FORT WORTH DISTRICT DALLAS FLOODWAY LEVEE SYSTEM SUPPLEMENTAL PROGRAM UPDATE

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United States Corps of Engineers Fort Worth District

Date: September 18, 2023





City of Dallas





AGENDA



- Project Background
- System Overview
- O&M Responsibilities
- Supplemental Overview
- Key Project Status & Highlights
- Program Schedule & Milestones
- Closing

U.S. ARMY



- 1908 Major Flooding. Caused downtown and all West Dallas to be devastated with damages totaling more than \$5 Million
- Mid 1920s Levees constructed upstream of the Elm Fork and West Fork confluence
- 1928 Construction began on the floodway improvement project
- 1942 April flood occurred; levees withstood it
- 1945 Amendment of the River and Harbor Act to include flood risk management
- 1948 USACE and the project sponsor, the Dallas County Flood Control District entered into an agreement for the Dallas County Flood Control District to participate in the project for the Dallas Floodway
- 1949-1950 Major flood occurs resulting in Congress commissioning a new USACE District in Fort Worth in 1950
- 1950 Amendment of the River and Harbor Act to include flood risk management
- 1950s Major USACE reconstruction begins
- 1958 USACE completes Dallas Floodway reconstruction project
- 1960 The Dallas Country Flood Control District formally accepts the USACE Operation and Maintenance Manual for the Dallas Floodway Project
- 1963 1975 City of Dallas improved interior drainage by adding several Pump Stations
- 1965 Dallas Floodway Extension Authorized by Flood Control Act of 1965
- 1979 City of Dallas added pumps to Able, Charlie, Pavaho and Delta Pump Stations
- 1989 Two floods occurred, causing \$12 Million in damage
- 1990 Another major flood causing \$300 Million in damages to the Trinity River basin
- 1991 Major floods in April, October and December caused \$242 Million
- 1998 Dallas voters authorized \$246 Million to fund flood control, transportation and recreation in the Trinity River Corridor
- 1999 Environmental Impact Statement (EIS) Record of Decision completed

- 2001 Supplemental to Record of Decision for the Dallas Floodway Extension
- 2004 Awarded Lower Chain of Wetlands Design Contract
- 2006 Major flood occurs resulting significant property damage

2007 – Congress authorized the Dallas Floodway Project for construction in the Water Resources Development Act of 2007 at a total project cost of \$459 Million

- 2008 Awarded Upper Chain of Wetlands Design Contract
- 2012 Base Condition Risk Assessment was conducted by USACE

2014 – Base Condition Risk Assessment was incorporated into the Final Feasibility Report. Amendment to the Water Resources Development Act of 1986

2015 – Record of decision (ROD) was issued in 2015 which allows for design and construction to begin (\$673,066,000)

Aug 2017 – Hurricane Harvey

Feb 2018 - Bipartisan Budget Act of 2018, Public Law 115-123

Jun 2019 – Project Partnership Agreement (PPA) signed between the Department of the Army and the City of Dallas

- Oct 2020 Awarded Hampton and Nobles Branch Design Contract
- Feb 2021 Completed AT&SF Demo
- Sep 2021 Awarded 277k Levee Raise and 4:1 Slope Flattening D-B Construction Contract
- Sep 2021 Awarded Lamar Levee Design Contract
- Dec 2021 Awarded Cadillac Heights Design Contract
- Feb 2022 Awarded Trinity Portland Pump Station D-B Construction Contract
- Mar 2022 Awarded Charlie Pump Station D-B Construction Contract

PROJECT BACKGROUND







SYSTEM OVERVIEW







OPERATIONS & MAINTENANCE



- City of Dallas (CoD) maintains eligibility in Public Law 84-99 through compliance with operations and maintenance (O&M)
 - PL 84-99 provides emergency flood fighting assistance and rebuild efforts in the event of a publicly declared disaster
- CoD's responsibility is to adhere to O&M manuals for each project implemented
 - Design, Construction and O&M is reviewed and approved by USACE
- □ USACE inspects the levees, sumps, river and pump stations
 - Site visits every year
 - Periodic Inspections 5 year cycle
- USACE maintains authority to render decisions under Section 408 for alterations to USACE Civil Works projects



SUPPLEMENTAL OVERVIEW



- Following a series of disaster declarations, Congress recognized the importance of fully funding flood risk management projects that could be implemented on an expedited schedule
- Dallas Floodway and Dallas Floodway Extension met criteria set and received:
 - \$457.7M in federal and local funding for the Dallas Floodway
 - \$135M in federal funding for Dallas Floodway Extension
- □ The City of Dallas is required to perform, and cost participate in certain items:
 - Cost share for Dallas Floodway (65% federal and 35% local)
 - Cost share for Dallas Floodway Extension (100% federal)
 - USACE performs routine cost analysis to account for current market conditions
 - Obtain fee simple land acquisition, subject to potential reimbursement for DFE only, easements and utility relocations, and all land must be "clean" prior to construction by USACE

City of Dallas and USACE partner to review all design and construction activities



DALLAS FLOODWAY PROJECT FEATURES





Authorization for Dallas Floodway by WRDA 2007, PL 110-114, Section 5141

Flood Risk Management Portion

- 277K cfs Levee Raise with AT&SF Bridge Modifications
- Emergency Action Plan Improvements
- Levee side slope flattening to 4H:1V (Betterment @ 100% local costs)
- Hampton Pump Station
- Nobles Branch Sump Improvements
- Charlie Pump Station
- Trinity Portland Pump Station
- Delta Pump Station

Ecosystem Restoration

- River Relocation (add meanders to approx.8 miles of the Trinity River in the Floodway)
- Approx. 80 acre wetland in Floodway



AT&SF BRIDGE DEMOLITION OVERVIEW



- Demo the existing trestle and concrete bridge
- □ <u>Completed</u> for \$1.7M
- Current Status
 - Construction completed February 2021









277K LEVEE RAISE & SLOPE FLATTENING OVERVIEW







277K LEVEE RAISE & SLOPE FLATTENING STATUS



- Raising both the east and west levees in order to sustain a 277K Cubic Feet per Second (CFS) water surface elevation
- □ Side slope flattening on river side of the levees (anywhere the existing slope is steeper than 4H:1V)
- Current Status
 - Design-Build construction contract awarded on 29 September 2021 to Southwest Valley Constructors (SWVC) in the amount of ~\$56M
 - Construction began in June 2022 and is scheduled to be completed in summer 2024



Construction activities along the West Levee





277K LEVEE RAISE & SLOPE FLATTENING CONSIDERATIONS



- Reduce Flood Risk and Minimize Flood Impacts
- Increase Embankment Stability and Decrease Operations & Maintenance Costs
- During construction, the level of protection that the levee provides will not be compromised at any time.
- There are redundancies built into the construction methodology to maintain the current levee integrity.
- □ The construction is being performed in sections.
- As construction progresses USACE and the City will inform the community of any scheduled interruptions to the recreational opportunities.



TRINITY PORTLAND PUMP STATION OVERVIEW







TRINITY PORTLAND PUMP STATION FEATURE & STATUS



- Design-Build Contract
- Build new pump station
 - 2 125K gallons per minute (gpm) concrete volute pumps.
 - Total capacity of 250K gpm
 - 1 6K gpm low flow sump pump
- Current Status
 - Design-Build construction contract awarded on 24 February 2022 to RKE Contractors in the amount of ~\$59M
 - Design efforts are complete
 - Construction start ~ late 2023
 - Construction complete ~ 2025



Trinity Portland Groundbreaking Ceremony



CHARLIE PUMP STATION OVERVIEW







CHARLIE PUMP STATION FEATURE & STATUS



Design-Build Contract

Build new pump station and demolish the existing pump station

- 3 75K gpm concrete volute pumps
 - Total capacity of 225K gpm
- 1 6K gpm low flow sump pump
- Demolish the old pump station
 - To be completed when new pump station is online
 - Will be a separate contract
- Current Status
 - Design-Build construction contract awarded on 15 March 2022 to LGC Global in the amount of ~\$63M
 - Design efforts are underway
 - Construction start ~ late 2023
 - Construction completion ~ 2025



HAMPTON PUMP STATION OVERVIEW







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HAMPTON PUMP STATION FEATURE & STATUS



- Design-Bid-Build Contract
- Build new pump station (Hampton 3)
 - 5 140K gpm concrete volute pumps
 - Total capacity of 700K gpm
- □ Renovate existing pump station (NHX) to include electrical upgrades and AC/Remote Terminal Unit
- Expected award amount between ~\$111M to \$130M
- Demolish the old pump station
 - Not part of the Hampton 3 & NHX design
- Current Status
 - Design is underway
 - Construction start ~ late 2025
 - Construction completion ~ 2029



DELTA PUMP STATION OVERVIEW





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DELTA PUMP STATION FEATURE & STATUS



Design-Build Contract

Demolition and replacement of existing pump station

2 replacement pumps – 700 HP

Upgrade electrical, HVAC, trash rack, and access road

□ Expected award amount between ~\$10M to \$15M

Current Status

- Design-Build RFP to be advertised late 2023
- Scheduled to be awarded in early 2024
- Construction start ~ late 2024
- Construction completion ~ 2026



NOBLES BRANCH SUMP IMPROVEMENTS OVERVIEW









Existing Headwall & Slide Gate structure to be improved



NOBLES BRANCH SUMP IMPROVEMENTS FEATURE & STATUS



- Design-Bid-Build Contract
- □ Add 4–60-inch pipe culverts with sluice gates
- Extend existing 60-inch gated culvert under Empire Central Drive
- Replace existing sluice gate and headwall
- □ Realign existing 48-inch Reinforced Concrete Pipe (RCP) to parallel the new 60-inch culverts
- Expected award amount between ~\$5M to \$10M
- Current Status
 - Design is complete
 - Real Estate acquisition underway
 - Construction start ~ mid 2025
 - Construction completion ~ 2026



DALLAS FLOODWAY EXTENSION FEATURES





Authorization of Dallas Floodway Extension by Section 301, River and Harbor Act of 1965, modified by Section 351 WRDA 1996 and Section 256 of WRDA 1999

Flood Risk Management Portion

- Flood control wetlands (Upper& Lower Chain of Wetlands)
- Cadillac Heights Levee
- Lamar Levee

Other portions include

- Ecosystem restoration
- Transportation
- Recreation



LAMAR LEVEE OVERVIEW







LAMAR LEVEE FEATURE & STATUS



- Design-Bid-Build
- ~3 miles earthen levee with floodwalls and flood gates
- Drainage sumps and levee crossings
- Current Status
 - Design contract was awarded on 29 September 2021 to FNI, COWI, & CDM Smith JV (FCC)
 - Design and Real Estate Acquisition are underway
 - Construction start ~ early 2028
 - Construction completion ~ 2030



A1 OVERALL SITE PLAN

CADILLAC HEIGHTS LEVEE OVERVIEW









View of typical concept of Roller Gate



CADILLAC HEIGHTS LEVEE FEATURE & STATUS



- Design-Bid-Build
- ~2.25 miles earthen levee with floodwalls and flood gates
- □ At least three railroad crossings and five major street crossings
- Current Status
 - Design contract was awarded on 3 December 2021 to Arcadis
 - Design and Real Estate Acquisition are underway
 - Construction start ~ mid 2028
 - Construction completion ~ 2031



SCHEDULE AND MILESTONES



Delta

In solicitation

Nobles Branch Sump

- In pre solicitation phase

Start Construction ~ late 2024 • Start Construction ~ early 2025 • Start Construction ~ mid 2025

□ Hampton & NHX

Design underway

13-Sep-23	2023		2024	2025	202	2026		2027		2028	2029		2030		2031
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DALLAS FLOODWAY															
277K Levee Raise															
4:1 Slopes (betterment)															
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QUESTIONS?



https://www.swf.usace.army.mil/Missions/Civil-Works/Dallas-Floodway/

An official website of the United States government Here's how you know.										
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Dallas Floodway Project

Project Overview

The U.S. Army Corps of Engineers (USACE). Fort Worth District's (SWF) Dallas Floodway Project is located in Dallas, Texas. It is a complex project in cooperation or partnership with multiple units of local, state and federal government. It addresses a number of regional concerns, although flood protection for the citizens of Dallas remains the cornerstone of this multi-faceted effort.

Modifications to the existing Dallas Floodway Project were authorized in the Water Resources Development Act (WRDA) of 2007, Public Law 110-114, Section 5141, at a total project cost of \$459 million, with an estimated Federal share of \$298 million and an estimated non-Federal share of \$161 million. The Final Feasibility Report provides a comprehensive assessment of alternatives to improve the Dallas Floodway System.

The USACE has oversight responsibility for all activities within the federally authorized Dallas Floodway System. The USACE-SWF is a lead actor in some of the projects, such as the existing Dallas Floodway, which was strengthened and improved by USACE in the 1950s to reduce the risk of flooding. It was designed to handle a Standard Project Flood event. In other projects within the confines of the Dallas Floodway listed below, the USACE plays a smaller supporting role or only an oversight function.

The Dallas Floodway Project is located along the Trinity River upstream from the abandoned Atchison, Topeka and Santa Fe (AT&SF) trestle to the confluence of the West and Elm Forks, then upstream along the West Fork for approximately 2.2 miles, and upstream about 4 miles along the Elm Fork.

Public safety is the No. 1 priority in the U.S. Army Corps of Engineers Levee Safety Program. The Dallas Floodway system consists of the Dallas Floodway and the Dallas Floodway Extension Projects. The Dallas Floodway Project, in addition to the adjacent Dallas Floodway Extension Project, focuses on three of five inter-related components within the Dallas Floodway System: Todo y rotection, ecosystem restoration and recreation in partnership with the local sponsor, the City of Dallas. The Dallas Floodway Project was designed to reduce flood risk for the citizens of Dallas. Both the USACE and the City of Dallas share the responsibility for public safety, and both are committed to ensuring the integrity of the system. Each project has its own web section accessible from this Fort Worth District home page. The USACE also provides public access to a National Levee Database which contains additional information on the Dallas Floodway levees. The USACE is also involved in two other major components of the project - transportation and community/economic development.

SWF Public Affairs Contact Information Mr. Clay Church Phone: 817-886-1314 Email: Clayton.A.Church@usace.army.mil

Project Menu

Project Overview News Releases Map & Photo Library Helpful Links

Fact Sheets

2015 Modified Dallas Floodway Project Update 2013 Dallas Floodway Project Who certifies levees in Dallas?

History Dallas Floodway Timeline (1908 - 2013) History to 2003 Dallas Reclaims 10,000 Acres in the Heart of the City (1929) Engineering Inventory and Analysis of the Dallas Floodway (2010) ...

https://www.swf.usace.army.mil/Missions/Civil-Works/Dallas-Floodway-Extension/

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US Army Corps of Engineers Fort Worth District Website

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Dallas Floodway Extension Project



Project Overview

The Dallas Floodway Extension (DFP) Project is located in Dallas, Texas, along the Trinity River beginning where the Dallas Floodway ends (at the abandoned Atchison, Topeka and Santa Fe trestle) and extending downstream to the area where IH-20 and Dowdy Ferry Road intersect. It is a complex project in cooperation and partnership with multiple units of local, state and federal government. It addresses a number of regional concerns, although reducing flood risk for the citizens of Dallas remains the cornerstone of this multi-faceted effort. Project Menu

Public Notice 6/11/2021 - Programmatic agreement regarding DFE Project Overview Dallas Floodway Timeline (1908 - 2013) Lower Chain of Wetlands Fact Sheet Upper Chain of Wetlands Fact Sheet Trinity River Corridor Project Update (11/13/2013) Dallas City Council briefing (8-21-2013) Corps-built ecosystem in urban Dallas attracts wildlife (2013) Mitigation plantings in harsh North Texas climate challenge U.S. Army Corps of Engineers team (2013) Trinity Bird Count birding report, Lower Chain of Wetlands slide show (2013) Bird list, Trinity Bird Count, Lower Chain of Wetlands (2013) Building for birders while reducing flood risk Lower Chain of Wetlands Status Report (March 2015) Girl Scouts, Master Naturalists support Floodway ecosystem restoration project Corps Restores Wetlands along DFE News Releases Map & Photo Library Helpful Links

https://www.usace.army.mil/missions/civil-works/budget/