

# Dallas Floodway and Dallas Floodway Extension:

August 2022



US Army Corps of Engineers  
**BUILDING STRONG**



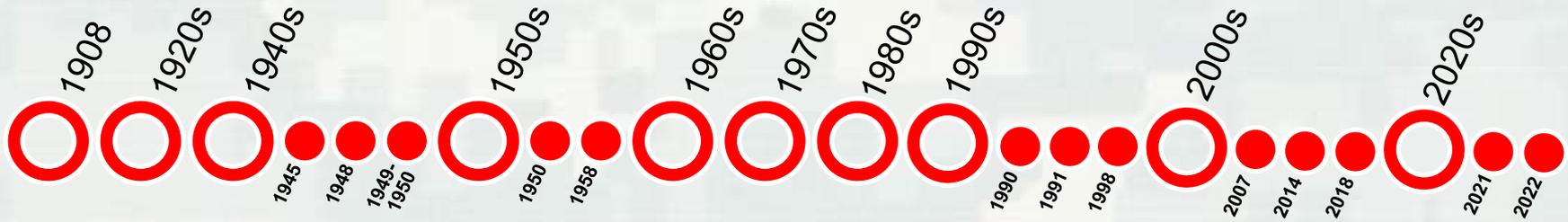
# Presentation Overview

- Background
- Program Overview
- Regional Water Management
- Operation and Maintenance
- Bi-Partisan Budget Act of 2018
- Flood Protection Projects
- Program Schedule



# Background



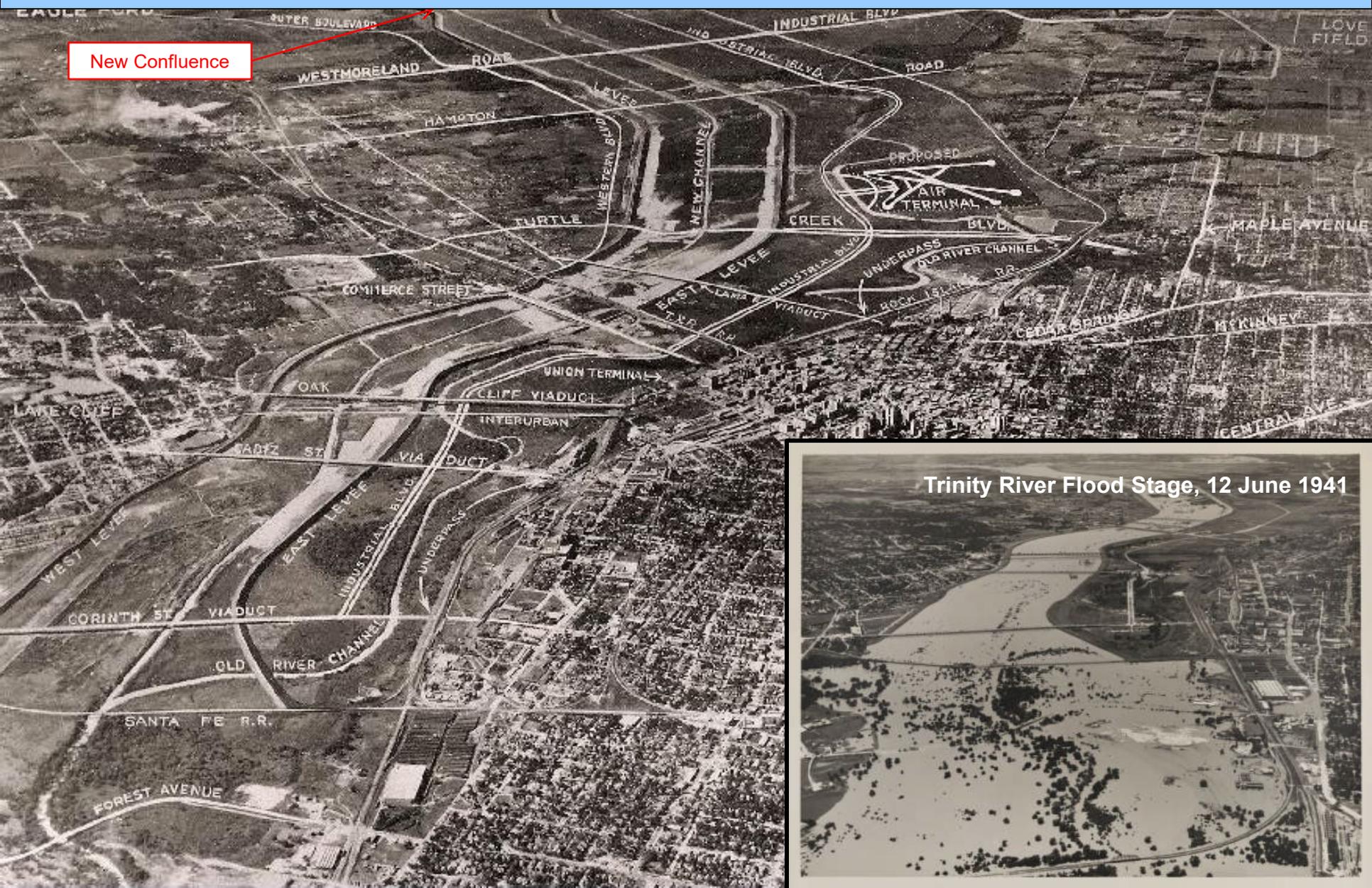


- **1908** – Major Flooding. Caused downtown and all West Dallas to be devastated with damages totaling more than \$5 Million
- **Mid 1920s** – Levees were constructed upstream of the Elm Fork and West Fork confluence
- **1928** – *Construction began on the floodway improvement project*
- **1942** – 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 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
- **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
- **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.



# Trinity River in Dallas through the years

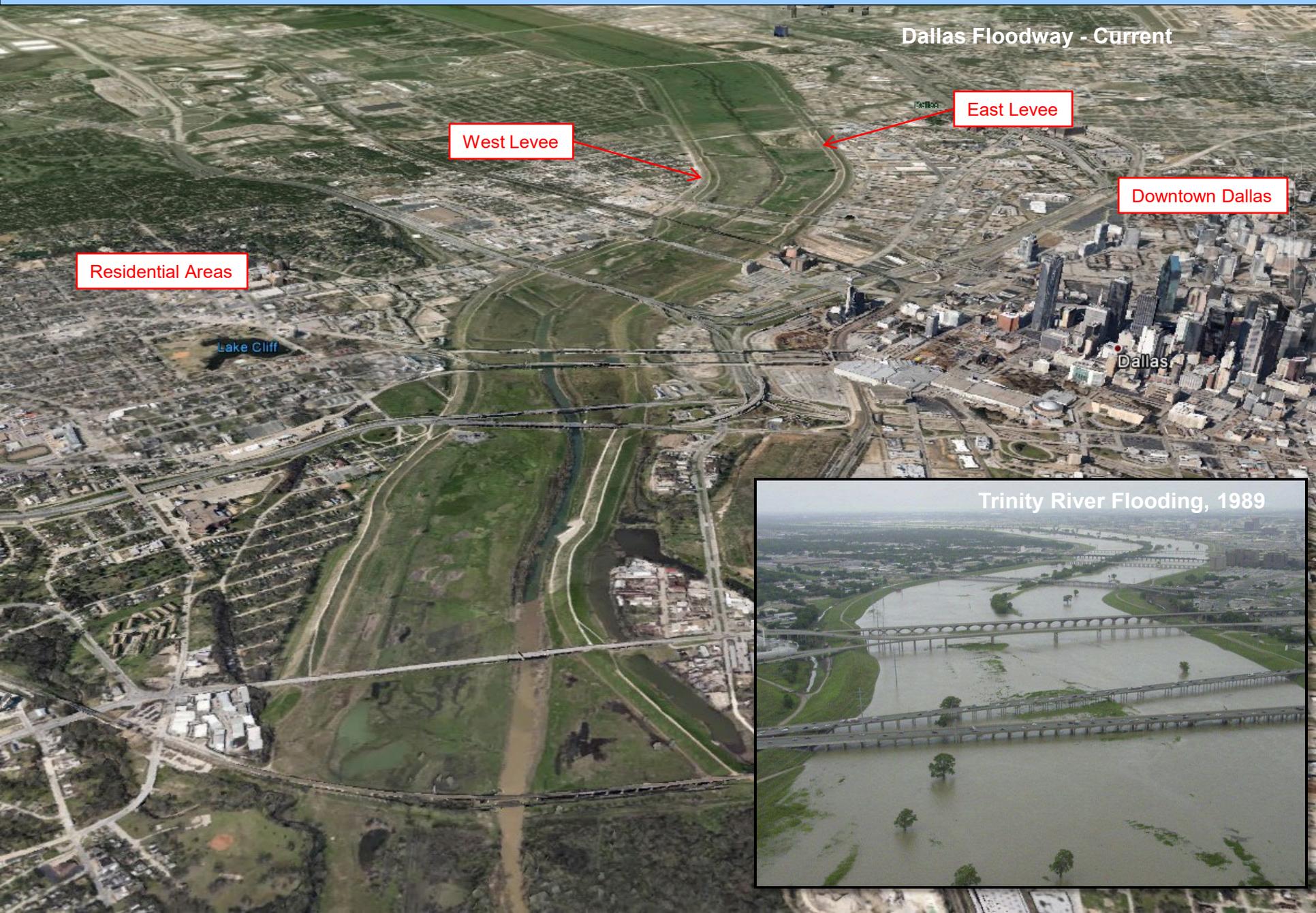
## First Dallas Floodway levee system as built: 1930



New Confluence

Trinity River Flood Stage, 12 June 1941

# Historic Context: USACE Strengthening in 1950s - Today



Dallas Floodway - Current

West Levee

East Levee

Downtown Dallas

Residential Areas

Lake Cliff

Dallas

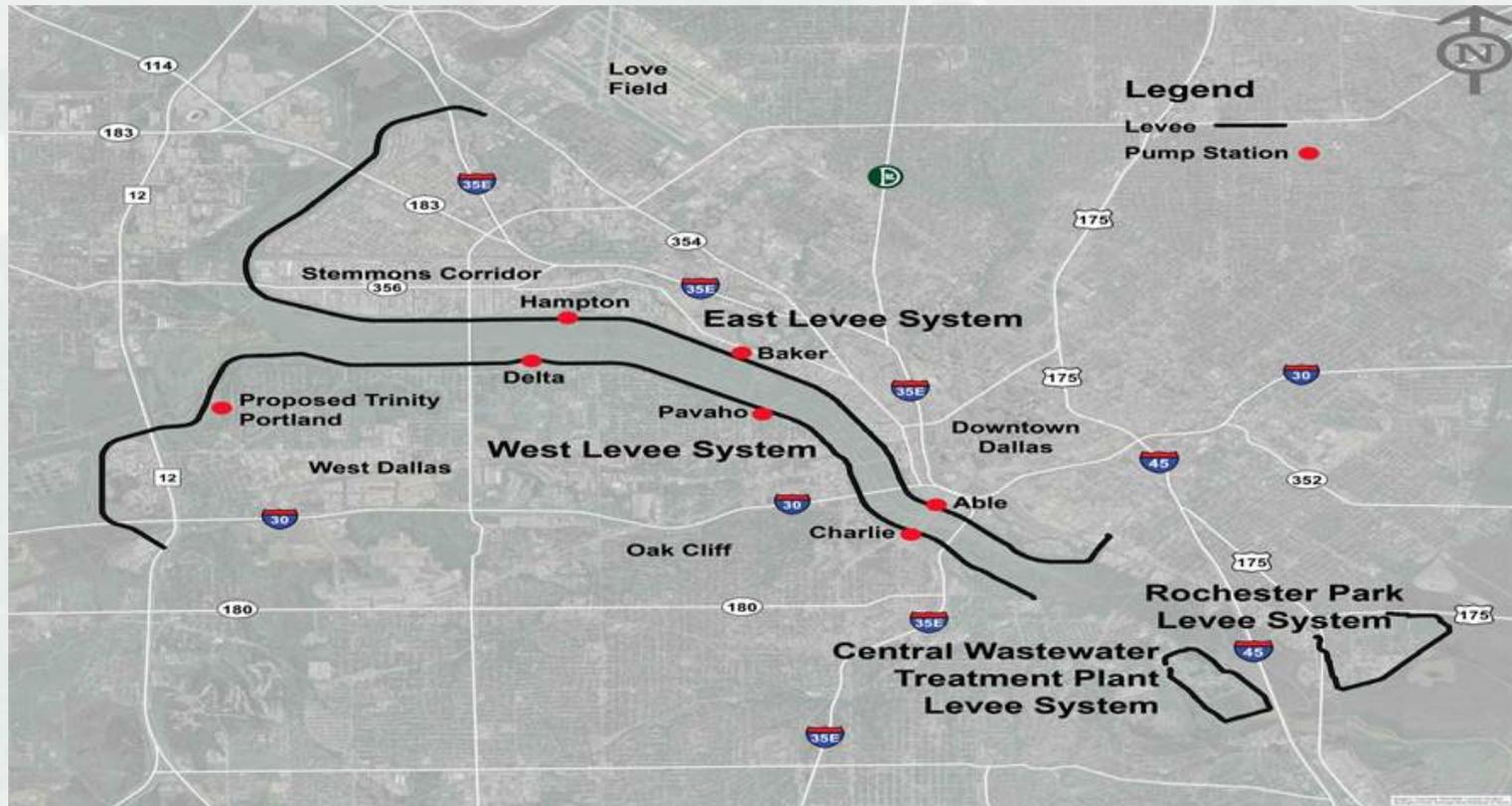


Trinity River Flooding, 1989

# Program Overview



# Dallas Floodway System



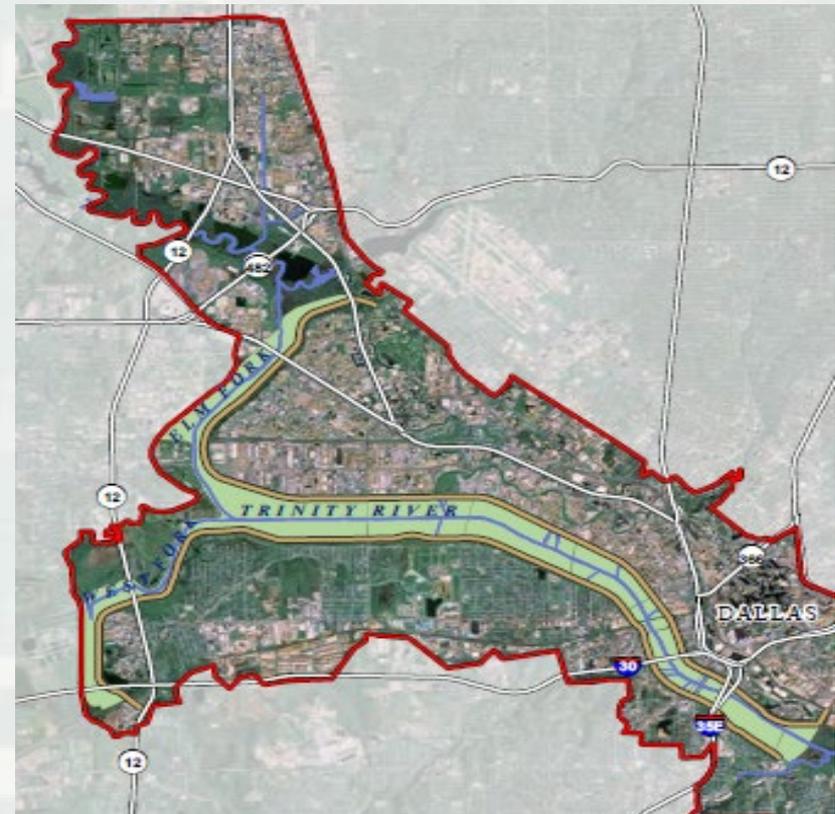
# Dallas Floodway

- Water Resources Development Act of 2007 established the current project known as the Dallas Floodway Project
- Final approvals and a record of decision (ROD) was issued in 2015 which allows for design and construction to begin
- 2015 decision outlines:
  - ▶ Federal cost share project (\$673M – 65% federal and 35% local)
  - ▶ Non-federal cost share project
  - ▶ Project implementation order
  - ▶ Project funded through workplan, no federal funding to date
- 2018 Bi-Partisan Budget Act appropriated all flood risk management projects to be complete on an expedited schedule



# 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 8<sup>th</sup> Street/Riverfront



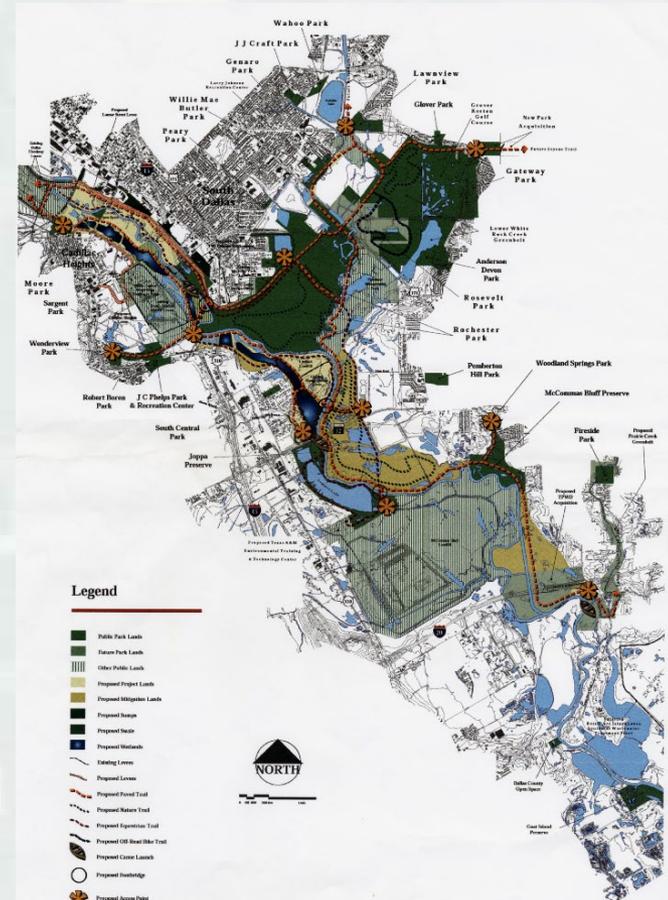
# Dallas Floodway Extension

- Dallas Floodway Extension was authorized in 1965 as part of the partnership with the Corps
- Major flooding in the late 1980s/early 1990s resulted in the City building the Rochester Levee and making major improvements to the Central Wastewater Treatment Levee ahead of the Corps' study completion
- 2018 Bi-Partisan Budget Act appropriated all flood risk management projects to be complete on an expedited schedule



# Dallas Floodway Extension

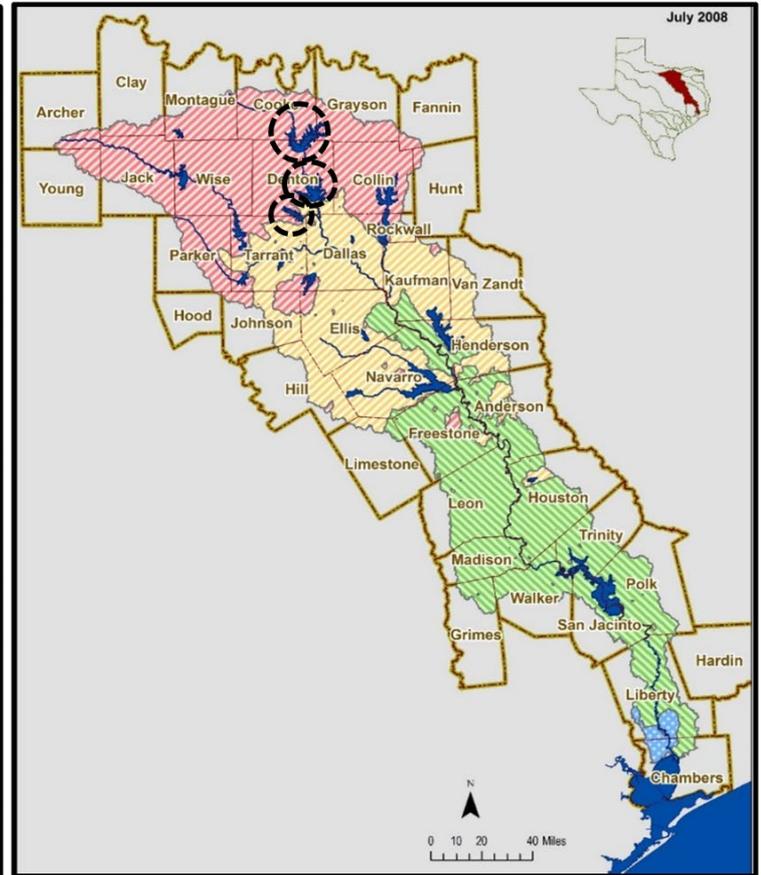
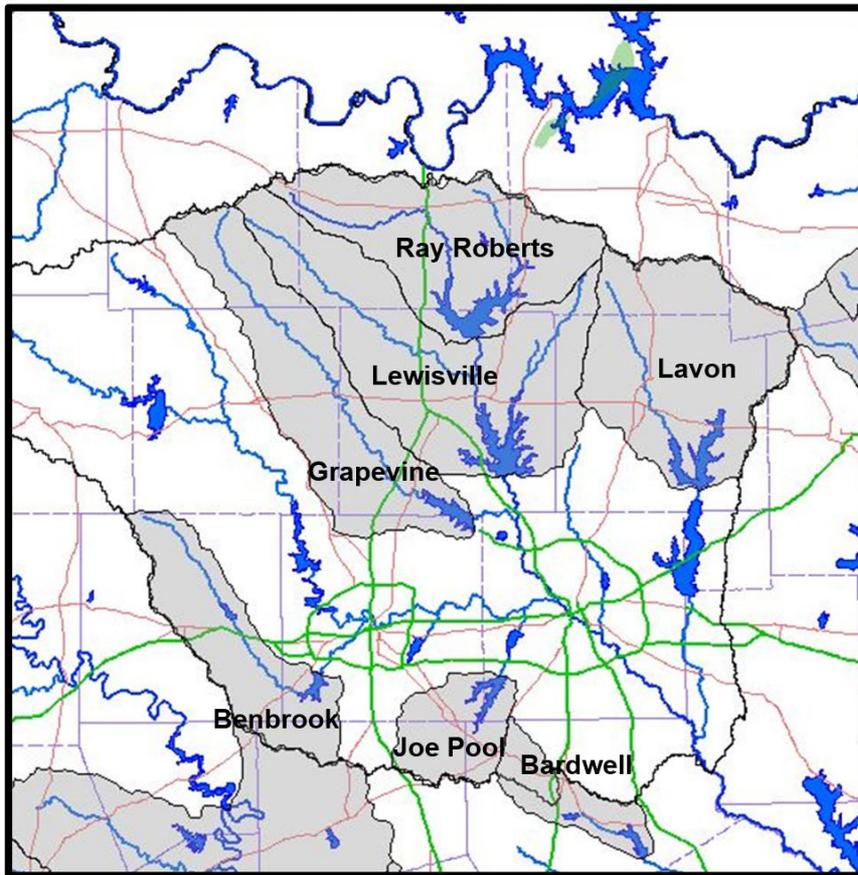
- Dallas Floodway Extension geographic boundary:
  - ▶ AT&SF bridge near the DART line at 8th to IH20/Dowdy Ferry



# Regional Water Management



# Water Management



# Operations and Management



# 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)



# Operations and Maintenance

- In order to move forward with any construction that touches the levee template, DF and DFE lands, easements, and rights-of-way, it requires additional permitting by the USACE commonly referred to as a 408
  - ▶ Template is any land within 150' from the toe and the levee
  - ▶ City is responsible for ensuring compliance for any action permitted through the life of the improvement
- Projects that touch the waters of the US may require a 404 permit or Section 10 Permit



# 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

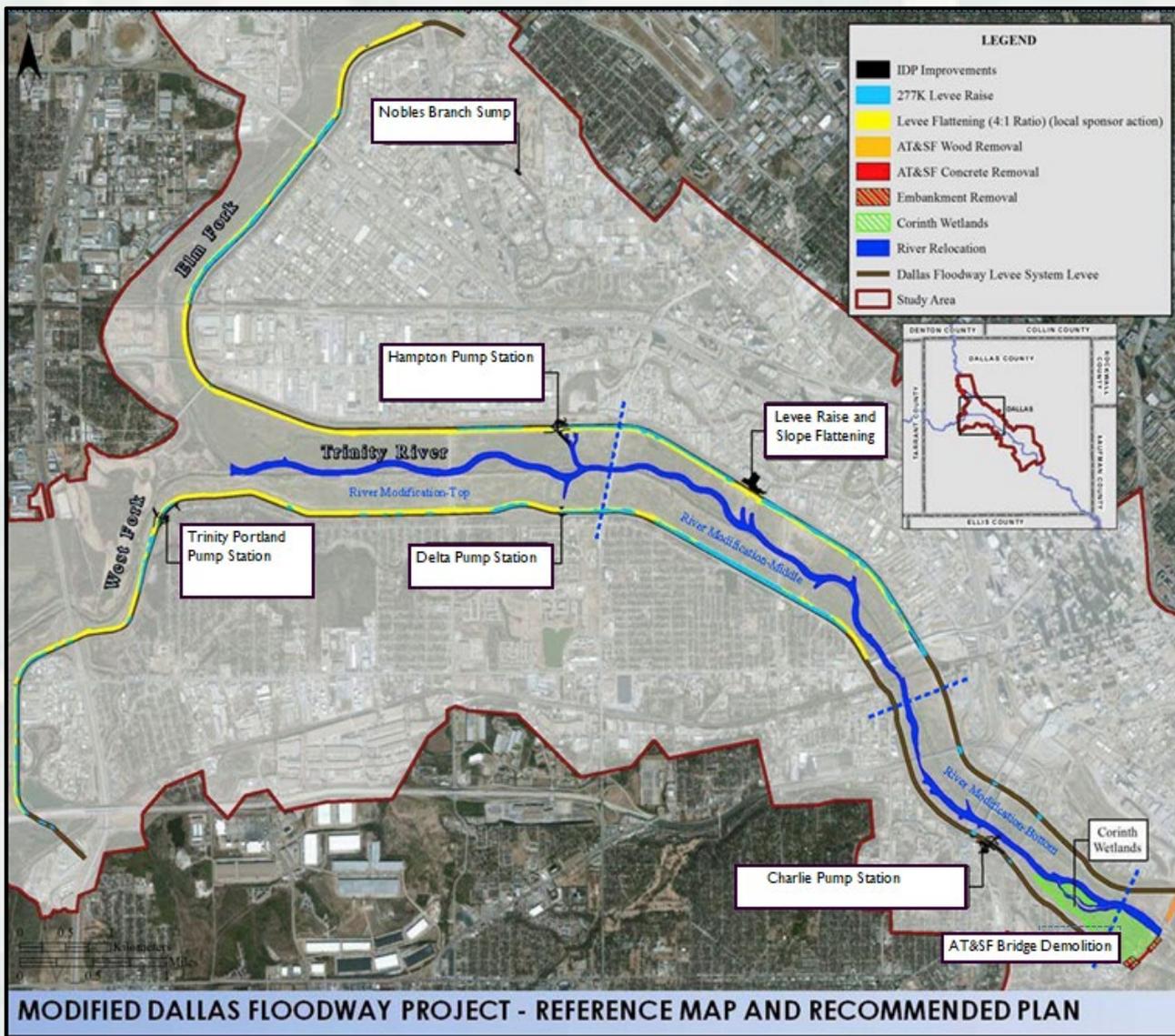
- City is required to perform, and cost participate in certain items:
  - ▶ Cost share for Dallas Floodway (65% federal and 35% local):
  - ▶ Cost share for Dallas Floodway Extension (100% federal):
  - ▶ City required to obtain fee simple land acquisitions, subject to potential reimbursement, easements 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



# Flood Protection Projects



# Dallas Floodway Supplemental

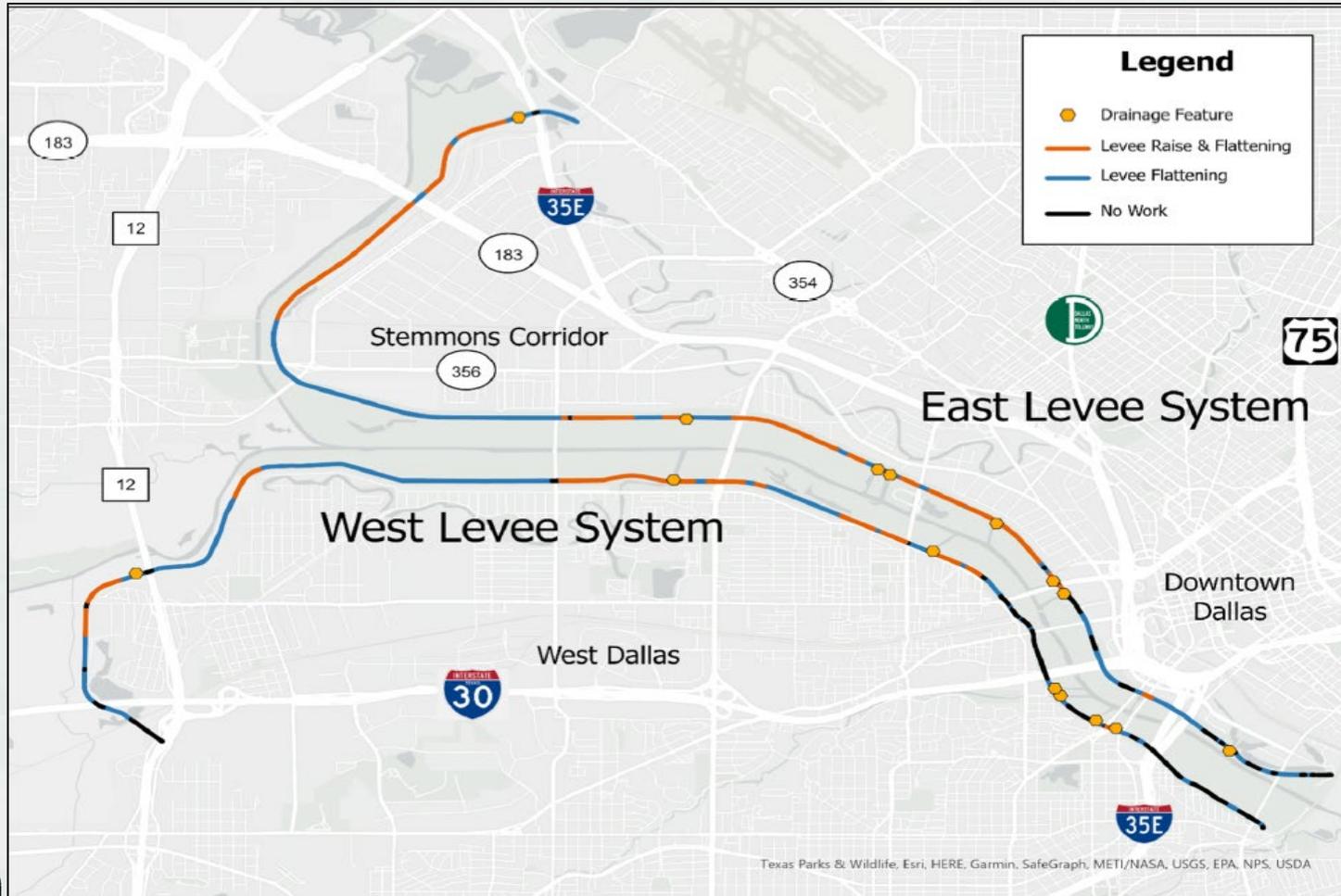


# 277K CFS Levee Raise & Side Slope Flattening

- 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



# Project Improvements

- Reduce Flood Risk
- Minimize Flood Impacts
- Less Steep and Increase Embankment Stability
- Decrease 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.

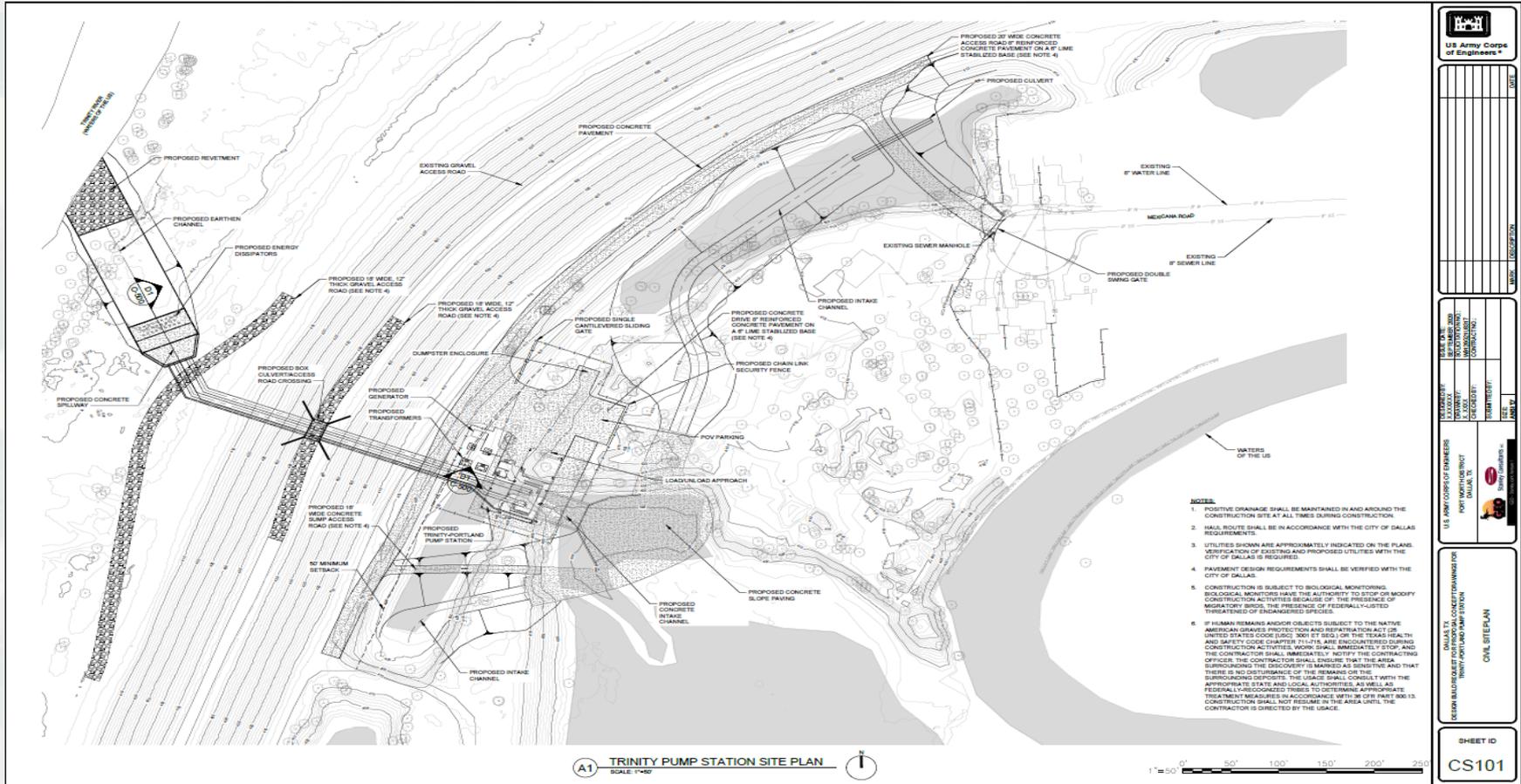


# Trinity Portland Pump Station

- 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 22 to RKE in the amount of ~\$59M
  - ▶ Design efforts are underway
  - ▶ Construction is scheduled to start in winter 2023 and finish in spring 2025



# Trinity Portland Pump Station Site Plan



# Charlie Pump Station

- 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
  - ▶ Completed when new pump station is online
  - ▶ This will be a separate contract
- Current Status
  - ▶ Design-Build construction contract awarded on 15 March 22 to LGC in the amount of ~\$63.6M
  - ▶ Design efforts are underway
  - ▶ Construction is scheduled to start in spring 2023 and finish in spring 2025





# Delta Pump Station

- Demolition and replacement of existing pump station
- 2 replacement pumps – 700 HP
- Upgraded electrical, HVAC, trash rack, and access road
- Expected award amount ~\$9M
  
- Current Status
  - ▶ Design-Build RFP was advertised on 26 May 2022
  - ▶ Project is scheduled to be awarded in winter 2023
  - ▶ Construction scheduled to start in fall 2023 and finish in spring 2025



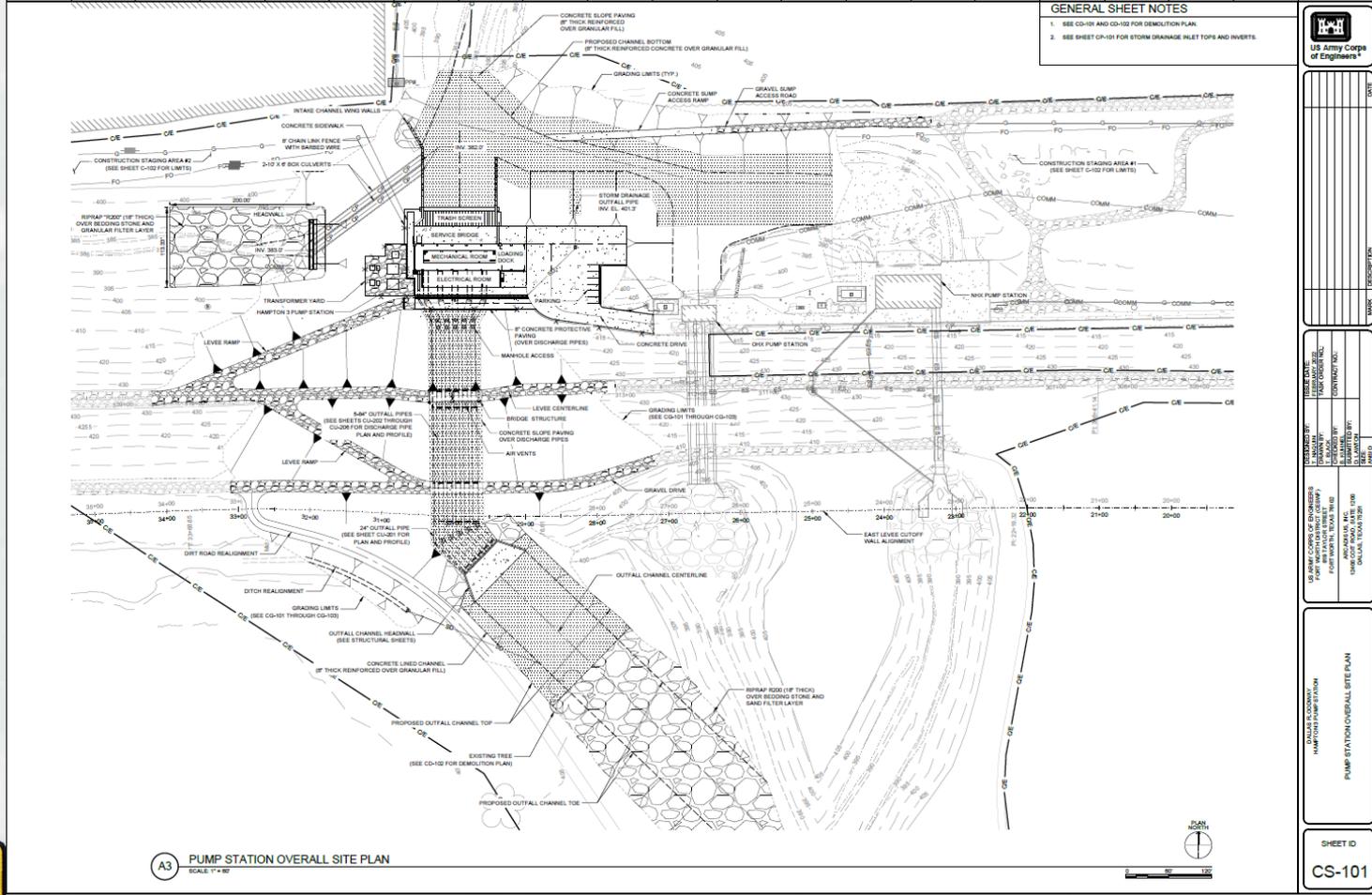


# Hampton Pump Station

- Design-Bid-Build
- 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 ~\$111M
- Demolish the old pump station
  - ▶ Not part of the Hampton 3 & NHX design
  
- Current Status
  - ▶ Design is underway and scheduled completion in fall 2022
  - ▶ Construction of Hampton 3 is scheduled to start in summer 2023
  - ▶ Construction of NHX is scheduled to start in winter 2025



# Hampton 3 Pump Station Site Plan



# Nobles Branch Sump

- Design-Bid-Build
- 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 ~\$5M
  
- Current Status
  - ▶ Design is complete
  - ▶ Construction solicitation scheduled for fall 2022
  - ▶ Construction scheduled to start in winter 2023 and finish in fall 2024





# AT&SF Bridge Demolition

- Demo the existing trestle and concrete bridge
- Awarded for \$1.7M
- Current Status
  - ▶ Construction completed February 2021



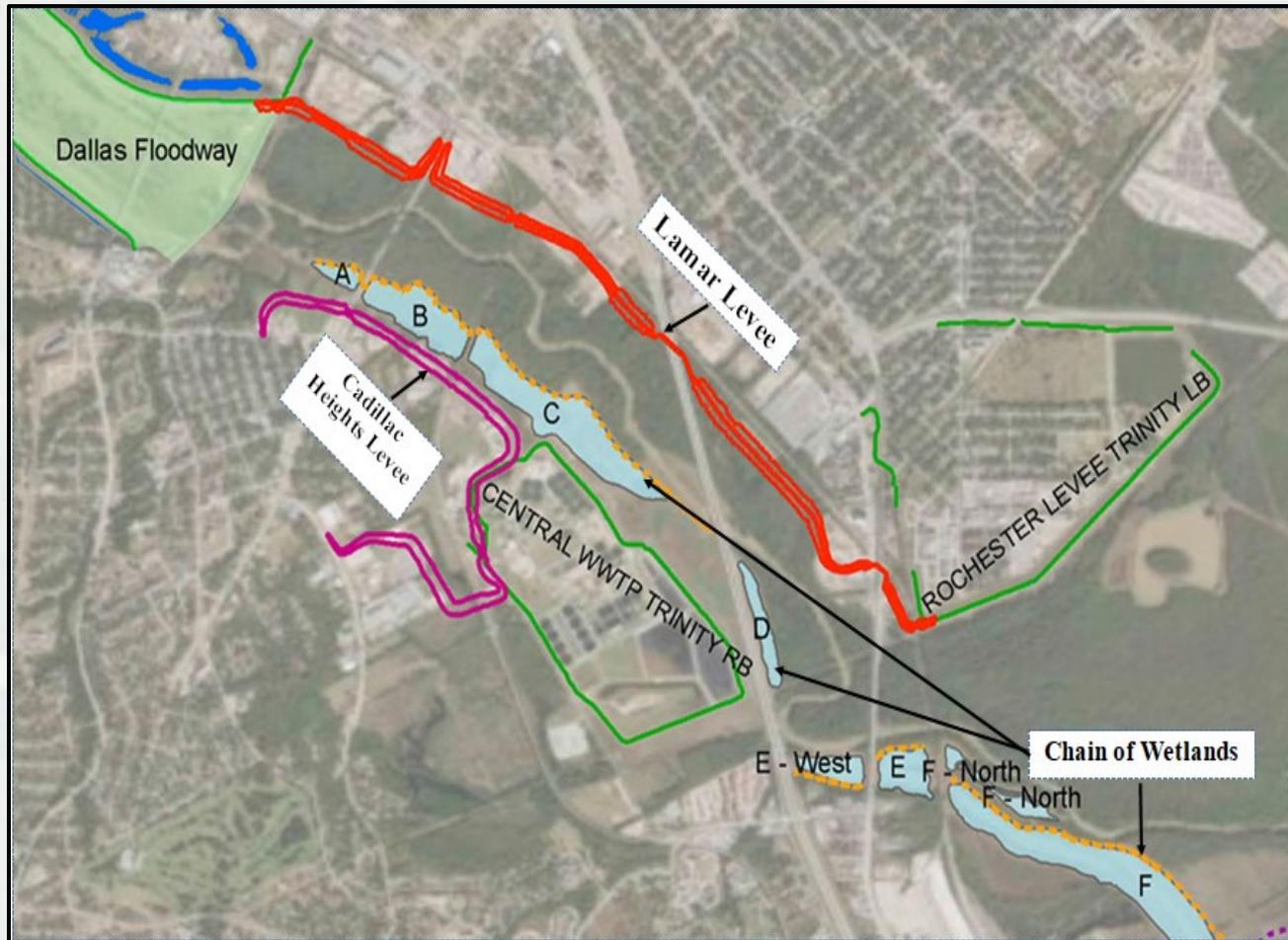
Old AT&SF Rail Service



Current Rail Service



# Dallas Floodway Extension Supplemental



# Lamar Levee

- Design-Bid-Build
- ~3 miles earthen levee with floodwalls and flood gates
- Drainage sumps and levee crossings
- Following the current risk-informed design recommendations from the 2019 Semi-Quantitative Risk Assessment
- Expected award amount ~\$80M
  
- Current Status
  - ▶ Design contract was awarded on 29 September 2021
  - ▶ Design is underway and scheduled to be completed in summer 2023
  - ▶ Construction is scheduled to start in winter 2024 and finish in spring 2026



# Cadillac Heights Levee

- Design-Bid-Build
- ~2.25 miles earthen levee with floodwalls and flood gates
- At least three railroad crossings and five major street crossings
- Risk assessment will be performed after the interim design submittal
- Expected award amount ~\$55M
  
- Current Status
  - ▶ Design contract was awarded on 3 December 2021
  - ▶ Design is underway and scheduled to be completed in fall 2023
  - ▶ Construction is scheduled to start in summer 2024 and finish in fall 2026



# Project Schedule





# Questions?

