemys scripta elegans*), river cooter (*Pseudemys texana*), and spiny soft shell turtle (*Apalone spinifera*) are likely to occur in the drainage channel and sump. Common fish and other aquatic wildlife also have the potential to occur within the sump and drainage channels.

Special Status Species

Federal- and state-listed threatened and endangered species that potentially occur in Dallas County are included in Table 3-2. There are 10 listed bird species in Dallas County; five are federally-listed as endangered; three are federally-delisted but are state listed, and two additional species are state listed. There is one federal candidate bird species. There are not any state or federally listed mammals in Dallas County. There are two state threatened mollusks and three state threatened reptiles in Dallas County (TPWD 2012). No listed species are known or likely to occur in the ROI due to lack of suitable habitat.

Table 3-2. Dallas County Federal and State Threatened and Endangered Species

Species	Habitat	Federal Status	State Status
BIRDS			
American Peregrine Falcon *(Falco peregrinus anatum)*	Nests in the Trans-Pecos region of West Texas; nests on high cliffs and structures, often near water where prey species are most common.	-	E
Arctic Peregrine Falcon *(Falco peregrinus tundrius)*	Nests in tundra regions; migrates through Texas; winters along gulf coast. Open areas, usually near water.	-	T
Bald Eagle *(Haliaeetus leucocephalus)*	Nests and winters near rivers and large lakes; nests in tall trees or on cliffs near large bodies of water; all reservoirs in north central Texas are considered potential nesting habitat.	DM	T
Black-capped Vireo *(Vireo atricapilla)*	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces.	E	E
Golden-cheeked Warbler *(Dendroica chrysoparia)*	Oak-juniper woodlands; dependent on mature Ashe juniper (cedar) for long fine bark strips from mature trees in nest construction; nests in various other trees; forages for insects in broad-leaved trees and shrubs.	E	E
Interior Least Tern *(Sternula antillarum athalassos)*	Nests along sand and gravel bars within braided streams and rivers; also known to nest on man-made structures near water.	E	E
Piping Plover (*Charadrius melodus)*	Wintering migrant along the Texas Gulf coast; prefers beaches and bayside mud or salt flats.	T	T
Sprague's Pipit (*Anthus spraueii)*	Occurs in Texas during migration and winter, mid-September to early April. Strongly tied to native upland prairie.	C	-
White-Faced Ibis *(Plegadis chihi)*	Freshwater marshes, sloughs, and irrigated rice fields; nests in marshes, in low trees, in bulrushes or reeds, or on floating mats.	-	T
Whooping Crane (*Grus americana*)	Potential migrant via plains throughout most of the state; winters in Texas coastal marshes in Aransas, Calhoun , and Refugio counties.	E	E

Species	Habitat	Federal Status	State Status
Wood stork (*Mycteria americana*)	Forages in prairie ponds; flooded pastures or fields, ditches, and other shallow standing water; usually roosts in tall snags.	-	T
MOLLUSKS			
Louisiana pigtoe (*Pleurobema riddellii)*	Streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; Sabine, Neches, and Trinity (historic) River basins.		T
Texas heelsplitter (*Potamilus amphichaenus)*	Quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins.		T
REPTILES			
Alligator Snapping Turtle *(Macrochelys temminckii)*	Perennial water bodies; deep water of rivers, canals, lakes, and oxbows; also swamps and ponds near deep running water.	-	T
Texas Horned Lizard *(Phrynosoma cornutum)*	Open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees.	-	T
Timber Rattlesnake *(Crotalus horridus)*	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland, limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines or palmetto.	-	T

Notes: E = Endangered, T = Threatened, C = Candidate, DM = Delisted, being monitored through August 8, 2012 (U.S. Fish and Wildlife Service)
Sources: FHWA 2009, TPWD 2012.

Eleven TPWD species of concern that occur in Dallas County are listed in Table 3-3 and include two birds, one insect, two mammals, three mollusks, one reptile, and two plants (TPWD 2012). No TPWD species of concern are known or likely to occur in the ROI due to lack of suitable habitat.

Table 3-3. Dallas County Species of Concern

Species	Habitat
BIRDS	
Henslow's Sparrow (*Ammodramus henslowii)*	Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; key component is bare ground.
Western Burrowing Owl (*Athene cunicularia hypugaea)*	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows.
INSECTS	
Black Lordithon rove beetle (*Lordithon niger)*	Hardwood forest.
MAMMALS	
Cave myotis bat (*Myotis velifer)*	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals.
Plains spotted skunk (*Spilogale putorius interrupta)*	Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.
MOLLUSKS	
Fawnsfoot (*Truncilla donaciformis)*	Small and large rivers especially on sand, mud, rocky mud, and sand and gravel, also silt and cobble bottoms in still to swiftly flowing waters; Red (historic), Cypress (historic), Sabine (historic), Neches, Trinity, and San Jacinto River basins.
Little spectaclecase (*Villosa lienosa)*	Creeks, rivers, and reservoirs, sandy substrates in slight to moderate current, usually along the banks in slower currents; east Texas, Cypress through San Jacinto River basins.

Species	Habitat
Wabash pigtoe (*Fusconaia flava)*	Creeks to large rivers on mud, sand, and gravel from all habitats except deep shifting sand; found in moderate to swift current velocities; east Texas River basins, Red through San Jacinto River basins; elsewhere occurs in reservoirs and lakes with no flow.
REPTILES	
Texas garter snake (*Thamnophis sirtalis annectens*)	Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August.
PLANTS	
Glen Rose yucca (*Yucca necopina)*	Grasslands on sandy soils and limestone outcrops.
Warnock's coral root (*Hexalectris warnockii).*	Leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons.

Source: TPWD 2012.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Habitat Types

Implementation of the Proposed Action would temporarily impact up to 1.46 acre of non-jurisdictional waters of the U.S. and 0.93acre of grasslands (Table 3-4). Implementation of the Proposed Action would permanently impact up to 0.48 acre of grassland habitat, 0.01 acre of non-jurisdictional waters of the U.S., and 0.03 acre of jurisdictional waters of the U.S. Impacts to non-jurisdictional waters of the U.S. would be temporary and minimized to the maximum extent possible and the small 0.03 acre of permanent impacts to jurisdictional waters of the U.S. would be minimized to the maximum extent possible. The aquatic habitats are likewise part of the 100-year floodplain. Pursuant to EO 11990, activities with the potential to impact wetlands may only occur if the USACE determines that there is no practicable alternative to the activity, and that the activity includes all practical measures to minimize harm to the wetlands. As the Proposed Action is a floodplain improvement, there is no practicable alternative to its current site within the floodplain.

Table 3-4. Permanent and Temporary Impacts to Habitat Types in the Region of Influence

Habitat Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)	Total Impact (Acres)
Aquatic			
Non-Jurisdictional Waters of the U.S.	1.46	0.01	1.47
Jurisdictional Navigable Waters of the U.S.	0	0.03	0.03
Terrestrial			
Grassland	0.93	0.48	1.41
Urban	0	2.17	2.17
Total	**2.39**	**2.69**	**5.08**

Sources: USACE 2007, Halff 2011.

As part of the Proposed Action, the construction contractor would obtain authorization under a NWP, most likely NWP 13 – "Bank Stabilization" (Appendix C). The construction contractor would implement any measures to minimize and/or mitigate impacts to waters and wetlands as required by the NWP. Thus, the resource conservation measures required under the NWP would similarly meet the requirements of EO 11990. Therefore, implementation of the Proposed Action would result in less than significant impacts to aquatic and terrestrial habitats.

Fish and Wildlife

Implementation of the Proposed Action would disturb or displace wildlife from the areas of construction and immediately surrounding areas. These activities could destroy individuals of the smaller, less mobile and burrowing species, whereas mobile species would disperse to surrounding areas. Individuals dispersing away from the activity would likely experience increased risks of predation, reduced foraging or reproductive success, and energetic costs. The overall impact on wildlife populations would be relatively small, proportional to the relatively small areas of habitat affected. In areas temporarily impacted, wildlife species would re-colonize available habitat area after construction. No long-term impacts to wildlife populations are likely. If an active bird nest were encountered during the implementation of the Proposed Action, it would be avoided. Due to the low quality of the habitat surrounding the majority of proposed project area and the small area of impact, the impacts to fish and wildlife, including migratory birds, would be minor. Therefore, implementation of the Proposed Action would result in less than significant impacts to fish and wildlife.

Special Status Species

No state or federally listed or TPWD species of concern are located in the ROI. Therefore, implementation of the Proposed Action would result in no impacts to special status species.

3.6.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.6.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to biological resources.

3.7 CULTURAL RESOURCES

3.7.1 Existing Conditions

3.7.1.1 Baker Pumping Plant

Figure 3-3 Baker Pumping Plant

The Baker Pumping Plant consists of the Old and New Baker Pump Stations, and drains approximately 3,418 acres. The Baker Pumping Plant, originally called "Pumping Plant B" consists of two pump houses (Figure 3-3), an intake structure, four gravity sluices, and an outlet structure. The original pump house (Old Baker Pump Station), constructed in 1929, is a one-and-one-half story building clad in rough, variegated red brick with a concrete foundation. The building has a medium-pitch, front-gabled roof covered in concrete tiles. The primary entrance to the building is located on the east façade. This metal, double door is located under a brick-in-filled segmental arch and includes multi-light windows above it. Above this entrance is a sheet metal sign which reads "City of Dallas Old Baker Pump Station Flood Control Div." Four in-filled windows with segmental arches are located on the south façade, while three in-filled windows with segmental arches are located on the west façade. The north façade contains four multi-light windows under segmental arches. These windows appear to be original, but the building's construction drawings indicate that fan lights were originally within the arched portion of the window openings that are now covered. Three circular brick design elements are interspaced between the window bays roughly 2 ft below the roofline. According to the original drawings, these portal window elements have always been blind, i.e. filled-in by a brick panel. The pump house contains four screw-type pumps manufactured by Fairbanks, Morse and Company, four gate valves, one trolley type chain hoist with a chain operated bridge, and two vacuum pumps.

The second pump house (New Baker Pump Station) associated with the Baker Pumping Plant was constructed in 1975 (refer to Figure 3-3). This building is a rectangular, poured-concrete structure with brick panels to match the exterior of the adjacent 1929 pump house. The south façade contains five bays of brick interspersed with concrete. A small, rectangular extension is located on the east façade that measures roughly 10 ft by 18 ft. The west façade contains an oversized garage bay with a metal door. Within the oversized bay is a smaller entrance man-door. The north façade contains five vents located within the brick bays. Located along the north façade is the trash rack for the pumping plant.

3.7.1.2 Historical Review and Designation

A search of the USACE files and the Texas Archaeological Sites Atlas Databases identified archaeological sites and architectural resources located within and near the project area. The project area and search parameters encompassed the immediate vicinity of the Baker Pumping Plant, which is also the Area of Potential Effect, per 36 CFR 800.16(d). Results of the file search identified 15 previously undertaken cultural resource surveys that involved the Dallas Floodway, of which the project area is a part. However, only four previous investigations evaluated the Baker Pumping Plant site as an individual resource. These four surveys resulted in no previously recorded archaeological sites and one NRHP-

eligible architectural resource, the Old Baker Pump Station. The following paragraphs summarize the previous investigations.

A survey conducted in 2000 and 2001 by Norman Alston Architects determined the Old Baker Pump Station was eligible for inclusion in the NRHP (Norman Alston Architects 2000). The Texas State Historic Preservation Officer (SHPO) provided official concurrence for this finding in a letter dated July 2, 2002 (Texas Historical Commission [THC] 2002). A survey conducted by Thomas P. Eisenhour in October 2009 upheld previous eligibility determinations and recommended the Old Baker Pump Station eligible for inclusion in the NRHP (Eisenhour 2009). AR Consultants, Inc. submitted a letter dated July 2, 2009 to the Texas SHPO determining that no archeological investigation of the property was warranted (AR Consultants, Inc. 2009). The Texas SHPO concurred with this finding on July 22, 2009, with a finding of "no historic properties affected, project may proceed."

In a letter report submitted to the Texas SHPO on October 23, 2009, the USACE Fort Worth District determined the Old Baker Pump Station to be individually eligible for inclusion in the NRHP under Criterion A for its association with local planning and development as well as Criterion C for its design and construction values. The Texas SHPO concurred with the USACE's finding of the Old Baker Pump Station's NRHP eligibility in a letter to the USACE Fort Worth District dated November 12, 2009 (THC 2009).

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

Implementation of the Proposed Action would impact one historic property within the project area and Area of Potential Effect, the NRHP-eligible Old Baker Pump Station. The implementation of the Proposed Action would decommission the Old Baker Pump Station, complete minor improvements to New Baker Pump Station, and would construct a new Baker Pump Station building adjacent to these structures. The construction of the new pump station would not directly or indirectly impact the historic Old Baker Pump Station.

The impact to the existing Old Baker Pump Station derives entirely from plans for its decommissioning. As a result of coordination with the THC and USACE (Appendix D), the City of Dallas would maintain the Old Baker Pump Station in its current state, as it is representative of the early Dallas Floodway Project flood risk management system. Construction activities associated with the repairs to the New Baker Pump Station and the proposed Baker No. 3 Pump Station would avoid the existing Old Baker Pump Station. The USACE has found these proposed actions to have No Adverse Effect to this historic property according to 36 CFR 800.5(i), which states that physical destruction of or damage to all or part of the property is an example of an adverse effect. The THC determined that implementation of the Proposed Action would result in No Adverse Effect to cultural resources. Therefore, the implementation of the Proposed Action would result in less than significant impacts to cultural resources.

If Native American human remains and/or objects subject to the Native American Graves Protection and Repatriation Act (25 USC 3001 et seq.) are encountered during proposed construction activities, the City of Dallas would immediately notify the USACE and THC and consult with appropriate federally recognized Tribe(s) to determine appropriate treatment measures in agreement with 36 CFR Part 800.13.

3.7.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.7.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to cultural resources.

3.8 VISUAL RESOURCES

3.8.1 Existing Conditions

The Baker Pumping Plant is located in an industrial area adjacent to the East Levee. As shown in Figure 3-3, the small, older pump station is constructed of red brick and has a silhouette similar to a small house and the larger, newer pump station is a rectangular block structure. Adjacent to both structures are utility poles/lines that run adjacent to and serve the pumping plant. The Baker Pumping Plant is located within the Trinity Industrial District viewshed, which is characterized by generally large, non-descript buildings without any unique visual characteristics. The pumping plant is consistent with the visual character of the surrounding area. The visual quality is generally low, as vividness, intactness, and unity are low. Based on the viewshed and surrounding land use, there is a moderate level of visual sensitivity. There are no key observation points located near the pumping plant.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

Proposed construction and rehabilitation activities associated with the Proposed Action would result in short-term impacts to visual resources due to the presence of construction equipment, vehicles, and building activities. The design of the proposed Baker No. 3 Pump Station would be consistent with the existing Baker Pumping Plant and surrounding area. Specifically, the exterior would be clad in a neutral toned architectural pre-cast concrete. Thus, the addition of the Baker No. 3 Pump Station and rehabilitation of the existing New Baker Pump Station under the Proposed Action would not substantially alter or degrade the existing visual environment. The existing Old Baker Pump Station would be decommissioned, but its façade would remain unchanged. Therefore, implementation of the Proposed Action would result in less than significant impacts to visual resources.

3.8.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.8.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to visual resources.

3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.9.1 Existing Conditions

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued to focus the attention of federal agencies on human health and environmental conditions in minority and low-income communities. In addition, EO 12898 aims to ensure that any potential disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. Because children may suffer disproportionately from environmental health and safety risks, EO 13045, *Protection of Children from Environmental Health*

Risks and Safety Risks, was introduced to help ensure that federal agencies' policies, programs, activities, and standards address environmental health and safety risks to children.

The neighborhood surrounding the Baker Pumping Plant is largely industrial. The development within the predicted 100-year, 24-hour storm event inundation area includes office, retail, hotel/motel, and industrial businesses. Commercial Metals Company (the twenty-third largest public employer in the Dallas-Fort Worth Metroplex), Aetna Healthcare, Stemmons Place offices, and the Hilton Anatole are all major employers in the predicted inundation area (Dallas Morning News 2010).

Data used for the socioeconomic analysis were collected primarily from the 2000 Census of Population and Housing (U.S. Census Bureau 2010). Demographic data are used to determine if there would be a potential disproportionate burden associated with a proposed action on a minority group (Environmental Justice) or on minors (Protection of Children).

According to the 2000 Census of Population and Housing, the population of the Census blocks served by the Baker Pumping Plant is 37,969. Of that total population, 38.7 percent is Hispanic, 8.1 percent is Black or African American, 5.4 percent is Asian, and 0.5 percent is Native American. In some cases, individuals identify themselves with more than one race. White, non-Hispanic persons comprise 66.5 percent of the population in the Hampton-Oak Lawn Basin. The population of the Census blocks within the predicted 100-year, 24-hour storm event inundation area of the Baker Pumping Plant is 64, reflecting the industrial and commercial development, rather than residential uses in the area. Of that total population, 78.1 percent is Hispanic, and 7.8 percent is Black or African American. In some cases, individuals identify themselves with more than one race. White, non-Hispanic persons comprise 21.9 percent of the population in the potential inundation area (U.S. Census Bureau 2010).

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

Implementation of the Proposed Action would result in a minor, temporary increase in jobs for the region. Following construction, no new jobs would be created and no change to the existing economic condition would occur. Following construction, the Baker Pumping Plant complex would provide improved flood risk management for its service area. Local flooding, and associated property damage and disruption of work within the service area would decrease in both frequency and magnitude. Therefore, implementation of the Proposed Action would result in beneficial impacts to socioeconomics.

Construction activities associated with the Proposed Action would generate short-term construction noise. To reduce potential disturbances to children in the surrounding area, the City of Dallas would contact any nearby residences and notify them of the construction and typical construction hours. Upon completion of construction, a fence would enclose the Baker Pumping Plant, thereby restricting unauthorized access. Therefore, implementation of the Proposed Action would result in less than significant impacts to the health and safety of children.

The Proposed Action would improve stormwater conveyance, and therefore, decrease flood risk in the Hampton-Oak Lawn Basin. Thus, implementation of the Proposed Action would decrease the flood risk posed to both minority populations and a significant employment center of the City of Dallas. Therefore, implementation of the Proposed Action would result in a beneficial impact to socioeconomics and there would be no disproportionate impact to minority populations or the health and safety of children.

3.9.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.9.1 would remain unchanged. Existing stormwater flooding risks for employment centers would continue and potentially affected structures would continue to be subject to economic damages. Employment data for these businesses is not currently available, however it may be inferred that the economic impacts of localized flooding within the project area would reach beyond the Hampton-Oak Lawn Basin, as damage would result in loss of wages to employees and economic contribution to the community. Therefore, implementation of the No Action Alternative would result in continued adverse, but less than significant impacts to socioeconomics. Given the ethnic makeup of the Hampton-Oak Lawn Basin, potential inundation associated with the No Action Alternative would have no disproportional impact to environmental justice.

3.10 AIR QUALITY

3.10.1 Existing Conditions

3.10.1.1 Attainment Status

The study area is located in Dallas County, and is included within the Metropolitan Dallas Fort Worth Air Quality Control Region (AQCR) 215. The TCEQ regulates the Metropolitan Dallas Fort Worth AQCR, by authority of the USEPA (Region 6), and promulgated in the TCEQ's State Implementation Plan. The Dallas Fort Worth ROI is in "serious" nonattainment for the federal ozone (O_3) standard, and is in attainment of all other criteria air pollutants (USEPA 2011a, TCEQ 2011). The applicable criteria pollutant *de minimis* levels are 50 tons/year for volatile organic compounds (VOCs) and nitrogen oxides (NO_x); VOCs and NO_x are precursors to the formation of O_3.

3.10.1.2 Baseline Emissions

Emissions in the study area come from a variety of stationary and mobile sources. Emission sources include vehicles, aircraft, industrial operations, and on-going construction activities. For example, there are several industrial facilities along and near the Trinity River that contribute to the ambient air quality of the region. These facilities include, but are not limited to, chemical plants, cement plants, semi-conductor facilities, printing operations, and oil and gas facilities. The Baker Pumping Plant is electrically powered and does not use generators (City of Dallas 2009a).

Approximately 70 percent of the Dallas Fort Worth region's air pollution comes from mobile sources such as cars, trucks, airplanes, construction equipment, and lawn equipment. The majority of pollutants emitted from motor vehicles include VOCs, NO_x, carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The City of Dallas is implementing several initiatives to improve air quality and reduce ozone levels, including: green fleet/vehicles, ordinances, commute solutions, and outreach programs. The Dallas/Fort Worth region has experienced a steady decline in ozone levels measured across the study area. Emission reductions have been achieved from stationary sources (stack) emissions, cleaner cars and construction equipment, and cleaner fuels (Green Dallas 2010).

3.10.1.3 Greenhouse Gas Emissions

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Predictions of long-term environmental impacts due to global climate change include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack. In Texas, predictions of these effects include exacerbation of air quality problems, increased storm frequency, and drastic impacts from sea level rise (Anderson n.d.).

Federal agencies are, on a national scale, addressing emissions of GHGs by reductions mandated in federal laws and EOs, most recently, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management.* Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, Senate Bill 184 (September 1, 2009), requires the State Comptroller to develop strategies to reduce GHG emissions, and the Texas Emission Reductions Plan, established in 2001, provides incentives to reduce emissions and improve and maintain air quality in Texas (Texas Comptroller of Public Accounts 2009). In addition, the City of Dallas initiated the "Green Dallas" program in 2005 designed to reduce GHG emissions from both municipal and private sectors of the city (City of Dallas 2005b).

3.10.2 Environmental Consequences

Emission thresholds associated with federal CAA conformity requirements are the primary means of assessing the significance of potential air quality impacts associated with implementation of a proposed action under NEPA. On March 24, 2010, the USEPA revised the General Conformity regulations. These rules implement CAA provisions prohibiting federal agencies from taking actions that may cause or contribute to violations of the National Ambient Air Quality Standards (NAAQS) (USEPA 2011b). A formal conformity determination is required for federal actions occurring in nonattainment or maintenance areas when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed *de minimis* thresholds.

3.10.2.1 Proposed Action

Air quality impacts would occur from the use of equipment during construction activities, other project-related vehicles, and worker commuting trips. Estimated emissions calculations resulting from project activities, assumptions, and a RONA for CAA Conformity are presented in Appendix F.

It was assumed that construction would take 2 years (24 months) and would begin in May 2012 and end in May 2014. However, for purposes of establishing compliance with CAA conformity applicability requirements, emissions are shown per calendar year 2012-2014. Emissions in 2012 were assumed to occur over 7 months. Emissions in 2013 were assumed to occur over 12 months. Emissions in 2014 were assumed to occur over 5 months. Implementation of the Proposed Action would result in temporary increases in criteria pollutant emissions associated with construction activities (Table 3-5).

Table 3-5. Estimated Emissions Resulting from Implementation of the Proposed Action

Project Emissions Tons Per Year	Pollutant					
	VOCs[1]	NO_x[1]	CO[2]	SO_x[2]	PM_{10}[2]	$PM_{2.5}$[2]
2012 Emissions (May-December)	0.54	4.07	2.01	0.00	1.62	1.78
2013 Emissions (January-December)	0.93	6.99	3.46	0.01	2.82	0.47
2014 Emissions (January-May)	1.39	2.87	1.39	0.00	0.97	0.24
de minimis threshold	50	50	100	100	100	100
Exceeds *de minimis* threshold?	No	No	No	No	No	No

Notes: [1] The Metropolitan Dallas Fort Worth AQCR is in "serious" nonattainment for the federal O_3 standard; VOCs and NO_x are precursors to the formation of O_3; and is in attainment of all other federal standards.
[2] *De minimis* thresholds are not applicable to NAAQS attainment areas; however, estimated average annual emissions have been compared with moderate nonattainment *de minimis* thresholds for planning purposes only.
Sources: TCEQ 2011, USEPA 2011a.

Vehicle emissions generated by proposed construction activities would be temporary and short-term; no long-term increases in vehicle emissions would occur under the Proposed Action. Emissions associated with construction-related vehicles and equipment would be minor, as most vehicles would be driven to and kept at the site until project activities are complete. There would be no long-term increase in mobile or stationary source emissions in the region and no emergency generators would be installed. In addition, GHG emissions associated with construction activities would not significantly contribute to global climate change.

Fugitive dust (i.e., PM_{10} and $PM_{2.5}$) would increase (as a result of surface disturbances associated with construction activities) and would temporarily impact local air quality. However, fugitive dust generated by proposed construction activities would be temporary and short-term; no long-term increases in fugitive dust would occur following the completion of construction activities. In addition, increases in PM_{10} and $PM_{2.5}$ would be moderated through BMPs (i.e., watering exposed soils, soil stockpiling, and soil stabilization), thereby limiting the total quantity of fugitive dust emitted during project implementation.

Estimated emissions would be below *de minimis* levels for conformity. Therefore, implementation of the Proposed Action would not trigger a formal conformity determination under Section 176(c) of the CAA, and less than significant impacts to air quality would occur.

3.10.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.10.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to air quality.

3.11 UTILITIES

3.11.1 Existing Conditions

The Baker Pumping Plant is powered by an overhead electrical line. Major utilities larger than local service in the Hampton-Oak Lawn Basin include an underground high pressure Atmos gas line that parallels the East Levee (City of Dallas 2008d). Stormwater runoff from Hampton-Oak Lawn Basin flows through various stormwater runoff control system components to the Hampton-Oak Lawn Sump. The Baker Pumping Plant then conveys runoff from the Hampton-Oak Lawn Sump to the Floodway (City of Dallas 2006). The exact location of every utility line is not always certain; thus, construction managers must call utility companies prior to any major underground construction within the study area to locate utilities infrastructure and to avoid disturbing existing utility lines.

The Hampton-Oak Lawn Sump consists of the old Trinity River Channel and ditches remaining from levee construction generally located between Hampton/Inwood Road and Oak Lawn Avenue. Two reinforced concrete box culverts running beneath the Stemmons Freeway and Irving Boulevard connect the Hampton-Oak Lawn Sump (City of Dallas 2006).

The Baker Pumping Plant consists of two pump stations, Old Baker and New Baker. Old Baker was constructed in 1929 with four, 52,000-gpm pumps. New Baker was constructed in 1975 with five, 80,000-gpm pumps and one, 6,000-gpm sump pump. Besides the two pump stations, water can flow from the sump to the Floodway through six, 10-ft by 10-ft gravity sluices. The Baker Pumping Plant outfall and gravity sluice outfalls pass under the East Levee at a depth of approximately 40-ft below the levee crest and discharge approximately 50 ft and 61 ft, respectively, from the toe of the levee (City of Dallas 2006).

NEPA compliance for relocation of the Atmos gas line is preliminarily covered by the Final Programmatic Assessment Civil Works Minor Section 408 NEPA Compliance by the United States Army Corps of Engineers Fort Worth District dated 11 April 2011. Neither this EA nor the associated USACE Section 408 Application for the Baker Storm Water Pump Stations and Sump Improvements constitutes the final actions necessary to clear the Atmos gas line relocation. Final NEPA and minor Section 408 approval for the gas line relocation will have to be made under a separate submittal as outlined in the PEA.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Prior to implementation of the Proposed Action, construction managers would ensure that construction would not damage infrastructure (e.g. buried pipes or power lines) by contacting utility companies to locate utilities infrastructure and by identifying utility crossings.

The proposed Baker No. 3 Pump Station would be built on undeveloped land, adjacent to the existing New Baker Pump Station southeast of Irving Boulevard. Utility access would continue to be available via the existing service connections for the Old and New Baker pump stations. The overhead power lines that run along Levee Road would continue to provide service to the Baker Pumping Plant. Any existing utilities (e.g. fire hydrants, gas meters, etc.) that would be in conflict with the design plan would be relocated.

As shown in Table 3-6, the Proposed Action would increase the pump capacity of the Baker Pumping Plant by 492,000-gpm. The improvements to the sump would improve the conveyance of stormwater to the pump stations, and the increased pump capacity would increase stormwater conveyance to the Dallas Floodway. With the implementation of the proposed improvements, the Baker Pumping Plant's predicted 100-year, 24-hour storm event elevations would be the same as the design elevation (402.5 ft), resulting in a substantial reduction (approximately 96 percent; see Section 3.14.2.1) in the number of structures potentially affected by flooding from the predicted 100-year, 24-hour storm event. The flood risk management within the Hampton-Oak Lawn Basin would improve, resulting in a decrease of the stormwater flood risk. Therefore, implementation of the Proposed Action would result in beneficial impacts to utilities.

Table 3-6. Pumping Capacity of Existing and Proposed Facilities at Baker Pumping Plant

Pump Station	Current Capacity	Proposed Capacity	Net Change
Old Baker Pump Station	208,000 gpm	0 gpm	-208,000 gpm
New Baker Pump Station	400,000 gpm	400,000 gpm	0 gpm
Proposed Bake No. 3 Pump Station	not applicable	700,000 gpm	+700,000 gpm
Total Baker Pumping Plant	608,000 gpm	1,100,000 gpm	+492,000 gpm

Source: City of Dallas 2006.

3.11.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.11.1 would remain unchanged. Existing stormwater flood risk management concerns would continue. Therefore, implementation of the No Action Alternative would result in adverse, but less than significant impacts to utilities.

3.12 HAZARDOUS MATERIALS AND WASTE

3.12.1 Existing Conditions

On February 19, 2010, an environmental records/database review of all applicable federal, state, local, and tribal records was prepared in support of the on-going DFP EIS (USACE 2010a). A total of 77 federal, state, local and tribal databases were reviewed. The search identified 963 known hazardous/toxic sites within the boundary search area (a subset of the study area associated with the DFP EIS). All of these sites are located outside of the ROI for the proposed Baker Pumping Plant improvements; however, the Murmur Corporation Site 3/RSR Corporation has the potential to fall within the Baker Pumping Plant ROI because of its large pollutant fallout radius.

The Murmur Corporation Site 3/RSR Corporation is located at the corner of North Westmoreland Road and Singleton Boulevard. This site encompasses approximately 13.6 square miles in West Dallas. Historically, this site was used as a secondary lead smeltering operation from the early 1930s until 1984. Contaminants of concern are arsenic, cadmium, and lead. In the early 1990s, the USEPA began soil sampling, followed by several years of removal and remediation of contaminated soil in affected residential areas. Cleanup of the residential properties and commercial properties has resulted in elimination of the source of contamination related to the RSR Superfund site. Portions of the site remain on the Final National Priority List (Superfund program) slated for priority cleanup and is most recently in a remediation phase (Environmental Data Resources [EDR] 2010). All portions of the site have completed construction and are in the "post-construction" remediation phase or have been removed from the National Priority List. Based on the 2010 site review, the human exposure risks and groundwater migration concerns are currently controlled (EPA 2012).

Buildings constructed between 1945 and 1978 commonly include asbestos containing materials (ACM) that include friable asbestos. Renovation of such buildings increases the risk of exposure to asbestos fibers and the potential for exposed persons to develop asbestosis and/or mesothelioma (USEPA 2010a). The Texas Department of State Health Services (DSHS) regulates asbestos remediation and management, and has codified requirements in the *Texas Asbestos Health Protection Rules*. The State rules adopt existing Occupational Safety and Health Administration (OSHA) and USEPA regulations and apply them to all public facilities in which activities involving the disturbance or removal of ACM may occur. The regulations also address remediation worker certification, training, notification and recordkeeping.

Through the 1940s, paint manufacturers frequently used lead as a primary ingredient in many oil-based interior and exterior house paints. Usage gradually decreased through the 1950s and 1960s as titanium dioxide replaced lead and as latex paints became more widely available. Lead exposure through lead based paint (LBP) has been demonstrated to have significant adverse health effects, most notably nervous system and cognitive function damage. The USEPA maintains guidance on management inspection of facilities that may have LBP (USEPA 2010b). The DSHS regulates LBP inspection, remediation and management. The state rules adopt existing OSHA and USEPA regulations and apply them to all public facilities in which activities involving the disturbance or removal of LBP may occur. The regulations also address remediation worker certification, training, notification and recordkeeping.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

The results of the 2010 EDR report confirmed the absence of any known hazardous materials/waste sites within or near the vicinity of the Proposed Action. Although no known sites where detected in the EDR report, there is still a potential for lead/heavy metal contamination in the soil at both locations, since the Proposed Action is across the Floodway from the boundary of the Murmur Corporation Site 3/RSR Corporation contamination plume.

It is unlikely that proposed ground disturbing activities associated with the Proposed Action would expose workers, nearby residents, or the environment to hazardous materials/contaminants or waste. A Contingency Action Plan reflecting the guidance of AR 200-1 and ER 1165-2-132 would be prepared to ensure familiarity with reporting and communication protocols in the event hazard materials are encountered in the course of Proposed Action implementation. If during construction or ground disturbing activities any potential hazardous materials/contaminants or waste are discovered, work would cease immediately and the proper personnel would be contacted for further assessment. Workers would follow standard BMPs and industry-wide protocols to minimize the potential for fuel, oil, and/or lubricant spills.

After implementation of the Proposed Action, the proposed pumping plant would not be a user or generator of any hazardous materials/wastes, except oils, solvents, paints, etc. to properly operate and maintain the pumping systems within the pumping station and other associated features. These products would be properly used and stored in accordance with all applicable local, state, and federal regulations. Therefore, implementation of the Proposed Action would not result in significant impacts to hazardous materials and waste.

3.12.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.12.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to hazardous materials and waste.

3.13 TRANSPORTATION

3.13.1 Existing Conditions

Within the Hampton-Oak Lawn Basin, 38 streets are potentially subject to flooding during the 100-year, 24-hour storm event. Major roads (Street Class 4 or 5) and baseline average daily traffic (ADT) values are presented in Table 3-7. Class 4 streets are thoroughfares – representing the main transportation corridor through an area. Class 5 streets are highways. The ADT values are representative of the

roadways near a major intersection within or adjacent to the predicted flood area. Access to the Baker Pumping Plant is via Pump Plant B Road located off Irving Boulevard.

Table 3-7. Hampton-Oak Lawn Basin Roads Potentially Subject to Flooding

Road	Street Class	ADT
Inwood Road	4	35,787
Irving Boulevard	4	16,102
Harry Hines Ramp North at Oak Lawn Avenue	4	12,724
Wycliff Avenue (Sylvan Avenue)	4	12,802
Market Center Boulevard	4	67,708
Dallas North Tollway SB	5	30,297
Stemmons Freeway (IH-35)	5	17,534

Sources: City of Dallas 2004a, NCTCOG 2009, FHWA 2009.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

Construction activities associated with the project would have a short-term impact on the traffic using Irving Boulevard and Sylvan Avenue due to lane closures, rerouting of traffic and possible traffic stoppages to allow construction traffic movement. Increases in daily traffic volumes associated with proposed construction activities would be temporary. Once completed, the Proposed Action would include two new driveway access points: one off Irving Boulevard and one to and from the levee maintenance road.

During construction, contractors would implement the provisions contained in the Traffic Control Plan to be prepared as part of the Proposed Action. Contractors would be responsible for providing and maintaining all barricades, warning signs, flashing lights and traffic control devices in conformance with Part VI of the *Texas Manual on Uniform Traffic Control Devices*. Once complete, the contractor would restore all items that are disturbed during installation of temporary traffic control, to original or better condition. Closure of traffic lanes and sidewalks along any public roadway would be restricted to the hours of 8:30 a.m. to 3:30 p.m. on workdays to minimize the impact on traffic flows, unless approved otherwise by the City of Dallas.

Upon completion of the Proposed Action, the improved Baker Pumping Plant would be better equipped to manage stormwater in the Hampton-Oak Lawn Basin. As a result, the roads identified as being potentially subject to flooding would have a reduced risk of flooding-related closure. Therefore, while the construction period would have a temporary less than significant impact on transportation, the implementation of the Proposed Action would result in beneficial impacts to transportation overall.

3.13.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.13.1 would remain unchanged. Therefore, implementation of the No Action Alternative would result in no impacts to transportation.

3.14 PUBLIC SAFETY

3.14.1 Existing Conditions

The Baker Pumping Plant drains a densely developed section of the City of Dallas. As discussed in Section 1.4.3.2, GIS analysis indicates that flooding associated with the modeled 100-year, 24-hour storm event has the potential to affect 329 structures within the Hampton-Oak Lawn Basin. Of these 329 structures, 104 are subject to flooding (City of Dallas 2008a, 2009b).

Stormwater flooding from the modeled 100-year, 24-hour storm event has the potential to affect 329 structures within the Hampton-Oak Lawn Basin (City of Dallas 2009a). During large flooding events in the Hampton-Oak Lawn Basin, emergency responders (e.g., fire, police, and medical) respond to flood-related emergencies.

A 2007 USACE inspection identified cracking and damage to the trash racks and retaining wall at the Baker Pumping Plant. As described in the report, the damage has weakened structural supports and would compromise the integrity of the surface if not repaired. This situation has the potential to affect Operations and Maintenance of the Baker Pumping Plant, which in turn, can compromise the effectiveness of the Baker Pumping Plant (USACE 2007).

In an effort to curtail damage to the levee systems from vegetation, in April 2009, the USACE issued Technical Letter Number 1110-2-571 regarding vegetation on levees. The intent of the letter is to provide basic requirements for vegetation-free and root-free zones in levee systems to protect levee integrity. The vegetation-free zone limits levee vegetation to grasses for the entire width of the levee, plus a buffer of 15 ft on either side of the levee. The 15-ft buffer is intended to minimize root growth that may penetrate the levee; no roots (aside from grasses) are permitted to penetrate the levee. In addition, the buffer extends vertically 8 ft, such that an adjacent tree may not have a branch overhang less than 15 ft from the levee toe. In addition to the vegetation-free zone, Technical Letter Number 1110-2-571 provides for the development of a vegetation management zone. This zone aids in maintenance of the vegetation-free zone and aids in flood control efforts by increasing grass growth for erosion control, removing large trees that become damaged by construction, and selecting species to moderate the erosive potential of water currents and wave action (USACE 2009).

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

The risk of storm events persists during construction. To this end, the Proposed Action incorporates an emergency action plan for high-water events. High-water events in the Trinity River could create flood risk management concerns. To address these concerns, different levels of emergency and notification procedures have been adopted.

The first step in the notification process is to identify that there is a potential problem with the levee and to assess its seriousness.

The two levels of emergency are an alert condition and a warning condition:

Level 1: An alert condition indicates that a potentially serious condition is developing and failure could occur if conditions do not improve.

Level 2: A warning condition indicates that failure of the levee is imminent or has already occurred.

During the project construction, the construction contractor would be responsible for the preparation and submittal of a flood emergency action plan to the USACE and TRFCD for their approval. The flood emergency action plan would be implemented in the event of imminent flooding during construction and would address actions to be implemented during above normal river stages for the duration of the construction activities.

The Proposed Action would reduce the stormwater flood risk associated with the 100-year, 24-hour storm event. With the implementation of proposed improvements, the predicted Baker Pumping Plant 100-year, 24-hour storm event elevation (403.7 ft) would be reduced to the original design elevation (402.5 ft), resulting in a substantial reduction in the number of structures potentially affected by flooding from the 100-year, 24-hour storm event. Specifically, the Proposed Action would reduce the number of structures subject to flooding from 104 to 4 (a reduction of 96 percent). Overall, the Proposed Action would result in a dramatically lower flood risk for persons and property in the Hampton-Oak Lawn Basin. Correspondingly, there would be a lower demand for flood-related emergency services.

Implementation of the Proposed Action would remedy the deficiencies identified in the 2007 USACE inspection report. Furthermore, proposed improvements would be implemented in accordance with Technical Letter Number 1110-2-571 by increasing grass growth for erosion control, removing any large trees that might become damaged by construction, and selecting species to moderate the erosive potential of water. Therefore, implementation of the Proposed Action would result in beneficial impacts to public safety.

3.14.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.14.1 would remain unchanged. Flood risk would continue at the current levels, with 329 structures potentially affected from inundation, and 104 structures potentially subject to flooding associated with the predicted 100-year, 24-hour storm event. Existing public safety and associated emergency response concerns would continue. Furthermore, existing deficiencies at the Baker Pumping Plant, as noted in the USACE inspection report, would continue. Therefore, implementation of the No Action Alternative would result in significant impacts to public safety.

CHAPTER 4
CUMULATIVE EFFECTS

4.1 CUMULATIVE IMPACTS

Cumulative effects are defined as the "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions (40 CFR 1508.7)." Currently, the USACE is analyzing the potential environmental impacts of several proposed actions within the Trinity River Corridor. The USACE is in the process of analyzing these proposed actions in the Dallas Floodway Feasibility Study/EIS, which will likely be publicly available in 2013.

4.1.1 Overview

The proposed improvements to the Baker Pumping Plant are localized and represent a relatively small action in an extensive area subject to on-going planning for large-scale activities. The comprehensive cumulative impact analysis included as part of the on-going DFP EIS includes an analysis of the proposed Baker Pumping Plant improvements. The cumulative impact from the implementation of proposed Baker Pumping Plant improvements would be less than the aggregate impact of other actions analyzed in the DFP EIS.

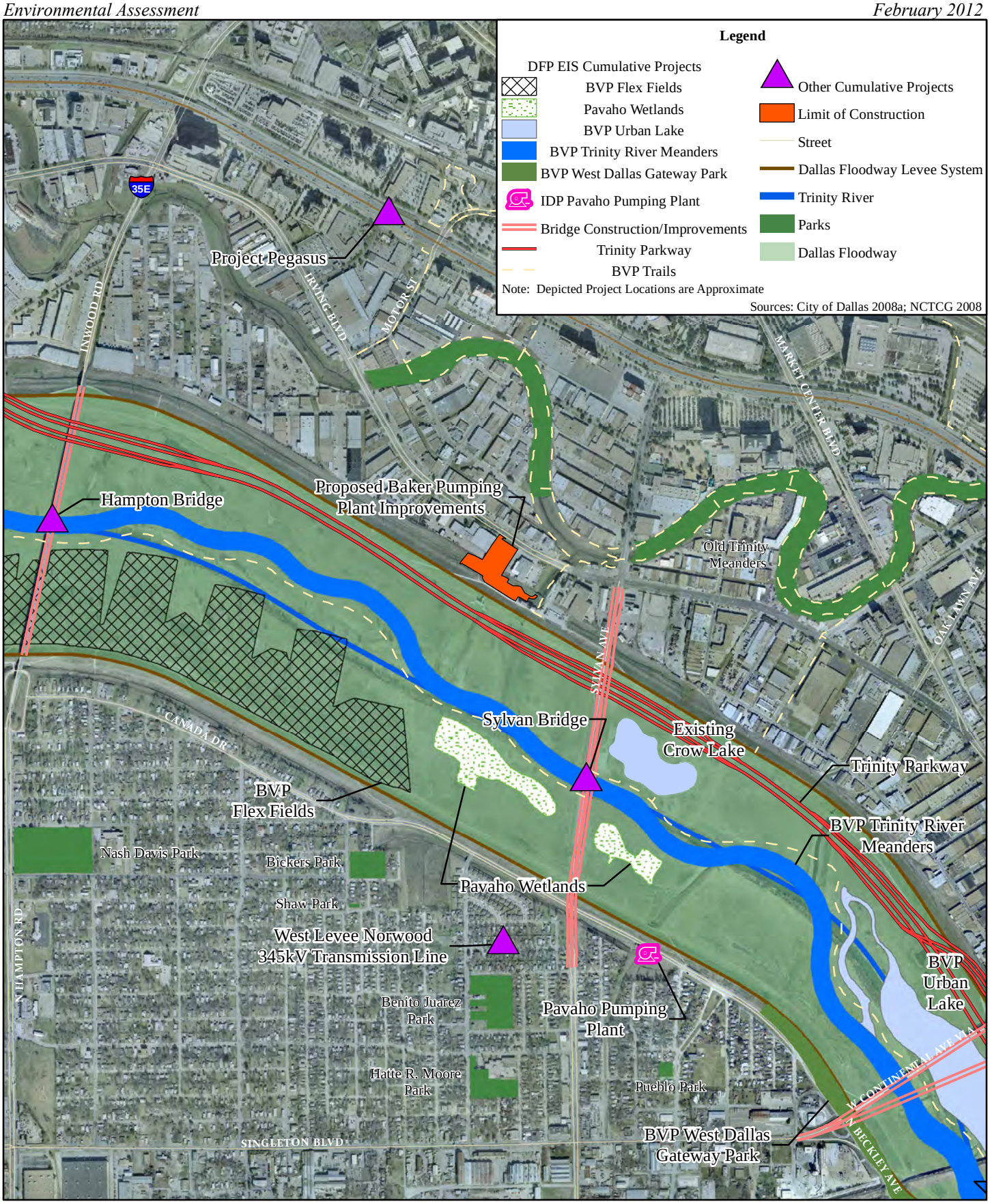
4.1.2 Identified Cumulative Projects

The following projects are part of the DFP EIS Proposed Action and are located in the vicinity of the Proposed Action (Figure 4-1):

- Pavaho Pumping Plant: The USACE Fort Worth District issued a Finding of No Significant Impact for proposed improvements to the Pavaho Pumping Plant (USACE 2010b). The City of Dallas broke ground on this project on September 21, 2010.
- Trinity Parkway: The Trinity Parkway is a proposed 9-mile toll road that would extend from the State Highway (SH)-183/Interstate Highway (IH)-35E juncture to U.S. 175/Spur 310. The Federal Highway Administration (FHWA) is analyzing action alternatives in their NEPA process (FHWA 2009).
- Ecosystem Restoration and Recreation Features: These elements include ecosystem restoration and recreation features defined in *"The Balanced Vision Plan for the Trinity River Corridor, Dallas, TX"* dated December 2003, and amended in March 2004 and include the Flex Fields, the Trinity River Meanders, Trails, the West Dallas Gateway Park, and Urban Lake (City of Dallas 2004b).
- Pavaho Wetlands: The City of Dallas proposed to construct approximately 70 acres of stormwater wetlands adjacent to the Pavaho Pumping Plant outfall.

There are several projects not part of the DFP EIS Proposed Action that are located in the vicinity of the Proposed Action (Figure 4-1). Projects of note include:

- Hampton Bridge: Texas Department of Transportation (TxDOT) constructed a new six-lane bridge to replace the current four-lane bridge at the Hampton/Inwood crossing. The project area was approximately 28 acres and construction of this project was completed in 2010 (TxDOT 2009, 2010a).



Meters
0 125 250 375 500
0 500 1,000 1,500 2,000
Feet

Figure 4-1
Cumulative Projects in the Vicinity of
Proposed Baker Pumping Plant Improvements

- Sylvan Bridge: TxDOT proposes to replace the existing low water Sylvan Avenue crossing with a 3,400-ft long structure that would include sidewalks; four, 12-ft wide driving lanes; and two, 14-ft wide shared bicycle and vehicle lanes (TxDOT 2010a, 2010b, 2010c).
- West Levee Norwood 345 Kilovolt Transmission Line: This project included installing new power lines and consolidating existing lines. Oncor Electric Delivery has installed a new 345-Kilovolt power transmission line from West Levee Switching Station located in Dallas to the Norwood Switching Station located in Irving. The transmission line covers almost seven miles, one mile of which is underground. This project was completed in the summer 2010 (City of Dallas 2010b).
- Project Pegasus: The Pegasus Project would redesign IH-30 from Sylvan Avenue to IH-45, and IH-35E from Eighth Street to Empire Central Drive (north of SH-183). The Pegasus Project focuses on the IH-30/IH-35E interchange on the western edge of downtown Dallas, the portion of IH-30 south of downtown, and the portion of IH-35E from the interchange to SH-183. The project area would cover approximately 461 acres. Construction has not yet begun (TxDOT 2009, 2010a).

4.1.3 Cumulative Impact Analysis

4.1.3.1 Land Use

The Proposed Action would result in less than significant impacts to land use. The projects identified in the cumulative effects region would be implemented in accordance with all applicable land use regulations. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to land use.

4.1.3.2 Noise

The Proposed Action would result in less than significant impacts to noise. The other projects in the cumulative effects region would likely result in minor localized changes in ambient existing noise levels, and would thus incorporate any necessary design or mitigation measures to minimize noise impacts to any sensitive noise receptors during construction and/or operation. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to noise.

4.1.3.3 Geology and Soils

The Proposed Action would result in less than significant impacts to geology and soils. The preparation and implementation of an Erosion Control Plan would minimize the potential for erosion during construction. The identified cumulative projects would be required to develop erosion control plans as well for any construction efforts, thus preventing any potential negative impact to the soils in the vicinity of the Proposed Action. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to geology and soils.

4.1.3.4 Water Resources

The Proposed Action would result in less than significant impacts to water resources. Other projects identified in the cumulative effects region would not significantly affect area water resources and would be implemented in accordance with all applicable laws and regulations relating to water resources. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to water resources.

4.1.3.5 Biological Resources

The Proposed Action would result in less than significant impacts to biological resources. The potential permanent impact to jurisdictional waters of the U.S. would be authorized by a NWP. There are no known special status species within the project area. Other projects identified in the cumulative effects region would result in minor changes to habitat types and an overall net benefit to wetland habitat and floodplains. As no sensitive plant communities are known to exist within the project area, no impacts to sensitive plant communities would occur. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to biological resources.

4.1.3.6 Cultural Resources

With the implementation on-site measures to avoid impact to the Old Baker Pump Station, implementation of the Proposed Action would result in less than significant impacts to cultural resources. Any potentially adverse effects from any of the identified cumulative projects would be mitigated as necessary following coordination with the THC. Therefore, the Proposed Action, in conjunction with identified cumulative projects and implementation of any applicable mitigation, would result in less than significant cumulative impacts to cultural resources.

4.1.3.7 Visual Resources

The Proposed Action would result in less than significant impacts to visual resources. The proposed Baker No. 3 Pump Station would be visually consistent with the existing Baker Pumping Plant facilities and surrounding area. The identified cumulative projects would strive for visual consistency throughout the ROI, and could potentially include design features to soften any potential visual impacts. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant cumulative impacts to visual resources.

4.1.3.8 Socioeconomics and Environmental Justice

The Proposed Action would result in beneficial impacts to socioeconomics and no disproportionate impact to minority populations or the health and safety of children. The identified cumulative projects would result in a beneficial impact to socioeconomics by improving connectivity between economic centers of the City of Dallas and more economically depressed residential areas and potentially increase tourism. In addition, construction of the identified cumulative projects would result in a temporary increase in construction-related spending in the local economy. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in beneficial cumulative impacts to socioeconomics. There would be no cumulative disproportionate impact to minority populations or the health and safety of children.

4.1.3.9 Air Quality

The Proposed Action would result in less than significant impacts to air quality. Many of the identified cumulative projects would result in a beneficial long-term impact to air quality by improving regional transportation and thus reducing trip times and associated emissions, despite an initial adverse impact resulting from construction-related emissions. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in less than significant impacts to air quality.

4.1.3.10 Utilities

The Proposed Action would have a beneficial impact to utilities by improving stormwater conveyance and increasing stormwater flood risk management. The proposed Baker Pumping Plant improvements would improve stormwater flood risk management in the Hampton-Oak Lawn Basin. The other identified cumulative projects would be implemented following coordination with regional utility companies to minimize the potential for impacts to utilities. The West Levee Norwood 345 Kilovolt Transmission Line would improve electrical service to the region. Therefore, the Proposed Action, in conjunction with the identified cumulative projects, would result in beneficial cumulative impacts to utilities.

4.1.3.11 Hazardous Materials and Waste

The Proposed Action would result in less than significant impacts to hazardous materials and waste. The Proposed Action and many of identified cumulative projects are all within the Murmur Corporation Site 3/RSR Corporation site. Any contamination discovered would be addressed and managed on a project-specific basis to minimize potential impacts from hazardous materials. All potentially hazardous wastes would be transported, stored, and disposed of in accordance with all applicable regulations. Therefore, the Proposed Action, in conjunction with the identified cumulative projects, would result in less than significant impacts to hazardous materials and waste.

4.1.3.12 Transportation

The preparation and implementation of the traffic control plan during construction would minimize the potential for local transportation delays. Upon the completion of construction, there would be a slight benefit to local and regional transportation as there would be a reduced risk of stormwater flooding closing area roadways in the Hampton-Oak Lawn Basin. Following construction, the identified cumulative projects would result in an overall beneficial impact to regional transportation. Therefore, the Proposed Action, in conjunction with identified cumulative projects, would result in beneficial cumulative impacts to transportation.

4.1.3.13 Public Safety

The Proposed Action would have a beneficial impact to public safety by reducing the stormwater flood risk and through implementation of an emergency action plan during high-water events. These reductions would be consistent with the stated purpose of EO 11988 to minimize the risk to human safety from flooding. The identified cumulative projects would benefit public safety by improving transportation and therefore regional access for emergency response services and would include any necessary safety measures to reduce potential health and safety risks to the public. Therefore, the Proposed Action, in conjunction with the identified cumulative projects, would result in beneficial cumulative impacts to public safety.

This Page Intentionally Left Blank

CHAPTER 5
SUMMARY OF IMPACTS

5.1 SUMMARY OF IMPACTS

In accordance with NEPA, the USACE performed a focused analysis of the following resource areas: land use, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics and environmental justice, air quality, utilities, hazardous materials and wastes, transportation, and public safety. Table 5-1 presents a summary of the impacts to all resource areas under the Proposed Action and No Action Alternatives, and the potential impacts of the Proposed Action in conjunction with the identified cumulative projects.

Table 5-1. Summary of Environmental Consequences

Resource Area	Proposed Action	No Action	Cumulative Impacts
Land Use	-	-	○
Noise	●	-	○
Geology and Soils	○	-	○
Water Resources	+	-	○
Biological Resources	○	-	○
Cultural Resources	○	-	*
Visual Resources	○	-	○
Socioeconomics	+	●	+
Air Quality	○	-	○
Utilities	+	●	+
Hazardous Materials and Wastes	○	-	○
Transportation	+	-	+
Public Safety	+	▲	+

Notes: + = Beneficial impacts
- = No impacts
○ = Less than significant impacts
● = Adverse, but less than significant impacts
* = With mitigation, less than significant impacts
▲ = Significant impacts

5.2 RESOURCE CONSERVATION MEASURES

In accordance with the criteria identified in Section 1.9, the City of Dallas would implement the following Resource Conservation Measures as part of the Proposed Action to avoid or minimize potential effects to environmental resources:

1. All disturbed soils would be immediately stabilized following the completion of work and be re-planted with native grass and shrub species. Before approval of the final design, the contractor would obtain City of Dallas approval of a soil layering plan, seed mixes, planting/seeding, and monitoring methods proposed for use in revegetation. Noxious weeds would be controlled by hand weeding or herbicide application.
2. Before the start of construction the project boundary (i.e., limit of construction) would be clearly marked with flagging, fencing, stakes, or lath.

3. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure site stabilization. An Erosion Control Plan would be prepared and implemented. The Erosion Control Plan would include BMPs that could include rock stabilization at the construction site entrance, inlet protection barriers at the Baker Pumping Plant inlet, and the use of rock filter dams within the sump. The contractor would also be required to use silt fences throughout the construction area wherever there is the potential for erosion. The City of Dallas would finalize the Erosion Control Plan upon final design approval of the proposed improvements, and all erosion control measures would be field adjusted for site conditions.

4. Fugitive dust controls would be monitored and maintained during construction. A Fugitive Dust Control Plan would be prepared and implemented. The Fugitive Dust Control Plan would include BMPs that could include watering exposed soils, soil stockpiling, and soil stabilization. The City of Dallas would finalize the Fugitive Dust Control Plan in concert with the Erosion Control Plan upon final design approval of the proposed improvements, and all dust control measures would be field adjusted for site conditions.

5. The contractor would implement a Traffic Control Plan approved by the City of Dallas prior to construction. The Traffic Control Plan would include requirements to cover any excavated pavement exposed to traffic with anchored steel plates during non-working hours; provide 48-hour notice of intended lane closures; install appropriate signage for construction periods; and install a temporary concrete traffic barrier before constructing the proposed discharge pipe shoring wall.

6. The Proposed Action would permanently impact 0.03 acre of jurisdictional waters of the U.S. The Proposed Action has been determined to fall under CWA Section 404 NWP 13 "Bank Stabilization" (Appendix C). No TCEQ water quality permit would be required, as the NWP 13 is sufficient for water quality permitting processes. The contractor would implement any measures to minimize and/or mitigate impacts as required by the NWP. As stipulated by NWP 13, because the temporary impacts would be less than 500 linear ft of shoreline to jurisdictional waters, PCN to the USACE District Engineer would not be required.

7. The construction contractor would survey for all pre-existing utilities in the area to avoid and/or minimize any temporary interruption of utility service(s).

8. Hazardous wastes would be handled in accordance with applicable federal, state, and local regulations. If an unknown or unidentified waste is encountered during construction, the City of Dallas personnel would be notified and all construction in the area would stop until the hazardous situation is remedied. Chapters 9 and 10 of AR 200-1, Environmental Protection and Enhancement (2007), outline USACE policy for hazardous materials and waste management. In addition, ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects provides guidance for consideration of issues and problems associated with HTRW which may be located within project boundaries or may affect or be affected by USACE Civil Works projects. The guidance is intended to provide information on how these considerations are to be factored into project planning and implementation. A Contingency Action Plan reflecting the guidance of AR 200-1 and ER 1165-2-132 would be prepared before implementing the Proposed Action. The City of Dallas would finalize the Contingency Action Plan upon final design approval of the proposed improvements, and all hazardous material control measures would be field adjusted for site conditions.

9. Drainage elements to allow the rapid percolation of water away from the structural elements of the Proposed Action would be incorporated into construction designs. These elements include, at a minimum:

    a. Constructing drains behind the retaining walls beneath the foundation mat adjacent to the gravity drainage structure proposed at the west end of the sump.

    b. Constructing drains beneath the concrete sump liner adjacent to both Baker No. 3 and New Baker pump stations; this will require replacement of significant portions of the sump liner and slope pavement east of the New Baker Pump Station.

    c. Including drainage behind the clay backfill behind the existing retaining wall located just west of New Baker; this will require excavation below the access road and levee slope south of the retaining wall, which can be tied with the excavation needed for the proposed retaining wall extension to the west of the existing wall. Such an excavation may result in the need for temporary riverside levee protection augmentation during excavation into the landside levee slope and drain construction.

    The functionality of these drainage measures will be monitored to determine their success.

This Page Intentionally Left Blank

CHAPTER 6
OTHER CONSIDERATIONS REQUIRED BY NEPA

6.1 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF NATURAL OR FINITE RESOURCES

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel. These resources are irretrievable in that they would be used for a project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. In addition, the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment is also considered an irreversible commitment of resources.

Implementation of the Proposed Action would require the consumption of materials typically associated with construction activities (e.g. concrete). In addition, the use of vehicles and construction equipment would result in the consumption of fuel, oil, and lubricants. An undetermined amount of human energy for construction would also be expended and irreversibly lost. However, the amount of these resources used would be relatively minor and these resources are readily available in large quantities. Therefore, implementation of the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

6.2 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE HUMAN ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM NATURAL RESOURCE PRODUCTIVITY

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development option reduces future flexibility in pursuing other options, or that giving over a parcel of land or other resource to a certain use often eliminates the possibility of other uses being performed at that site.

Under the Proposed Action, short-term effects would be primarily related to construction activities and the use of associated vehicle and equipment that are currently used for other purposes. In the long-term, the proposed construction would provide an important increase in flood risk management capability. With implementation of BMPs and mitigation measures, the Proposed Action would not result in any impacts that would reduce environmental productivity or narrow the range of beneficial uses of the environment.

6.3 MEANS TO MITIGATE AND/OR MONITOR ADVERSE ENVIRONMENTAL IMPACTS

With the implementation of Resource Conservation Measures as presented in Section 2.4 into the project design, the Proposed Action would not result in significant environmental impacts.

This Page Intentionally Left Blank

CHAPTER 7
REFERENCES

Anderson, J. No date. Climate Change Impact on the Texas Coast. http://www.edf.org/documents/9336_TCEC.03.Dr.JohnAnderson.pdf. Accessed on July 14, 2010.

AR Consultants, Inc. 2009. Letter from S. Alan Skinner (AR Consultants, Inc.) to Bill Martin (THC). Inc. July 2.

CH2M Hill. 2009. Trinity Lakes Geotechnical Report. Prepared for: City of Dallas, Texas. June.

City of Dallas. 2004a. Street Conditions Inventory. Online at: http://www.dallascityhall.com/streets/links.html. Accessed March 17, 2009.

_____. 2004b. Refinement to the Balanced Vision Plan for the Trinity River Corridor, Dallas, TX. Prepared by CDM. March 22.

_____. 2005a. Trinity River Corridor Comprehensive Land Use Plan. Adopted March 9, 2005.

_____. 2005b. Environmental Policy. Approved by Dallas City Council on January 26.

_____. 2006. Draft City of Dallas Interior Levee Drainage Study – Phase I. Volume 1 of 2 – Report. Prepared by Carter Burgess. September.

_____. 2008a. GIS Data, Provided by Trinity River Corridor Project Office during Site Visit, 14 Nov.

_____. 2008b. City of Dallas Trinity River Flood Control District. "Information." http://fc.dallascityhall.com/html/fc.html. Accessed on December 18.

_____. 2008c. Trinity River Project – River Corridor Study Map. October 16, 2008.

_____. 2009a. Interior Levee Drainage Study. West Levee – Phase II. Volume 1 of 2 - Report. Prepared by Jacobs Carter Burgess. January.

_____. 2009b. GIS Data, Quarterly Zoning Update. December 31.

_____. 2010a. Personal communication with Jennifer Hiromoto, Planner, Development Services, January 20. Information regarding permit review process to ensure consistency between City of Dallas and USACE building requirements. Dallas, TX.

_____. 2010b. Personal communication via email with Warren Benoy, Trinity Watershed Management. Information concerning the West Levee Norwood 345 kV Transmission Line. May 19.

_____. 2011. USACE Section 408 Application: Baker Storm Water Pump Stations and Sump Improvements. Prepared by Jacobs Engineering Group. May.

Dallas Morning News. 2010. Biggest Dallas-Fort Worth Public Companies 2009. http://www.dallasnews.com/database/2009/scorecard2009.html. Accessed on August 27.

EDR. 2010. EDR Data Map Environmental Atlas: Dallas Floodway Project EIS, Dallas, TX (Inquiry Number 02701908.1r). February 19.

Eisenhour, Thomas P. 2009. Non-Archeological Historic-Age Resource Reconnaissance Survey Report Trinity Parkway from IH-35E/SH-183 to US-175/SH-310, Dallas County, TxDOT Dallas District. Prepared for North Dallas Texas Tollway, City of Dallas, and Texas Department of Transportation. Ecological Communications Corporation, Austin, Texas. October.

EPA. 2012. Superfund Site Progress Profile: RSR Corporation. http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0602297. Accessed on January 11.

FHWA. 2009. Supplemental Draft Environmental Impact Statement and Draft Section 4(f) Evaluation for the Trinity Parkway. February.

Federal Emergency Management Agency. 2002. Digital flood insurance rate map database, Dallas County, Texas and incorporated areas. October 29.

Federal Interagency Committee on Noise. 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. Washington, DC. August.

Green Dallas. 2010. Building a Greener City – Air Quality. http://www.greendallas.net/air_quality.html. Accessed on January 28.

Halff and Associates. 2011. Re-verification of Dallas Floodway Jurisdictional Determination (USACE# SWF-2000-00308). January.

Norman Alston Architects. 2000. Cultural Resource Review for the Environmental Impact Statement Areas of Potential Effect of the Trinity River Parkway, Dallas, Texas.

NCTCOG. 2007. 2005 Land Use GIS Data.

_____. 2008. GIS Data.

_____. 2009. Historic Traffic Counts. http://www.nctcog.org/trans/data/tcins/historic/. Accessed September 9.

TEC. 2009. Site Visit September 15-16. Observer: Melissa Tu, Biologist.

Texas Comptroller of Public Accounts. 2009. State Policies and Programs. http://www.window.state.tx.us/finances/captrade/txpolicies_programs/. Accessed on September 24.

TCEQ. 2011. Dallas-Fort Worth Current Attainment Status. http://www.tceq.texas.gov/airquality/sip/dfw/dfw-status. Accessed on December 13.

TxDOT. 2010a. GIS Data, provided by Tim Wright, GIS Coordinator/Project Manager. April 12.

_____. 2010b. Personal communication via telephone with Sue Rosebrock, TxDoT District Librarian. Information concerning the Loop 12 Corridor and Sylvan Bridge. March 5.

_____. 2010c. Environmental Assessment Sylvan Avenue at Trinity River. February.

THC. 2002. Letter from Bob Brinkman (THC) to Mario Sanchez (TxDOT). July 2.

_____. 2009. Letter to Fort Worth Corps, United States Corps of Engineers. November 12.

TPWD. 2009. TPWD Rare Resources Review for the USACE DFP (Dallas County). November 30.

_____. 2011. Annotated County Lists of Rare Species for Dallas County. http://gis2.tpwd.state.tx.us/ReportServer$GIS_EPASDE_SQL/Pages/ReportViewer.aspx?%2fReport+Project2%2fReport5&rs%3aCommand=Render&county=Dallas. Last updated August 17 2011, accessed on September 23.

USACE. 2007. GIS vegetation data.

_____. 2009. Engineering and Design: Guidelines for landscape planting and vegetation management at levees, floodwalls, embankment dams, and appurtenant structures. Technical Letter Number 1110-2-571. Adopted April 10.

_____. 2010a. Revised Draft Phase I Report. Dallas Floodway Project. Prepared by TEC for the USACE Fort Worth District. March 1.

_____. 2010b. Environmental Assessment for the Proposed Improvements to the Pavaho Pumping Plant, Dallas, Texas. June 20.

U.S. Census Bureau. 2010. Prepared for U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau. http://www.census.gov. Accessed on April 20.

USDA. 1980. Soil Conservation Service in cooperation with Texas Agricultural Experiment Station. Soil Survey of Dallas County, Texas. Washington, D.C.: U.S. Government Printing Office.

USEPA. 1974. Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety. Report 550/9-74-004.

_____. 2010a. Asbestos. http://www.epa.gov/oppt/asbestos/. Accessed on April 30.

_____. 2010b. Lead in Paint, Dust, and Soil. http://www.epa.gov/oppt/lead/. Accessed on April 30.

_____. 2011a. The Green Book Nonattainment Areas for Criteria Pollutants. http://www.epa.gov/air/oaqps/greenbk/index.html. Accessed on December 13.

_____. 2011b. General Conformity Regulatory Actions. http://www.epa.gov/oar/genconform/regs.htm. Accessed on December 13.

This Page Intentionally Left Blank

CHAPTER 8
LIST OF PREPARERS

This EA was prepared for, and under the direction of, the USACE Fort Worth District by the following Cardno TEC Inc. staff:

Project Management

Ryan Pingree, Project Director, 16 years' experience
M.S., Environmental Science and Management

Erica Mignone, Project Manager, Public Safety, Water, Socioeconomics and Environmental Justice, 7 years' experience
B.S. Environmental Science

Quality Assurance

Scott Barker, Quality Assurance/Quality Control, 21 years' experience
M.S., Civil Engineering, M.C.P (Master of City Planning)

Technical Analysts

Jennifer Bryant, Cultural Resources, 5 years' experience
M.A., History/Public History

Christine Davis, Air Quality, 12 years' experience
M.S., Environmental Management

Elizabeth Gray, Utilities, Transportation, Land Use, 2 years' experience
B.A., Environmental Studies/Managerial Studies

Melissa Tu, Biological Resources, 14 years' experience
B.A., Environmental Biology

Jason Harshman, GIS Specialist, 4 years' experience
B.A., Geography

Document Production

Claudia Tan, Production Manager, 11 years' experience
A.A., Liberal Arts and Sciences

Jackie Brownlow, Production Assistant, 4 years' experience
B.A., Business Administration

This Page Intentionally Left Blank