East Bank-West Bank

Interceptor Connection Project

Section 408

Environmental Assessment

Prepared for:

Dallas Water Utilities and

The U.S. Army Corps of Engineers

Fort Worth District

Prepared by:

CP&Y, Inc.

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PUBLIC DRAFT
ENVIRONMENTAL ASSESSMENT

Proponent: Dallas Water Utilities, City of Dallas, Texas

Title of Proposed Action: Proposed Section 408 for the Dallas Water Utility's Installation of the East Bank-West Bank Interceptor Connection Project

Designation: Environmental Assessment

ABSTRACT

An Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and USACE Engineering Regulation 200-2-2. This EA describes the potential environmental consequences resulting from approving, pursuant to 33 U.S.C. 408, (referred to as Section 408), modifications to the Dallas Floodway System in the City of Dallas, Dallas County, Texas.

The purpose of the proposed project is to improve the reliability and functionality of wastewater transfers from the Cadiz Street Pump Station (CSPS) to the Central Wastewater Treatment Plant (CWWTP) while maintaining the integrity of the Trinity River levees and avoiding impact to the City's ability to achieve Federal Emergency Management Agency (FEMA) certification for the Dallas Floodway System.

The two large sewer mains proposed under this project, known collectively as the East Bank-West Bank Interceptor Connection Project, were designed and permitted under 33 CFR Section 208.10 in 2009. Only the first line had been constructed before a January 2012 flood event caused the tunnel to be breached creating a depression in the Trinity River Floodway. This Section 408 EA document addresses remediation of this depression and seeks USACE approval to complete construction of the proposed project, which includes installation of 3,400 linear feet of tunnel between the CSPS and the CWWTP. By implementing the proposed project, the City intends to improve conveyance of waste waters to the CWWTP and preserve its ability to achieve its 100-year FEMA accreditation.

Under the terms of Section 408, any proposed modifications to an existing USACE project, whether federally or locally maintained, that goes beyond those modifications required for normal operation and maintenance requires a determination by USACE that the proposed alteration, permanent occupation, or use of a federal project would not be injurious to the public interest and would not impair the functioning of the existing project. This EA evaluates the potential environmental consequences of the proposed Section 408 modifications associated with the Dallas Floodway System.

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TABLE OF CONTENTS

APPENDICES

ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practice
CFR	Code of Federal Regulations
CP&Y	CP&Y Incorporated
CSPS	Cadiz Street Pump Station
CWA	Clean Water Act
CWWTP	Central Wastewater Treatment Plant
DWU	Dallas Water Utilities
EA	Environmental Assessment
EB-WB	East Bank-West Bank Interceptor Connection Project
EIS	Environmental Impact Statement
EOR	Engineer of Record
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GCR	General Conformity Rule
GIS	Geographic Information Systems
IH	Interstate Highway
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NDD	Natural Diversity Database
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWP-12	Nationwide Permit 12
PCN	Pre-Construction Notification
PEA	Programmatic Environmental Assessment
PL	Public Law
SAR	Safety Assurance Review

SIP	State Implementation Plan
TCEQ	Texas Council on Environmental Quality
THC	Texas Historical Commission
TPY	tons per year
TPWD	Texas Parks and Wildlife Department
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended and 33 CFR Section 230, Procedures for Implementing NEPA (Engineering Regulation 200-2-2). The EA assesses the overall environmental effects of the proposed Section 408 sub-surface installation of a sewer main beneath the East Trinity Levee and Trinity River within the Dallas Floodway System in the City of Dallas, Texas. The U.S. Army Corps of Engineers (USACE) has determined this project to be a Major Section 408 in Accordance with 33 United States Code (U.S.C.) 408. This EA will be prepared in accordance with this designation.

This type of Action would normally be covered under the Final Programmatic Environmental Assessment, Civil Works Minor Section 408 NEPA Compliance dated April 11, 2011 with a Finding of No Significant Impact (FONSI) signed April 15, 2011, except that is has been determined to be a Major Section 408. Therefore, a standalone environmental assessment is being prepared.

For the purposes of this EA, the Dallas Floodway System is defined as a system of two separate federally-authorized levees along the Trinity River. The City of Dallas plans, operates, and maintains the two federally-authorized levees in accordance with USACE requirements. The two federally-authorized levees associated with the Dallas Floodway System are the East and West Levees, which together protect much of the essential infrastructure and commercial and residential interests in downtown and West Dallas.

Under the terms of 33 U.S.C. 408 (henceforth referred to as Section 408), any proposed modification to an existing USACE project, whether federally or locally maintained, that goes beyond those modifications required for normal operations and maintenance, requires a determination by the Secretary of the Army that the proposed alteration, permanent occupation, or use of a federal project would not be injurious to the public interest and would not impair the usefulness/functioning of such work. Therefore, USACE is responsible for determining if the proposed modifications would be injurious to the public interest and would impair the functioning of the Dallas Floodway System.

The Fort Worth District has reviewed the Safety Assurance Review (SAR) Plan for the proposed project and it was approved on April 12, 2013. The geotechnical data and analyses report and construction plans and specifications will be reviewed prior to issuance of Section 408 construction approval. The Engineer of Record (EOR) is defined as the entity that is ultimately responsible and liable for the adequacy and safety of a design. CP&Y Incorporated (CP&Y) is the EOR for the proposed Section 408 modifications.

The City of Dallas Water Utility proposes Section 408 modifications to the Dallas Floodway System through installation of sewer mains for the conveyance of waste waters beneath the Trinity Levee system. The project, known as the East Bank-West Bank Interceptor Connection Project (EB-WB), proposes the installation of three large sewer mains:

- One (1) 102-inch wastewater pipeline to connect the Cadiz Street Pump Station (CSPS) to an inlet structure, the proposed 78-inch pipeline is connected to the inlet structure;

- One (1) 78-inch wastewater pipeline running parallel to the existing 96-inch wastewater pipeline beneath the East Trinity Levee and Trinity River; and,

- One (1) wastewater pipeline of 78-inches to connect the outlet structure, the proposed 102-inch pipeline connects the outlet structure to an existing 120-inch pipeline southwest of the Trinity River.

The vicinity of the proposed project is illustrated in **Figure A-1** in **Appendix A**; photographs of the project area provided in **Appendix B** provide further context to the vicinity of the proposed project. The project components include the previously stated proposed wastewater pipelines as well as two access shafts at the proposed pipeline connectors (from the project to the Cadiz Street Pump Station and to the existing 120-inch pipeline southwest of the Trinity River) and the recently-constructed 96-inch pipeline (which was the first of the two tunnels to be completed under EB-WB). See **Figure A-2** in **Appendix A** for the locations of these proposed features and the proposed second pipeline (78-inch) to run parallel to the first.

These sewer lines, which would convey raw wastewater between the CSPS and the West Bank Relief Interceptor for eventual treatment at the Central Wastewater Treatment Plant (CWWTP), would serve to remove the risk of raw sewage outfall or overflow to the Trinity River and its historic remnant, and also allow for the decommissioning of the Cadiz Street Pump Station, which is a large wastewater pump station located near downtown Dallas. What makes this project unique is that it was originally analyzed and permitted under 33 CFR 208.10, following which one of the two sewer mains (96-inch) was constructed by the City of Dallas Water Utility (DWU) in the spring of 2011. Before the second pipeline and associated tunnel could be constructed, the first was breached following a flood event in January 2012; the breach created a depression in the Trinity River Floodway near the toe of the East Levee. The depression was immediately filled with grout to protect the integrity of the levee system and partially remediate the depression and breach. As a result of this breach, USACE required DWU to complete a Major Section 408 prior full remediation of the pipeline breach and before construction on the second tunnel commences so that further geotechnical analyses could be performed to ensure the safety of the levee system. Information on proposed full remediation of this depressed area in the Floodway is provided in Section 2.2.

1.1 PURPOSE AND NEED

The purpose of the EB-WB project is to improve the reliability and functionality of wastewater transfers from CSPS receiving interceptors to the CWWTP while maintaining the integrity of the Trinity River levees and avoiding impact to the City's ability to achieve Federal Emergency Management Agency (FEMA) certification for the Dallas Floodway System.

The project has been in planning since the mid 1990's. The construction of EB-WB would allow DWU to decommission the CSPS, a large wastewater pump station located near downtown Dallas, and eliminate the risk of raw sewage bypassing to the Trinity River and its historic remnant due to pump station malfunction, as occurred in June 2000. Decommissioning the pump station would allow an existing 60-inch force main to be converted into a discharge main for the pumping of treated wastewater from Dallas' CWWTP, upstream to the reverse flow lakes that are part of the Trinity River Corridor Project. Following the breach of the first tunnel, USACE

has required that DWU complete a Section 408 request to fully remediate the tunnel breach and for construction of the second tunnel prior to initiation of construction on the second tunnel.

1.2 SCOPE

Due to a breach of the first 96-inch tunnel and USACE's determination that approval of a Major Section 408 will be required to complete the full remediation plan and construction of the second tunnel, an EA is required. This document, prepared in accordance with the NEPA, assesses the overall environmental effects of remediation of the tunnel breach and the construction and operation of the second sewer main (78-inch) and associated 102-inch tunnels connecting the CSPS with the CWWTP by way of the West Bank Relief Interceptor. This EA is narrow in scope, focusing only potential impacts to the integrity and function of the Dallas Floodway System. Both tunnels are included in this EA documentation; however, the first tunnel is basically complete.

2.0 DESCRIPTION OF ALTERNATIVES

Subsequent to the breach of EB-WB's first tunnel, USACE required further analysis of geologic, soil, and hydrologic conditions in the area of the project prior to the full remediation of the pipeline breach and construction of the second tunnel. Results of these analyses have indicated that the area of the proposed project is suitable for installation of both the 96-inch and 78-inch tunnels and pipelines. The location and configuration of these pipelines have been previously evaluated in the original design and permitting phases of this project. This section explains the two alternatives going forward: (1) leave the project area unchanged, without constructing a second parallel tunnel; or (2) construct the second tunnel and install the pipeline in the first tunnel. Both alternatives would require full remediation of the pipeline breach. As noted previously, construction of the first tunnel is substantially complete.

2.1 ALTERNATIVE 1 - NO ACTION

In the No Action Alternative, the proposed Section 408 modification measures are not implemented and the second sewer main and associated tunnel would not be installed. Existing conditions would be left unchanged; this alternative would not affect the installation of the first tunnel as it is already substantially constructed. Under the No Action Alternative, the wastewater to be transferred from the existing CSPS to the CWWTP would have insufficient infrastructure for conveyance. The CSPS could not be decommissioned and there would be continued risk of raw sewage overflow. Under this alternative, the reliability and functionality for transferring wastewater from the CSPS receiving interceptors to the CWWTP would be insufficient.

Under the no action alternative, the depressed area of the Floodway resulting from the breach in the first tunnel would be fully remediated. Grout has already been placed in the depressed area and the proposed full remediation activities would include construction of 400-500' of cement bentonite slurry wall to separate potential ground water flow from the river to the depression area and underneath the levee system. In addition, it would include installation of a clay cap, approximately 30-inches thick with an HDPE geomembrane liner that would be placed over the slurry walls and depression area. Finally, the site would be monitored to ensure that the area did not continue to settle over time.

This alternative would not meet the Purpose and Need identified in Section 1.1 above because it would only partially handle the volume of flow needed for the project.

2.2 ALTERNATIVE 2 – CONSTRUCTION OF THE SECOND SEWER MAIN AND TUNNEL (PROPOSED ACTION)

Under the Alternative 2, the DWU would implement Section 408 modifications to the Dallas Floodway System by installing parallel sewer mains (96-inch and 78-inch), 102-inch connector sewer mains, and associated tunnels under the East Trinity Levee and the Trinity River to connect with the existing 120-inch sewer main southwest of the Trinity River (**Figure A-2** in **Appendix A**). The 96-inch pipeline is substantially constructed.

The Proposed Action Alternative involves the construction of 3,400 linear feet of tunnel that would go from 60 feet in depth at the CSPS to 100 feet at its connection with the existing 120-inch sewer main on the west side. The diameter of the tunnel would be just under 10 feet. Initial support would consist of steel ribs and wood lagging 2,460; the 78-inch sewer pipeline would be centrifugally cast fiberglass pipe. Silt fences would be utilized for erosion protection. Together with the first tunnel and 96-inch sewer pipeline, this facility would be sufficient to convey sewage to the CWWTP and the CSPS could be decommissioned.

Under this alternative, the depressed area of the Floodway resulting from the breach in the first tunnel would be fully remediated. Grout has already been placed in the depressed area and the proposed full remediation activities would include construction of 400-500' of cement bentonite slurry wall to separate potential ground water flow from the river to the depression area and underneath the levee system. In addition, it would include installation of a clay cap, approximately 30-inches thick with an HDPE geomembrane liner that would be placed over the slurry walls and depression area. Finally, the site would be monitored to ensure that the area did not continue to settle over time.

The Proposed Action Alternative represents the preferred alternative as it meets the Purpose and Need identified in Section 1.1.

3.0 AFFECTED ENVIRONMENT

In order to assess the environmental consequences of the proposed project, the existing conditions within the project study area must be known. Due to the narrow nature of this EA and the large number of completed USACE Public Works projects within the Dallas Floodway, the affected environment resources are addressed by providing specific project-level resource impacts where appropriate; consultation with the Programmatic Environmental Assessment (PEA) document (USACE, 2011) can provide additional context to conditions within the Dallas Floodway.

3.1 SETTING

The Proposed Action Alterative is located in the City of Dallas in north central Texas, which is bisected by the Trinity River (**Figure A-1** in **Appendix A**). The Trinity River traverses the City of Dallas from northwest to southeast and, included in its floodway system are the East and West

Trinity Levees. This EA investigates and documents potential impacts to Dallas Floodway resources that may be affected by the proposed project. The project limits are about 500 feet directly downstream of the IH-35 Bridge.

3.2 AQUATIC RESOURCES

3.2.1 Surface Water

The Trinity River runs through the project area in between the East and West Levees. The Trinity is currently adversely affected when sewage spills out of the current waste water lines which happened as recently as June 2000.

3.2.2 Ground Water

There are no major aquifers within the project area; however the river beds and banks serve as an alluvial aquifer.

3.2.3 Waters of the United States

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged and fill material into waters of the United States, including wetlands. USACE responsibility under Section 10 of the Rivers and Harbors Act of 1899 is to regulate any work in, or affecting, navigable waters of the United States. Based on the description of the proposed work, and other information available to us, we have determined this project will involve activities subject to the requirements of Section 10. The Trinity River is considered a jurisdictional water of the United States under Section 404 of the Clean Water Act within the project area. In addition, there are additional Section 404 jurisdictional waters in between the river and the East Levee in the project area. The proposed project is primarily underground, and therefore it should not have any impacts to waters of the United States. However, the full remediation plan has the potential to have temporary impacts to waters of the United States.

3.3 BIOLOGICAL RESOURCES

3.3.1 Fish and Wildlife Species

Wildlife in the project area includes a variety of year-around resident and migratory land and shore birds as well as mammals, reptiles, amphibians, and invertebrates adapted to urban environments throughout the State of Texas. Common wildlife species in Dallas County include white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), fox squirrel (*Sciurus niger*), jackrabbit (*Lepus californicus*), cottontail (*Sylvilagus floridanus*), bobwhite quail (*Colinus virginianus*), and mourning dove (*Zenaida macroura*). Mammals such as coyote (*Canis latrans*), nutria (*Myocastor coypus*), opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), ring-tailed cat (*Bassariscus astutus*), and striped skunk (*Mephitis mephitis*) may also be present in the county.

3.3.2 Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS) maintains a list of federally-listed threatened, endangered, and candidate species known to occur in Dallas County. According to this list, five threatened and endangered species potentially occur in Dallas County, as listed in Table 3.2-1 in the PEA (USACE, 2011).

Table 3.2-1. Federally-listed Threatened and Endangered Species of Dallas County

Common Name	Scientific Name	Habitat	Federal Status
Black-capped vireo	Vireo atricapilla	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer	Endangered
Golden-cheeked warbler	Dendroica chrysoparia	Juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer	Endangered
Interior least tern	Sterna antillarum	Nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony	Endangered
Piping plover	Charadrius melodus	Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats	Threatened
Whooping crane	Grus americana	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties	Endangered

Source: USACE, 2011

According to the USFWS Critical Habitat map, there is no critical habitat in the vicinity of the project. Information from the Texas Parks and Wildlife Department (TPWD), Natural Diversity Database (NDD) found no occurrences of threatened or endangered species within three miles of the proposed project (TPWD, 2012). Additionally, the eBird range map indicates that there have been no recent sightings of any of the five listed bird species in the vicinity of the project (Audubon and Cornell Lab of Ornithology, 2012).

Based on the previously submitted Nationwide Permit 12 (NWP-12) Pre-Construction Notification (PCN) and the fact that the project is mostly underground, USACE "determined that this project will not affect any species listed as threatened or endangered by the USFWS within our permit area". Based on the subsequent desktop review and field survey, this project is not likely to adversely affect federally-listed threatened and endangered species in Dallas County.

3.4 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) is required to set National Ambient Air Quality Standards (NAAQS). The pollutants, known as criteria pollutants, include carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. TCEQ administers the federal program in Texas. Effective January 19, 2011, Dallas County is classified as "Serious Nonattainment" based on 1997 eight-hour ozone NAAQS of 0.08 ppm.

3.5 CLIMATE, GEOLOGY, AND SOILS

The North Central Texas region is considered to be humid subtropical with hot summers, although a wide range of extremes are common. The winters are fairly mild except for the sporadic cold fronts and sudden drops in temperature that occasionally occur throughout the season. Precipitation also varies, ranging from less than 20 inches to greater than 50 inches annually. Summer daytime temperatures frequently exceed 100 degrees Fahrenheit with low nighttime temperatures rarely exceeding 80 degrees Fahrenheit. A large part of the annual precipitation results from thunderstorm activity, with occasionally heavy rainfall over brief periods of time. The major storms experiences in the project study area are produced by heavy rainfall from frontal-type storms which generally occur in the spring and summer months, but major flooding can also be produced by intense rainfall associated with localized thunderstorms. These thunderstorms may occur at any time during the year, but they are more prevalent in spring and summer months. Snow in the Dallas area is rare. The average length of the warm season (freeze-free period) in Dallas is approximately 249 days. The average last occurrence of 32 degrees Fahrenheit or below is mid-March and the average first occurrence of 32 degrees Fahrenheit or below is in late November (National Weather Service Weather Forecast Office, 2012).

The first tunnel's access shafts, completed with the construction of the first tunnel, feature approximately 15 feet of alluvial clays, sands, and gravels overlying about 25 feet of moderately hard limestone belonging to the Austin Chalk Formation. The limestone is underlain by the Eagle Ford Shale, a soft to moderately hard clayey shale with stringers of limestone and sandstone. The limestone has been eroded away in the valley section and replaced with alluvial deposits of clay, sand, and gravel. Eagle Ford Shale underlies the alluvium and comprises the

tunnel medium for both the 96-inch and 78-inch tunnels, the first and second tunnels, respectively.

Dallas County is located in the Blackland Prairie subprovince of the Gulf Coastal Plains Physiographic Province. In the Blackland Prairie subprovince, soils are typically deep, black, clay soils that have formed from weathered chalk and marl. The area has largely been cleared of natural vegetation in order to cultivate crops. Land elevations in Dallas County vary from 300 to 800 feet above mean sea level (MSL), and the topography consists of low rolling terrain.

Trinity-Urban land complex underlies the project area. The Trinity series consists of very deep, moderately well drained, very slowly permeable soils on floodplains. They formed in alkaline clayey alluvium. Slopes are typically less than 1 percent, but range from 0 to 3 percent. Runoff here is very slow, and the hazard of erosion is slight (USDA, 1980).

3.6 CULTURAL RESOURCES

A review of the Texas Historical Commission's (THC's) Texas Archeological Sites Atlas (Archeological Atlas) determined that there are no previously recorded archeological sites within the project area. The Archeological Atlas also indicates that there have not been any previously conducted surveys of the project area. A review of the THC's Historic Sites Atlas (Historic Atlas) determined that there is one National Register of Historic Places (NRHP) property within the project area. The NRHP listed Turtle Creek Pump Station (currently known as the Cadiz Street Pump Station) is located at the eastern terminus of the project area. The brick industrial building was designed by Dallas architect C. A. Gill and constructed in 1909 as the primary pumping station for the City of Dallas water supply. The building features ornate masonry detailing in the Italianate style. The property was listed in the NRHP in 1983.

A review of aerial photographs and historic topographic maps of the project area was conducted to determine previously disturbed areas and areas with moderate to high likelihood of containing intact cultural resources. The historic aerial review used photographs of the project area from 1958, 1972, 1979, 1989, and 2001 (NETR Online, 2013). The aerial photograph review revealed that eastern portion of the project area has been heavily disturbed by multiple construction episodes. The western portion of the project has been disturbed by the construction and ongoing maintenance of the Dallas Floodway. The review of historic topographic maps and aerial photographs did not indicate any historic-age structures within the project area besides the NRHP-listed Turtle Creek Pump Station.

In addition to the background review, an assessment of available information on the project area site setting was conducted. The assessment included a review of the Dallas County Soil Survey and USGS topographic maps to evaluate the general site conditions and provide a probability of unidentified cultural resources within the project area (Coffee et al., 1980; Barnes, 2000). Geologically, the project area is mapped exclusively as recent (Holocene) alluvium deposits (Barnes, 2000). Soils within the project area consist exclusively of Trinity-Urban land complex (Soil Survey Staff, 2013). These soils are described as up to 60 percent Trinity clays with minor soils and urban development making up the rest (Coffee et al., 1980). The Trinity clays are described as clayey alluvium of Holocene age derived from mixed sources. These soils in the project area are likely heavily disturbed since the northern half of the project area is in areas of

current or former urban development. In addition, the southern portion of the project area has undergone large scale earth moving activities related to the construction and maintenance of the Dallas Floodway.

Section 405(a) of the 2010 Supplemental Disaster Relief and Summer Jobs Act (Public Law 111-212) states that the Army is not required to make determinations of eligibility under the National Historic Preservation Act (NHPA) for the Dallas Floodway Levee System. USACE Implementation Guidance dated October 19, 2010 directs the Fort Worth District not to make further determinations under the NHPA or to examine, describe, and consider the built environment that comprises the Dallas Floodway as cultural resources within the context of the scope of impacts that must be analyzed under NEPA.

The USACE has determined that this project would have no potential to affect cultural resources. Further coordination with the THC is not necessary.

4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the environmental consequences of the No Build and Proposed Action alternatives.

4.1 AQUATIC RESOURCES

This project had previously been permitted under Section 10 of the Rivers and Harbors Act of 1899.

4.1.1 Surface Water

4.1.1.1 No Action

Impacts to surface waters in the vicinity of the project would continue to occur under the No Action Alternative because of potential sewage outfalls to the Trinity River and its historic remnant resulting from system overflows or failures at the CSPS, as occurred in June 2000. Absent a reliable and functional system, the surface waters of the adjacent water systems continue to be at risk.

4.1.1.2 Proposed Action

Under the Proposed Action, a reliable system for sewage conveyance would be put in place; this would reduce the risk of raw sewage outfalls to the Trinity River resulting from insufficient capacity or failure in transferring these materials to the CWWTP. Activities under the Proposed Action would typically consist of tunnel boring, which are not expected to impact surface water features. Best Management Practices (BMPs), to include silt fences, would be utilized to minimize soil erosion, degradation, and siltation into adjacent waters. The proposed project, therefore, is not expected to result in adverse impacts to the surface waters located within the project area.

4.1.2 Groundwater

4.1.2.1 No Action

Absent the project improvements proposed, a spill or overflow event could impact groundwater resources in the vicinity of the project, but it would be unlikely. The full remediation plan of the first tunnel breach would require placement of a 400-500 foot cement bentonite cutoff wall between the depression area and the East Levee. A clay blanket was also placed over this area and would be reinforced to stop the flow of water downward. The cut-off wall would stop the flow of ground water from the river underneath the levee system. Due to the overall small size of the cut-off wall no significant impacts to ground water would occur.

4.1.2.2 Proposed Action

Construction activities related to the Proposed Action Alternative, which would cross the 100-year floodplain associated with the Trinity River, would be constructed between 60 and 100 feet underground; the project would not reach the depths of aquifers utilized to pump groundwater. The full remediation plan of the first tunnel breach would require placement of a 400-500 foot cement bentonite cutoff wall between the depression area and the East Levee. A clay blanket was also placed over this area and would be reinforced to stop the flow of water downward. The cut-off wall would stop the flow of ground water from the river underneath the levee system. Due to the overall small size of the cut-off wall no significant impacts to ground water would occur. In addition, the proposed project would not utilize materials that could potentially contaminate groundwater. Therefore, impacts, if any, to groundwater resources would not be significant as a result of implementing the Proposed Action Alternative.

4.1.3 Wetlands and Waters of the U.S.

4.1.3.1 No Action

The first tunnel breach, which caused a depression, resulted in temporary impacts to approximately 0.12 acres of waters of the United States. The area was filled and the contours in this area were restored to their original grade so there was no loss of wetlands. The construction of this tunnel is considered complete, although there is still ongoing working within the tunnel.

Upon full remediation of the first tunnel breach, a cutoff wall and clay blanket will be installed, which may result in additional temporary impacts, but no loss to waters of the United States. This action meets the terms and conditions of NWP-12 (Utility Lines).

Absent construction of the second tunnel, the Trinity River and its historic remnant could experience impacts resulting from sewage outfalls in the event of failure of the existing infrastructure, as occurred in June 2000. Wetlands that are fed by these waters could also experience impacts in the presence of sewage overflows.

4.1.3.2 Proposed Action

Upon full remediation of the first tunnel breach, a cutoff wall and clay blanket will be installed, which may result in additional temporary impacts, but no loss to waters of the United States. This action meets the terms and conditions of NWP-12 (Utility Lines).

In addition, the second tunnel was previously issued a NWP-12. That permit expired and DWU has requested a second NWP. Since it has been determined to be a Section 408 project, the proposed work is eligible to be authorized under Regional Permit 12 (See **Appendix C**).

4.2 BIOLOGICAL RESOURCES

4.2.1 Vegetation

4.2.1.1 No Action

The no action would cause short-term impacts to the previously-disturbed vegetation between the East and West levees. This vegetation, comprised of grasslands, would be impacted through remediation of the depression caused by the breach of the first tunnel. Following full remediation activities (cut-off wall and clay cap), the affected area would be revegetated. No special habitat features, such as mature trees or riparian bottomland hardwood forests, would be impacted. Once construction has been completed, disturbed areas would be returned to preconstruction contours and restored to previously present vegetative communities dependent upon site conditions.

4.2.1.2 Proposed Action

The Proposed Action would cause short-term impacts to the previously-disturbed vegetation between the East and West levees. This vegetation, comprised of grasslands, would be impacted through remediation of the depression caused by the breach of the first tunnel. Following full remediation activities (cut-off wall and clay cap), the affected area would be revegetated. For construction of the tunnels, work would be performed below grade, thus eliminating vegetation impacts at the surface. No special habitat features, such as mature trees or riparian bottomland hardwood forests, would be impacted. Once construction has been completed, disturbed areas would be returned to preconstruction contours and restored to previously present vegetative communities dependent upon site conditions. Therefore, implementation of the Proposed Action would not cause significant adverse impacts to vegetation.

4.2.2 Fish and Wildlife Species

4.2.2.1 No Action

A failure of existing infrastructure could impact fish and wildlife surrounding the Trinity River and its historic remnant. Absent the proposed project, no additional construction impacts would occur.

4.2.2.2 Proposed Action

The Proposed Action is located within an urban environment with typical fish and wildlife species adapted to urban activities and surroundings. Since the fish and wildlife have adapted to the present conditions and the proposed alteration would not significantly alter that condition, any impacts to wildlife and their habitats would be temporary in nature and limited to the construction phase and would therefore not be considered significant.

4.2.3 Threatened and Endangered Species

4.2.3.1 No Action

As discussed in Section 3.3.2, there are five threatened and endangered species known to occur in Dallas County. These species are not anticipated to use the project area as habitat.

4.2.3.2 Proposed Action

As discussed in Section 3..2, there are five threatened and endangered species known to occur in Dallas County. These species are not anticipated to use the project area as habitat. Therefore, the Proposed Action would not affect these species.

4.3 AIR QUALITY

4.3.1 No Action

The No Action Alternative would only have minor impacts on air quality due to the cut-off wall and clay cap installation. These would be well below the threshold level of 50 tons per year (tpy) for either nitrogen oxides (NOx) or volatile organic compounds (VOC) for the project.

4.3.2 Proposed Action

The General Conformity Rule (GCR), promulgated by the EPA, mandates that the Federal government not engage in, support, or provide financial assistance for licensing or permitting, or approving any activity not conforming to an approved State Implementation Plan (SIP). The GCR is applicable only to non-attainment and maintenance areas. During construction activities, there may be temporary impacts on the air quality in the immediate project area. Construction equipment at the work site may include a variety of diesel engine machinery, though construction activities will primarily occur underground.

The construction machinery would have exhaust emissions from the combustion of the diesel fuel and the soil disturbance would result in releases of dust and other particulates. In addition, surface activities supporting the tunnel boring would disturb soils and may result in the mobilization of particulates above ground. Fugitive dust could be released into the air and suspended, affecting visibility and contributing to suspended particulate matter. However, these effects are considered temporary and short term and long-term degradation of air quality would not occur. Dust control and use of properly calibrated pollution controls on engines would further limit the effects.

Since the project site is located within the Dallas/Fort Worth non-attainment area, a General Conformity Determination would be required if emissions exceed the threshold level of 50 tons

per year (tpy) for either nitrogen oxides (NOx) or volatile organic compounds (VOC) for the project.

A comparison of current USACE projects, primarily the proposed Little Fossil Creek Flood Damage Reduction project, was used to determine whether a more thorough General Conformity Analysis might be required. The Little Fossil Creek project would use more equipment, exceed hauling mileage and materials, and utilize a more compressed construction schedule (one calendar year) than the expected equipment usage and mileage of the Proposed Action. Additionally, the Proposed Action would have minimal hauling of materials during the tunnel boring phase of construction; it is not anticipated that this period would extend beyond six months The Little Fossil Creek project expected emissions fell well below (less than 15 tons) the threshold level of 50 tpy for either NOx or VOC. The comparative analysis indicates that the amount of emissions from the project would not produce sufficient precursors to develop ozone to levels that would impair Texas ability to meet SIP and no further analysis is required.

During construction activities, there would be temporary impacts on the air quality in the immediate project area. Construction equipment at the work site may include a variety of diesel engine machinery, such as excavators, generators, or cranes. The construction machinery would have exhaust emissions from the combustion of the diesel fuel and the soil disturbance would result in releases of dust and other particulates. Fugitive dust could be released into the air and suspended, affecting visibility and contributing to suspended particulate matter. However, these effects are considered temporary and short term and long-term degradation of air quality would not occur. Dust control and use of properly calibrated pollution controls on engines would further limit the effects. An initial analysis indicates that the amount of emissions from the project would not produce sufficient precursors to develop ozone to levels that would impair Texas ability to meet SIP and no further analysis is required.

4.4 CLIMATE, GEOLOGY, AND SOILS

4.4.1 No Action

Under the No Action Alternative, no impacts to climate or geology would occur.

The full remediation plan would have minor disturbances down to the bed rock within the project area due to construction of the cut-off wall. It will strengthen the soil so that water cannot penetrate through the soil. These impacts or benefits are considered insignificant due to the length of the cut-off wall.

4.4.2 Proposed Action

Due to the small size of the project, it would have no impact on climatic conditions in the project area.

The full remediation plan would have minor disturbances down to the bed rock within the project area due to construction of the cut-off wall. It will strengthen the soil so that water cannot penetrate through the soil. These impacts or benefits are considered insignificant due to the length of the cut-off wall.

The access shafts for the project that provide the start and end points for the 78-inch tunnel have been previously constructed for the 96-inch pipe and essentially comprise the only disturbance to the subsurface. These shafts were constructed to depths of 60 and 80 feet through fill and alluvial materials overlying moderately hard argillaceous limestone which in turn overlies soft shale with limestone stringers and hard sandstone beds belonging to the Eagle Ford Shale Formation. All construction for the 78-inch line will be 60 to 95 feet below the ground surface in Eagle Ford Shale and will consist of boring an approximate 108-inch diameter hole using a fully shielded tunnel boring machine with steel ribs and oak lagging for initial support. Excavation from the bore will be disposed of in an approved location. Therefore, construction and operation of the 78-inch line will have no significant impact on the soils or geology of the area.

4.5 CULTURAL RESOURCES

4.5.1 No Action

The No Action Alternative would not have any impact to cultural resources.

4.5.2 Proposed Action

The Proposed Action would not have any impact on cultural resources.

5.0 MITIGATION

Following project construction, the area would be returned to preconstruction conditions and therefore no mitigation is required..

6.0 CUMULATIVE IMPACTS

Cumulative Impacts are impacts on the environment that would occur from the incremental impacts of the Proposed Action when added to past, present, and reasonably foreseeable actions in the study area. Therefore, the first step is identifying the past, present, and reasonably projects in the Area of Influence. Because this project is so limited in scope, the area of influence is within 500 feet upstream and downstream of the project limits.

6.1 PAST PROJECTS

The Dallas Floodway Levees were constructed by the locals in the 1920's and then reinforced in the 1950's by USACE. At that time, the Trinity River was located to where it is today and the levees that you see out there today are essentially the levees that were reinforced in the 1950's.

Interstate Highway (IH)-35 was constructed by Texas Department of Transportation long ago about 500 feet upstream of the project area.

6.2 PRESENT PROJECTS

IH-35 is being expanded just upstream of the project area. The approved plan includes building a new bridge in between the existing bridge structure and the first tunnel.

6.3 REASONABLY FORESEEABLE PROJECTS

The Dallas Floodway Feasibility Study is currently proposing to raise the existing levees to contain the 277,000 cubic feet per second flow. The levee would be raised to an elevation of 426.0 feet in this area and would be flattened to 4 (horizontal):1 (vertical) side slopes.

Two proposed alignments of the Trinity Parkway would cross directly over the first tunnel remediation area project area.

6.4 BIOLOGICAL RESOURCES

Due to the fact that most of the project area is disturbed and that all impacts for this project would be restored to the extent practicable, there would be only minor temporary cumulative impacts to biological resources, if any.

6.5 AIR QUALITY

The incremental piece of construction of the Proposed Action would not be enough to trigger significant cumulative impacts to Air Quality. This is due to the very limited scope of the Proposed Action.

6.6 CULTURAL RESOURCES

There would be no adverse cumulative impacts to cultural resources.

7.0 FINDINGS AND CONCLUSIONS

The proposed alternatives and their environmental impacts for the Section 408 request have been evaluated in this EA. No significant impacts to the environment are identified as resulting from implementation of this Proposed Action.

8.0 PUBLIC INVOLVEMENT

8.1 AGENCY COORDINATION

This section discusses consultation and coordination that will occur during preparation of the document. This includes contacts made during development of the Proposed Action, other alternatives considered, and writing of this EA. Copies of agency coordination letters will be included in **Appendix D**. Formal and informal coordination would be conducted with the following agencies:

- State Historic Preservation Office,
- U.S. Fish and Wildlife Service,
- Environmental Protection Agency, Region 6 Office,
- Texas Parks and Wildlife Department, and
- Texas Commission on Environmental Quality

8.2 PUBLIC INFORMATION AND REVIEW

A 15-day public review period of this Environmental Assessment was provided via a Notice of Availability on the Fort Worth District Website and a local mailing list (**Appendix D**).

9.0 REFERENCES

Audubon and Cornell Lab of Ornithology. *eBird*. http://ebird.org/ebird/map/ (Accessed: December 12, 2012).

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Coffee, Daniel R., Ralph H. Hill, and Dennis D. Ressel. 1980. *Soil Survey of Dallas County, Texas. Soil Conservation Service.* United States Department of Agriculture, Washington, DC.

Nationwide Environmental Title Research, LLC (NETR) Online. 2013. *Historic Aerials*. Real Estate Research and Information. Tempe AZ. http://www.historicaerials.com (Accessed 2/23/2013).

National Weather Service, Weather Forecast Office. September 2012. *Dallas/Fort Worth Climate Overview.* http://www.srh.noaa.gov/ (Accessed: January 2, 2013).

Soil Survey Staff. 2013. *Dallas County, Texas. Web Soil Survey.* NRCS, United States Department of Agriculture. http://websoilsurvey.nrcs.usda.gov (Accessed 2/23/2013).

Texas Parks and Wildlife Department (TPWD).

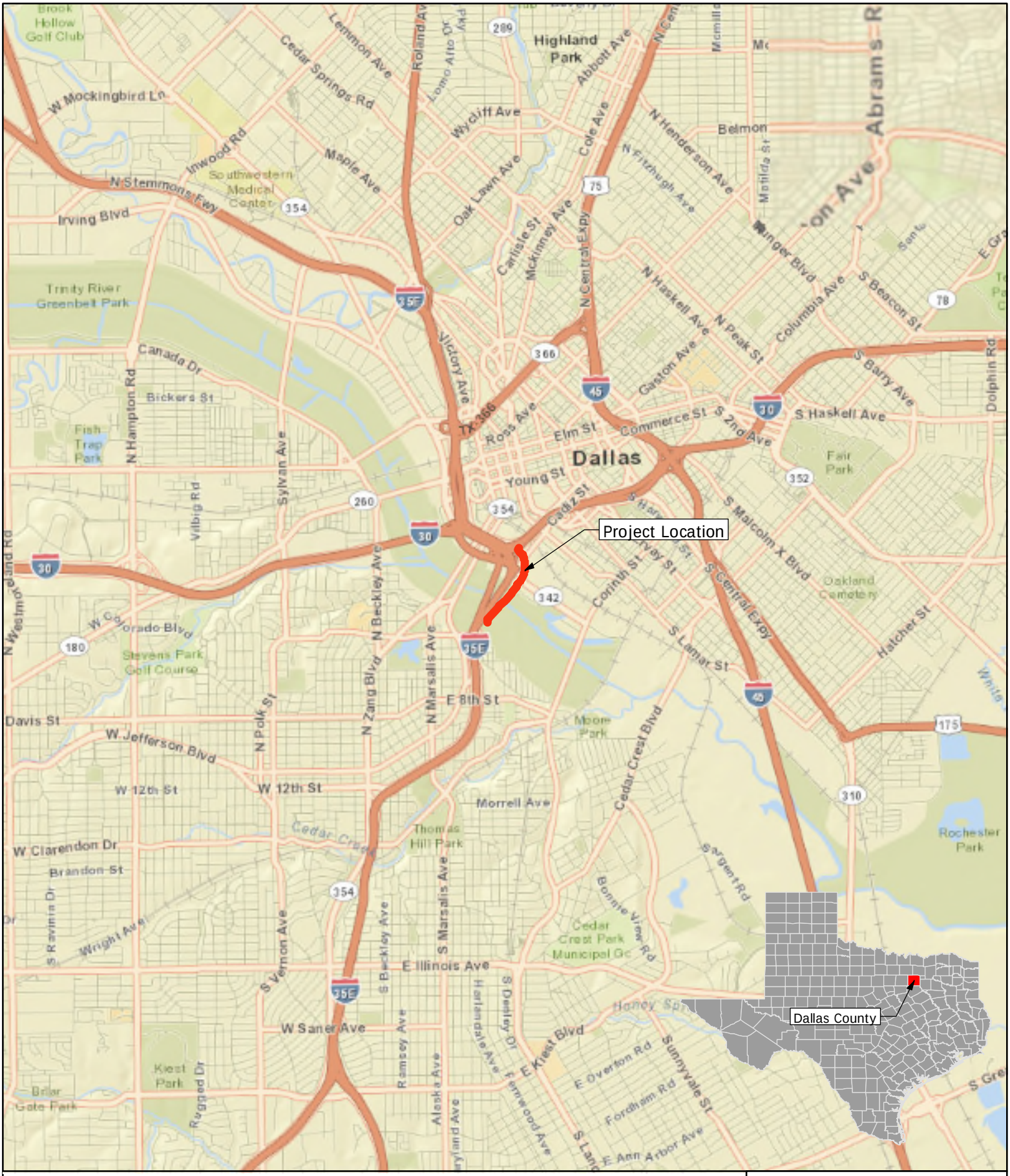
- August 17, 2011 (Revised). Annotated County Lists of Rare Species. http://www.tpwd.state.tx.us (Accessed: January 2, 2013).
- Personal Communication (Natural Diversity Database request: Dallas County), December 6, 2012.

U.S. Army Corps of Engineers (USACE), Fort Worth District. April 11, 2011. Final Programmatic Environmental Assessment - Civil Works - Minor Section 408 NEPA Compliance.

U.S. Department of Agriculture (USDA) Soil Conservation Service. 1980. *Texas Book: Soil Survey of Dallas County, Texas.* http://texashistory.unt.edu/ark:/67531/metapth130211/m1/1/ (Accessed: January 21, 2013).

APPENDIX A

FIGURES

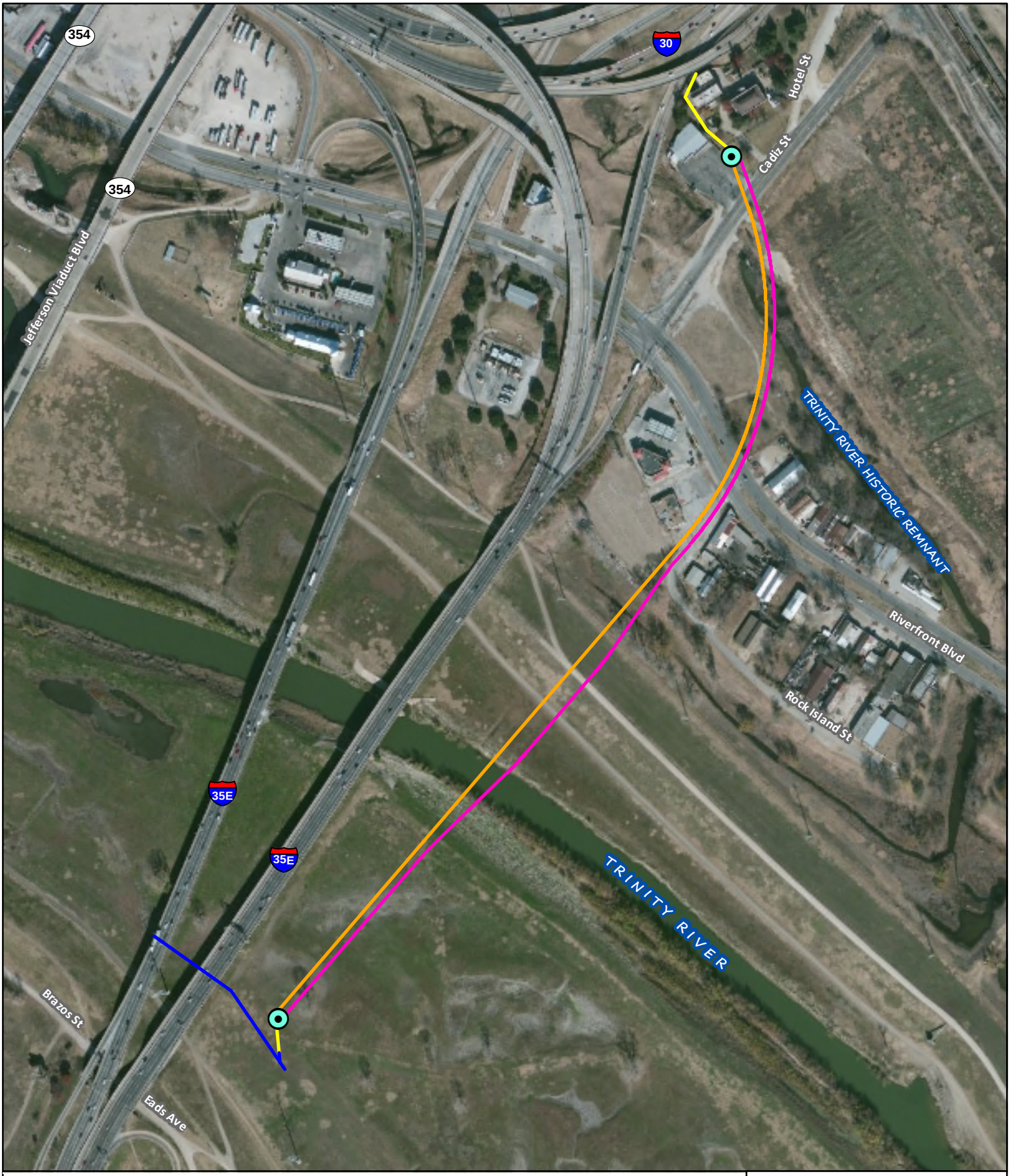


Source: World Street Map

East Bank-West Bank Interceptor Connection Project

Vicinity Map

FIGURE A-1



Access Shaft

Existing 120" WW Pipeline

Existing 96" WW Pipeline

Proposed 102" WW Pipeline

Proposed 78" WW Pipeline

N

0 200 400 800 Feet

Source: Microsoft World Imagery (December 2010)

East Bank-West Bank Interceptor Connection Project

Project Features

FIGURE A-2

APPENDIX B

PROJECT PHOTOGRAPHS

Photo 1: Access shaft to the southwest of the Trinity River, looking north. Construction has already been approved and work commenced for the first tunnel.

Photo 2: Access shaft at the Cadiz Street Pump Station, looking south.

Photo 3: Original Cadiz Pump Station adjacent to the construction of the access shaft (looking north).

Photo 4: Cadiz Pump Station and construction staging surrounding the access shaft (looking northwest).

Photo 5: I-35 North / Cadiz Street crossing the Trinity River, looking north.

Photo 6: View of East levee from the project alignment, looking northeast. Depression area (discolored) appears in the center of the photograph.

Photo 7: View of the project alignment from on top of the East levee, looking southwest. The revegetated rectangle in the center of the photo is the filled depression.

Photo 8: Historical remnant of the Trinity River along the project alignment, looking northeast.

Photo 9: Standing water along the project alignment, to the west of the Trinity River (looking north).

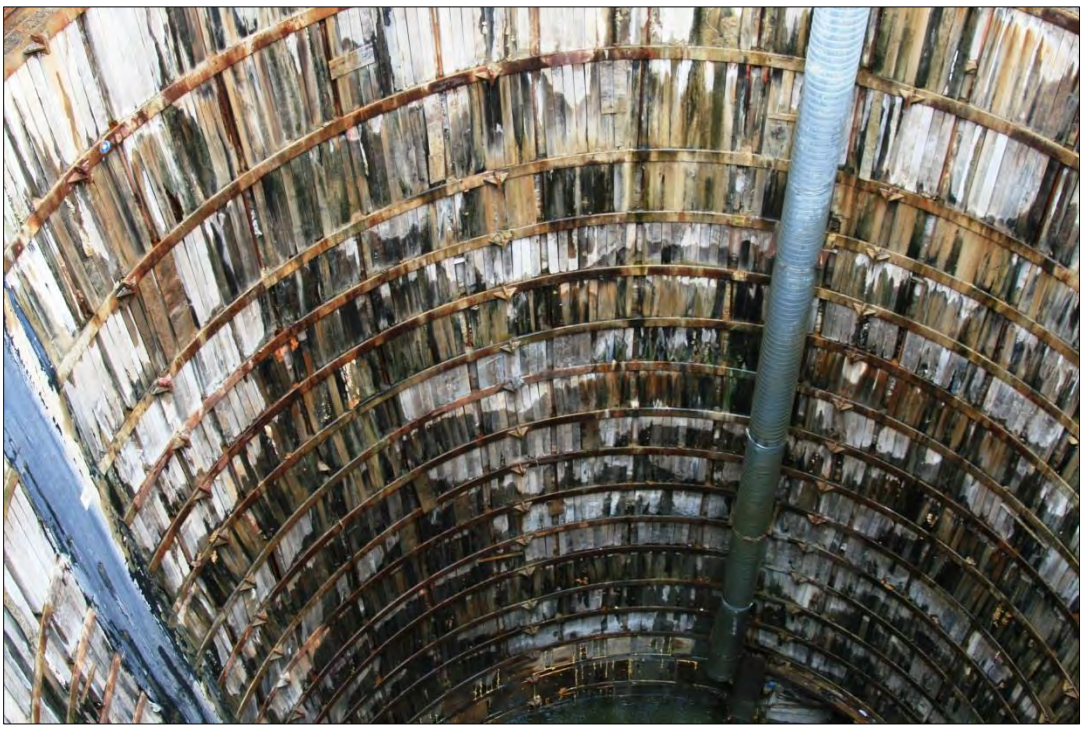


Photo 10: View looking inside the access shaft (already constructed as part of development of the first tunnel).

APPENDIX C

PRE-CONSTRUCTION NOTIFICATION FOR NATIONWIDE PERMIT 12

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

November 3, 2009

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2003-00001, WEST BANK SEWER INTERCEPTOR, DALLAS

Mr. Melvin Green, R.G.
Chiang, Patel & Yerby Incorporated
1820 Regal Row, Suite 200
Dallas, Texas 75235

Dear Mr. Green:

Thank you for your letter received October 6, 2009, concerning a proposal by Dallas Water Utilities to construct the East Bank to West Bank Sewer Interceptor extending from the Cadiz Pump Station to the existing West Bank Relief Interceptor in Dallas, Dallas County, Texas. This project has been assigned Project Number SWF-2003-00001. Please include this number in all future correspondence concerning this project. Failure to reference the project number may result in a delay.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined that this project will not involve activities subject to the requirements of Section 404. However, this project will involve activities subject to the requirements of Section 10. Therefore, it will require Department of the Army authorization.

We have reviewed this project under the preconstruction notification (PCN) procedures of Nationwide Permit (NWP) General Condition 27 (Federal Register, Vol. 72, No. 47, Monday, March 12, 2007 and corrections in Federal Register Vol. 72, No. 99, Tuesday, May 8, 2007). We have determined that this project is authorized by Nationwide Permit (NWP) 12 for Utility Line Activities. To use this permit, the person responsible for the project must ensure that the work is in compliance with the specifications and conditions listed on the enclosure and below. The special condition for this permit is as follows:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall

cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration. Failure to comply with these specifications and conditions invalidates the authorization and may result in a violation of the Clean Water Act.

Our verification for the construction of this activity under this nationwide permit is valid until March 18, 2012, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit regionally or nationally. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Our review of this project also addressed its effects on threatened and endangered species. Based on the information provided, we have determined that this project will not affect any species listed as threatened or endangered by the U.S. Fish and Wildlife Service within our permit area. However, please note that you are responsible for meeting the requirements of general condition 17 on endangered species.

The permittee must sign and submit to us the enclosed certification that the work, including any required mitigation, was completed in compliance with the nationwide permit. You should submit your certification within 30 days of the completion of work.

This permit should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. It does not authorize any damage to private property, invasion of private rights, or any infringement of federal, state, or local laws or regulations.

The USACE based this decision on a preliminary jurisdictional determination (JD) that there are waters of the United States within the project site. It is incumbent upon the applicant to remain informed of changes in the Department of the Army regulations.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please refer to our website at http://www.swf.usace.army.mil/regulatory or contact Mr. Eric Dephouse at the address above or telephone (817) 886-1820.

Please help the Regulatory Program improve its service by completing the survey on the following website: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

ORIGINAL SIGNED

Stephen L Brooks
Chief, Regulatory Branch

Enclosure

SCOTT/CESWF-PER-R

BROOKS/CESWF-PER-R

CP&Y Partners for a Better Quality of Life

October 5, 2009

SWF-2003-001

Mr. Wayne A. Lea
Chief, Regulatory Branch
US Army Corps of Engineers, Fort Worth District
P.O.Box 17300
Fort Worth, TX 76102-300

RE: East Bank – West Bank Sanitary Sewer Interceptor
Cadiz Pump Station, Dallas, Texas
Project Number SWF-2003-001
CP&Y Project No.: DWU0029

Dear Mr. Lea:

On January 2, 2008, per the attached letter, you granted the City of Dallas a two-year extension for the verification for construction of the East Bank – West Bank Sewer Interceptor Project under Nationwide Permit 12 for utility line activities. Funding for the project has been secured, but real estate action for easement acquisition has continued to hold up advertisement and award for construction. As a result, the City has requested, as outlined in the attached letter, that CP&Y request a time extension for the verification for the construction. We anticipate City Council will authorize advertisement for the project once all easements have been secured.

Please accept this letter as certification that there have been no significant changes to the design or construction plans for the project since December 31, 2002.

Your assistance in this matter is greatly appreciated. Should you need additional information, please feel free to contact me at (817) 354-0189.

Sincerely,

Melvin G. Green, R. G.
Project Manager

MGG/kn

Enclosure

cc: Mr. James Wellington, P.E., Project Manager - Dallas Water Utilities
Mr. William E. Carroll, P.E. - CP&Y
Mr. Wade Brooks, P.E., - CP&Y

RECEIVED
OCT 06 2009
CESWF-PER-R SW

SWF-2003-001

1820 Regal Row, Suite 200
Dallas, Texas 75235
214.638.0500 • 214.638.3723 fax
www.cpyi.com

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

January 2, 2008

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2003-0001

Mr. Melvin G. Green, R.G.
Project Manager
Chian, Patel and Yerby, Incorporated
1820 Regla Row, Suite 200
Dallas, Texas 75235

Dear Mr. Green:

Thank you for your letter of November 26, 2007, concerning a proposal by Dallas Water Utilities to construct the East Bank to West Bank Sewer Interceptor extending from the Cadiz Pump Station to the existing West Bank Relief Interceptor in Dallas, Dallas County, Texas. This project has been assigned Project Number SWF-2003-0001. Please include this number in all future correspondence concerning this project. Failure to reference the project number may result in a delay.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined that this project will not involve activities subject to the requirements of Section 404. However, this project will involve activities subject to the requirements of Section 10. Therefore, it will require Department of the Army authorization.

We have reviewed this project under the preconstruction notification (PCN) procedures of Nationwide Permit General Conditions 27 (Federal Register, Vol. 72, No. 47, Monday, March 12, 2007). We have determined that this project is authorized by nationwide permit 12 for Utility Line Activities. To use this permit, the person responsible for the project must ensure that the work is in compliance with the specifications and conditions listed on the enclosures and the special conditions listed below. The special conditions for this permit are as follows:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall

SWF-2003-001

cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Failure to comply with these specifications and conditions invalidates the authorization and may result in a violation of the Clean Water Act.

Our verification for the construction of this activity under this nationwide permit is valid for two years from the date of this letter, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit regionally or nationally. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Our review of this project also addressed its effects on threatened and endangered species. Based on the information provided, we have determined that this project will not affect any species listed as threatened or endangered by the U.S. Fish and Wildlife Service within our permit area. However, please note that you are responsible for meeting the requirements of general condition 17 on endangered species.

The permittee must sign and submit to us the enclosed certification that the work, including any required mitigation, was completed in compliance with the nationwide permit. You should submit your certification within 30 days of the completion of work.

This permit should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. It does not authorize any damage to private property, invasion of private rights, or any infringement of federal, state, or local laws or regulations.

The USACE based this decision on an approved jurisdictional determination (JD) that there are navigable waters of the United States on the project site. The basis for this approved jurisdictional determination (JD) is enclosed. This approved JD is valid for a period of no more than five years from the date of this letter unless new information warrants revision of the delineation before the expiration date. It is incumbent upon the applicant to remain informed of changes in the Department of the Army regulations.

The applicant may accept or appeal this approved JD or provide new information in accordance with the enclosed Notification of Administration Appeal Options and Process and Request For Appeal (NAAOP-RFA). If the applicant elects to appeal this approved JD, the applicant must complete Section II (Request For Appeal or Objections to an Initial Proffered Permit) of the enclosure and return it to the Division Engineer, ATTN: CESWD-ETO-R, U. S. Army Corps of Engineers, 1100 Commerce Street, Dallas, Texas 75242-0216 within 60 days of the date of this notice. Failure to notify the USACE within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please contact Ms. Kelly Allen at the address above or telephone (817)886-1732. If you would like more information about our nationwide permit program, please contact us and we will furnish you with a copy of the nationwide permit regulations.

Sincerely,

Jennifer R. Walker
for
Wayne A. Lea
Chief, Regulatory Branch

Enclosures

Copy Furnished with Copy of Preconstruction Notification:

Ms. Lyn Preston
Chief, Nautical Data Branch
Office of Coast Survey
National Ocean Service
1315 East West Highway
Silver Springs, MD 20910-3282

SWF-2003-001

CITY OF DALLAS

August 25, 2009
William E. Carroll, P.E.
1820 Regal Row, Suite 200
Dallas, Texas 75235

Re: **404 Permit**
(Project Number SWF-2003-0001)
East Bank – West Bank Interceptor Connection
Contract Number 00-446E

Dear Mr. Carroll:

Please consider this as a formal authorization to initiate a time extension on the above subject matter with the Corps of Engineers. The is very vital because we do not see the project being advertised prior to the permit expiration date of January 2, 2010.

Should you have any questions, please call me at 214-948-4552.

Sincerely,

James Wellington, P.E.
Project Manager
Pipeline Project Management

cc: C. Michael Hines, P.E.
Contract No. 00-446E FILE

Water Utilities Department
Project Management · 2121 Main, Suite 300 · Dallas, Texas 75201 · 214/948-4560 · Fax 214/948-4551
A city utility providing regional water and wastewater services vital to public health and safety.

January 2, 2007 8 KA

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2003-001

Mr. Melvin G. Green, R.G.
Project Manager
Chian, Patel and Yerby, Incorporated
1820 Regla Row, Suite 200
Dallas, Texas 75235

Dear Mr. Green:

Thank you for your letter of November 26, 2007, concerning a proposal by Dallas Water Utilities to construct the East Bank to West Bank Sewer Interceptor extending from the Cadiz Pump Station to the existing West Bank Relief Interceptor in Dallas, Dallas County, Texas. This project has been assigned Project Number SWF-2003-001. Please include this number in all future correspondence concerning this project. Failure to reference the project number may result in a delay.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined that this project will not involve activities subject to the requirements of Section 404. However, this project will involve activities subject to the requirements of Section 10. Therefore, it will require Department of the Army authorization.

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1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall

cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Failure to comply with these specifications and conditions invalidates the authorization and may result in a violation of the Clean Water Act.

Our verification for the construction of this activity under this nationwide permit is valid for two years from the date of this letter, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit regionally or nationally. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Our review of this project also addressed its effects on threatened and endangered species. Based on the information provided, we have determined that this project will not affect any species listed as threatened or endangered by the U.S. Fish and Wildlife Service within our permit area. However, please note that you are responsible for meeting the requirements of general condition 17 on endangered species.

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The USACE based this decision on an approved jurisdictional determination (JD) that there are navigable waters of the United States on the project site. The basis for this approved jurisdictional determination (JD) is enclosed. This approved JD is valid for a period of no more than five years from the date of this letter unless new information warrants revision of the delineation before the expiration date. It is incumbent upon the applicant to remain informed of changes in the Department of the Army regulations.

The applicant may accept or appeal this approved JD or provide new information in accordance with the enclosed Notification of Administration Appeal Options and Process and Request For Appeal (NAAOP-RFA). If the applicant elects to appeal this approved JD,the applicant must complete Section II (Request For Appeal or Objections to an Initial Proffered Permit) of the enclosure and return it to the Division Engineer, ATTN: CESWD-ETO-R, U. S. Army Corps of Engineers, 1100 Commerce Street, Dallas, Texas 75242-0216 within 60 days of the date of this notice. Failure to notify the USACE within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

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Sincerely,

Wayne A. Lea
Chief, Regulatory Branch

Enclosures

Copy Furnished with Copy of Preconstruction Notification:

Ms. Lyn Preston
Chief, Nautical Data Branch
Office of Coast Survey
National Ocean Service
1315 East West Highway
Silver Springs, MD 20910-3282

CP&Y SM Partners for a Better Quality of Life

November 26, 2007

Mr. Wayne A. Lea
Chief, Regulatory Branch
U.S. Army Corps of Engineers
Fort Worth District
P.O. Box 17300
Fort Worth, TX 76102-0300

RE: East Bank – West Bank Sewer Interceptor
Cadiz Pump Station, Dallas, Texas
CESWF Project Number: 200300001 KA
CP&Y Project Number: DWU0029

Dear Mr. Lea:

Your letter dated January 15, 2003, authorizing construction of the East Bank – West Bank Sewer Interceptor project under Nationwide Permit 12 for utility line activities stated that the verification for the construction of the project was valid until March 18, 2007, unless prior to that date the Permit was suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the Permit on a regional or national basis. While the above noted project is still authorized for construction, the City of Dallas has not advertised or awarded the project due to funding restrictions; however, it is expected that the project will be constructed in the near future.

We have spoken with Ms. Kelly Allen regarding the time issue and steps that we must take to extend the validity of the Permit. It is our understanding that in order to extend the validity date, Chiang, Patel & Yerby, Inc., must certify to the Corps that there have been no changes to the design since the project was submitted for final review and authorization for construction issued on December 31, 2002.

Please accept this letter as certification that there have been no significant changes to the design or construction plans for the East Bank – West Bank Sewer Interceptor Project since December 31, 2002.

We appreciate your assistance in this matter. Should you need additional information, please feel free to contact me at (817) 354-0189.

Sincerely,

Melvin G. Green, R.G.
Project Manager

MGG/kn

RECEIVED
NOV 27 2007

pc: Mr. James Wellington, P.E., Project Manager, Dallas Water Utilities
Mr. William E. Carroll, P.E. – CP&Y
Mr. Wade Brooks, P.E. – CP&Y
DWU0029 – Corr.

M:\DWU0029 - Cadiz PS\Correspondence\COE-Lea Ltr-11-26-07.doc\kn

Chiang, Patel & Yerby, Inc.
1820 Regal Row, Suite 200,
Dallas, Texas 75235
214.638.0500 • 972.263.3960 metro • 214.638.3723 fax
www.cpyi.com

January 15, 2003

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number 200300001

Mr. Melvin G. Green, R.G.
Chiang, Patel & Yerby, Inc.
15100 Trinity Boulevard, Suite 200
Fort Worth, Texas 76155

Dear Mr. Green:

Thank you for your letter of December 31, 2002, concerning a proposal by Dallas Water Utilities to construct the East Bank to West Bank Sewer Interceptor extending from the Cadiz Pump Station to the existing West Bank Relief Interceptor in Dallas, Dallas County, Texas in . This project has been assigned Project Number 200300001. Please include this number in all future correspondence concerning this project. Failure to reference the project number may result in a delay.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined that this project will not involve activities subject to the requirements of Section 404. However, this project will involve activities subject to the requirements of Section 10. Therefore, it will require Department of the Army authorization.

We have reviewed this project under the preconstruction notification procedures of Nationwide Permit General Condition 13 (Federal Register, Vol. 67, No. 10, Tuesday, January 15, 2002, Vol. 67, No. 30, Wednesday, February 13, 2002, Vol. 67, No. 37, Monday, February 25, 2002). We have determined that this project is authorized by nationwide permit 12 for Utility Line Activities. To use this permit, the person responsible for the project must ensure that the work is in compliance with the specifications and conditions listed on the enclosures and the special condition listed below. The special condition for this permit is as follows:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the

structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Our verification for the construction of this activity under this nationwide permit is valid until March 18, 2007, unless prior to that date the nationwide permit is suspended or revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit on a regional or national basis. The USACE will issue a public notice announcing the changes when they occur. Furthermore, if you commence, or are under contract to commence, this activity before the date that this nationwide permit is modified or revoked, you will have twelve months from the date of the modification or revocation to complete the activity under the present terms and conditions of the nationwide permit. Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Our review of this project also addressed its effects on endangered species. Based on the information provided, we have determined that this project will not affect any species listed as threatened or endangered by the U.S. Fish and Wildlife Service within our permit area. However, please note that you are responsible for meeting the requirements of general condition 11 on endangered species.

The permittee must sign and submit to us the enclosed certification that the work, including any required mitigation, was completed in compliance with the nationwide permit. You should submit your certification within 30 days of the completion of work.

This permit should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. It does not authorize any damage to private property, invasion of private rights, or any infringement of federal, state, or local laws or regulations.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please contact Mr. Ken Laterza at the address above or telephone (817)886-1735. If you would like more information about our nationwide permit program, please contact us and we will furnish you with a copy of the nationwide permit regulations.

Sincerely,

ORIGINAL SIGNE

Wayne A. Lea
Chief, Regulatory Branch

Enclosures

SCOTT/CESWF-PER-R
for LEA/CESWF-PER-R

Partners for Better Quality of Life

KL

December 31, 2002

200300001

Mr. Presley Hatcher
U.S. Army Corps of Engineers
CESWF-PER-RP
P.O. Box 17300
Fort Worth, Texas 76102-0300

RE: Pre-Construction Notification for Nationwide Permit 12, for East Bank – West Bank Sewer Interceptor, Cadiz Pump Station, Dallas, Texas

Dear Mr. Hatcher:

Attached please find two (2) copies of a letter report, with exhibits, discussing the environmental impacts that would be experienced with the construction of a new sewer interceptor from the Cadiz Pump Station across the Dallas Floodway to the 120-inch West Bank Relief Interceptor Sewer line. The report, prepared by Halff Associates under subcontract to Chiang, Patel, & Yerby, Inc., requests concurrence from the Corps of Engineers that NWP 12 authorizes the project.

The new sewer interceptor will consist of 78-inch and 96-inch diameter dual pipes designed to withstand a head equal to the top of the floodway levees. The pipes will be installed inside individual tunnels more than 55 feet below the bottom of the Trinity River. The host rock will be Eagle Ford Shale, a soft to moderately hard clay shale with limestone and sandstone seams. It is anticipated that the initial tunnels will be constructed with a fully shielded Tunnel Boring Machine (TBM). The initial lining will likely consist of steel ribs and lagging or steel liner plates. The steel ribs will be expanded to provide full support for the rock. If liner plates are used grouting will be required between the liner plates and the rock.

The inlet shaft, approximately 60 feet deep, will be located near the Cadiz Pump Station. The shaft will contain control gates and a rock catcher. The outlet shaft, about 80 feet deep, will be located 100 feet from the West Bank Relief Interceptor in the floodway. Gates will also be

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Chiang, Patel & Yerby, Inc.
15100 Trinity Blvd., Suite 200
Fort Worth, Texas 76155
817.354.0189 • 817.540.4220 metro • 817.354.4935 fax
www.cpyi.com

provided in the outlet shaft to allow control and periodic maintenance of the pipelines. The shafts will each have a diameter of about 40 feet.

The west shaft located in the floodway will be protected during construction for the 100-year flood, and will be waterproofed at completion. All materials excavated from the shaft will be disposed out of the floodplain, and contours will be restored to their original elevation following construction. Permanent surface markers will be placed along the pipeline alignment for future reference.

This project is currently under design with final plans and specs anticipated to be completed in early spring. Construction is scheduled for the summer of 2003. Your timely review, and response to this submittal will be appreciated. If there are questions please call me at (817) 354-0189.

Sincerely,

Melvin A. Green

Melvin G. Green, R.G.

Enclosure: Pre-construction Notification Letter by Halff Associates

Cc: Mr. Richard Wagner, P.E. – Dallas Water Utilities
Mr. Bill Lewis, P.E. – Halff Associates
Mr. Terry Bachim – U.S. Army Corps of Engineers, CESWF-OD-M
Mr. Douglas Perrin – U.S. Army Corps of Engineers, CESWF-OD-M

Halff Associates
ENGINEERS • ARCHITECTS • SCIENTISTS
PLANNERS • SURVEYORS

8616 NORTHWEST PLAZA DRIVE
DALLAS, TEXAS 75225
(214) 346-6200
FAX (214) 739-0095

December 12, 2002
AVO 19298

wee 12/19/02

Mr. Bill Carroll, P.E.
Chiang, Patel & Yerby, Inc.
15100 Triniry Boulevard, Suite 200
Fort Worth, TX 76155

RE: Cadiz Pump Station
East Bank - West Bank Sewer Interceptor

Dear Mr. Carroll:

Per your instructions, I have changed the date on the letter to the U.S. Army Corps of Engineers regarding the 404 permitting requirements of the East Bound - West Bound Sewer Interceptor.

This letter does not identify or determine the potential impacts of the bore hole construction in the vicinity of the West Bank Interceptor connection/bore pit in relation to the wetlands that are located in the immediate area. I hope this provides the needed information required to begin the 404 permit review.

If you require additional assistance with this project, you may contact me at (214) 346-6200.

Sincerely,

HALFF ASSOCIATES, INC.

David S. Morgan

David S. Morgan, Environmental Scientist
Vice President

DSM:sps

Enclosure

C: Mr. Bill Lewis, P.E., Halff Associates, Inc.

Halff Associates
ENGINEERS • ARCHITECTS • SCIENTISTS
PLANNERS • SURVEYORS

8616 NORTHWEST PLAZA DRIVE
DALLAS, TEXAS 75225
(214) 346-6200
FAX (214) 739-0095

December 12, 2002
AVO 19298

Mr. Presley Hatcher
U.S. Army Corps of Engineers
Regulatory Branch
P.O. Box 17300
Fort Worth, Texas 76102-0300

Re: Pre-construction Notification for Nationwide Permit 12 – *Utility Line Activities* for modifications to the Cadiz Pump Station in downtown Dallas, Texas

Dear Mr. Hatcher:

Halff Associates, Inc. (Halff) has been hired as a subcontractor to Chiang, Patel, & Yerby, Inc. to assist in the Section 404 permitting for modifications to the Cadiz Street Pump Station (CSPS) located on Cadiz Street north of Industrial Boulevard in downtown Dallas, Texas as shown in Figure 1. The proposed modifications are for Dallas Water Utilities (DWU) to construct a bypass pipeline across the Dallas Floodway which would connect with the West Bank Relief Interceptor Sewerline.

PURPOSE AND NEED

Currently, the Cadiz Pump Station has an emergency bypass overflow pipe, which empties into a remnant meander of the historical Trinity River channel. Recently, in June 2000, severe thunderstorms severed power to the CSPS for several hours, which resulted in approximately 10 million gallons of raw sewage entering the old Trinity River channel. The old Trinity River channel is connected to the sump system and the raw sewage was eventually pumped into the floodway and into the main stem of the Trinity River.

The proposed modifications to the CSPS would be to construct two (2) parallel pipelines (in separate bore holes) via tunnel boring from the CSPS to the West Bank Relief Interceptor, which would totally eliminate the need for the current bypass. The proposed alignment would cross the old Trinity River channel northeast of the Sportatorium and then parallel IH-35E until it connects with the West Bank Relief Interceptor. Figure 2 from Chiang, Patel, and Yerby, Inc. shows three alternative routes that have been evaluated as well as the preferred eastern alternative (shown in blue).

BASELINE CONDITIONS

In April 1994, Halff prepared a wetland delineation and Section 404 Individual Permit application for the Dallas Floodway Channel Modification Project (Project #199300146). This delineation was used as a reference and field verified in October 2000 by Halff. Prior to field investigations, aerial photographs, soil survey maps, and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps were reviewed. Due to the large amount of

available information, field verification consisted of the Corps of Engineers routine determination method, as described in the 1987 Wetland Delineation Manual.

One large wetland area was identified in the study area on the west side of the Trinity River channel. This area contains a variety of emergent plant species such as smartweed (*Polygonum* sp.), umbrella sedge (*Cyperus* sp.), flat sedge (*Carex* sp.), and curly dock (*Rumex crispus*). Black willow (*Salix nigra*) was common, however only stumps were present after mowing (regular floodway maintenance). Drift lines were common which are indicative of periodic flooding. Soil units as mapped by the Soil Survey of Dallas County (1980) include the Trinity clay, frequently flooded classification, which is included on the Dallas County hydric soils list. A large, linear wetland feature was identified in the 1994 delineation between the Trinity River and the east levee. However, recent work associated with the channel desiltation and levee improvement project has altered the landscape and vegetation has yet to recover (see site photographs and data sheets).

The Trinity River is a jurisdictional water of the United States with an o.h.w. of 135-140 feet, is considered a navigable waterway, and is regulated under the Rivers and Harbors Act of 1899. Drainage sumps located along the perimeter of the floodway are considered jurisdictional based on their association with the historical Trinity River channel, which is also a water of the United States. The historic river channel has an o.h.w. of 40 feet and the drainage sump has an o.h.w. of 50-55 feet. Figure 3 labels each jurisdictional feature within the study area.

SUMMARY OF IMPACTS

Both pipelines would be constructed via a dual tunnel-boring operation throughout all but about 350 linear feet of the entire length. Based on the proposed construction methods, it is assumed that the project will not result in discharges into wetlands or other waters of the United States as regulated by Section 404 of the Clean Water Act. However, since the main stem of the Trinity River is a navigable waterway, Section 10 authorization in accordance with the Rivers and Harbors Act of 1899 will be required.

The pipelines would cross the existing Trinity River channel with the top of pipe approximately 50 feet below the existing Trinity River channel bottom. Furthermore, the borings would occur in Eagle Ford Shale, which would protect the pipeline from long-term erosion hazards. The proposed alignment configuration and profile would also be consistent with future highway modifications, including the proposed Trinity Parkway profiles.

Halff believes that the proposed project will provide an alternative that contributes to the long-term water quality of the immediate area by eliminating the risk of an overflow incident recurring in the future. Although no discharges into waters of the United States will occur, a Section 10 water will be crossed which requires pre-construction notification in accordance with the guidelines set forth in NWP 12 – *Utility Line Activities*. The design team has been coordinating

Halff Associates
ENGINEERS • ARCHITECTS • SCIENTISTS
PLANNERS • SURVEYORS

closely with the Corps Operation Division and a copy of this permit application is being forwarded to Mr. Douglas Perrin and Mr. Terry Basham.

We recognize the Corps' increased workload as a result of the new NWPs. However, as this is a very high priority project for the City of Dallas, we ask that you provide concurrence that the project is may be authorized by NWP 12 as expeditiously as possible. We look forward to working with you on this project. If you have any questions or require any additional information, please do not hesitate to call at (214) 346-6367.

Sincerely,
HALFF ASSOCIATES, INC.

Russell Marusak
Environmental Scientist

Enclosures

C: Mr. Richard Wagnor, P.E. – Dallas Water Utilities
Mr. Bill Carroll, P.E. - Chiang, Patel, & Yerby, Inc.
Mr. Melvin G. Green, R.G. - Chiang, Patel, & Yerby, Inc.
Mr. Bill Lewis, P.E. - Halff Associates, Inc.
Mr. Terry Basham - U.S. Army Corps of Engineers - Operations
Mr. Doug Perrin - U.S. Army Corps of Engineers - Operations

0029FIG2.DWG

EXHIBIT 2

CITY OF DALLAS, WATER UTILITIES DEPARTMENT
CADIZ STREET PUMP STATION
WASTEWATER PIPELINE IMPROVEMENTS
PLAN OF ALTERNATIVES

Chiang, Patel & Yerby, Inc.
Consulting Engineers • Planners • Project Managers
Dallas, Texas

JUNE 2001

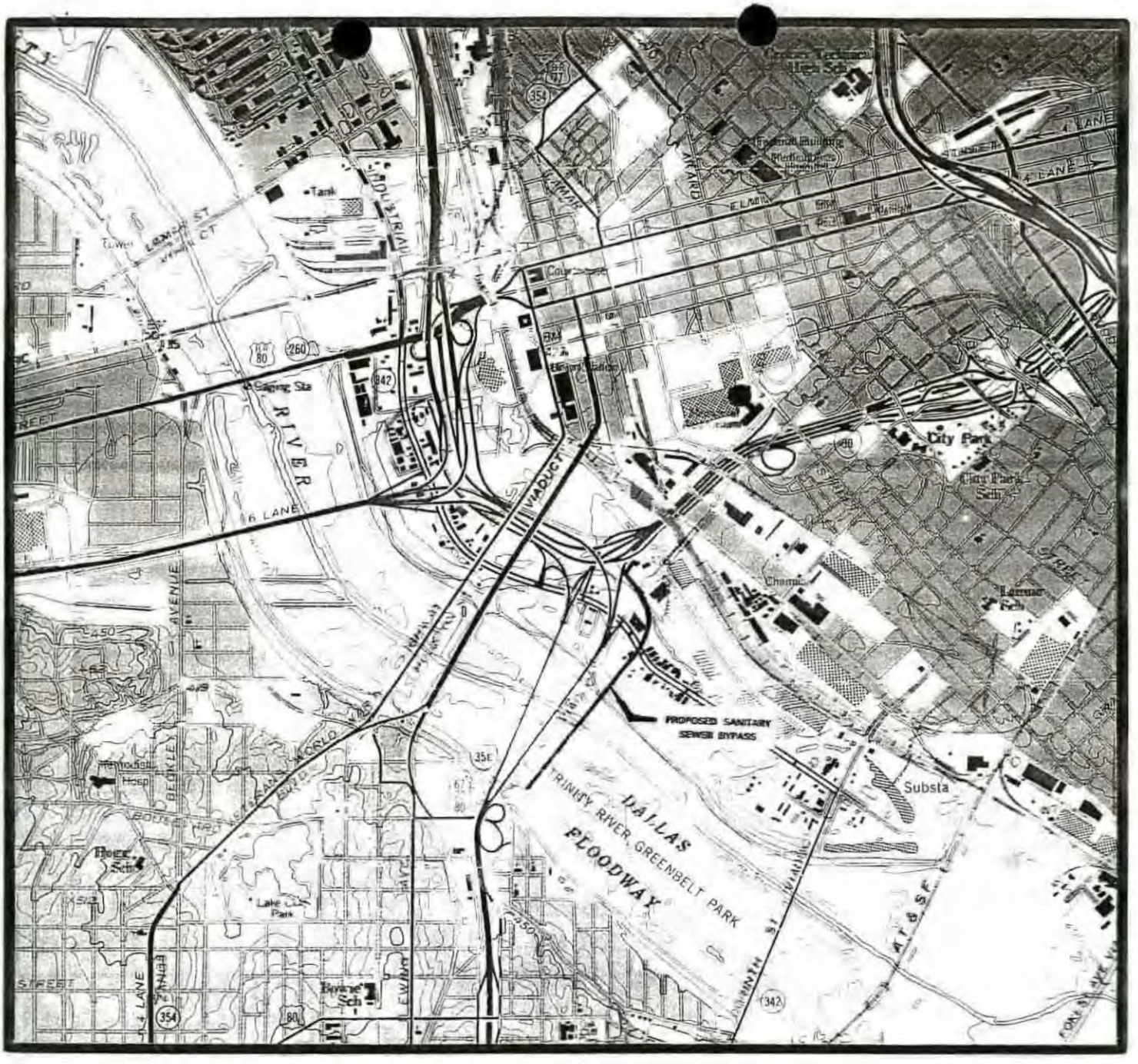


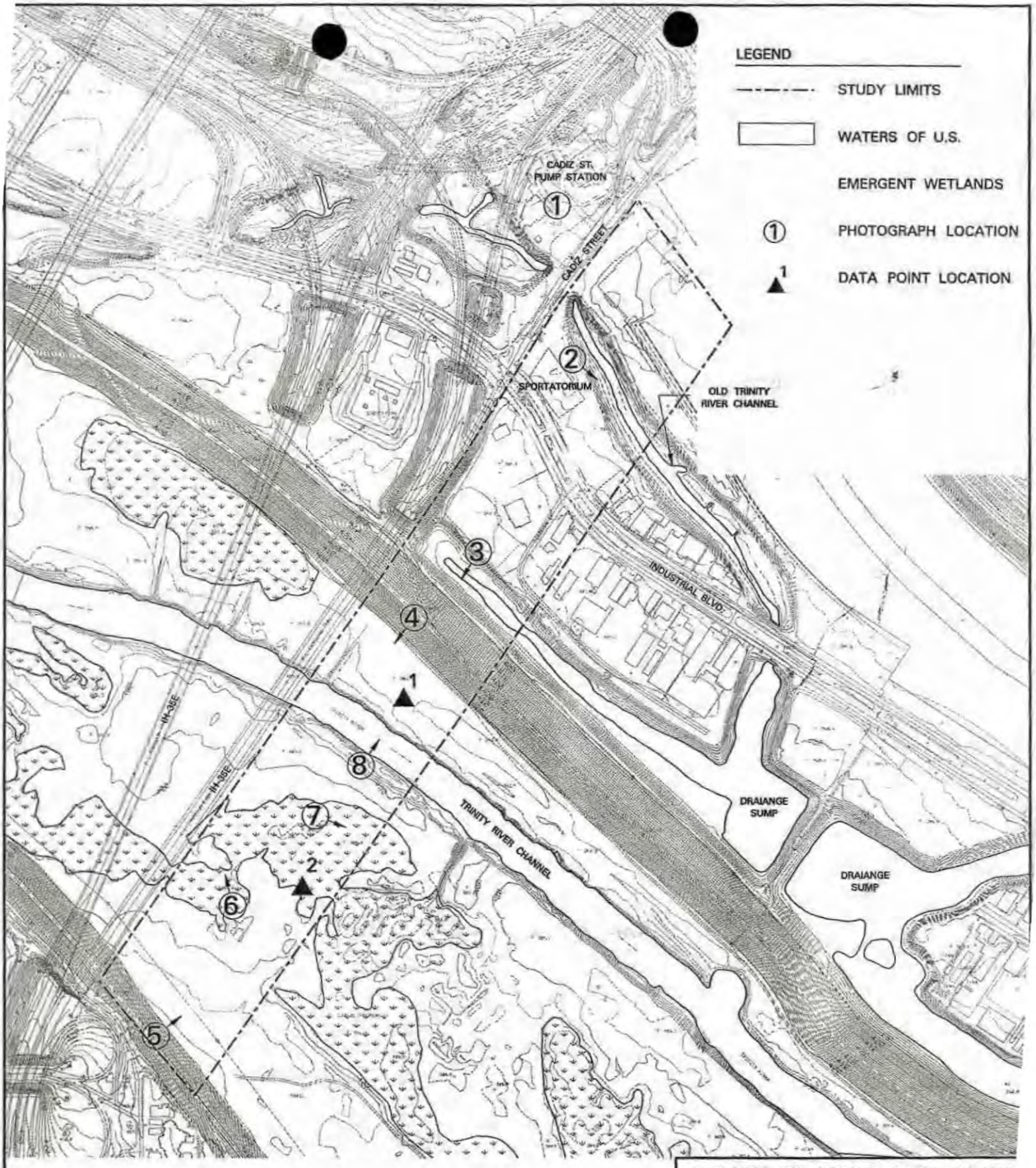
FIGURE 1

USGS QUADRANGLE

DALLAS QUADRANGLE

TEXAS–DALLAS CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)



WETLANDS AND WATERS OF THE U.S. MAP

CADIZ STREET PUMP STATION SEWER LINE

DALLAS WATER UTILITIES

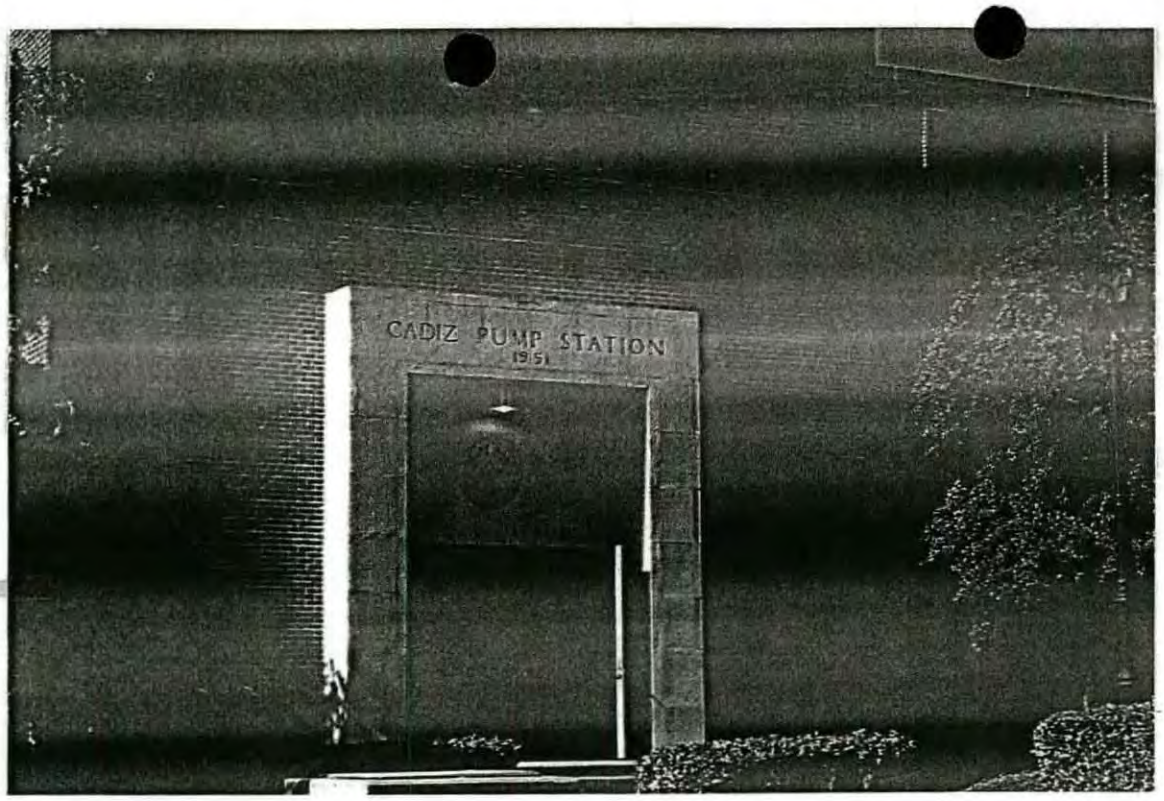
DALLAS, TEXAS

HALFF ASSOCIATES, INC.
ENGINEERS • SCIENTISTS • SURVEYORS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO
B.M.	CADD	NOV 2000	1" = 500'	1008 1072CWDR1	1008-00-1072	3

APPENDIX A

SITE PHOTOGRAPHS AND DATA SHEETS



PHOTOGRAPH 1

Description: View of the Cadiz Street Pump Station (new building)

PHOTOGRAPH 2

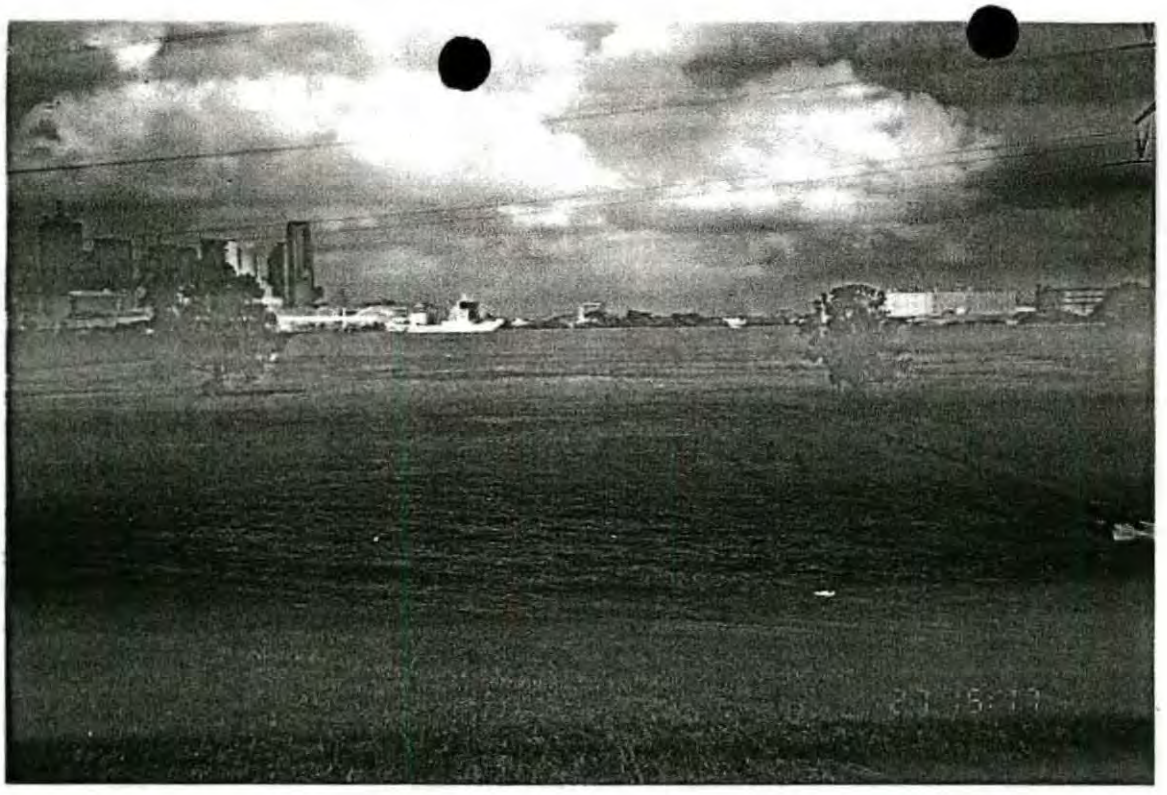
Description: View of old river channel crossing behind the Sportatorium building looking south

PHOTOGRAPH 3

Description: View of drainage sump crossing looking towards east levee

PHOTOGRAPH 4

Description: View of wetland area that has been disturbed by activities associated with recent river project

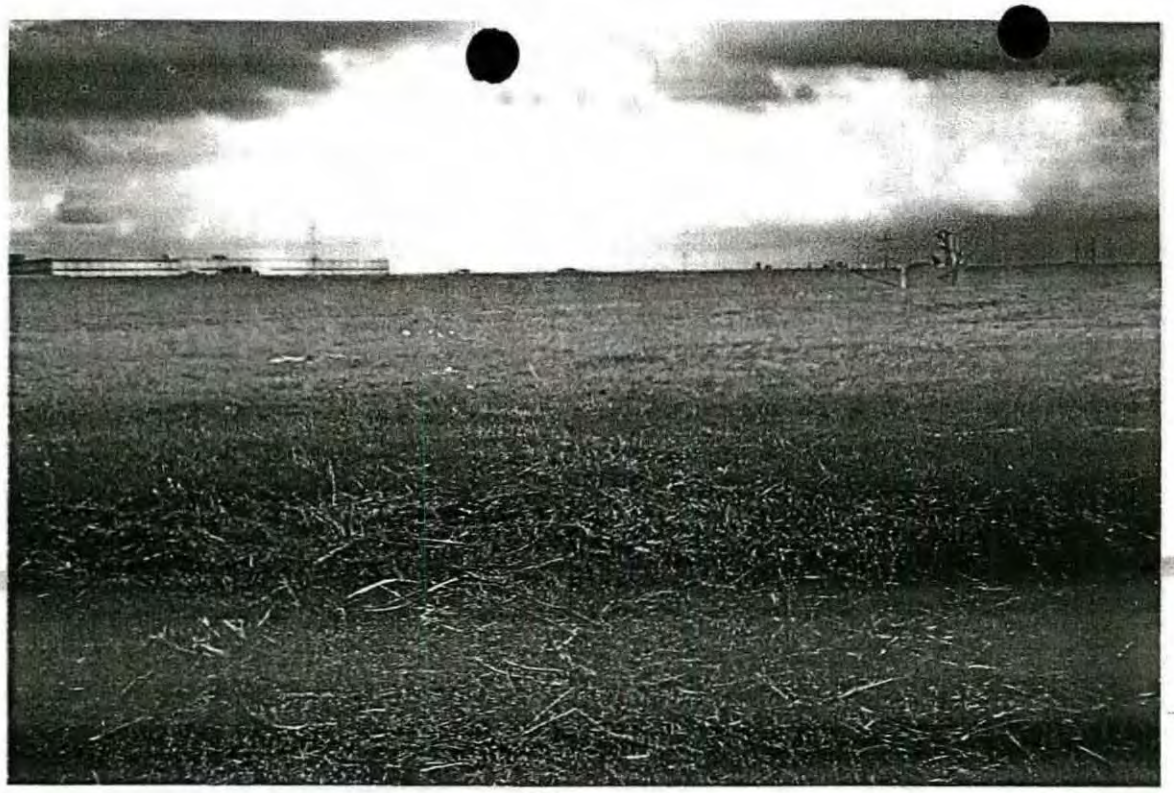


PHOTOGRAPH 5

Description: View of corridor from west levee looking across the Dallas Floodway (east)

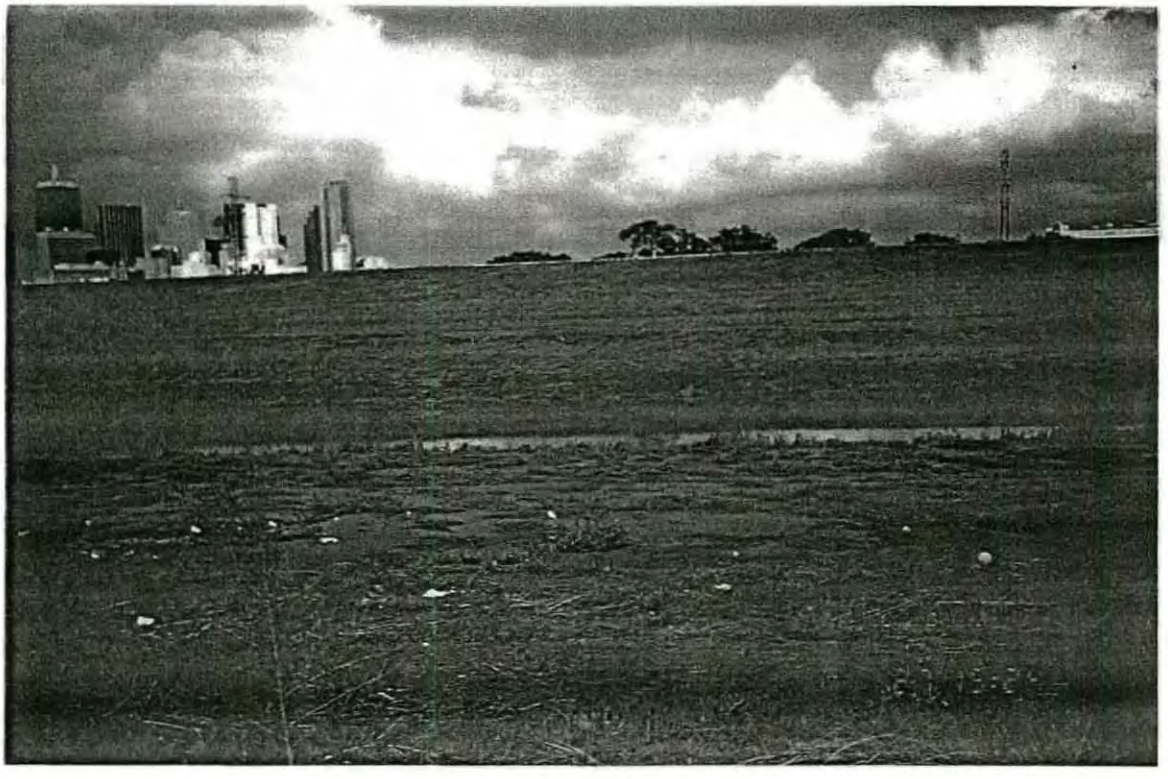
PHOTOGRAPH 6

Description: View of emergent wetland area in middle portion of the Dallas Floodway



PHOTOGRAPH 7

Description: View of recently mowed vegetation in same emergent wetland area



PHOTOGRAPH 8

Description: View of Trinity River channel from the west bank

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Trinity Parkway Applicant/Owner: North Texas Tollway Authority Investigator: Russell Marusak			Date: 3-4-99 County: Dallas State: TX
Do Normal Circumstances exist on the site: Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse)	☒Yes ☐Yes ☐Yes	☐No ☒No ☒No	Community ID: Transect ID: Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Carex crus-corvii*	herb	OBL	9.		
2. *Rumex crispus*	herb	FACW	10.		
3. *Eleocharis acicularis*	herb	OBL	11.		
4. *Xanthium strumarium*	herb	FAC-	12.		
5. *Salix nigra*	shrub	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 80%

Remarks: Vegetative criteria met.

HYDROLOGY

☐Recorded Data (Describe in Remarks):
- ☐Stream, Lake, or Tide Gauge
- ☒Aerial Photographs
- ☒Other

☐No Recorded Data Available

Field Observations:

Depth of Surface Water:	4-6	(in.)
Depth to Free Water in Pit:	4	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☒Inundated
- ☒Saturated in Upper 12 Inches
- ☐Water Marks
- ☐Drift Lines
- ☐Sediment Deposits
- ☐Drainage patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐Oxidized Root Channels in Upper 12 inches
- ☐Water-Stained Leaves
- ☐Local Soil Survey Data
- ☐FAC-Neutral Test
- ☐Other (Explain in Remarks)

Remarks: Site was included in previous wetland delineation dated April 1994 (Project #199900265). Review of aerial photography from various dates show the area to be inundated. Based on available data and current site conditions, it is safe to say hydrology is available to sustain these wetlands.

SOILS

Map Unit Name				Drainage Class:	Urban land complex
(Series and Phase):	Trinity clay			Field Observations	
Taxonomy (Subgroup):	Typic Pelludert			Confirm Mapped type?	☒ Yes ☐No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		10 YR 4/2	2.5 Y 5/1	few, faint	

Hydric Soil Indicators:

- ☐Histosol
- ☐Histic Epipedon
- ☐Sulfidic Odor
- ☐Aquic Moisture Regime
- ☐Reducing Conditions
- ☒Gleyed or Low-Chrome Colors
- ☐Concretions
- ☐High Organic Content in Surface Layer in Sandy Soils
- ☐Organic Streaking in Sandy Soils
- ☐Listed on Local Hydric Soils List
- ☐Listed on National Hydric Soils List
- ☒Other (Explain in Remarks)

Remarks: Being a dark mineral soil, chroma determination of hydric soils was not as reliable. Some faint mottling was observed in soil sample which would indicate a fluctuating water table.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐No	Is this Sampling Point Within a Wetland?	☒ Yes ☐No
Wetland Hydrology Present?	☒ Yes	☐No		
Hydric Soils Present?	☒ Yes	☐No		

Remarks: Sample point located east of R.L. Thorton Freeway on the north side of the river.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cadiz Street Pump Station Applicant/Owner: Dallas Water Utilities Investigator: Russell Marusak			Date: 10-27-00 County: Dallas State: TX
Do Normal Circumstances exist on the site: Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse)	☒Yes ☒Yes ☐Yes	☐No ☐No ☒No	Community ID: Transect ID: Plot ID: 2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Rumex crispus*	herb	FACW	9.		
2. *Cynodon dactylon*	herb	FACU	10.		
3. *Carex crus-corvii*	herb	FACW-	11.		
4. *Polygonum* sp.	herb	FACW	12.		
5. *Salix nigra*	shrub	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 80%

Remarks: Vegetative criteria not met. Mowing has made identification of true representative species difficult.

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐Stream, Lake, or Tide Gauge
- ☒Aerial Photographs
- ☐Other

☐No Recorded Data Available

Field Observations:

Depth of Surface Water:	None	(in.)
Depth to Free Water in Pit:	None	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐Inundated
- ☒Saturated in Upper 12 Inches
- ☐Water Marks
- ☒Drift Lines
- ☐Sediment Deposits
- ☐Drainage patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐Oxidized Root Channels in Upper 12 inches
- ☐Water-Stained Leaves
- ☐Local Soil Survey Data
- ☐FAC-Neutral Test
- ☐Other (Explain in Remarks)

Remarks: Soil heavily saturated due to recent rains.

SOILS

Map Unit Name				Drainage Class:	Urban land complex
(Series and Phase):	Trinity clay			Field Observations	
Taxonomy (Subgroup):	Typic Pelludert			Confirm Mapped type?	☒ Yes ☐ No
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/2	2.5 YR 5/3	faint	clay

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low-Chrome Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Slight mottling varies from sample to sample

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No
Hydric Soils Present?	☒ Yes	☐ No

Is this Sampling Point Within a Wetland? ☒ Yes ☐ No

Remarks:

CP&Y SM Partners for Better Quality of Life

KV December 31, 2002

200300081

Mr. Presley Hatcher
U.S. Army Corps of Engineers
CESWF-PER-RP
P.O. Box 17300
Fort Worth, Texas 76102-0300

RE: Pre-Construction Notification for Nationwide Permit 12, for East Bank – West Bank Sewer Interceptor, Cadiz Pump Station, Dallas, Texas

Dear Mr. Hatcher:

Attached please find two (2) copies of a letter report, with exhibits, discussing the environmental impacts that would be experienced with the construction of a new sewer interceptor from the Cadiz Pump Station across the Dallas Floodway to the 120-inch West Bank Relief Interceptor Sewer line. The report, prepared by Halff Associates under subcontract to Chiang, Patel, & Yerby, Inc., requests concurrence from the Corps of Engineers that NWP 12 authorizes the project.

The new sewer interceptor will consist of 78-inch and 96-inch diameter dual pipes designed to withstand a head equal to the top of the floodway levees. The pipes will be installed inside individual tunnels more than 55 feet below the bottom of the Trinity River. The host rock will be Eagle Ford Shale, a soft to moderately hard clay shale with limestone and sandstone seams. It is anticipated that the initial tunnels will be constructed with a fully shielded Tunnel Boring Machine (TBM). The initial lining will likely consist of steel ribs and lagging or steel liner plates. The steel ribs will be expanded to provide full support for the rock. If liner plates are used grouting will be required between the liner plates and the rock.

The inlet shaft, approximately 60 feet deep, will be located near the Cadiz Pump Station. The shaft will contain control gates and a rock catcher. The outlet shaft, about 80 feet deep, will be located 100 feet from the West Bank Relief Interceptor in the floodway. Gates will also be

JAN 0 2 2003

~~JAN 0 9 2003~~

Chiang, Patel & Yerby, Inc.
15100 Trinity Blvd., Suite 200
Fort Worth, Texas 76155
817.354.0189 • 817.540.4220 metro • 817.354.4935 fax
www.cpyi.com

provided in the outlet shaft to allow control and periodic maintenance of the pipelines. The shafts will each have a diameter of about 40 feet.

The west shaft located in the floodway will be protected during construction for the 100-year flood, and will be waterproofed at completion. All materials excavated from the shaft will be disposed out of the floodplain, and contours will be restored to their original elevation following construction. Permanent surface markers will be placed along the pipeline alignment for future reference.

This project is currently under design with final plans and specs anticipated to be completed in early spring. Construction is scheduled for the summer of 2003. Your timely review, and response to this submittal will be appreciated. If there are questions please call me at (817) 354-0189.

Sincerely,

Melvin G. Green, R.G.

Enclosure: Pre-construction Notification Letter by Halff Associates

Cc: Mr. Richard Wagner, P.E. – Dallas Water Utilities
Mr. Bill Lewis, P.E. – Halff Associates
Mr. Terry Bachim – U.S. Army Corps of Engineers, CESWF-OD-M
Mr. Douglas Perrin – U.S. Army Corps of Engineers, CESWF-OD-M

Halff Associates
ENGINEERS • ARCHITECTS • SCIENTISTS
PLANNERS • SURVEYORS

8616 NORTHWEST PLAZA DRIVE
DALLAS, TEXAS 75225
(214) 346-6200
FAX (214) 739-0095

December 12, 2002
AVO 19298

wee 12/19/02

Mr. Bill Carroll, P.E.
Chiang, Patel & Yerby, Inc.
15100 Triniry Boulevard, Suite 200
Fort Worth, TX 76155

RE: Cadiz Pump Station
East Bank - West Bank Sewer Interceptor

Dear Mr. Carroll:

Per your instructions, I have changed the date on the letter to the U.S. Army Corps of Engineers regarding the 404 permitting requirements of the East Bound - West Bound Sewer Interceptor.

This letter does not identify or determine the potential impacts of the bore hole construction in the vicinity of the West Bank Interceptor connection/bore pit in relation to the wetlands that are located in the immediate area. I hope this provides the needed information required to begin the 404 permit review.

If you require additional assistance with this project, you may contact me at (214) 346-6200.

Sincerely,

HALFF ASSOCIATES, INC.

David S. Morgan

David S. Morgan, Environmental Scientist
Vice President

DSM:sps

Enclosure

C: Mr. Bill Lewis, P.E., Halff Associates, Inc.

Halff Associates
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8616 NORTHWEST PLAZA DRIVE
DALLAS, TEXAS 75225
(214) 346-6200
FAX (214) 739-0095

December 12, 2002
AVO 19298

Mr. Presley Hatcher
U.S. Army Corps of Engineers
Regulatory Branch
P.O. Box 17300
Fort Worth, Texas 76102-0300

Re: Pre-construction Notification for Nationwide Permit 12 – *Utility Line Activities* for modifications to the Cadiz Pump Station in downtown Dallas, Texas

Dear Mr. Hatcher:

Halff Associates, Inc. (Halff) has been hired as a subcontractor to Chiang, Patel, & Yerby, Inc. to assist in the Section 404 permitting for modifications to the Cadiz Street Pump Station (CSPS) located on Cadiz Street north of Industrial Boulevard in downtown Dallas, Texas as shown in Figure 1. The proposed modifications are for Dallas Water Utilities (DWU) to construct a bypass pipeline across the Dallas Floodway which would connect with the West Bank Relief Interceptor Sewerline.

PURPOSE AND NEED

Currently, the Cadiz Pump Station has an emergency bypass overflow pipe, which empties into a remnant meander of the historical Trinity River channel. Recently, in June 2000, severe thunderstorms severed power to the CSPS for several hours, which resulted in approximately 10 million gallons of raw sewage entering the old Trinity River channel. The old Trinity River channel is connected to the sump system and the raw sewage was eventually pumped into the floodway and into the main stem of the Trinity River.

The proposed modifications to the CSPS would be to construct two (2) parallel pipelines (in separate bore holes) via tunnel boring from the CSPS to the West Bank Relief Interceptor, which would totally eliminate the need for the current bypass. The proposed alignment would cross the old Trinity River channel northeast of the Sportatorium and then parallel IH-35E until it connects with the West Bank Relief Interceptor. Figure 2 from Chiang, Patel, and Yerby, Inc. shows three alternative routes that have been evaluated as well as the preferred eastern alternative (shown in blue).

BASELINE CONDITIONS

In April 1994, Halff prepared a wetland delineation and Section 404 Individual Permit application for the Dallas Floodway Channel Modification Project (Project #199300146). This delineation was used as a reference and field verified in October 2000 by Halff. Prior to field investigations, aerial photographs, soil survey maps, and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps were reviewed. Due to the large amount of

available information, field verification consisted of the Corps of Engineers routine determination method, as described in the 1987 Wetland Delineation Manual.

One large wetland area was identified in the study area on the west side of the Trinity River channel. This area contains a variety of emergent plant species such as smartweed (*Polygonum* sp.), umbrella sedge (*Cyperus* sp.), flat sedge (*Carex* sp.), and curly dock (*Rumex crispus*). Black willow (*Salix nigra*) was common, however only stumps were present after mowing (regular floodway maintenance). Drift lines were common which are indicative of periodic flooding. Soil units as mapped by the Soil Survey of Dallas County (1980) include the Trinity clay, frequently flooded classification, which is included on the Dallas County hydric soils list. A large, linear wetland feature was identified in the 1994 delineation between the Trinity River and the east levee. However, recent work associated with the channel desiltation and levee improvement project has altered the landscape and vegetation has yet to recover (see site photographs and data sheets).

The Trinity River is a jurisdictional water of the United States with an o.h.w. of 135-140 feet, is considered a navigable waterway, and is regulated under the Rivers and Harbors Act of 1899. Drainage sumps located along the perimeter of the floodway are considered jurisdictional based on their association with the historical Trinity River channel, which is also a water of the United States. The historic river channel has an o.h.w. of 40 feet and the drainage sump has an o.h.w. of 50-55 feet. Figure 3 labels each jurisdictional feature within the study area.

SUMMARY OF IMPACTS

Both pipelines would be constructed via a dual tunnel-boring operation throughout all but about 350 linear feet of the entire length. Based on the proposed construction methods, it is assumed that the project will not result in discharges into wetlands or other waters of the United States as regulated by Section 404 of the Clean Water Act. However, since the main stem of the Trinity River is a navigable waterway, Section 10 authorization in accordance with the Rivers and Harbors Act of 1899 will be required.

The pipelines would cross the existing Trinity River channel with the top of pipe approximately 50 feet below the existing Trinity River channel bottom. Furthermore, the borings would occur in Eagle Ford Shale, which would protect the pipeline from long-term erosion hazards. The proposed alignment configuration and profile would also be consistent with future highway modifications, including the proposed Trinity Parkway profiles.

Halff believes that the proposed project will provide an alternative that contributes to the long-term water quality of the immediate area by eliminating the risk of an overflow incident recurring in the future. Although no discharges into waters of the United States will occur, a Section 10 water will be crossed which requires pre-construction notification in accordance with the guidelines set forth in NWP 12 – *Utility Line Activities*. The design team has been coordinating

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closely with the Corps Operation Division and a copy of this permit application is being forwarded to Mr. Douglas Perrin and Mr. Terry Basham.

We recognize the Corps' increased workload as a result of the new NWPs. However, as this is a very high priority project for the City of Dallas, we ask that you provide concurrence that the project is may be authorized by NWP 12 as expeditiously as possible. We look forward to working with you on this project. If you have any questions or require any additional information, please do not hesitate to call at (214) 346-6367.

Sincerely,
HALFF ASSOCIATES, INC.

Russell Marusak
Environmental Scientist

Enclosures

C: Mr. Richard Wagnor, P.E. – Dallas Water Utilities
Mr. Bill Carroll, P.E. - Chiang, Patel, & Yerby, Inc.
Mr. Melvin G. Green, R.G. - Chiang, Patel, & Yerby, Inc.
Mr. Bill Lewis, P.E. - Halff Associates, Inc.
Mr. Terry Basham - U.S. Army Corps of Engineers - Operations
Mr. Doug Perrin - U.S. Army Corps of Engineers - Operations

DD29FIG2.DWG

EXHIBIT 2

CITY OF DALLAS, WATER UTILITIES DEPARTMENT
CADIZ STREET PUMP STATION
WASTEWATER PIPELINE IMPROVEMENTS
PLAN OF ALTERNATIVES

Chiang, Patel & Yerby, Inc.
Consulting Engineers • Planners • Project Managers
Dallas, Texas

JUNE 2001

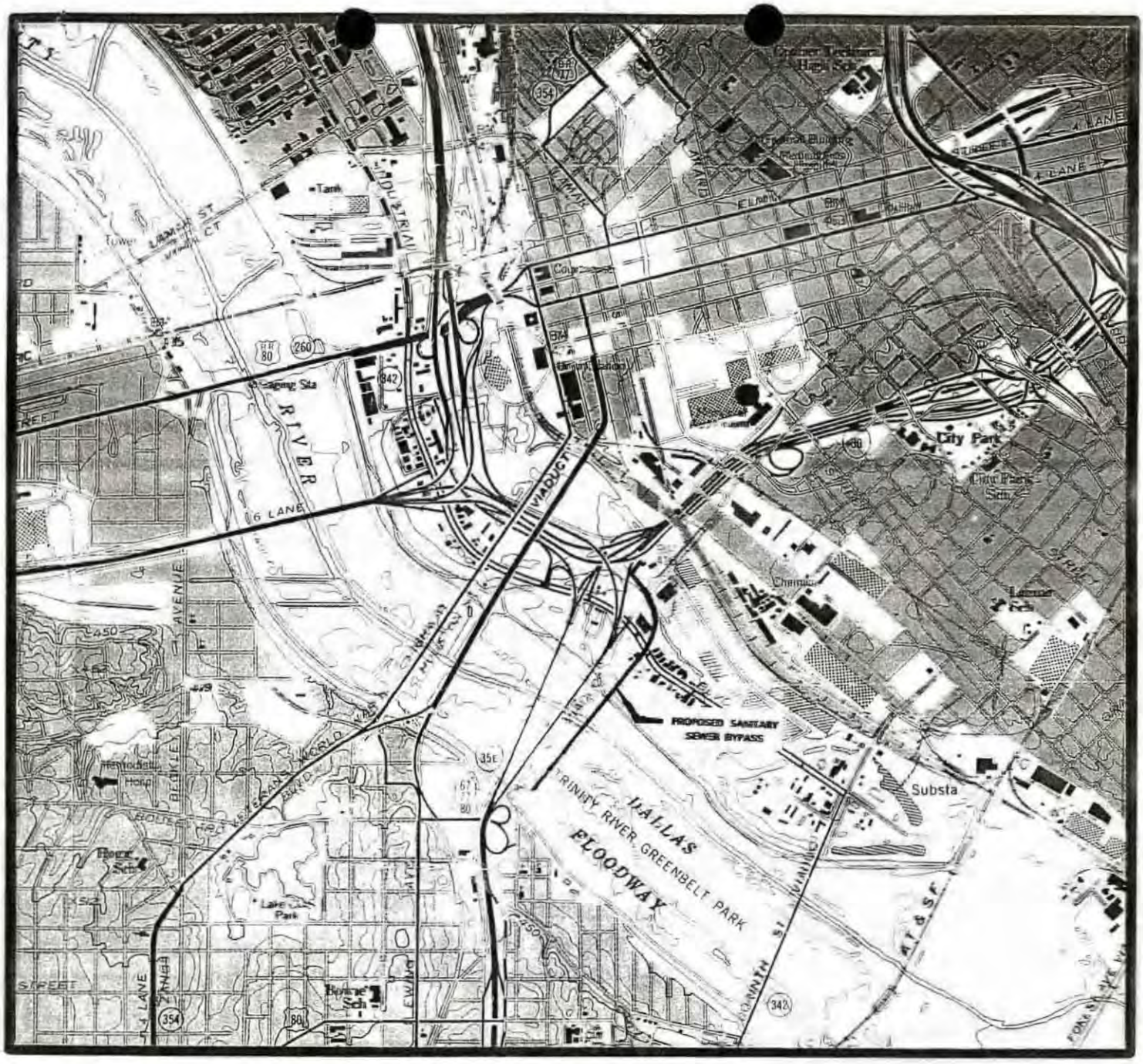


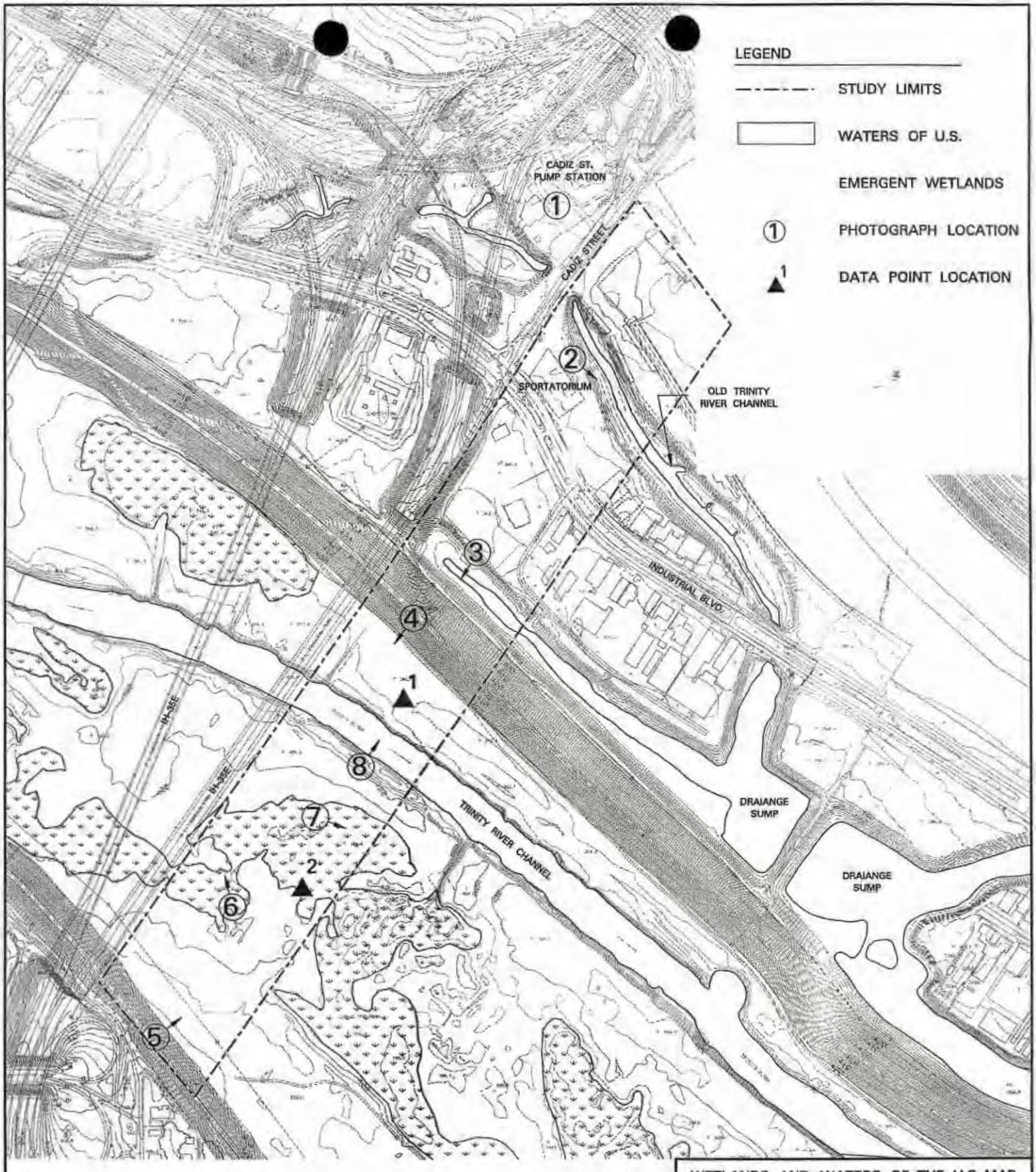
FIGURE 1

USGS QUADRANGLE

DALLAS QUADRANGLE

TEXAS-DALLAS CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)



WETLANDS AND WATERS OF THE U.S. MAP

CADIZ STREET PUMP STATION SEWER LINE

DALLAS WATER UTILITIES

DALLAS, TEXAS

HALFF ASSOCIATES, INC.
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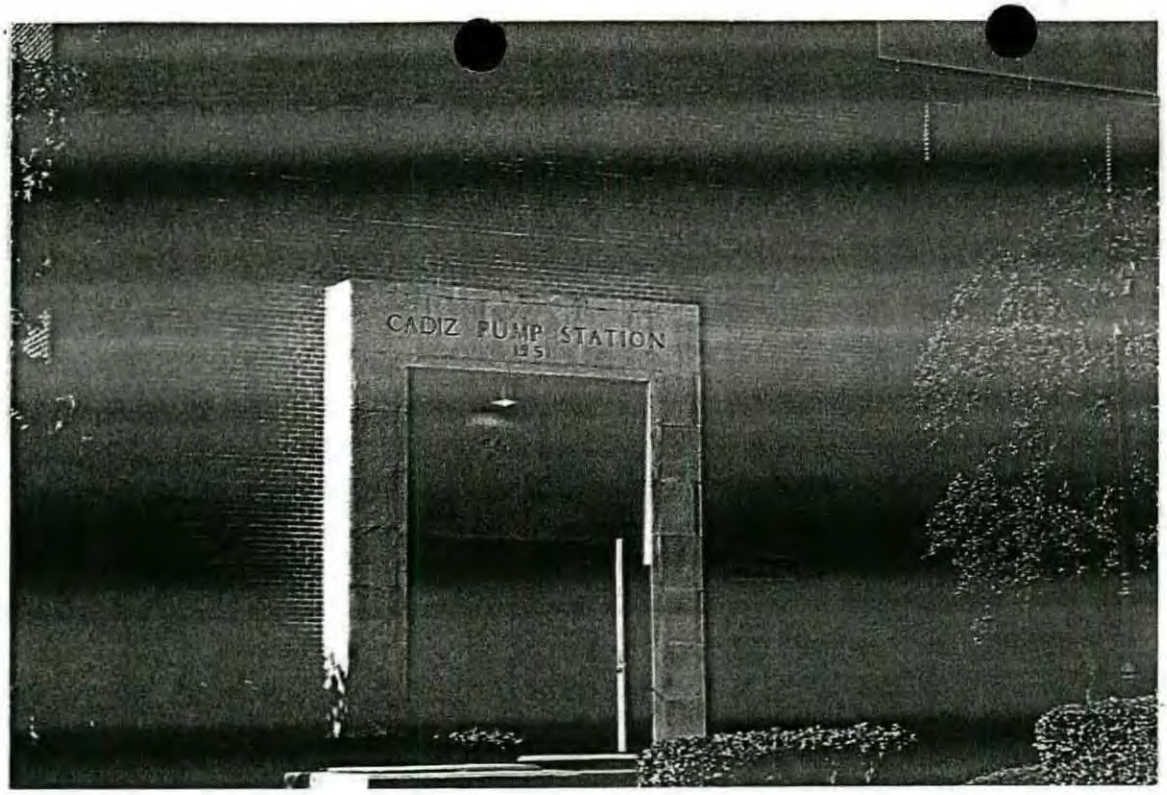
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
R.M.	CADD	NOV 2000	1" = 500'	1008 1072CWD01	1008-00-1072	3



PHOTOGRAPH 1

Description: View of the Cadiz Street Pump Station (new building)

PHOTOGRAPH 2

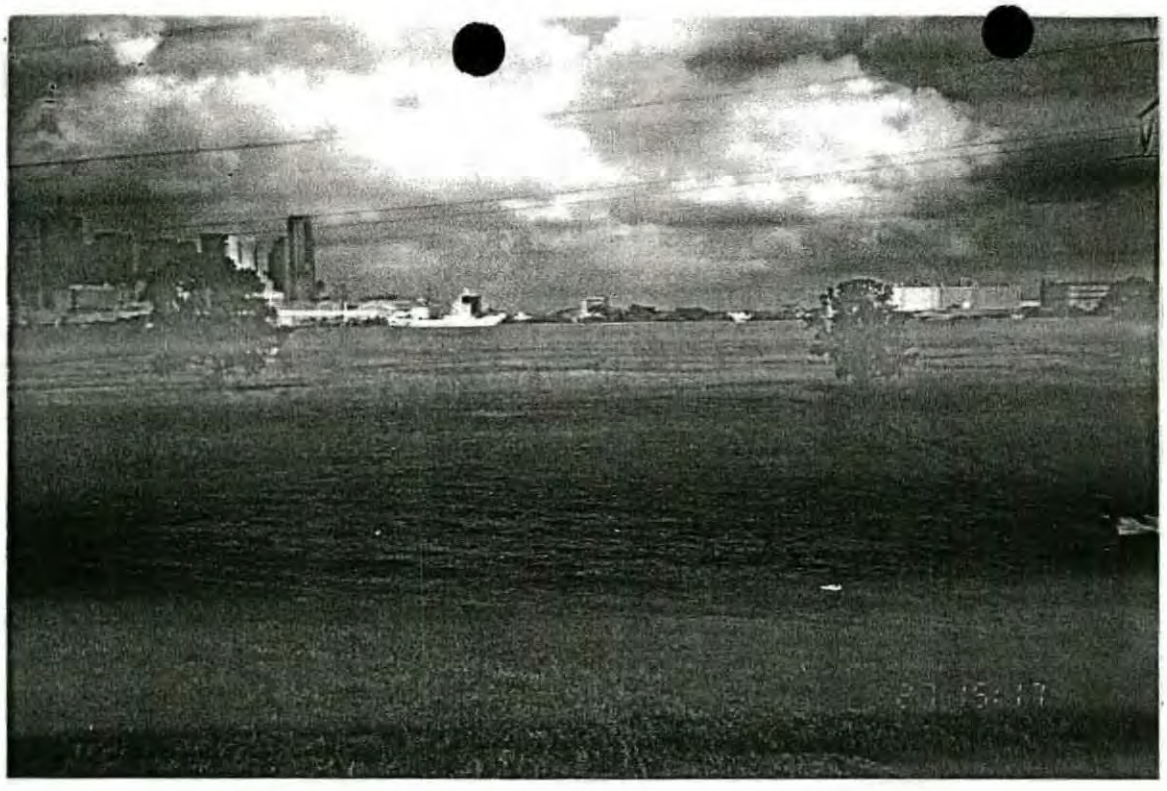
Description: View of old river channel crossing behind the Sportatorium building looking south

PHOTOGRAPH 3

Description: View of drainage sump crossing looking towards east levee

PHOTOGRAPH 4

Description: View of wetland area that has been disturbed by activities associated with recent river project



PHOTOGRAPH 5

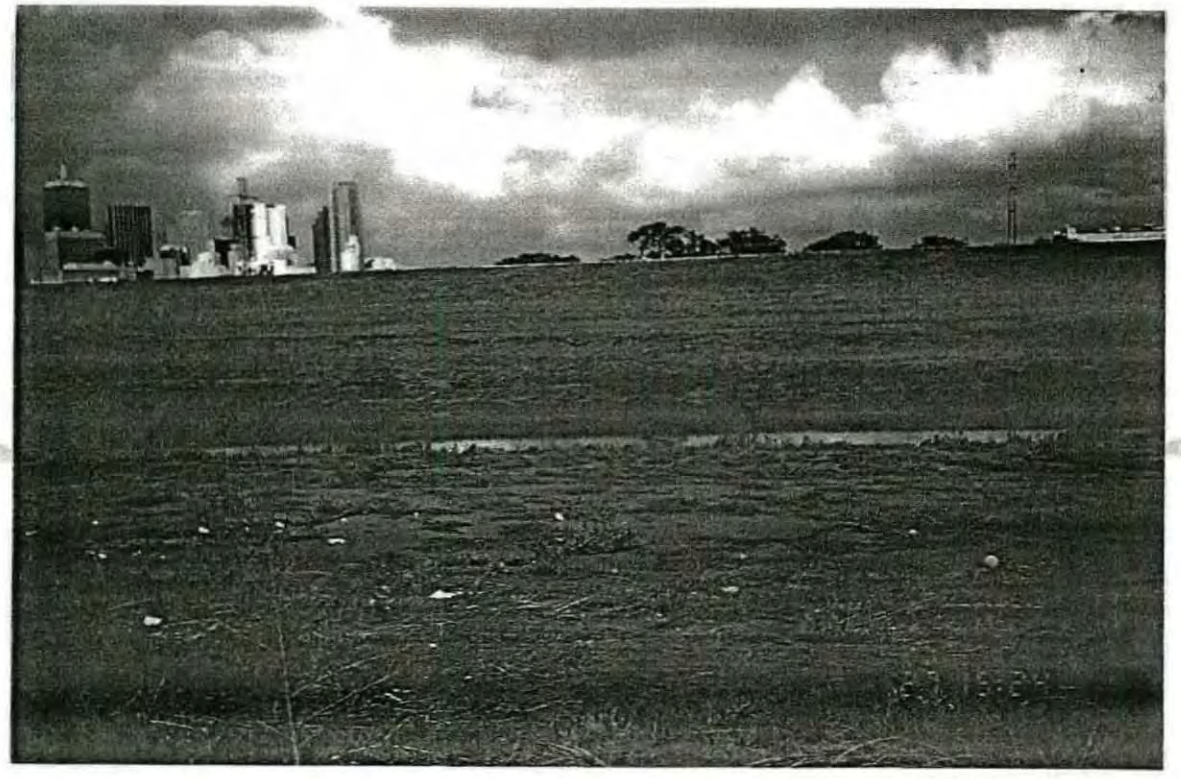
Description: View of corridor from west levee looking across the Dallas Floodway (east)

PHOTOGRAPH 6

Description: View of emergent wetland area in middle portion of the Dallas Floodway

PHOTOGRAPH 7

Description: View of recently mowed vegetation in same emergent wetland area



PHOTOGRAPH 8

Description: View of Trinity River channel from the west bank

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Trinity Parkway Applicant/Owner: North Texas Tollway Authority Investigator: Russell Marusak			Date: 3-4-99 County: Dallas State: TX
Do Normal Circumstances exist on the site: Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse)	☒Yes ☐Yes ☐Yes	☐No ☒No ☒No	Community ID: Transect ID: Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Carex crus-corvii*	herb	OBL	9.		
2. *Rumex crispus*	herb	FACW	10.		
3. *Eleocharis acicularis*	herb	OBL	11.		
4. *Xanthium strumarium*	herb	FAC-	12.		
5. *Salix nigra*	shrub	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 80%

Remarks: Vegetative criteria met.

HYDROLOGY

☐Recorded Data (Describe in Remarks):
- ☐Stream, Lake, or Tide Gauge
- ☒Aerial Photographs
- ☒Other

☐No Recorded Data Available

Field Observations:

Depth of Surface Water:	4-6	(in.)
Depth to Free Water in Pit:	4	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☒Inundated
- ☒Saturated in Upper 12 Inches
- ☐Water Marks
- ☐Drift Lines
- ☐Sediment Deposits
- ☐Drainage patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐Oxidized Root Channels in Upper 12 inches
- ☐Water-Stained Leaves
- ☐Local Soil Survey Data
- ☐FAC-Neutral Test
- ☐Other (Explain in Remarks)

Remarks: Site was included in previous wetland delineation dated April 1994 (Project #199900265). Review of aerial photography from various dates show the area to be inundated. Based on available data and current site conditions, it is safe to say hydrology is available to sustain these wetlands.

SOILS

Map Unit Name		Drainage Class:	Urban land complex
(Series and Phase):	Trinity clay	Field Observations	
Taxonomy (Subgroup):	Typic Pelludert	Confirm Mapped type?	☒ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		10 YR 4/2	2.5 Y 5/1	few, faint	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low-Chrome Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☒ Other (Explain in Remarks)

Remarks: Being a dark mineral soil, chroma determination of hydric soils was not as reliable. Some faint mottling was observed in soil sample which would indicate a fluctuating water table.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No
Hydric Soils Present?	☒ Yes	☐ No

Is this Sampling Point Within a Wetland? ☒ Yes ☐ No

Remarks: Sample point located east of R.L. Thorton Freeway on the north side of the river.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cadiz Street Pump Station Applicant/Owner: Dallas Water Utilities Investigator: Russell Marusak			Date: 10-27-00 County: Dallas State: TX
Do Normal Circumstances exist on the site: Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse)	☒Yes ☒Yes ☐Yes	☐No ☐No ☒No	Community ID: Transect ID: Plot ID: 2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Rumex crispus*	herb	FACW	9.		
2. *Cynodon dactylon*	herb	FACU	10.		
3. *Carex crus-corvii*	herb	FACW-	11.		
4. *Polygonum* sp.	herb	FACW	12.		
5. *Salix nigra*	shrub	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 80%

Remarks: Vegetative criteria not met. Mowing has made identification of true representative species difficult.

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐Stream, Lake, or Tide Gauge
- ☒Aerial Photographs
- ☐Other

☐No Recorded Data Available

Field Observations:

Depth of Surface Water:	None	(in.)
Depth to Free Water in Pit:	None	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐Inundated
- ☒Saturated in Upper 12 Inches
- ☐Water Marks
- ☒Drift Lines
- ☐Sediment Deposits
- ☐Drainage patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐Oxidized Root Channels in Upper 12 inches
- ☐Water-Stained Leaves
- ☐Local Soil Survey Data
- ☐FAC-Neutral Test
- ☐Other (Explain in Remarks)

Remarks: Soil heavily saturated due to recent rains.

SOILS

Map Unit Name		Drainage Class:	Urban land complex
(Series and Phase):	Trinity clay	Field Observations	
Taxonomy (Subgroup):	Typic Pelludert	Confirm Mapped type?	☒ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 3/2	2.5 YR 5/3	faint	clay

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low-Chrome Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Slight mottling varies from sample to sample

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No
Hydric Soils Present?	☒ Yes	☐ No

Is this Sampling Point Within a Wetland? ☒ Yes ☐ No

Remarks:

APPENDIX D

PUBLIC COORDINATION