Dallas Floodway and Dallas Floodway Extension Update

June 27, 2022



U.S.ARMY



US Army Corps of Engineers BUILDING STRONG®



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Presentation Overview

- Purpose
- Background
- Flood Protection Projects
- Operation and Maintenance
- Contact Information





Purpose

Provide a historical background on the Dallas
Floodway System and Flood Risk Management
Projects.





Background





1908 – Major Flooding. Caused downtown and all West Dallas to be devastated with damages totaling more than \$5 Million

1950

- Mid 1920s Levees were constructed upstream of the Elm Fork and West Fork confluence
- 1928 Construction began on the floodway improvement project

1940.

1945

1920

- 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 the interior drainage by adding several Pump Stations
- 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 occurred 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

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- 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.
- 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

1980

1991

197

1961

- Feb 2018 Bipartisan Budget Act of 2018, Public Law 115-123
- June 2019 the PPA was signed between the Department of the Army and the City of Dallas
- Oct 2020 Hampton and Nobles Branch Design Contract awarded
- Feb 2021 Completed AT&SF Demo
- Sept 2021 Awarded 277k Levee Raise and 4:1 Slope Flattening Construction Contract
- Feb 2022 Awarded Trinity Portland Pump Station Construction Contract
- March 2022 Awarded Charlie Pump Station Construction Contract
- Current Conducting a Change Control Board for Dallas Floodway.



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Trinity River in Dallas through the years First Dallas Floodway levee system as built: 1930



Historic Context: USACE Strengthening in 1950s - Today



Bi-Partisan Budget Act of 2018 Supplemental Projects







Supplemental Background

- 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:
 - \$223M in federal and local funding for the Dallas Floodway
 - \$135M in federal funding for Dallas Floodway Extension





Supplemental Background

- City 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):
 - City required to obtain fee simple land acquisitions, subject to potential reimbursement, easements and utility relocations, and all land must be "clean" upon transfer to USACE for construction
- City and USACE are partnering to review all design and construction activities





Dallas Floodway System





Dallas Floodway

- Dallas Floodway geographic boundary:
 - West and Elm Forks through the confluence of the Trinity River to the AT&SF bridge near the DART line at 8th Street/Riverfront







Dallas Floodway Supplemental



MODIFIED DALLAS FLOODWAY PROJECT - REFERENCE MAP AND RECOMMENDED PLAN

AUTHORIZATION WRDA 2007, PL 110-114, SECTION 5141

PROJECT FEATURES

277K CFS LEVEE RAISE AND SIDE SLOPE FLATTENING

Awarded for \$55,990,600

Raise the East & West Levees as well as flatten riverside slopes 4:1

TRINITY PORTLAND PUMP STATION

- Awarded for \$59,165,000
- Build new pump station
- 2 125,000 gpm concrete volute pumps
- I 6,000 gpm low flow sump pump

DELTA PUMP STATION

- Approximately \$9M
- Building replacement
- 2 replacement pumps—700HP
- · Upgraded electrical, HVAC, trash rack, and access road

CHARLIE PUMP STATIONS

- Awarded for \$63,559,380
- · Build new pump station and demolish the existing pump station
- 3 75,000 gpm concrete volute pumps
- I 6,000 gpm low flow sump pump

HAMPTON PUMP STATIONS

- Approximately \$111M
- Build new pump station, renovate existing station to include electrical upgrades and demolish the old pump station
- New station: 5 140,000 gpm concrete volute pumps

NOBLES BRANCH SUMP

- Approximately \$5M
- 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 to parallel the new 60 inch culverts

AT&SF BRIDGE DEMOLITION

- Completed \$1.7M
- · Demo the existing trestle and concrete bridges



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277K CFS Levee Raise & Side Slope Flattening

- Raising both the east and west levees to be able to sustain a 277K Cubic Feet per Second (CFS) water surface elevation along the entire length of the levee where the elevation is less than the water surface elevation corresponding to the 277k flow.
- 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 21 to SWVC in the amount of ~\$56M
 - Construction began in June 2022 and is scheduled to be completed in summer 2024





277K/4:1 Slope Flattening Site Plan





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Project Improvements

- Reduce Flood Risk
- Minimize Flood Impacts
- Less Steep and Increase Embankment Stability
- Decrease Over Operations & Maintenance Costs





Project Improvements

- 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 scheduled to be performed in sections.
- As construction progresses the Corps and the City will inform the community of any scheduled interruptions to the recreational opportunities.







Stripping of the Riverside Slope









Trinity Portland Pump Station

- Build new pump station
 - ► 2 125K gpm concrete volute pumps
 - ▶ 1 6K gpm low flow sump pump
- Current Status
 - Design-Build construction contract awarded on 24 February 22 to RKE in the amount of ~\$59M
 - Design efforts are under way
 - Construction is scheduled to start in winter 2023 and finish in spring 2025





Trinity Portland Pump Station Site Plan



Dallas Floodway Extension

- Dallas Floodway Extension geographic boundary:
 - AT&SF bridge near the DART line at 8th to IH20/Dowdy Ferry





Dallas Floodway Extension Supplemental



AUTHORIZATION

- Section 301, River and Harbor Act of 1965 (flood control)
- modified by Section 351 WRDA 1996 (inclusion of non-Federal constructed work), and Section 356 of WRDA 1999 (addition of ecosystem and recreation features)

PROJECT FEATURES

LAMAR LEVEE

- Approximately \$80M
- I 6,037 feet (approximately 3 miles)
- Earthen levee with floodwalls and flood gates
- Five drainage sumps
- Four levee crossings

CADILLAC HEIGHTS LEVEE

- Approximately \$55M
- 11,89 Ifeet (approximately 2.25 miles)
- Earthen levee with floodwalls and flood gates
- At least three railroad crossings and five major street crossings



Schedule

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Operations and Maintenance





Operations and Maintenance

- City 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
- O&M requirements must be met to not negatively impact USACE and FEMA related regulations





Operations and Maintenance

- City responsibility 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
 - Annually and periodically inspections
 - Annual O&M Inspection completed (13 15 Oct 2021)





USACE Contact Information

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Questions?



