Trinity River COMMON VISION Steering Committee

September 19, 2024

Welcome and Introductions

Thank you for attending!

City of Arlington

City of Carrollton

City of Coppell

City of Dallas

City of Farmers Branch

City of Fort Worth

City of Grand Prairie

City of Irving

City of Lewisville

City of Seagoville

Dallas County

Denton County

Kaufman County

Tarrant County

Tarrant Regional Water District

Trinity River Authority

NCTCOG

U.S. Army Corps of Engineers

FEMA

Texas Water Development Board

Trinity
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Agenda

1. Welcome and Introductions
2. Remarks from NCTCOG's Environment & Development Director
3. Program Updates
    1. COMMON VISION Overview and Activities
    2. Related Activities
4. FY25 Trinity River COMMON VISION Work Program and Budget
    1. New Items
    2. Budget
    3. Vote
5. Roundtable Topics/Other Business
6. Adjournment

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Remarks from NCTCOG's Environment & Development Director

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Environmental Challenges & Opportunities in the DFW Region

Common Vision Steering Committee Meeting

Susan Alvarez, PE, CFM

September 19, 2024

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NCTCOG REGIONAL SERVICE AREAS

Executive Director & Agency Administration

- Executive Board
- Membership
- Public Affairs, Strategic Plan
- Municipal Fee Survey
- City Management Association
- Agency Administration
- Training & Development Institute(TSI)

Community Service

- Aging Services
- Broadband
- Regional Community Economic Development
- Workforce Solutions
- Youth
- Workforce Development Training

Emergency Preparedness

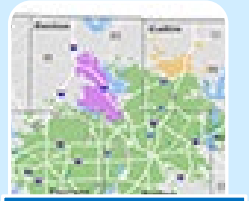
- Emergency Preparedness Planning Council
- Homeland Security Grant Program
- Collaborative Adaptive Sensing of the Atmosphere (CASA Wx)
- Urban Area Security Initiative Mitigation
- Technical Resources
- NCT 9-1-1

Environment & Development

- Watershed Management
- Open Space Planning/ Preservation
- Materials Management
- Regional Building Codes
- Public Works
- Development Excellence
- R.I.S.E

Transportation

- Regional Planning & Projects, Plans Studies & Reports
- Quality of Life
- State Implementation Plan (Air Quality)
- All things EV
- Energy Efficiency
- Climate Pollution Reduction Plan



Research & Information Services

- Regional Data
- Digital Elevation Contours
- Geospatial Information Systems (GIS)
- Population data and related land use projections

www.nctcog.org/

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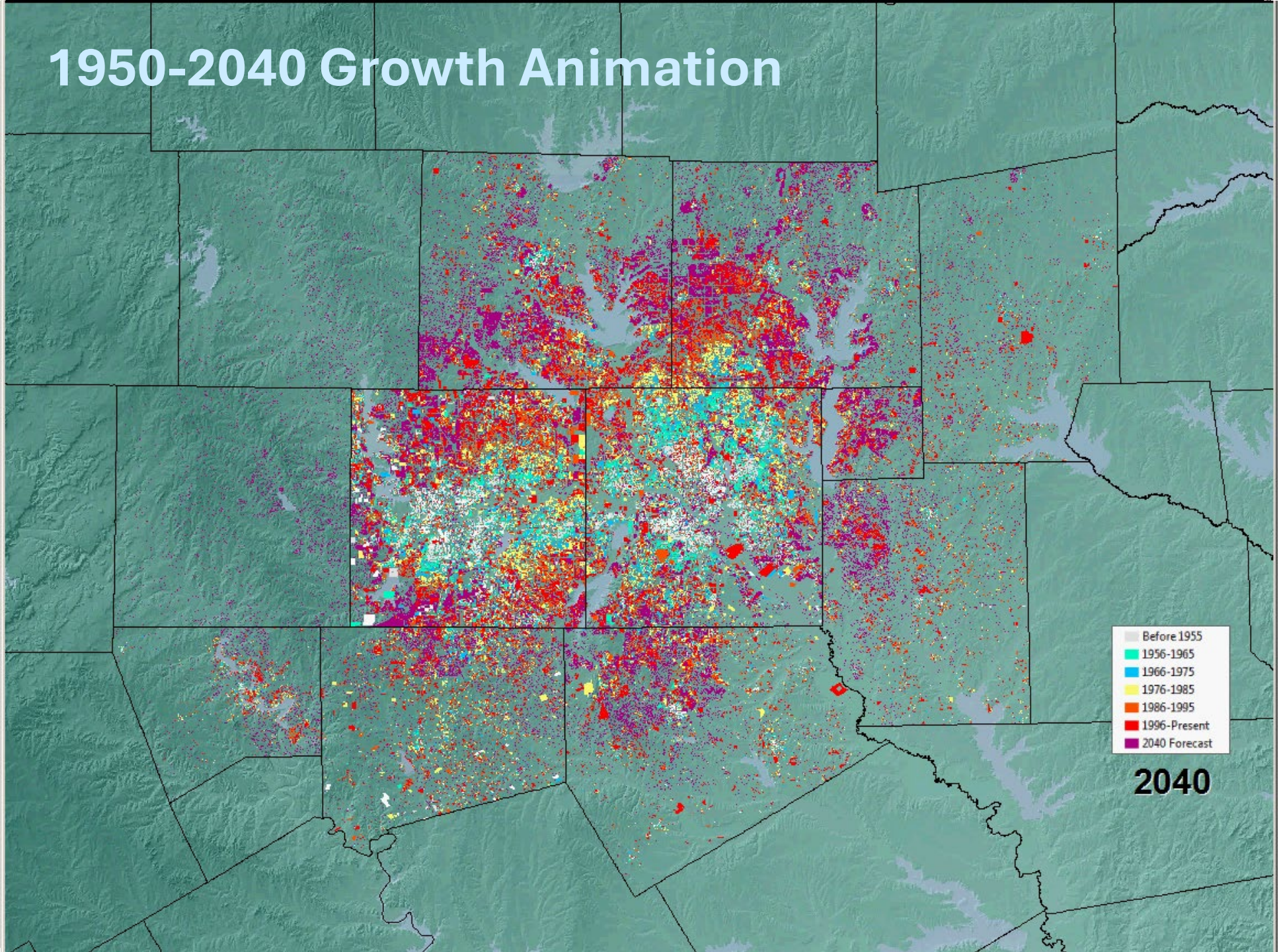
1950-2040 Growth Animation



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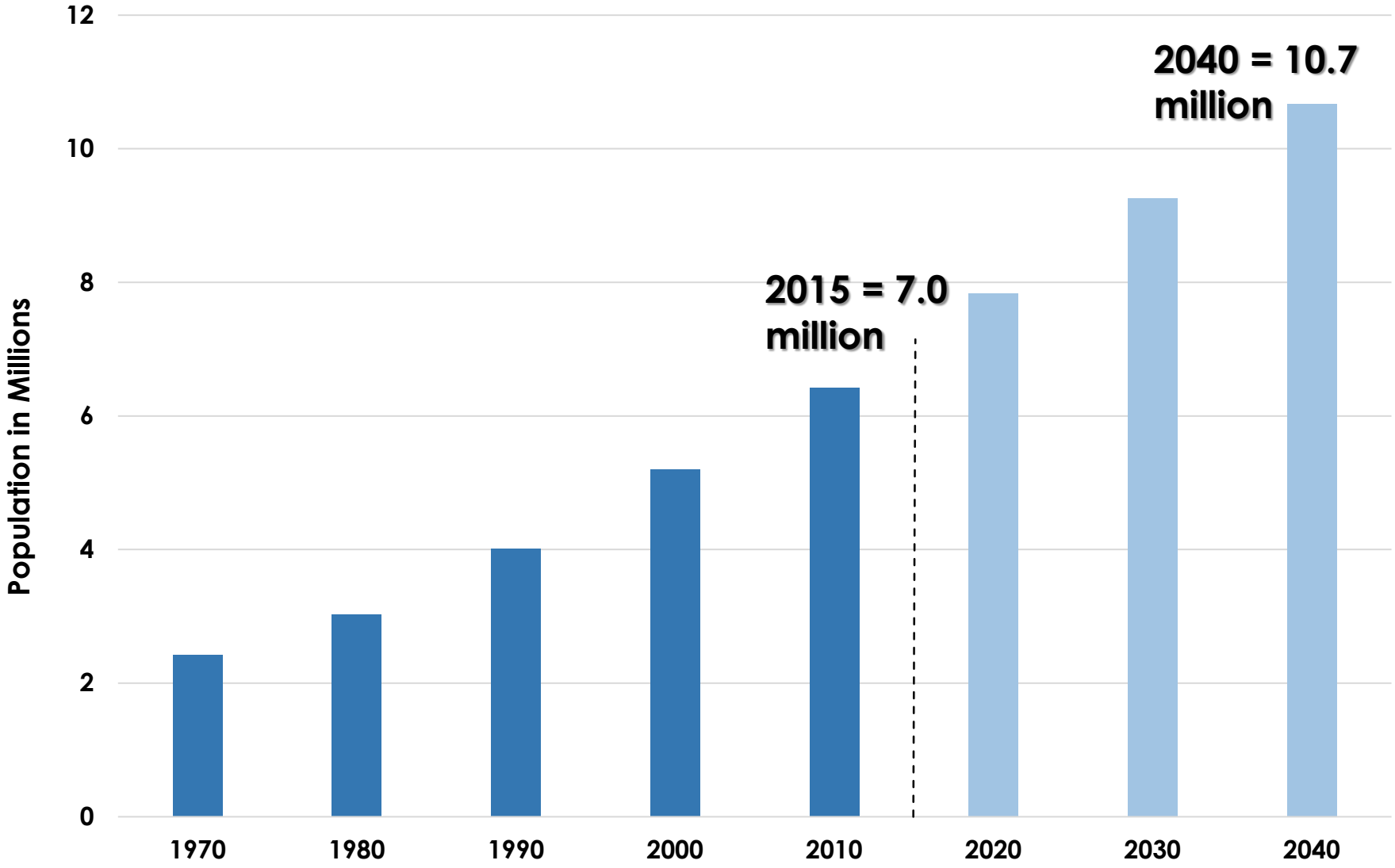
North Central Texas Population Forecasts



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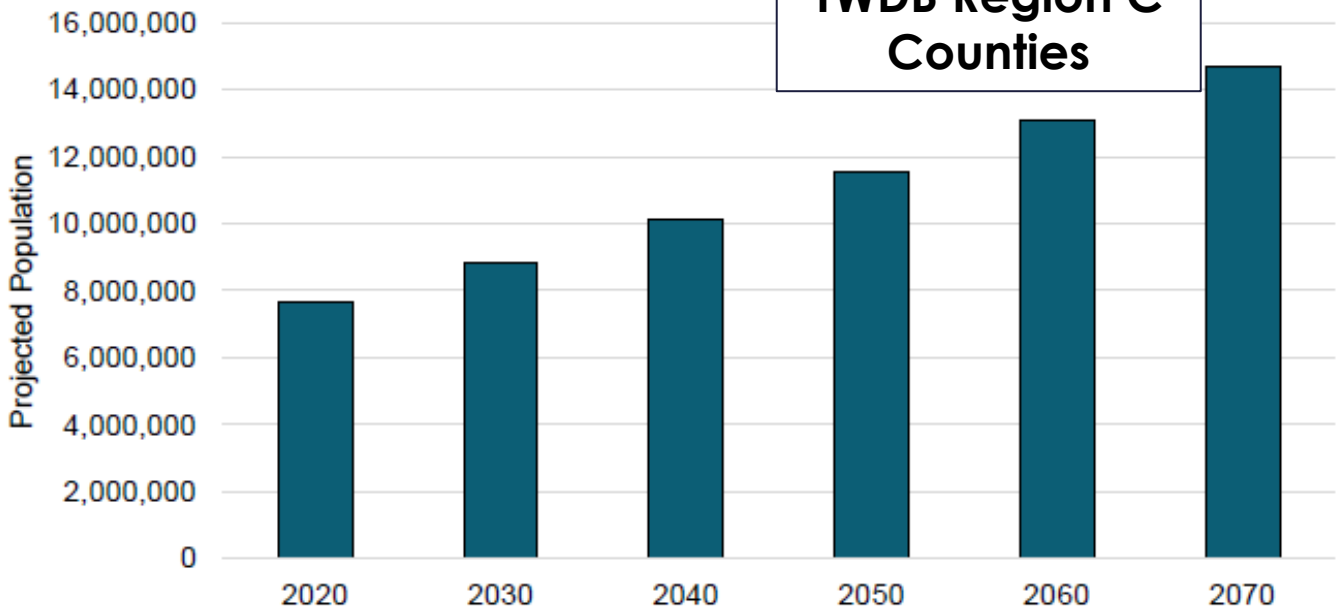
Regional Growth and Water Resources

Figure 2.3 Adopted Population Projections for Region C

91% growth in TWDB Region C Counties

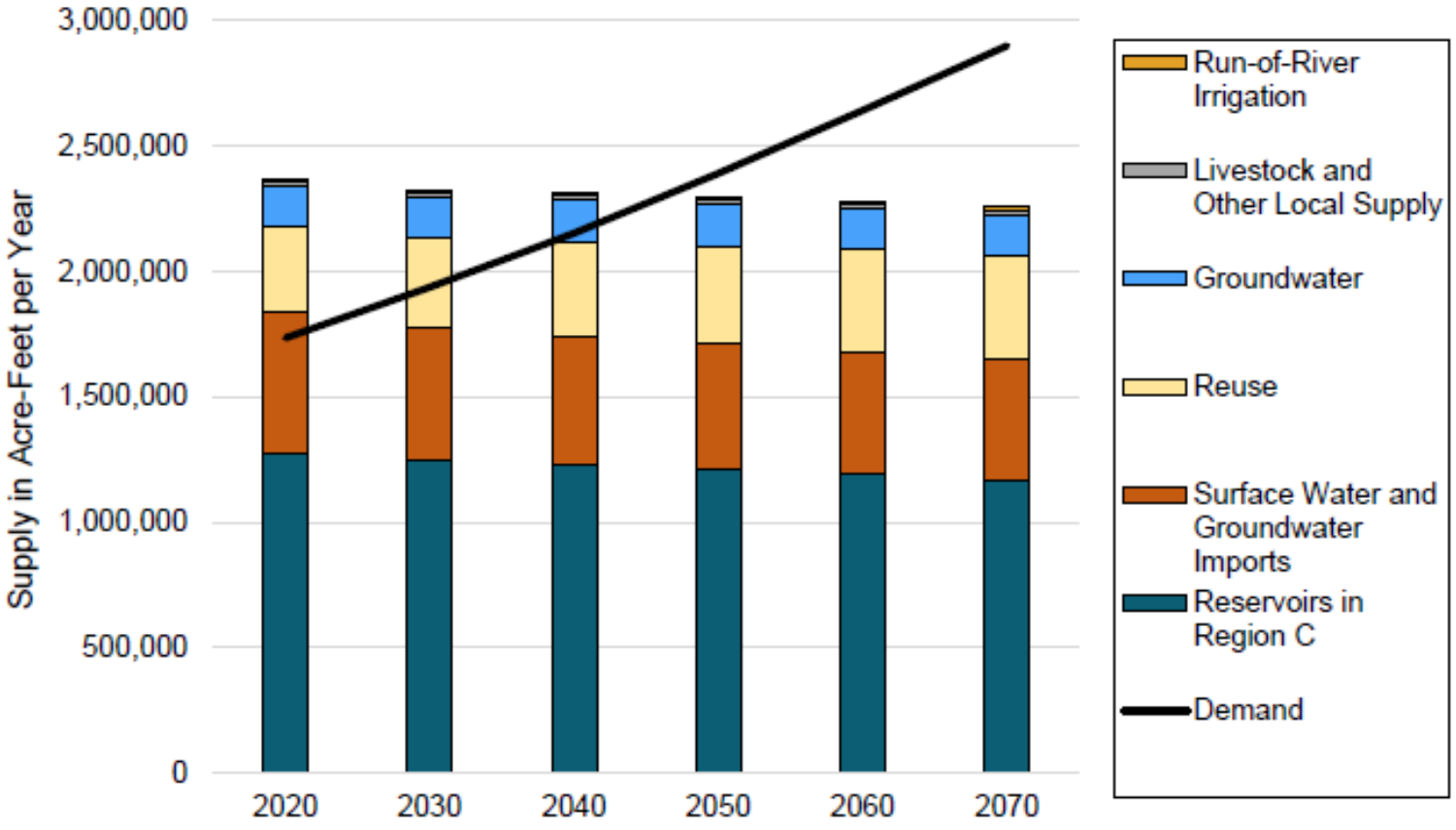


Region C's population is increasing by more than 300 people per day

Region C Counties: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, Wise

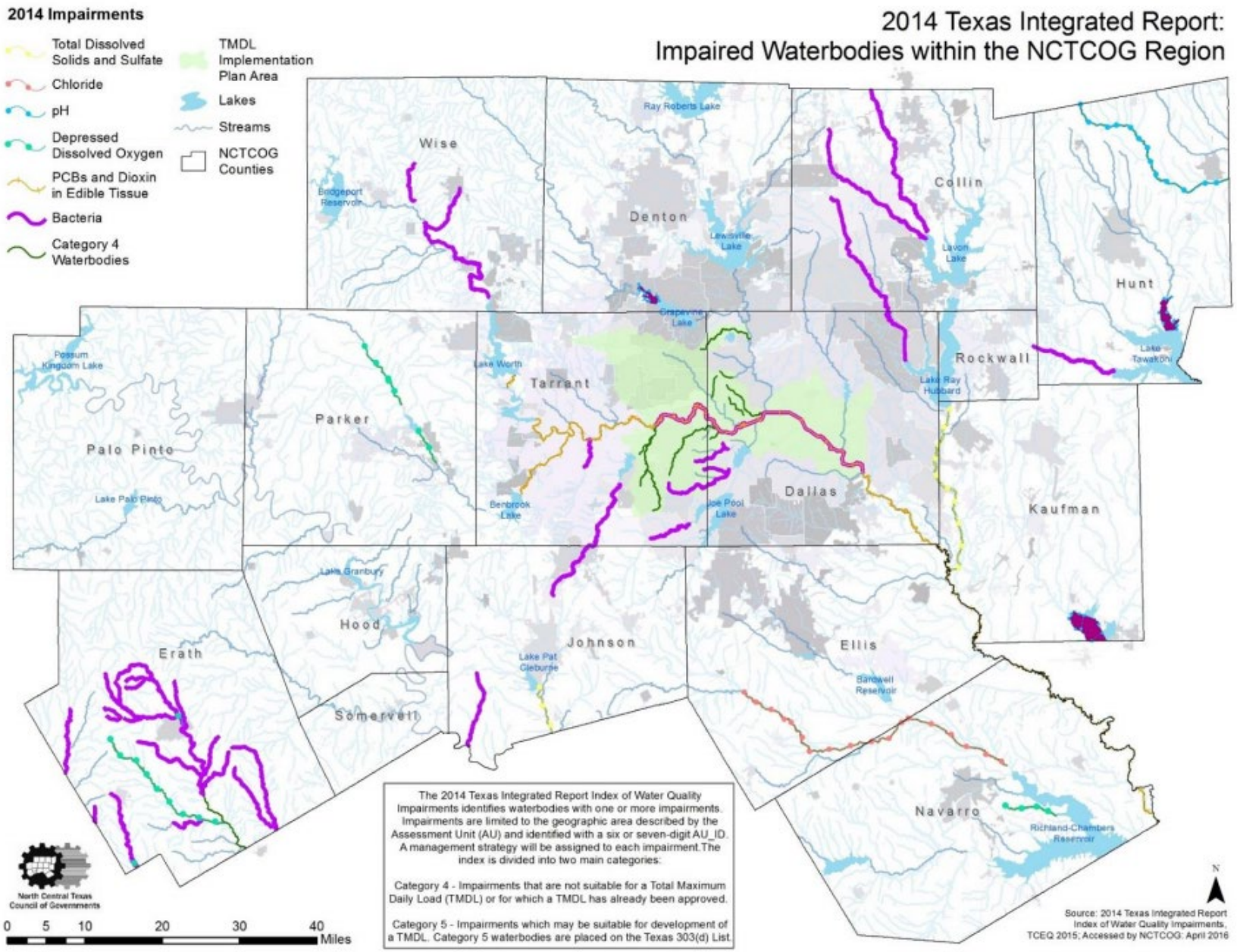
Source: TWDB 2021 Region C Water Plan – Population Projections Accessed July, 2023

Regional Water Challenges – Water Supply



Source: Texas Water Development Board, 2021 Region C Water Plan, Accessed July 2023

Figure 6. 2014 Texas Integrated Report - Impaired Water Bodies within the NCTCOG Region



2014 Impaired Water Bodies - 303(d) list

Purple = bacteria

Green shade = TMDL I-Plan (bacteria)

The map displays the 2014 Texas 303(d) List of impaired surface water bodies by pollutant. Impairments are

E&D Department Primary Focus Areas

Watershed Management

- Stormwater Management
- Water Quality
- Trinity River Common Vision
- Flood Risk Reduction
- Integrated Transportation & Stormwater Planning (TSI)

Development Excellence

- Principles of Development Excellence
- RISE Coalition
- Technical Tools

Materials Management

- Regional Landfill Capacity
- Recycling
- Waste to Energy
- Illegal Dumping
- Technical Resources

Natural Resources

- Water Supply
- Water Quality
- Open Space Planning/ Preservation
- Energy

Public Works

- Construction Standards
- Wastewater Roundtable
- iSWM™
- Texas Community Block Grants
- Public Works Roundup!

Regional Building Codes

- Commercial & Residential
- Electrical & NEC
- Plumbing & Mechanical
- Energy & Green Construction
- Fire Codes

www.nctcog.org/envir/

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Watershed Management

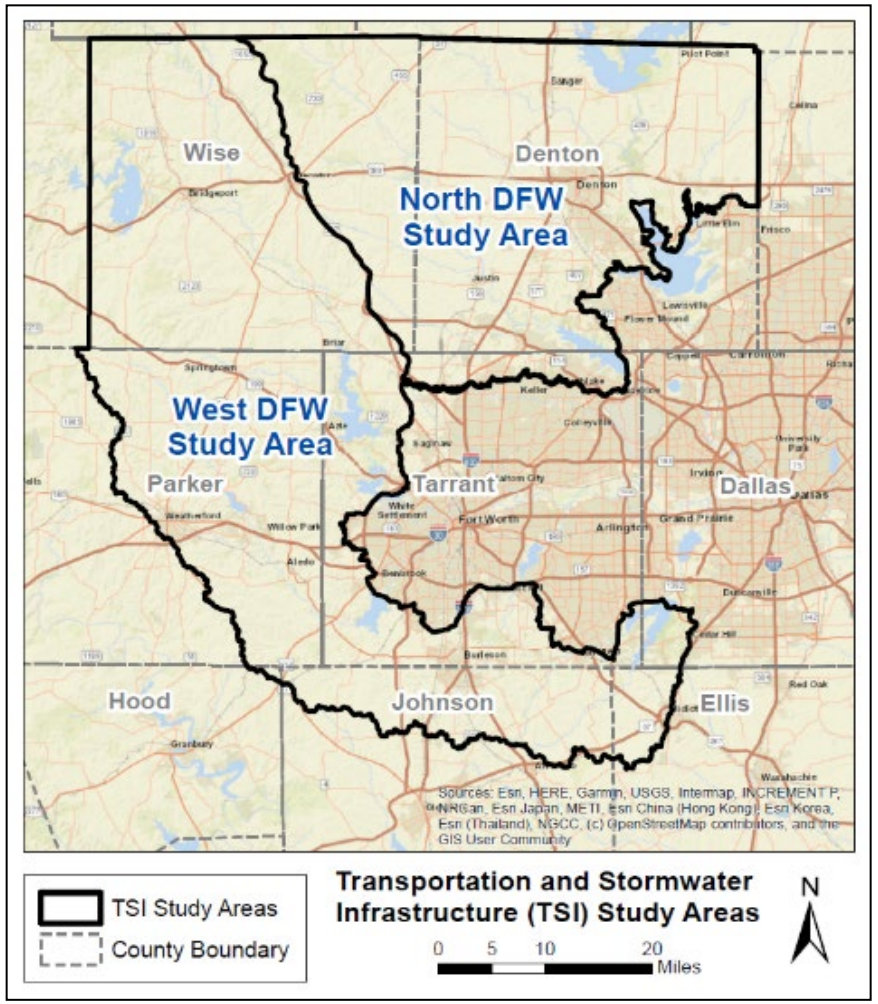
NCTCOG brings local governments and stakeholders together to improve stormwater quality and reduce flood risks.

Committees: Regional Stormwater Management Coordinating Council; Trinity River COMMON VISION Steering Committee; Transportation and Stormwater Infrastructure Steering Committee

Programs:

- Regional Stormwater Monitoring Program
- Trinity River COMMON VISION
- Corridor Development Certificate Program
- Transportation and Stormwater Infrastructure Project (TSI)
- FEMA Cooperating Technical Partnership
- Texas SmartScape

Funding Sources: Local Funds; Texas Water Development Board; Federal Emergency Management Agency; Federal Highway Administration, Texas Department of Transportation



Website:
North Central Texas Council of Governments - Upper Trinity River Transportation and Stormwater Infrastructure Project (nctcog.org/tsi)

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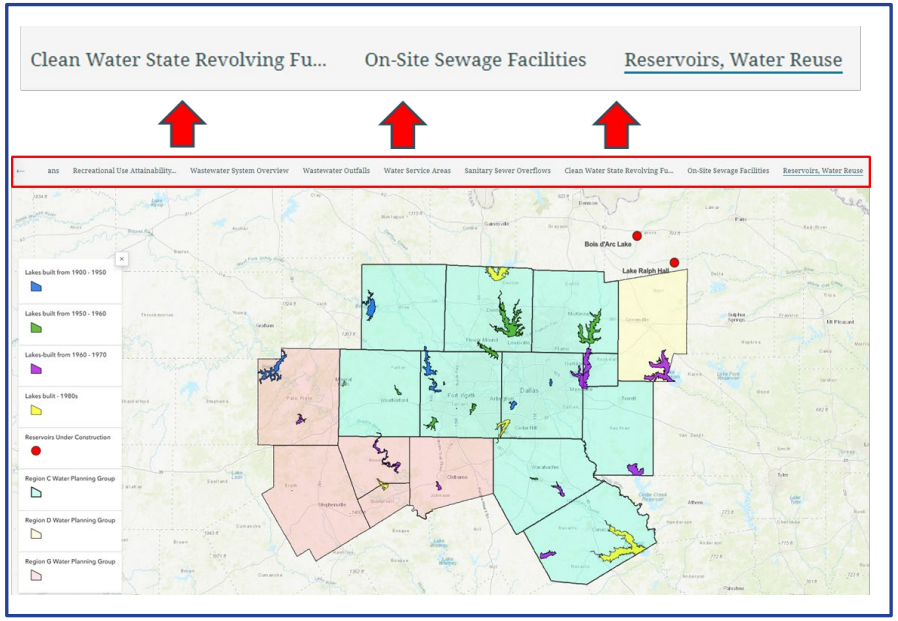
Natural Resources



From: 2023 Update to the Water Quality Management Plan

Funding Source: Texas Commission on Environmental Quality

Websites:
https://www.nctcog.org/envir/Natural-Resources
https://www.nctcog.org/envir/natural-resources/water-resources

NCTCOG maintains the regional Water Quality Management Plan with input from the Water Resources Council. Also works with the State Energy Conservation Office to provide training on water and energy conservation.

Committees: Water Resources Council, Bacteria TMDL Coordination Committee; Upper Trinity River Basin Coordinating Committee

Programs:

- Texas Water Development Board Region C Planning Group
- North Central Texas Water Quality Management Plan
- Bacteria TMDL Implementation Plan for Greater Trinity River Region
- Total Maximum Daily Load and Impairment Programs
- Open Space Preservation/Conservation
- Regional Energy Management Program

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Materials Management

NCTCOG is the state-designated planning agency for municipal solid waste in the 16-county region. NCTCOG coordinates with stakeholders to update the Regional Solid Waste Management Plan.

Committees: Resource Conservation Council

Programs:

- Regional Materials Management Plan
- Closed Landfill Inventory
- Time to Recycle
- Report DFW Dumping
- Know What to Throw
- Regional Tire Task Force
- Report Illegal Dumping

Funding Source: Texas Commission on Environmental Quality

Websites: https://www.nctcog.org/envir/Materials-Management
https://www.nctcog.org/envir/materials-management/materials-management-plan

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Public Works

Save the Date for the 24th Annual Public Works Roundup!
Thursday, August 22, 2024
Hurst Conference Center

Stay Tuned for Registration & Agenda~!

Websites:
https://www.nctcog.org/envir/Public-Works
https://www.txshare.org/
https://www.defendyourdrainsnorthtexas.com/

Since 1984, NCTCOG has facilitated collaboration between member governments to address local public works issues and provide training opportunities.

Committees: Public Works Council

Programs:
- Construction Standards
- Sustainable Public Rights of Way
- ***integrated* Stormwater Management**
- TXShare Contracts
- Wastewater and Treatment Education Roundtable
- Defend Your Drains North Texas
- **Holiday Grease Roundup**
- Texas Community Development Block Grant

Funding Sources:
Local Funds; Texas Department of Agriculture

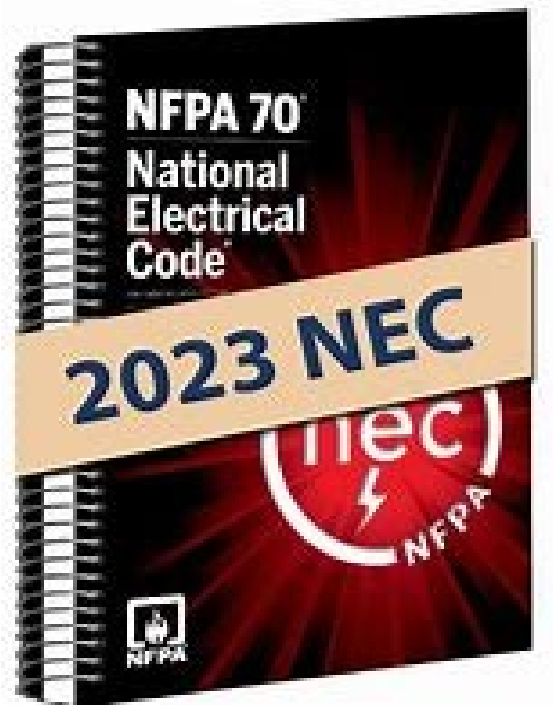
Regional Building Codes

Since 1967, NCTCOG and local code professionals have worked to standardize model construction codes to increase safety, promote common interpretations, and reduce training and construction costs.

Committees: Regional Codes Coordinating Committee

Programs:

- Building & Residential Advisory Board
- Electrical Advisory Board
- Energy & Green Advisory Board
- Fire Advisory Board
- Plumbing & Mechanical Advisory Board



Funding Source: Local Funds

Websites:
https://www.nctcog.org/envir/Regional-Building-Codes
https://www.nctcog.org/envir/regional-building-codes/amendments

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Development Excellence

2021 CLIDE Award Winner: Mayor Vera Calvin Plaza, Burleson, TX

Websites:
https://www.nctcog.org/envir/Development-Excellence
https://www.nctcog.org/envir/development-excellence/rise-coalition
https://www.nctcog.org/envir/development-excellence/vision-north-texas

NCTCOG promotes sustainable development and provides annual awards to projects, developments, and programs that exemplify Principles of Development Excellence.

Committees: Regional Integration of Sustainability Efforts Coalition

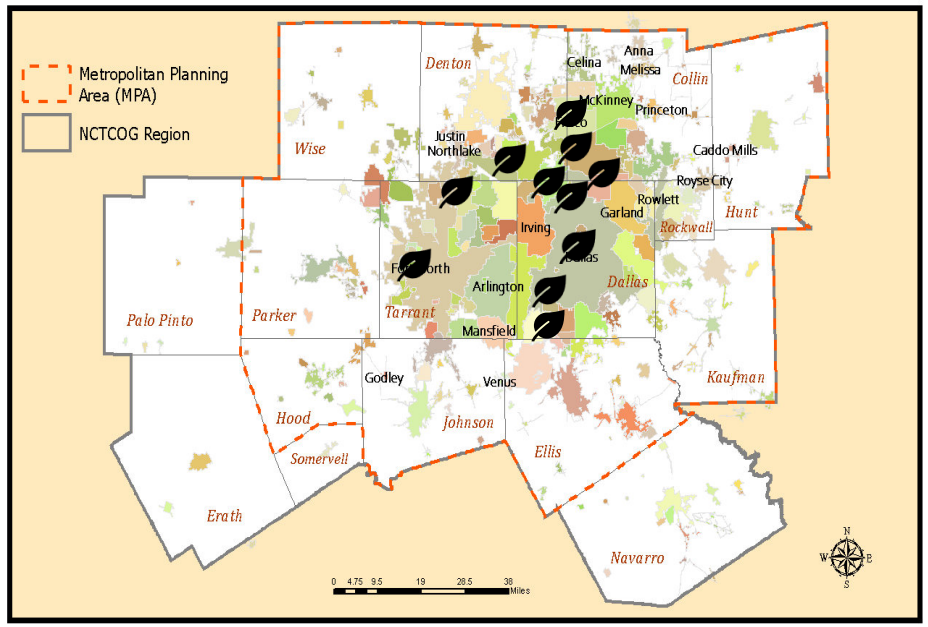
Sampling of Programs:
- Celebrating Leadership in Development Excellence (CLIDE) Awards Program
- RISE Coalition

Funding Source: Local Funds

Regional Integration of Sustainability Efforts

The purpose of the RISE Coalition is to:

- Align regional partner initiatives
- Leverage regional resources and share best practices
- Provide networking and capacity building opportunities
- Identify funding opportunities for projects
- Provide mentorship
- Collaborate as a group on regional sustainability projects and initiatives
- **FY 23-24: advised on regional GHG Inventory update and Priority Climate Action Plan**



[Website: North Central Texas Council of Governments - Regional Integration of Sustainability Efforts Coalition (nctcog.org)]

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EPA Climate Pollution Reduction Grant

- **$5 Billion Dollar EPA Grant Program under the Inflation Reduction Act**
- **$1.0 Million Formula Grants to 6 Texas Metropolitan Urban areas**

  - **Priority Climate Action Plan (PCAP)** Sunday, June 18, 2023, to Friday, March 1, 2024
  - **Comprehensive Climate Action Plan (CCAP)** Monday, June 19, 2023, to Wednesday, June 18, 2025 (developed concurrently with PCAP)
  - **Status Reports** Wednesday, June 18, 2025, to Friday, June 18, 2027
  - **Stakeholder Engagement and Outreach** Tuesday, August 1, 2023, to Friday, June 18, 2027

Energy & Transportation Focus

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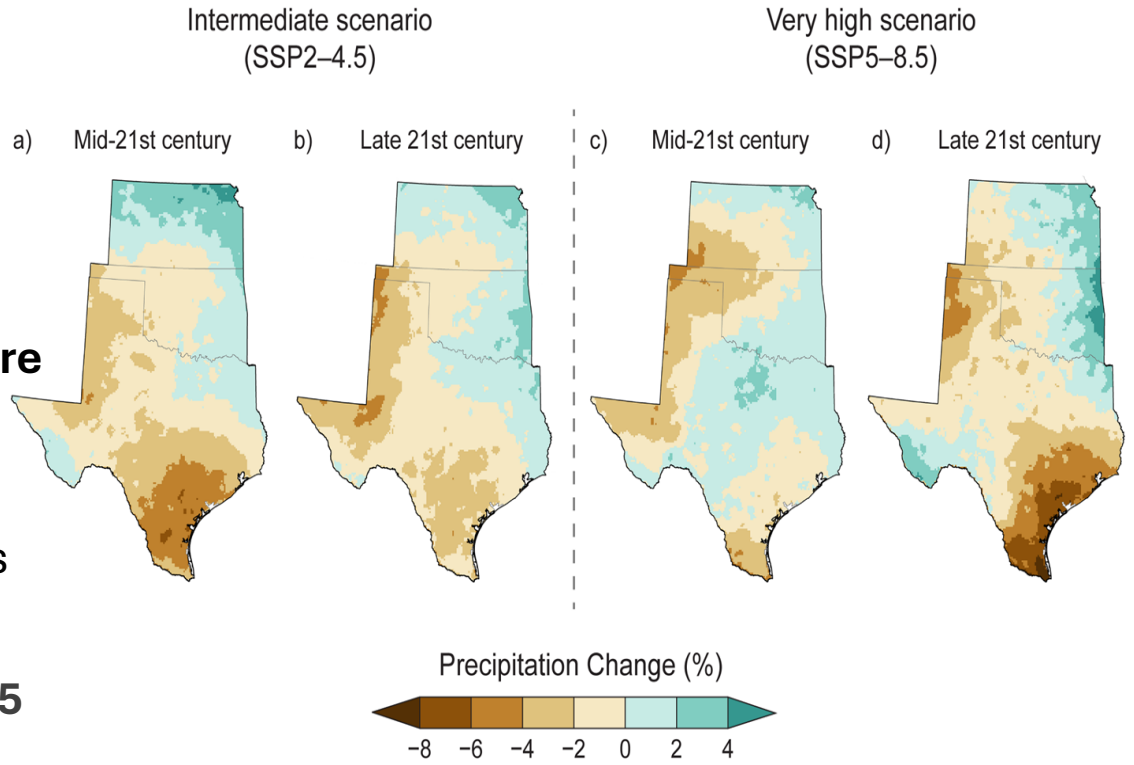
Climate Takeaways for Texas

- Annual precipitation has **increased** across most of the Southern Great Plains (SGP) except far west Texas.
- Days with **2+ inches** of precipitation have become **more frequent.**
- Annual average temperatures have **increased 1.5°F** for Texas
- Temperatures are **expected to increase between 2.5 and 12.5 degrees F**, depending on emissions scenarios.
- Most cities in the region have begun to take action.



Data Source: 5th National Climate Assessment

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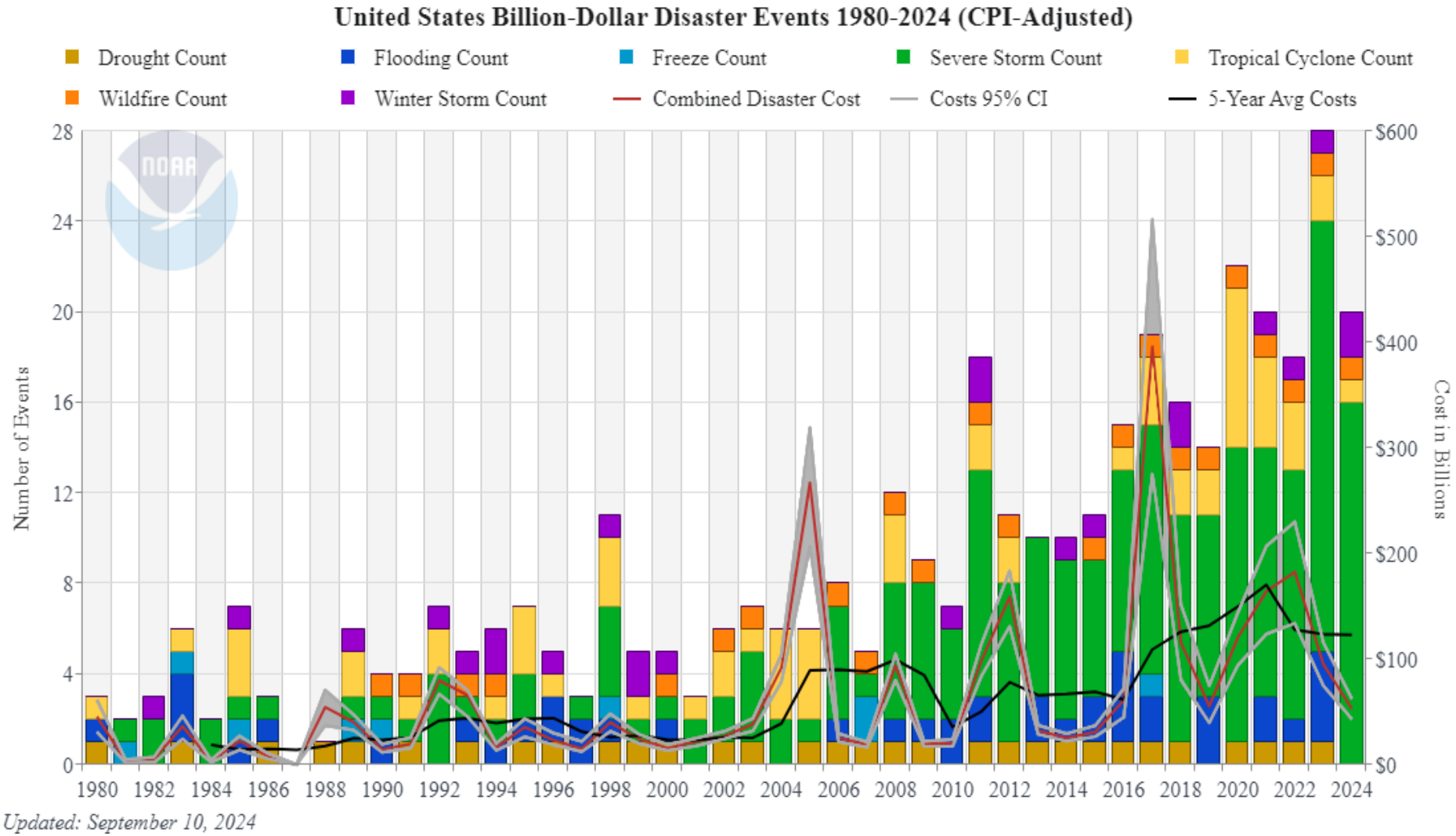

•NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2024) https://www.ncei.noaa.gov/access/billions/, DOI: 10.25921/stkw-7w73

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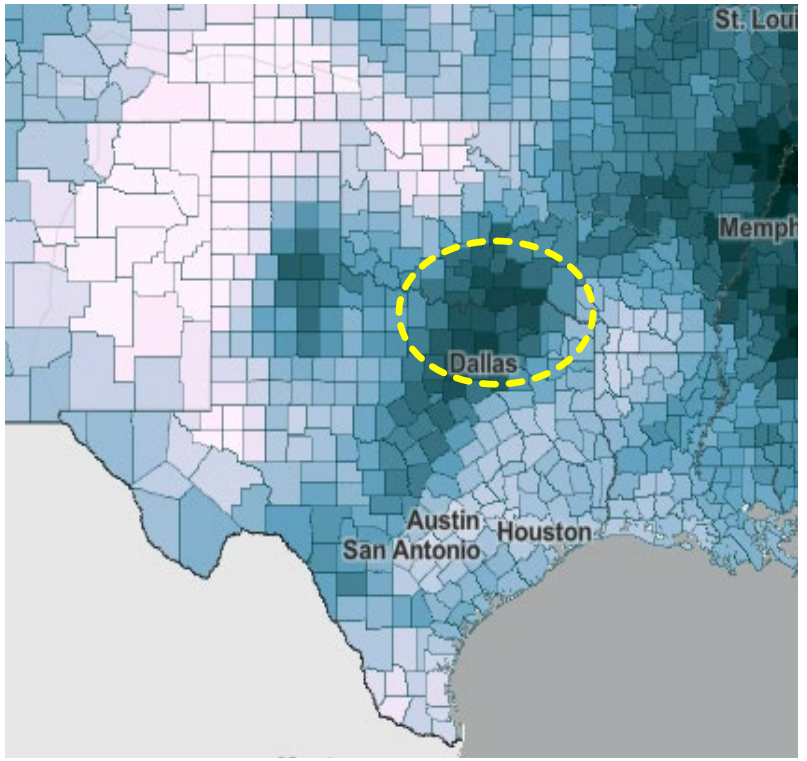
Water.....

- **Texas' biggest risk**
- Drought affecting water supply to support growing populations
- Floodproofing urban and rural areas
- Coastal flooding & tidal surge
- Riverine flooding
- Localized & flash flooding
- Changes in inundation frequency
- Changing how engineers and planners approach setting finish floor elevations and floodplain analyses



Increases in Extreme Precipitation (>2 inches/day)

Data Source: 5th National Climate Assessment

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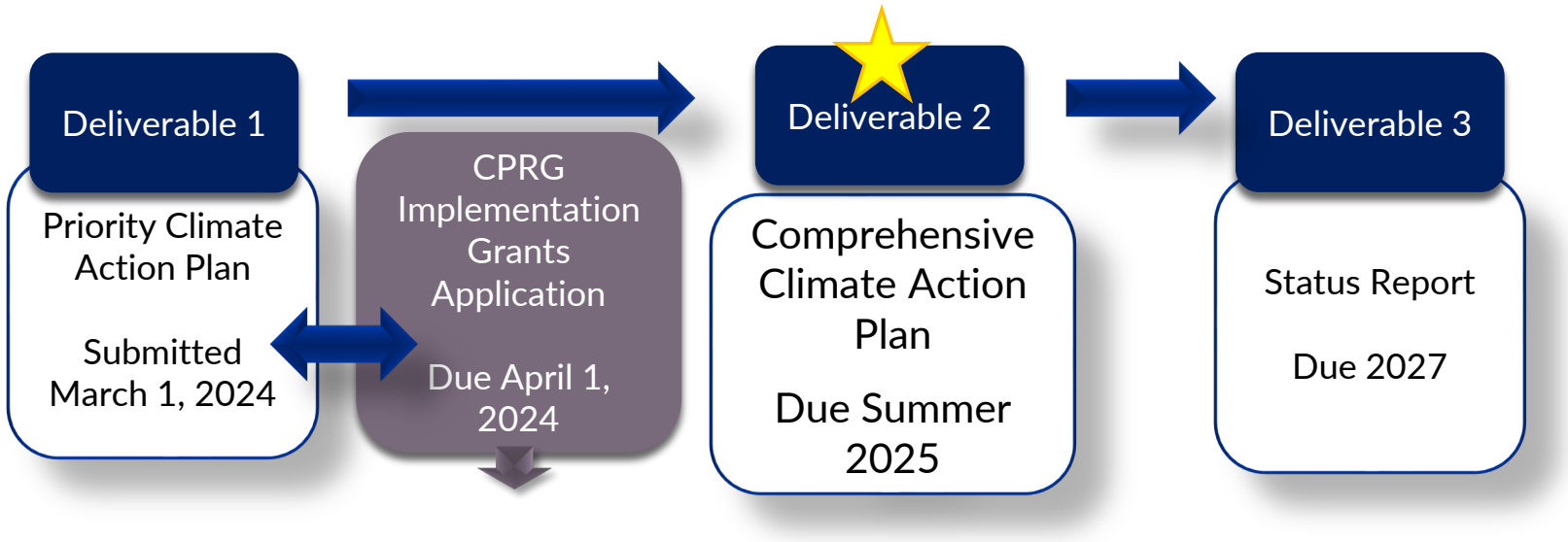
Implementation Grant Program Background

DFW Air Quality Improvement Plan Submitted March 1 Enables Eligibility Under EPA Climate Pollution Reduction Grants: Implementation Grants Program



Opportunity to Implement Measures in the Plan that:

- ✓ Reduce greenhouse gases (GHGs)
- ✓ Reduce ozone pollution
- ✓ Reduce particulate matter pollution
- ✓ Implement infrastructure projects

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DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

The North Central Texas Council of Governments (NCTCOG) is seeking recommendations on air quality improvement projects for your community!

NCTCOG is collaborating with local stakeholders in the Dallas-Fort Worth region to develop a comprehensive Air Quality Improvement Plan (DFW AQIP). The plan will create a roadmap to improve air quality, protect public health, and reduce the impacts of extreme weather events.

Your input is requested and important! Please go to **www.publicinput.com/dfwAQIP** to make recommendations, attend an open house, and more.

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Final Words around “One Water”…

“The State of Texas, based on my analysis of our existing water plan, is somewhere in the neighborhood of 10 to 11 million acre feet short of goals. A fair assessment of that plan would say that we’re at least ten years, if not 20 years behind in meeting those goals. We cannot conserve an 11 million acre feet shortfall……

And when you realize the patient is beginning to become terminal, it’s 30 years from that point forward to fix it.

Texas needs and has the ability to fix this. We have about 50 million acre feet per year of developer resources. It’s actually more than that, but that’s probably realistically what we could expect to do. And we only need about 10 to 11 million acre feet to set the water supply up to probably centuries plus.

So, the neat thing is, we recognize the issue, we have the supply opportunity to fix it, and we have the resources to front load it for future cost recovery when water delivery begins. So, ***that’s my goal for the 89th*** *that should not be a shock for anybody that’s been paying attention. But I have clarity like I’ve never had”.*

Sen. Charles Perry of Lubbock’ commentary made at the beginning of the September 3, 2024 hearing held by the Senate Committee on Water, Agriculture and Rural Affairs

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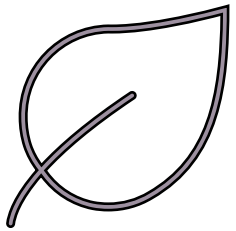
Contact



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Work Program Overview and Activities Update

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Trinity River COMMON VISION

What is the COMMON VISION?

The Trinity River COMMON VISION Program is a regional partnership aimed at managing flood risks, promoting sustainable development, and preserving the environment along the Trinity River.

This program brings together local governments, regional authorities, and state and federal agencies to promote:

- a **SAFE** Trinity River, with stabilization and reduction of flooding risks,
- a **CLEAN** Trinity River, with fishable and swimmable waters,
- an **ENJOYABLE** Trinity River, with recreational opportunities linked by a trails system within a world-class greenway,
- a **NATURAL** Trinity River, with preservation and restoration of riparian and cultural resources,
- a **DIVERSE** Trinity River, with local and regional economic, transportation and other public needs addressed.

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Trinity River COMMON VISION

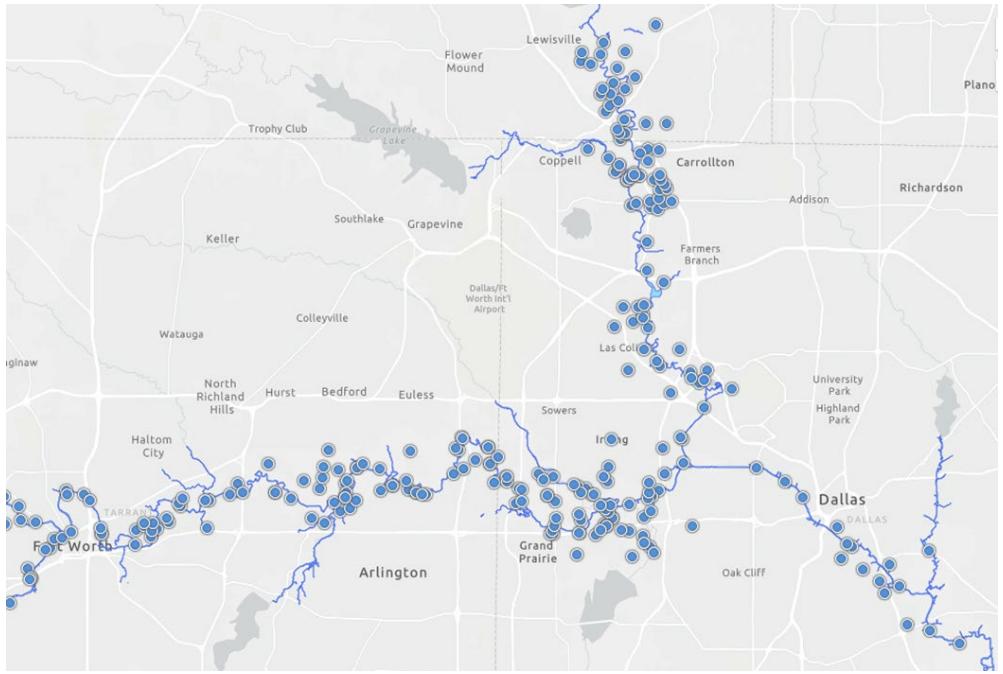
Participating Members

Ten Cities
Arlington
Carrollton
Coppell
Dallas
Farmers Branch
Fort Worth
Grand Prairie
Irving
Lewisville
Seagoville

Four Counties
Dallas County
Denton County
Kaufman County
Tarrant County

Two Special Districts
Tarrant Regional Water District
Trinity River Authority

Programmatic Partners
NCTCOG Environment & Development
U.S. Army Corps of Engineers
Federal Emergency Management Agency
Texas Water Development Board



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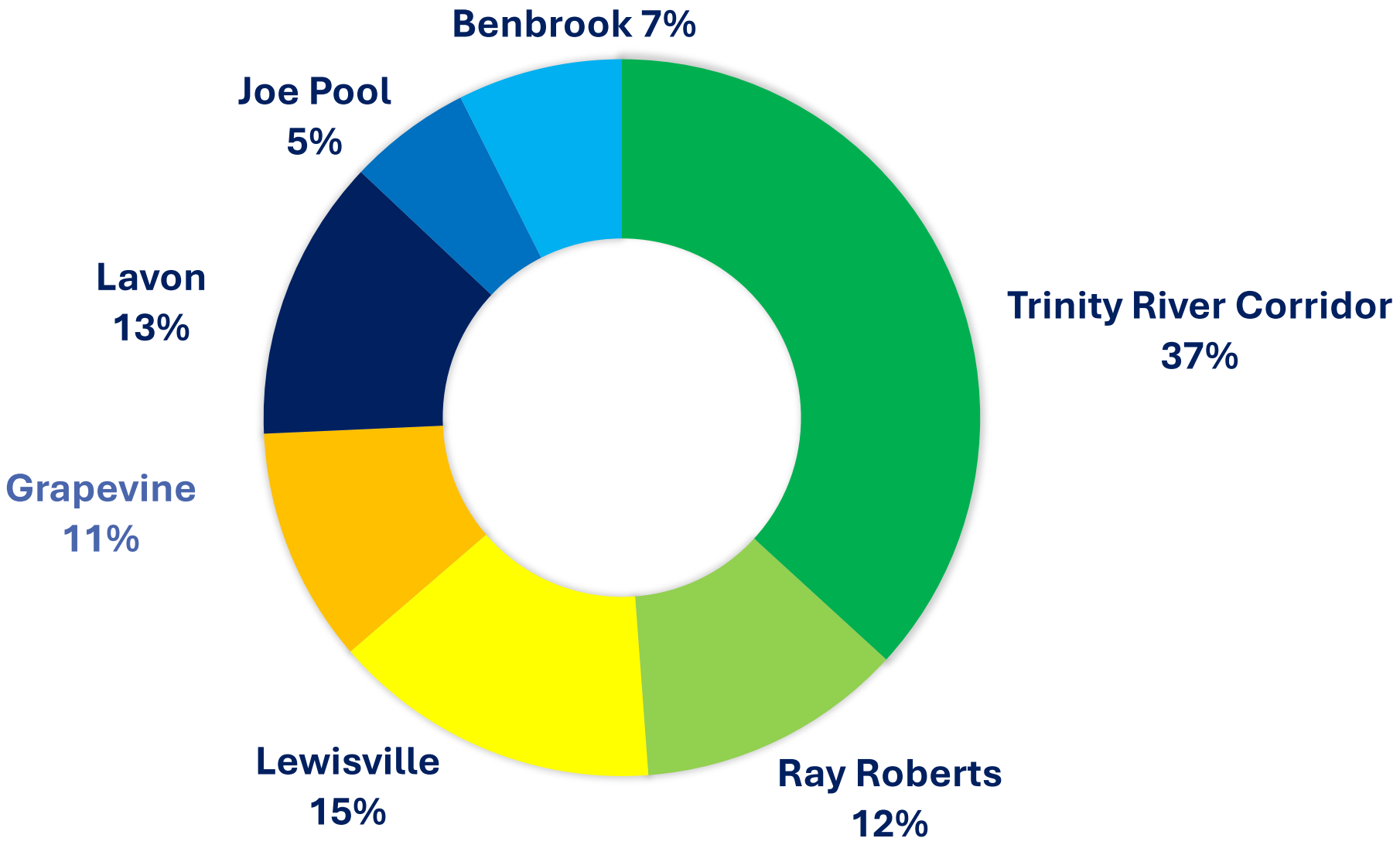
Active Flood Storage



2015 Floods

Carrier Parkway at I-20, Grand Prairie, TX, May 17, 2015

Loop 12 at I-30 flooding in Dallas, TX, May 29, 2015

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2015 Floods

The 111th Engineer Battalion of the Texas Army National Guard rescue three people from a vehicle stuck in a low water crossing near Granbury, TX, May 26, 2015.

Grapevine Lake Spillway, June 19, 2015

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Corridor Development Certificate Program

Provides Oversight

Provides oversight for projects constructed in the 1% annual chance floodplain

Review Process

Establishes a consistent regional criteria and review process

Limits Impact

Limits (but does not eliminate) the impact of floodplain encroachments for regulated streams on downstream areas

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step 00 — Pre-CDC Application Conference

Communication is key in the CDC process. NCTCOG highly recommends that developers and potential CDC applicants hold a pre-CDC conference with the floodplain administrator of the CDC Permitting Entity in which the project is located.

step 01 — Developer Submits Application to City

If a developer wants to develop in the floodplain, they first dowonload the model and insert their project. The developer then meets with the CDC Permitting Entity to get their application in order. This step may vary by jurisdiction.

step 02 — City Submits CDC Application

The CDC Permitting Entity submits the CDC Application and fees to the Trinity COMMON VISION program through this website.

step 03 — Municipalities Offer Comments

Starting the day the application is submitted, CDC communities are notified and have 30 days to review and provide comments on the application.

step 04 — Application Sent to USACE for Review

The application and all documentation is sent to the U.S. Army Corps of Engineers (USACE) for review. The USACE will coordinate review with the Applicant's engineer representative during the review process.

step 05 — Project Added to CDC Model

The project is added to the CDC Model by USACE after the CDC permit is granted by the submitting CDC Permitting Entity.

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FY2024 Trinity River Common Vision Work Program

CDC Manual Update to the 5th Edition

Following last years efforts, the NFIP-CDC Model Consolidation Team continued to meet to finalize the revisions for the 5th Edition to the CDC Manual.

- Main Updates and Revisions included in the new manual
  - Updating the CDC Process to include the NFIP-CDC Consolidated Model.
  - Inclusion of new Trinity River CDC website
  - CDC will be valid for two years instead of current five years and one-year extensions given instead of three years with a maximum of three extensions allowed
  - Addition of Model Maintenance Fee following completion of project during LOMR process
  - Revised format of chapters to clarify requirements and process
  - Developed FAQs for community and public audiences

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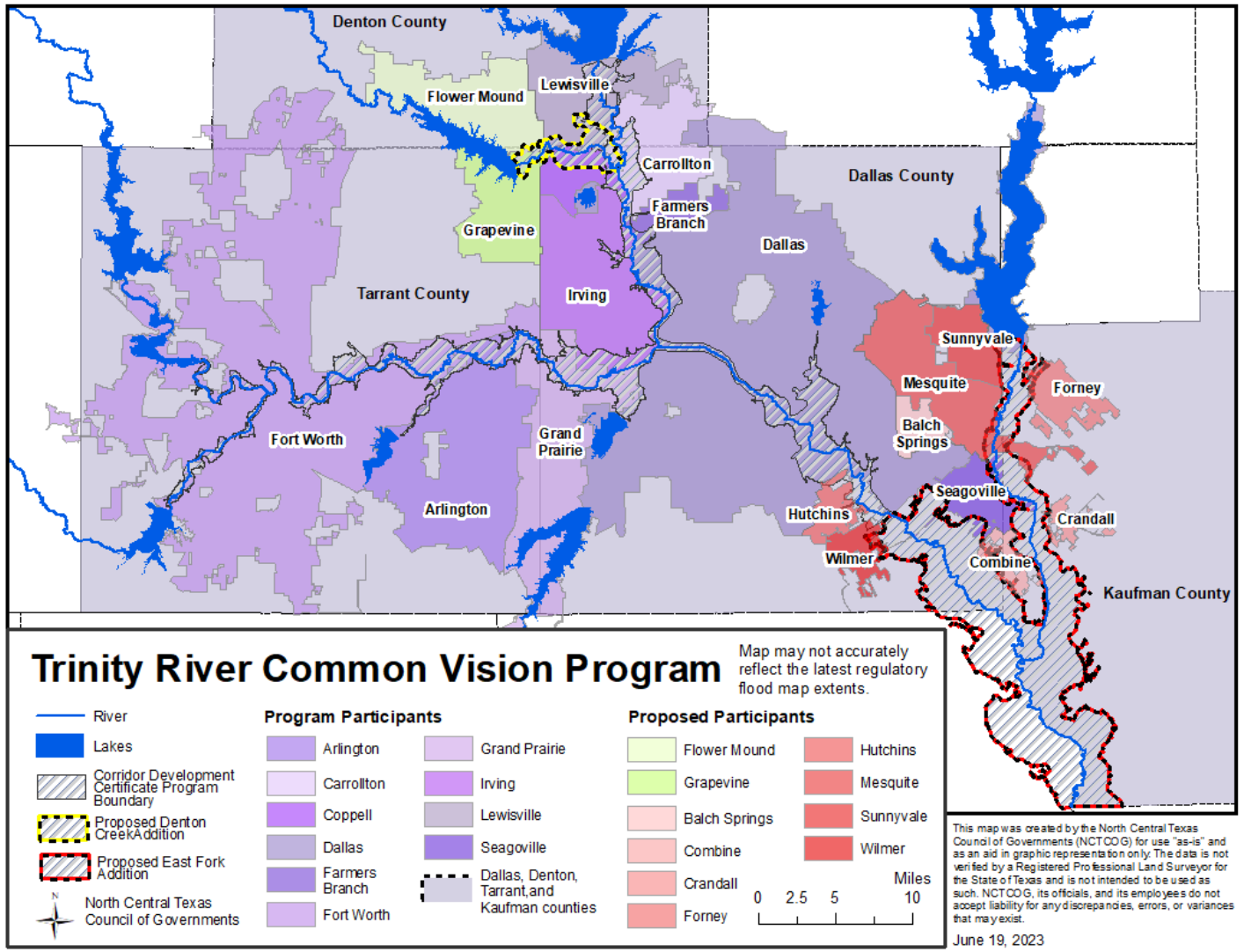
FY2024 Trinity River Common Vision Work Program

East Fork Trinity and Denton Creek Community Integration

- USACE and NCTCOG are working with the City of Weatherford to conduct a pilot study to explore expanding the CDC program.
- NCTCOG will target Wise County as a potential member for COMMON VISION.
- NCTCOG will renew efforts to recruit East Fork communities and Denton Creek Communities.



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FY2024 Trinity River Common Vision Work Program

Classes and Trainings

NCTCOG will host its 29th Annual Combined L0273 Course and Certified Floodplain Manager (CFM) Exam.

- This 4-day course includes an overview of the NFIP, outreach and risk communication techniques, utilization of Flood Insurance Studies and maps to determine the flood hazard risk at given sites, and NFIP minimum floodplain requirements.

Future Training Opportunities

- 4-day CRS training class with FEMA in 2025
- CRS Users Group Meetings
- USACE's free online trainings that include 1D/2D modeling, HEC-RAS, and HEC-HMS
- CDC Model Training

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FY2024 Trinity River Common Vision Work Program

Community Rating System (CRS) Users Group

What is CRS?

- Voluntary incentive program
- Recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP

What is the North Central Texas CRS Users Group?

- Formed by CRS communities in North Central Texas
- Collaborate to meet local floodplain mitigation goals and support each other in qualifying for CRS credit
- One of two CRS users groups in Texas – many others across the nation
- Planning for a 4-day CRS training class with FEMA in 2025

Rate Class	Discount for SFHA*	Discount for Non-SFHA**	Credit Points Required
1	45%	10%	4,500 +
2	40%	10%	4,000–4,499
3	35%	10%	3,500–3,999
4	30%	10%	3,500–3,499
5	25%	10%	3,000–2,999
6	20%	10%	2,500–2,499
7	15%	5%	1,500–1,999
8	10%	5%	1,000–1,499
9	5%	5%	500–999
10	0	0	0–499

* Special Flood Hazard Area

** Preferred Risk Policies are available only in B, C, and X Zones for properties that are shown to have a minimal risk of flood damage. The Preferred Risk Policy does not receive premium rate credits under the CRS because it already has a lower premium than other policies. Although they are in SFHAs, Zones AR and A99 are limited to a 5% discount. Premium reductions are subject to change.

Trinity COMMON VISION

Floodplain Seminar for Elected Officials

Floodplain Seminar for Elected Officials

November 1, 2024; 9:30 - 11:30 AM

NCTCOG Offices, Transportation Council Room, 616 Six Flags Drive, Arlington, TX 76011

Register and Add to Calendar

This seminar is specifically targeted towards elected officials in our region. Others who are interested in learning more about floodplain management are also welcome to attend.

Trinity COMMON VISION

Related Activities Update

Trinity
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Trinity River National Water Trail Master Plan

Trinity
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History and Background

In 2018, Trinity Coalition and NCTCOG met with cities and counties with a proposal to integrate 21 existing canoe launch sites into a single paddling trail. In October 2020, the Trinity River Paddling Trail was designated as a National Water Trail by the National Park Service.

The Trinity River National Water Trail Task Force and master plan is a coordinated effort between:

- The Trinity Coalition
- The North Central Texas Council of Governments
- and the communities and organizations along the Trinity River

The Task Force was created to advance recreation, tourism, and economic development along the Water Trail. The goal of the Task Force is to:

- Support the designation by maintaining the trail
- Promote the use of the trail as a recreational attraction
- Create a regional master plan

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Trinity River National Water Trail

- 130 miles with 21 official launch sites
- Traverses 9 municipalities including Dallas and Fort Worth and as far north as Lewisville
- All but two sections are 4-6 miles in length: one section is 12 miles and one is 24 miles

Trinity COMMON VISION

Master Plan

- Identify long-range actions that advance:
  - Tourism
  - Recreation
  - Economic Development
- Provide resources to help communities maintain and develop the Water Trail

Trinity
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Stakeholder Meetings

- NCTCOG met with 12 stakeholders (i.e., cities, counties, nonprofits)
- Sought feedback on:
  - Goals for the Trinity River Corridor
  - Points of interest to highlight
  - Challenges and opportunities (e.g., design standards, maintenance, signage, safety, etc.)

Trinity COMMON VISION

Goals for the Trail

DEVELOPMENT

Develop new entry sites and expand the footprint of the existing water trail.

PROMOTION

Promote the use of the Water Trail and educate all users.

ACCESS

Make the Water Trail more accessible to all.

MAINTENANCE

Maintain condition and safety of the Water Trail's existing and future launch sites.

PROTECTION

Promote stewardship along the Trinity River.

INTEGRATION

Connect the Water Trail to existing land trails.

PROSPERITY

Promote stewardship along the Trinity River.

LEGACY

Highlight the cultural and historical context of the Water Trail.

Trinity
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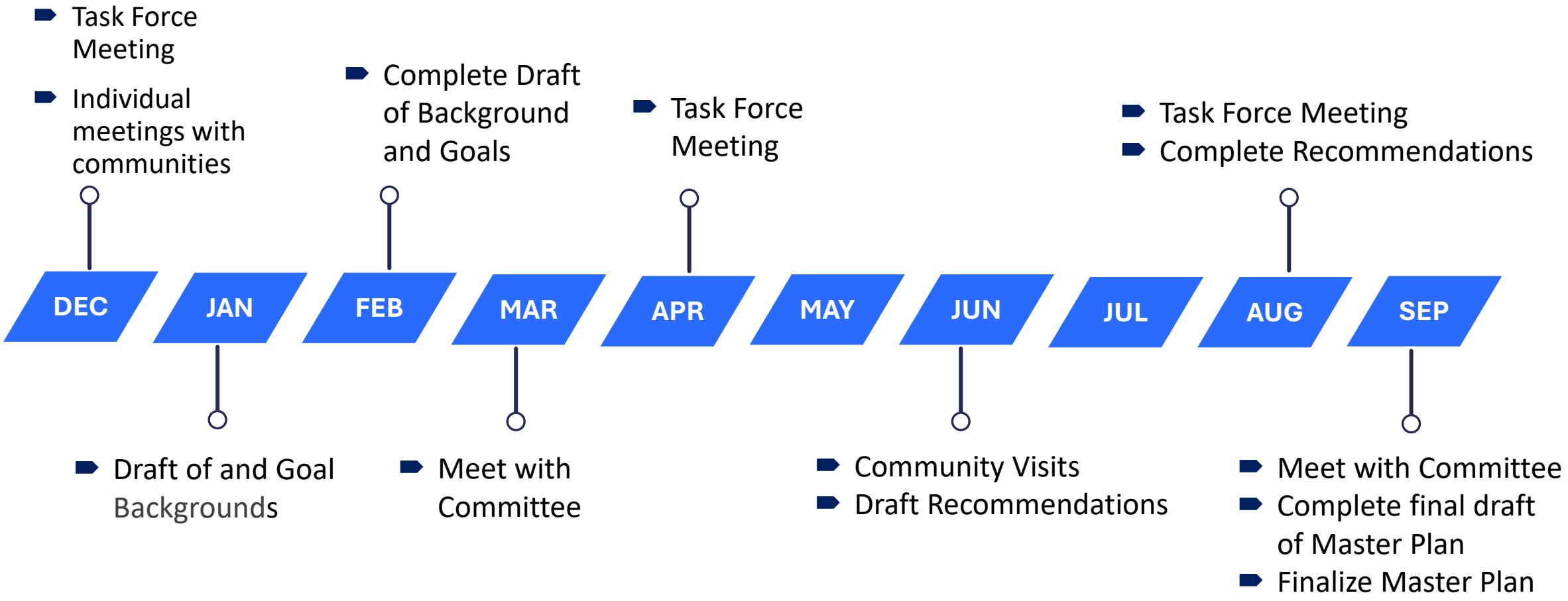
Progress Over the Last Year



Trinity COMMON VISION

North Central Texas Council of Governments

Integrating Transportation and Stormwater Infrastructure

Trinity River COMMON VISION Steering Committee | September 19, 2024

Funded by the Texas General Land Office, Community Development Block Grant, Disaster Recovery Program.

Also Funded by the Texas Water Development Board and Texas Department of Transportation.

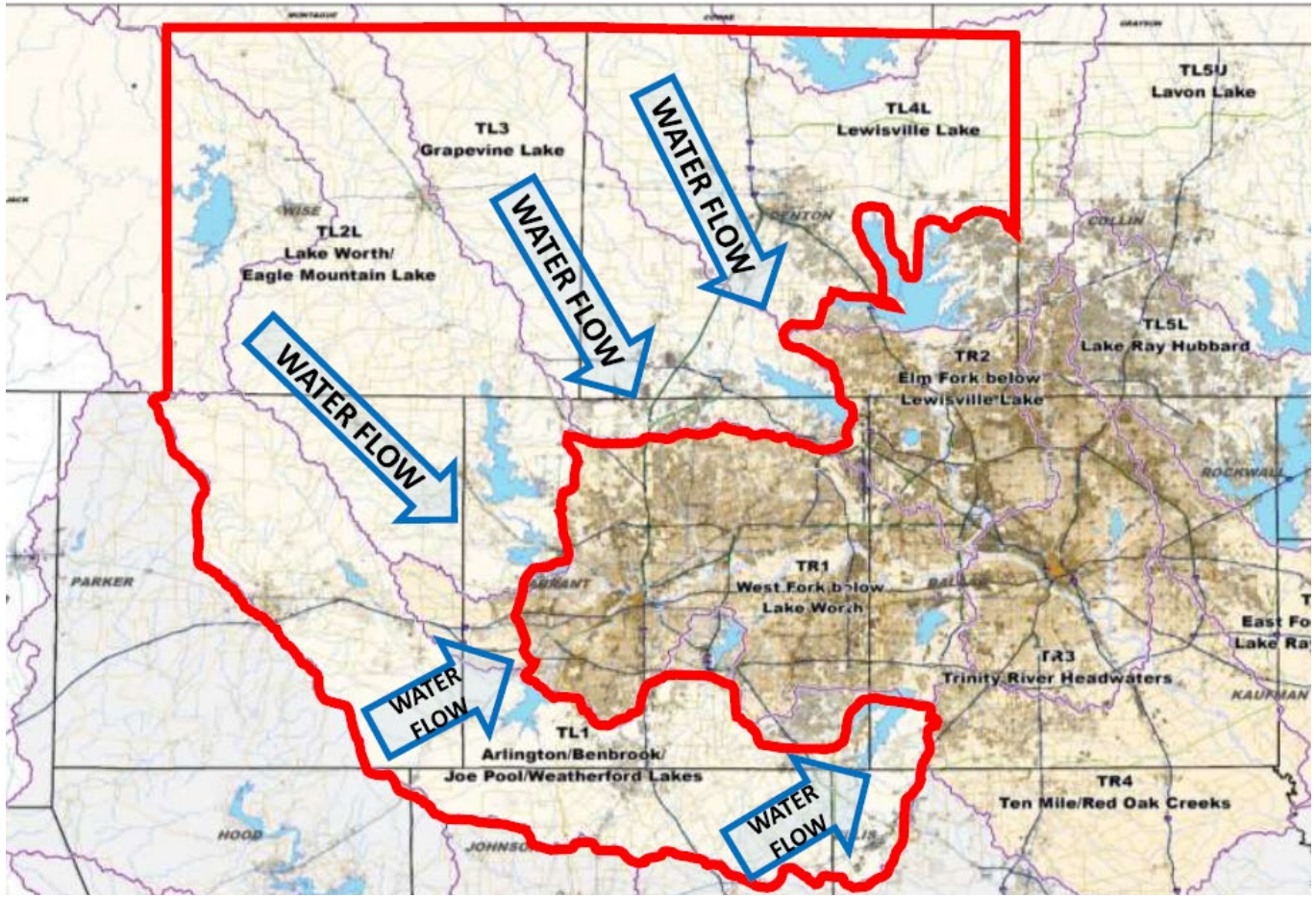
Study Background

www.nctcog.org/tsi

integrating **Transportation & Stormwater Infrastructure**

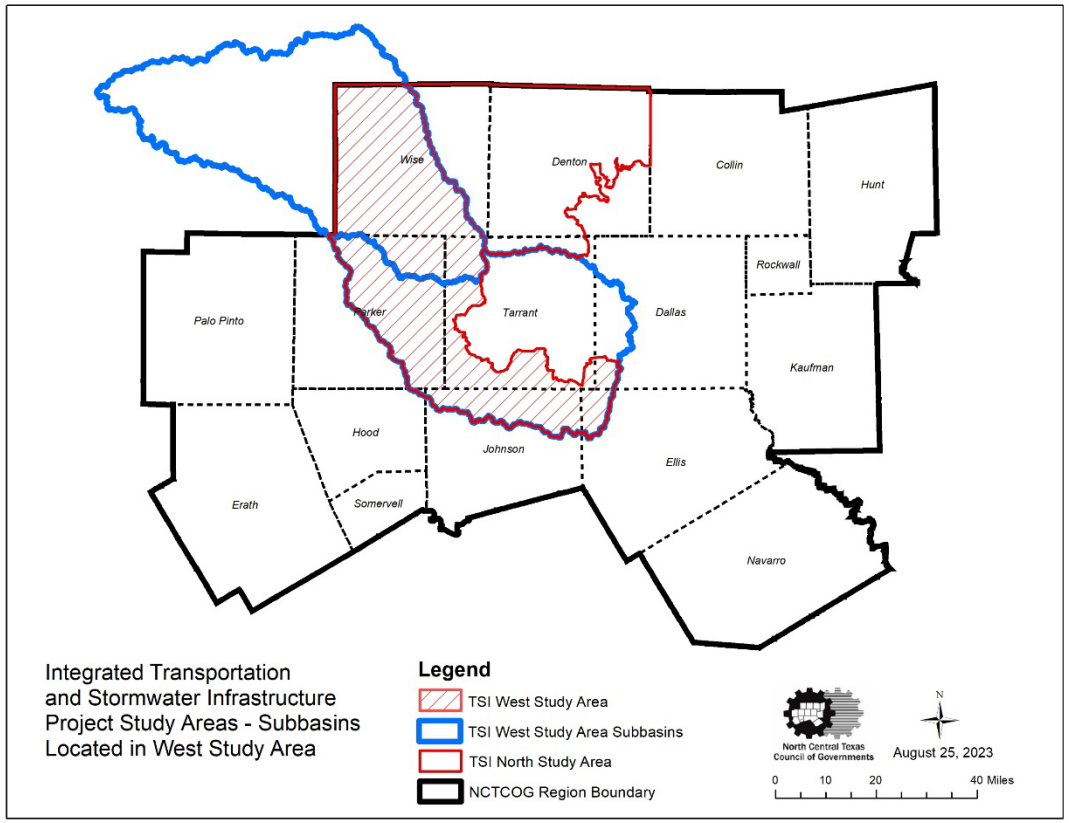
Integrated Transportation and Stormwater Infrastructure (TSI) Initiative

- Integrate stormwater management, urban development, transportation, and environmental planning
- Identify impacts and alleviate risks from flooding
- Get ahead of growth
- Reduce costs

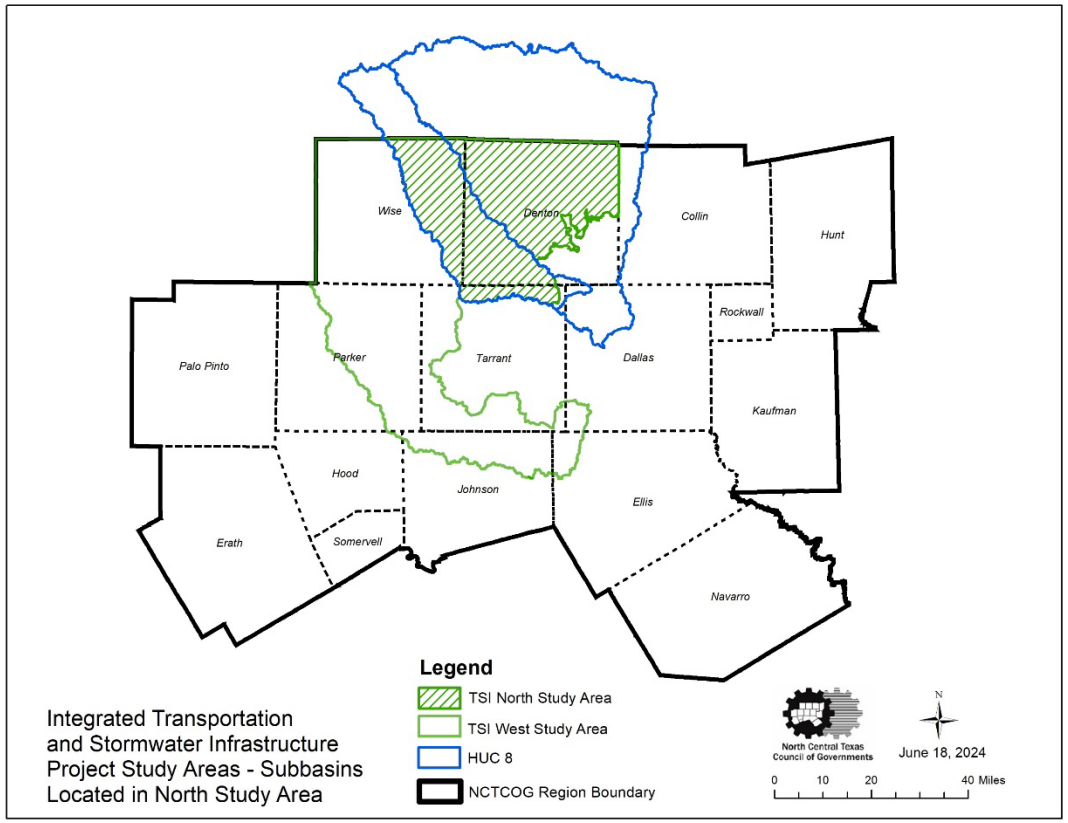


integrating Transportation & Stormwater Infrastructure

West and North Study Areas



Arlington, Dallas, Fort Worth, Grand Prairie, Tarrant County



Lewisville, Fort Worth, Denton County, Tarrant County

integrating **Transportation & Stormwater Infrastructure**

Project Area Details

- 85 cities and portions of 8 counties
- 126% increase in population (2020 – 2045)
- 60% undeveloped (2015)
- 19% growth in impervious surface (2006 – 2016)
- > 7,000 miles of streams and > 274,000 acres of 100-year floodplain

Photo courtesy of City of Newark

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Ongoing Challenges

Urbanization Demands

- About 50,000 people are moving to the study area every year
- More urbanization and development leads to more impervious surfaces

Stormwater Data

- No regionwide infrastructure data
- Piece-meal/lacks connectivity
- NOAA Atlas 14 updated rainfall estimates but only updated every 10 years

Transportation Funding

- Transportation spending is high and growing, including for asset management
- Rate of deterioration for transportation infrastructure increasing

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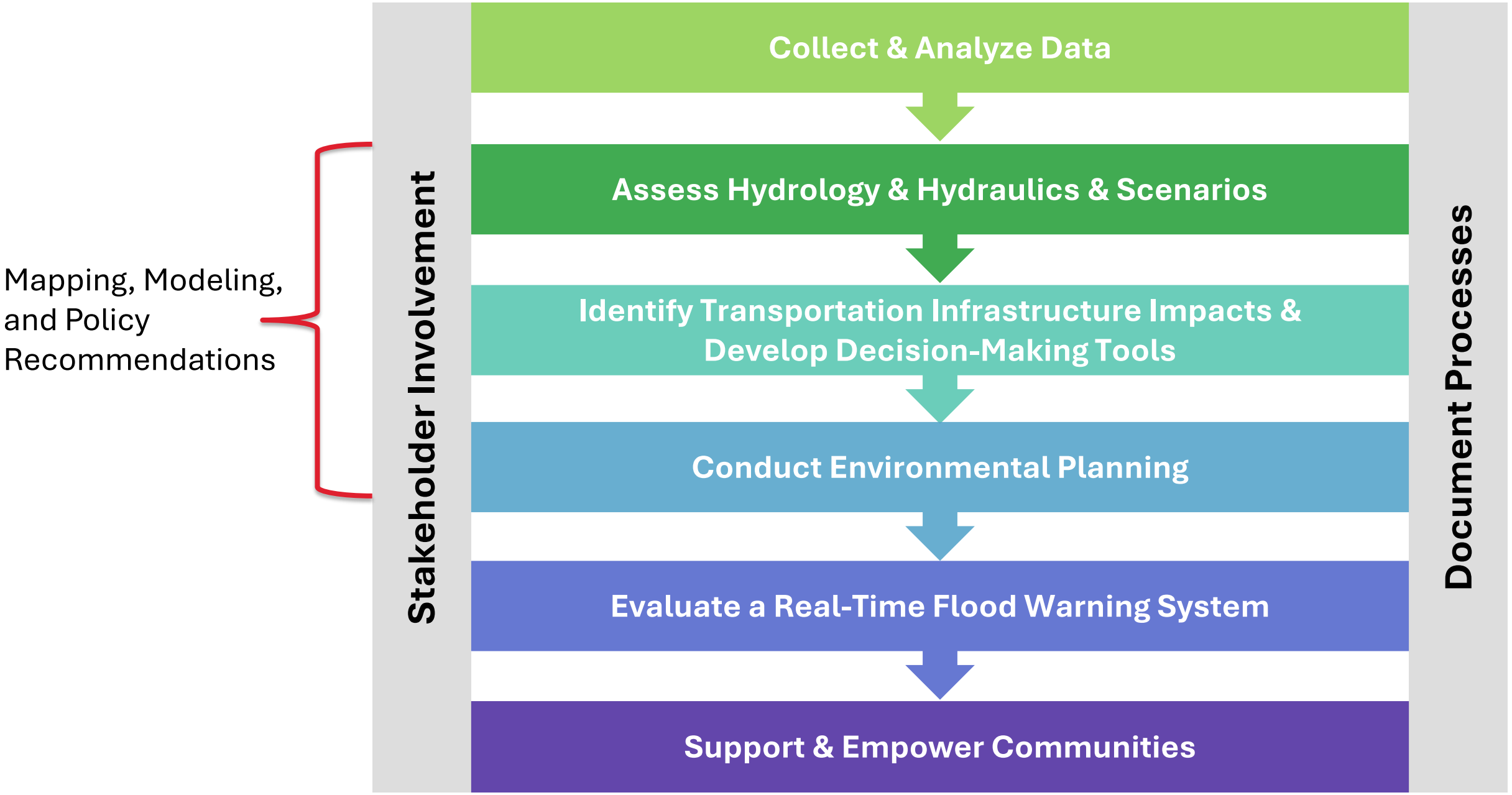

integrating Transportation & Stormwater Infrastructure

Study Benefits for COMMON VISION Communities

- Potential reduced flows to downstream communities
- Participation possible via Technical Advisory Group, annual Project Update meetings, training workshops
- Developer exposure to TSI concepts
- Documented methods for updating hydrologic and hydraulic models and incorporating data into real-time flood warning systems
- Documented methods for identifying optimal locations for green stormwater infrastructure and nature-based solutions
- Universal model policies, codes, and ordinances
- Universal transportation planning recommendations
- Pilot expansion of Corridor Development Certificate Program
- Identified funding strategies

Estimated Study Timeline

Through Fall 2025
Continue training workshops and site visits to individual communities

Winter 2025/2026
Complete H&H modeling and identify transportation and other policy recommendations

March 2026
Conduct project update meeting to present findings and seek stakeholder feedback

June 2026
Conduct project update meeting to present final products incorporating stakeholder feedback

July 2026
Submit deliverables to funding agencies

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Data & H&H Modeling

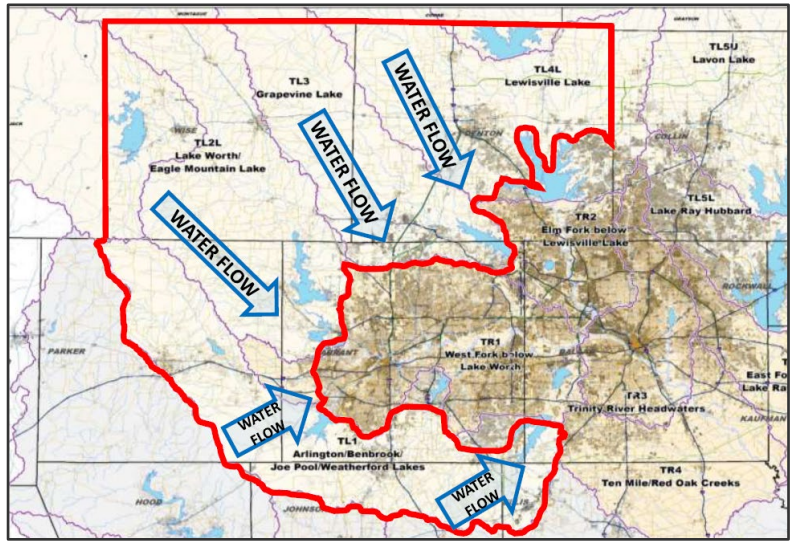
integrating **Transportation**
& Stormwater Infrastructure

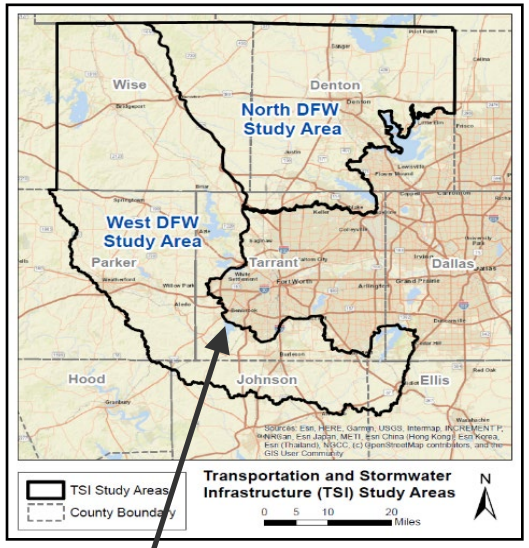
Response vs. Prevention

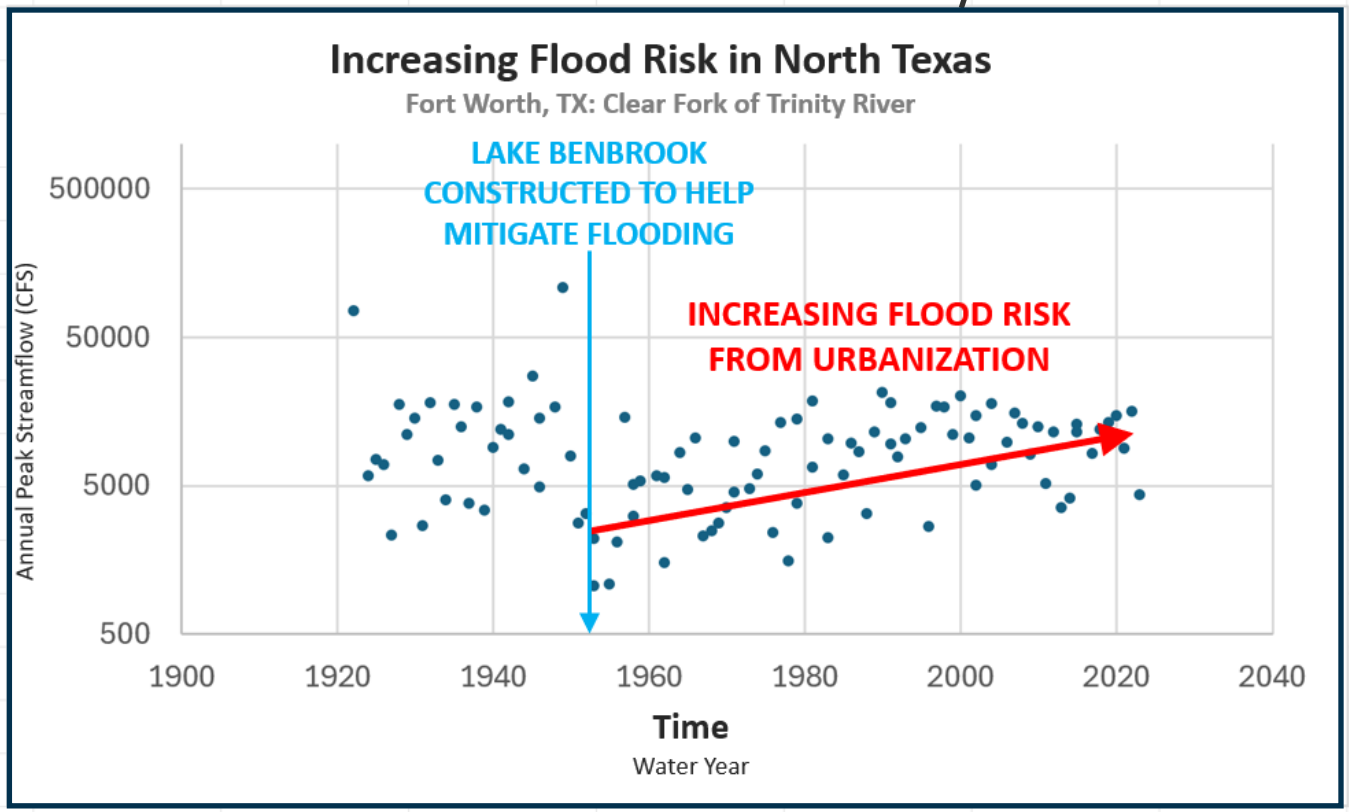
Sources: Flooded Area of Stores and Homes Near Downtown Fort Worth During Flood of 1949; https://texashistory.unt.edu/ark:/67531/metapth27965/: University of North Texas Libraries, The Portal to Texas History, https://texashistory.unt.edu; Tarrant County College NE, Heritage Room

Fort Worth – May 1949 (~11 inches of rain overnight):

- Levees breached, 10 deaths & $11M+ in damages
- *Resulted in extensive improvements to flood control infrastructure*
  - Water District (established in 1924)
  - USACE Fort Worth District (established in 1950)







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How Can *WE* Accomplish This?

- TSI benefits from valuable flood hazard awareness and resiliency information that has helped reduce uncertainty related to flood risk
- Enables us to further enhance and integrate this information at a regional scale
- Without this information, it would require extensive effort on the front end of the project to get here

Leverage existing Flood Risk Management initiatives…

… to innovate at a regional scale

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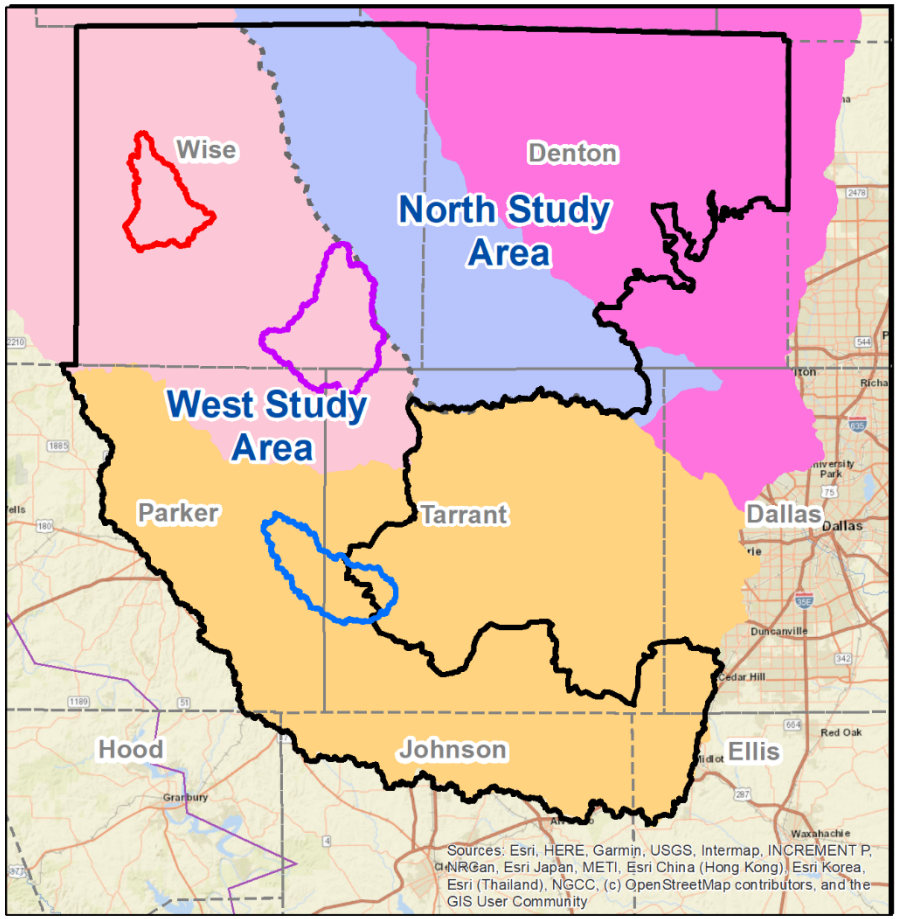
Hydraulics

- Developed SOP and enhancing hydraulic models to inform flooding considerations:
  - Defining approach for enhancing Base Level Engineering (BLE)
    - Exploring 1D vs 2D model considerations
    - Testing approaches, adding detail, urban drainage, determining environmental constraints, establish recurrence intervals, incorporate current/future flows, optimization scripting, etc.

TSI Project
West Study Region
HEC-RAS Model Development
May 2024

Defining TSI HEC-RAS Modeling Process for:

1. 1D Individual Models
2. 1D Combined Models
3. 2D Modeling



TSI Pilot Areas with BLE (as of FEB 2024)

Eagle Mountain Pilot Area
Mary's Creek Pilot Area)
Bridgeport Pilot Area
Denton: BLE AVAILABLE ON VIEWER (1D STUDY)
Elm Fork Trinity: BLE AVAILABLE ON VIEWER (1D STUDY)
Lower West Fork Trinity: BLE COMPLETE & ON VIEWER SOON (2D STUDY)
Upper West Fork Trinity: BLE AVAILABLE ON VIEWER (1D STUDY)

0 5 10 20 Miles

N

BLE Viewer Link: https://webapps.usgs.gov/infrm/estBFE/

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Hydrology

- Developed SOP and enhancing hydrology (including new flow locations) in pilot areas and larger West area:
  - Mary's Creek
  - Village Creek
  - Mountain Creek
  - Clear Fork
  - West Fork

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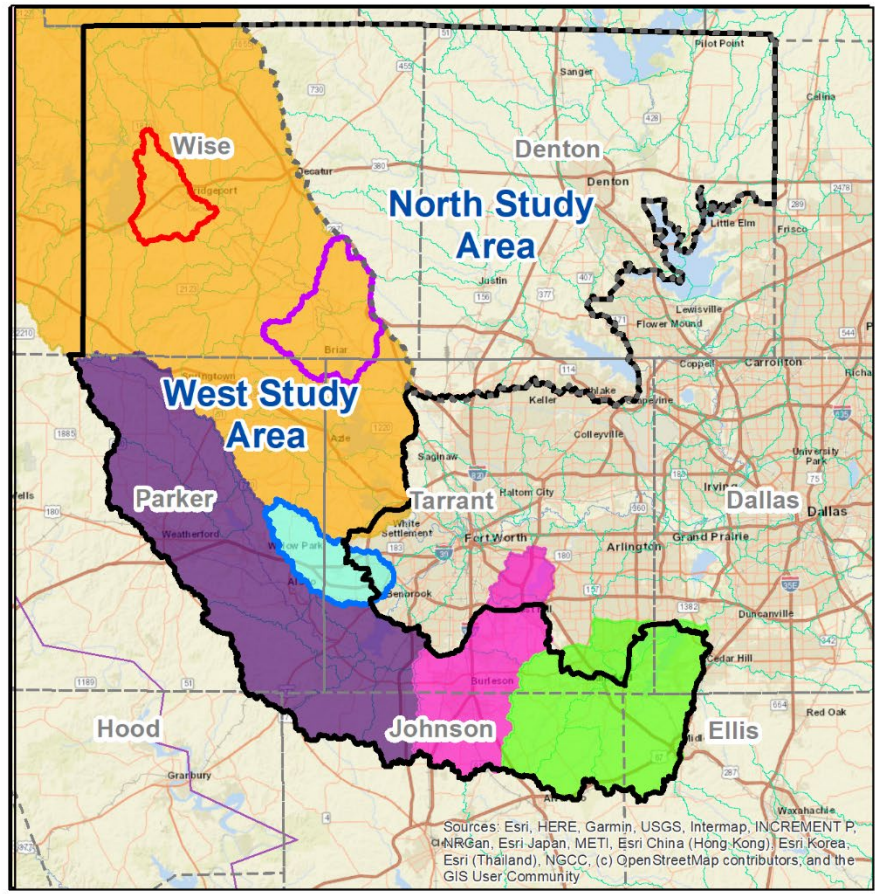
TSI Project
West Study Region
HEC-HMS Model Development SOP

May 2024

1. Delineate additional subbasins in HEC-HMS
2. Update HMS element names and descriptions
3. Calculate initial HMS parameters
4. Calibrate to InFRM WHA results
5. Update the HMS basin model for TSI current and future conditions
6. Run TSI storm scenarios
7. Model documentation
8. Submit final HMS model for review and use for team members



TSI Pilot and Hydrology Focus Areas

TSI Study Areas
County Boundary
InFRM WHA Subbasins

Eagle Mountain Pilot Area
Mary's Creek Pilot Area
Bridgeport Pilot Area

0 5 10 20 Miles

N

West Hydrology Focus Areas

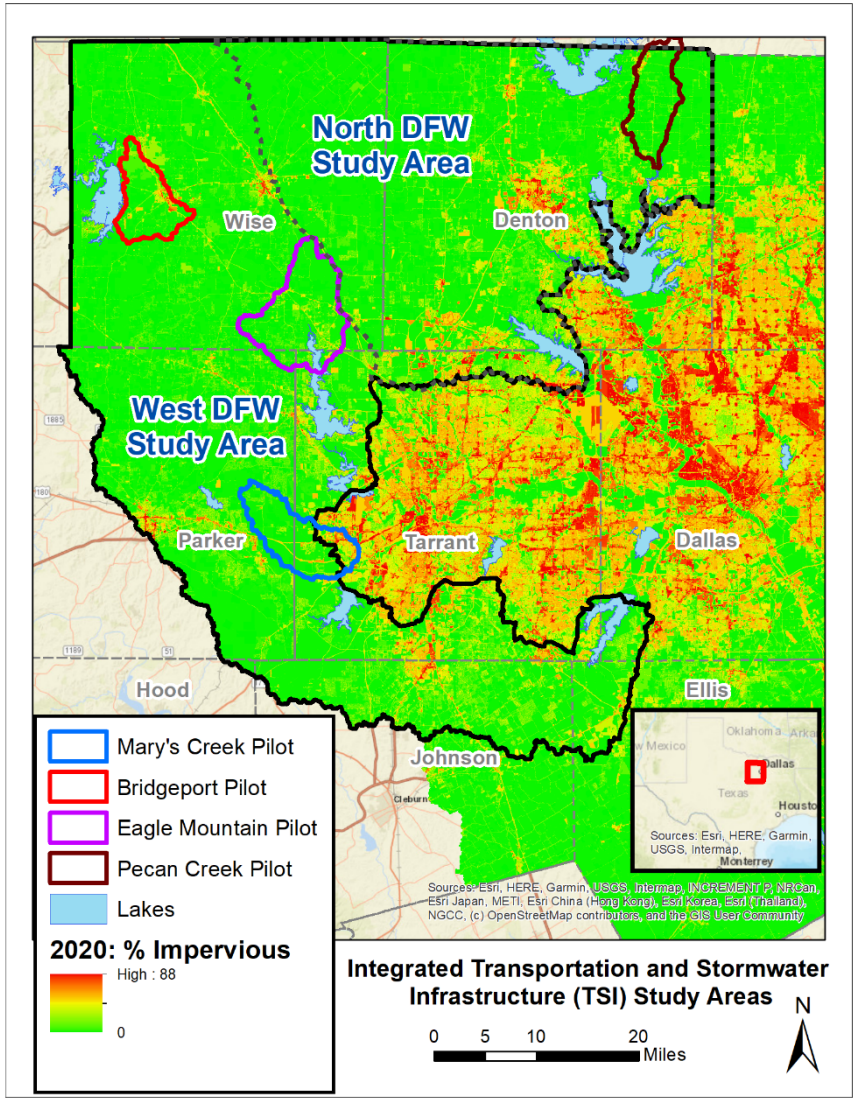
Clear Fork
Marys Creek
Mountain Creek
Village Creek
West Fork

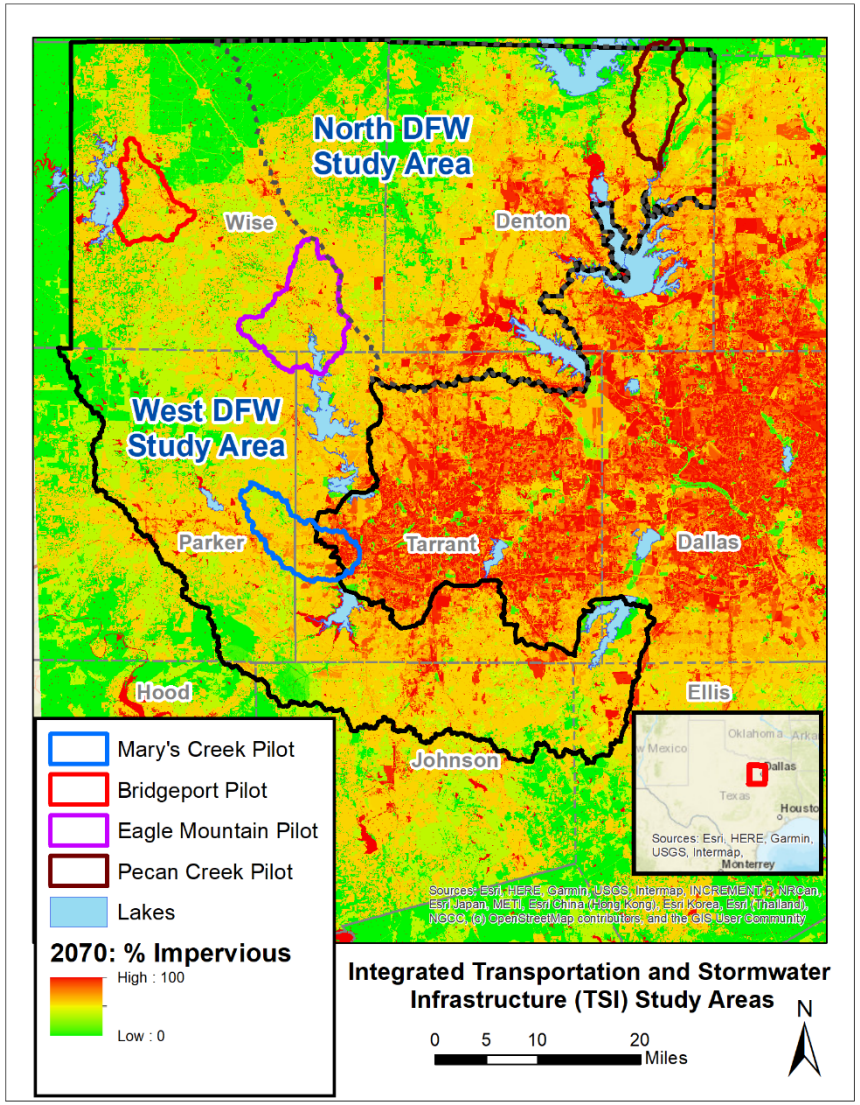
Green Stormwater Infrastructure

integrating **Transportation**
& Stormwater Infrastructure

Typical Urbanization Adds Impervious Surfaces

2020 (6.4% Impervious) → 2070 (35.2% Impervious)





Green Stormwater Infrastructure and Nature-Based Solutions Can Mitigate Increased Runoff

Menu of potential green stormwater infrastructure (GSI) and nature-based solutions (NBS) mitigation strategies

Ideal locations for GSI and NBS

Return-on-investment analysis

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Approach to Flood Risk Reduction Flood Susceptibility Mapping

- Indicator method: Develop a flood susceptibility map using a GIS stacking model that includes four categories of conditioning factors: **Environmental, Socio-economical, Infrastructural, and Institutional**

Environmental

Topographical
- Elevation
- Slope
- LS factor
- Aspect
- Curvature
- TWI
- TRI

Meteorological
- Rainfall intensity
- Rainfall duration
- Rainfall frequency

Geological
- Geology (lithology)
- Soil hydrologic group

Hydromorphological
- SPI
- STI
- Stream order
- Distance from river
- Stream density
- Flow accumulation
- Flow direction
- Time of concentration
- Curve number

Land use/cover
- NDVI
- NDWI
- Imperviousness or NDBI

Socio-economical

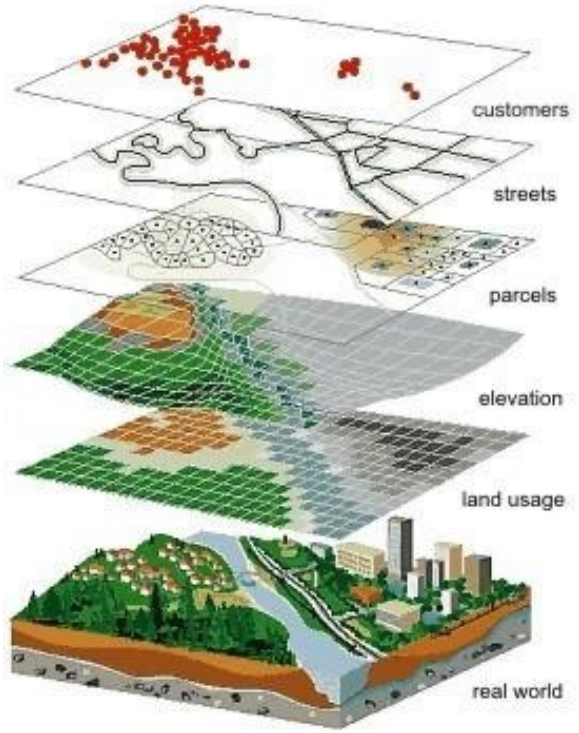
- Social vulnerability index
- Population density

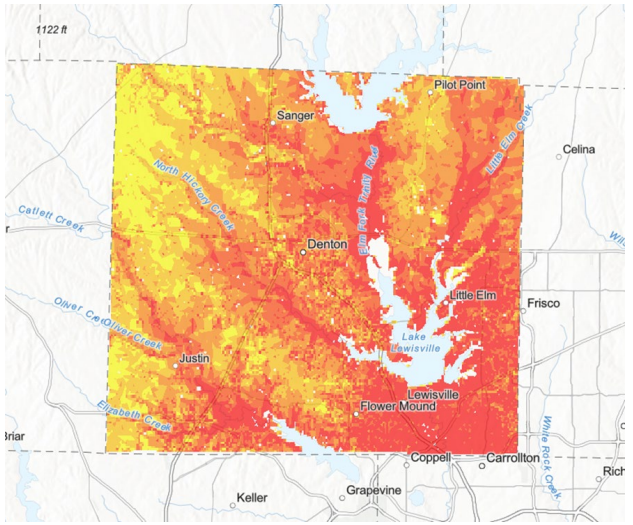
Infrastructural

- Distance from transportation network
- Distance from NRCS BMPs (ex. water harvesting catchment, pumping plant, roof runoff structure)

Institutional

- Distance from USGS streamflow monitoring gauges





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Note: Factors are summarized based on a literature review from 30 peer-reviewed journal articles over the past three years. All these factors could be considered in TSI study according to the data availability.

Optimization Study

- The optimization study aims to model ideal **location and sizing** for detention ponds and consider potential alternatives (e.g., GSI/NBS) **to reduce downstream flows**.
- Utilizes the enhanced hydrology (HEC-HMS) models as a starting point.
- May incorporate transportation facilities at risk, regulatory tools, green infrastructure applications, scenario options, vulnerable areas, infrastructure integration options, and flood-prone and ideal GSI/NBS implementation areas where possible.
- Relies on the results of GSI and NBS suitability index based on geological, social, and environmental parameters and ranking of project types and locations.

Result: A menu of options & integration where it makes sense

Note that these images are AI generated

integrating **Transportation & Stormwater Infrastructure**

Upcoming TSI Activities

Technical Advisory Group Meeting

Friday, October 25, 10:30 a.m. - noon

Microsoft Teams

Attend the meeting

Community Site Visits

In person in your community

Please reach out to a study team member to schedule a visit

Training Workshops

Potential topics:

- County Watershed Management
- Upstream/Downstream Communities Dialogue
- Others?

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Funding Partners

Texas General Land Office / Department of Housing and Urban Development

Texas Water Development Board

Texas Department of Transportation / Federal Highway Administration

US Army Corps of Engineers

Federal Emergency Management Agency

Project Partners

West Study Area

North Central Texas Council of Governments

US Army Corps of Engineers

University of Texas at Arlington

Texas A&M AgriLife Extension Service

Tarrant Regional Water District

Freese and Nichols, Inc.

Halff Associates, Inc.

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USACE Updates on NFIP-CDC Model Improvement Efforts

September 2024

Trinity River Common Vision Steering Committee

C. Landon Erickson, P.E.

Lead Hydraulic Engineer, Water Resources

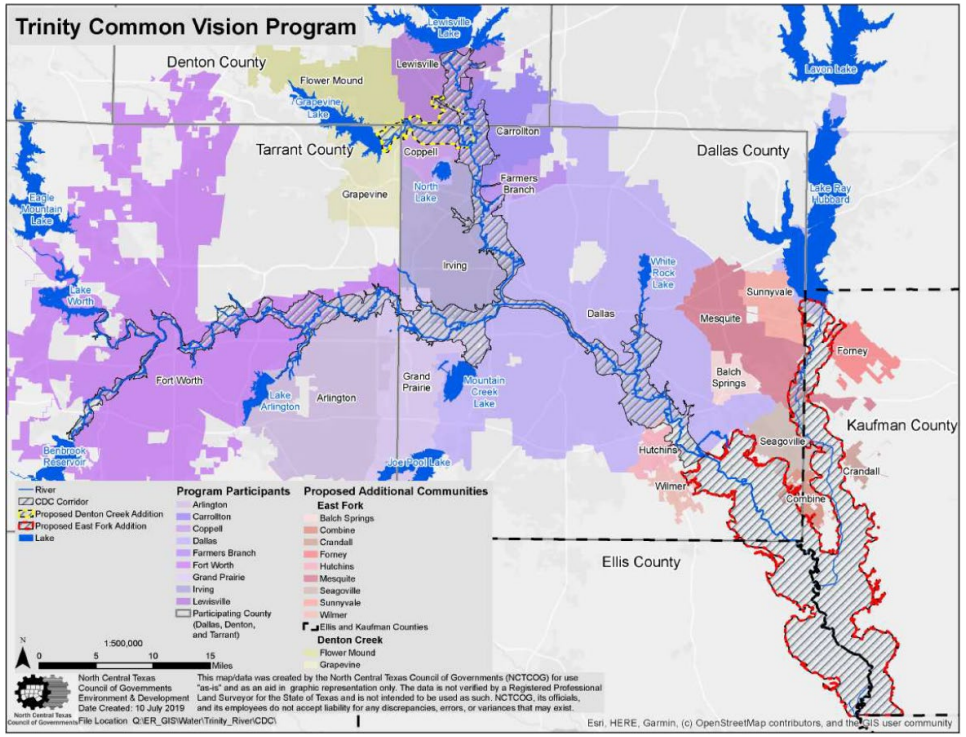
U.S. Army Corps of Engineers

Fort Worth District

What Is Model Consolidation

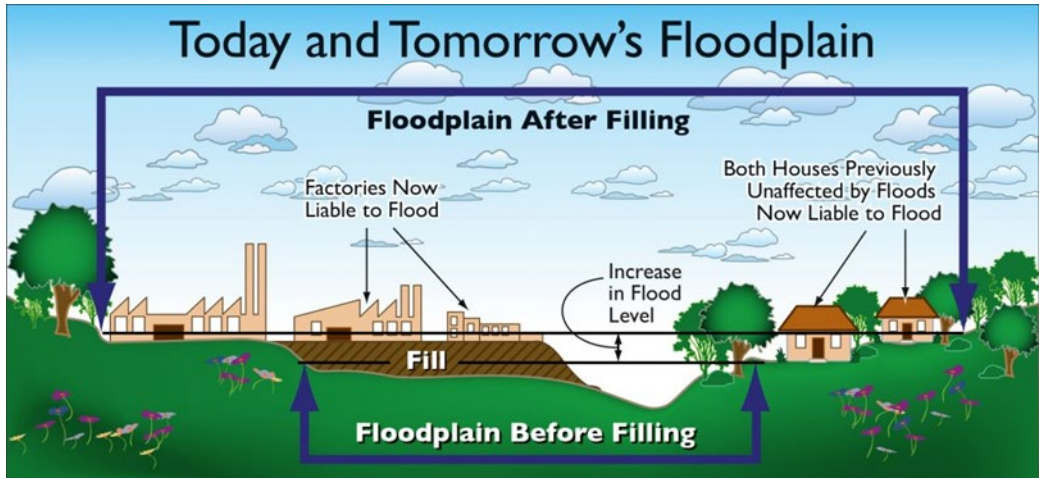
2 Models, 2 Purposes (Goals, Objectives, Criteria)

- **FEMA NFIP model(s)**
  - Used for the National Flood Insurance program
  - Existing conditions
  - Projects must be constructed
- **FMTF/NCTCOG CDC model(s)/tool(s)**
  - Used to manage growth and development
  - Loss of storage and WS elevations
  - Has prevented billions in damages
  - Future conditions
  - Constructed and planned (permitted) projects



One Model (Consolidated) – Many Purposes

- Managed by the NCTCOG w/ technology
- Captures watershed/floodplain changes
- Transparency in both processes
- Consolidated review process
- Satisfies and supports NFIP and CDC
- Manages storage, WS elevations and…
- Simplified and streamlined
- Promotes flood risk awareness and resiliency
- Incorporates new technologies, tools and data (decreased uncertainty)
- Other purposes

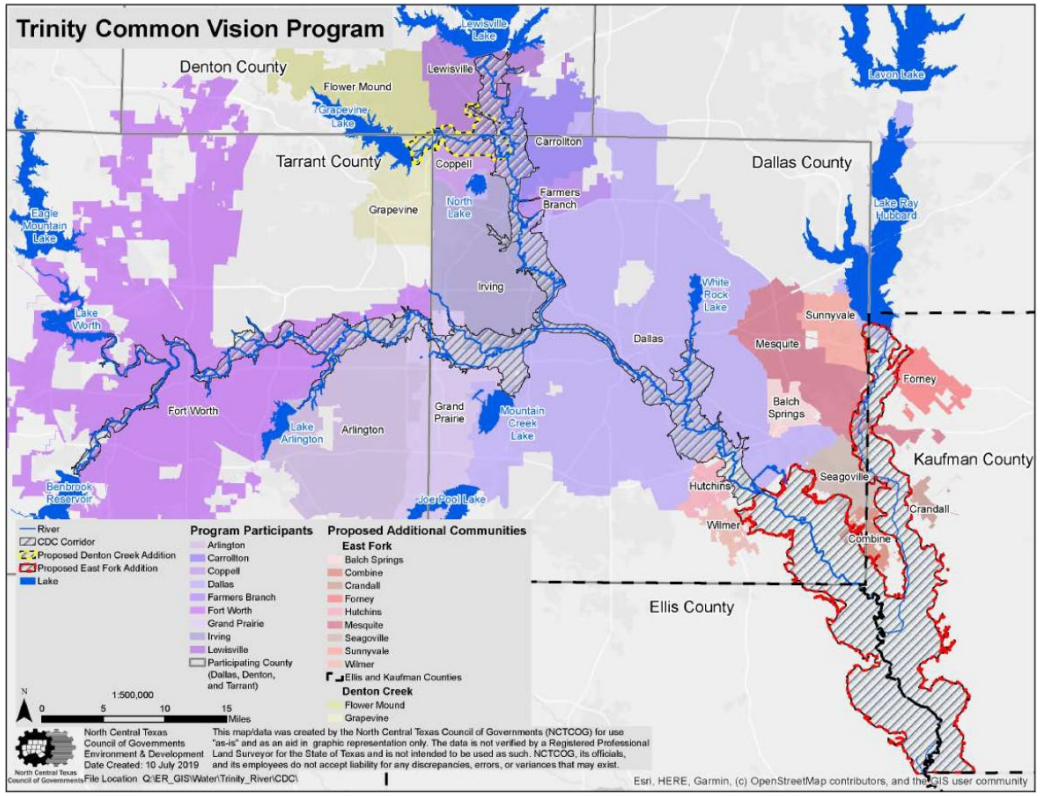


Trinity COMMON VISION

FY2023 Trinity River Common Vision Work Program

NFIP/CDC Model Consolidation Highlights

- **Common actions**
  - Incorporate new georeferencing technologies (FEMA funded $2 M)
  - Restructured for multi-purpose and future conditions
  - Leverages Trinity River WHA meteorological and hydrologic models (FEMA & USACE funded $1 M)
  - Collaboration with member communities
- **NFIP-CDC Model Consolidation**
  - Integration of floodplain actions (FEMA)
  - Integration of CDC projects since last update
  - Schedule & cost – Compete (May 2023) $0.25 M
- **NFIP-CDC Main Stem/East Fork Trinity River Model Extension**
  - NFIP model completed, all floodplain actions incorporated (FEMA funded $1.5 M)
  - CDC H&H models under development
  - Collaboration with member communities
  - Discussed strategy with NCTCOG and FEMA Region 6.
  - Schedule and Cost – 2024, $0.3 M



Trinity COMMON VISION

FY2023 Trinity River Common Vision Work Program

NFIP-CDC Model Consolidation

- Updated the newly georeferenced CDC model with future flows and approved but not yet constructed CDC project geometries from 2017 onward.
  - USACE and FEMA worked to update their respective models and posted consolidated NFIP-CDC model to the Trinity River CDC website.
  - Culmination of a collaborative effort to generate a first-ever consolidated NFIP/CDC model.
  - Aligns with NFIP/CDC manual updates and incorporates FMTF review & feedback.
- Consolidated NFIP-CDC model was approved at May 2023 FMTF meeting and posted to https://www.nctcog.org/envir/watershed-management/corridor-development-certificate-program/trinity-river-corridor-development-certificate.
  - **Thank you to our partners for this collaborative effort to generate a first-ever consolidated NFIP/CDC model**

Trinity COMMON VISION

FY2023 Trinity River Common Vision Work Program

NFIP-CDC Model Extension

Study extents:

East Fork Trinity - 30 miles
Lake Ray Hubbard to Trinity River

Trinity Main Stem - 38 miles
South of IH 20 to Henderson County

3 Impacted Counties:

- Dallas
- Ellis
- Kaufman

FY2023 Trinity River Common Vision Work Program

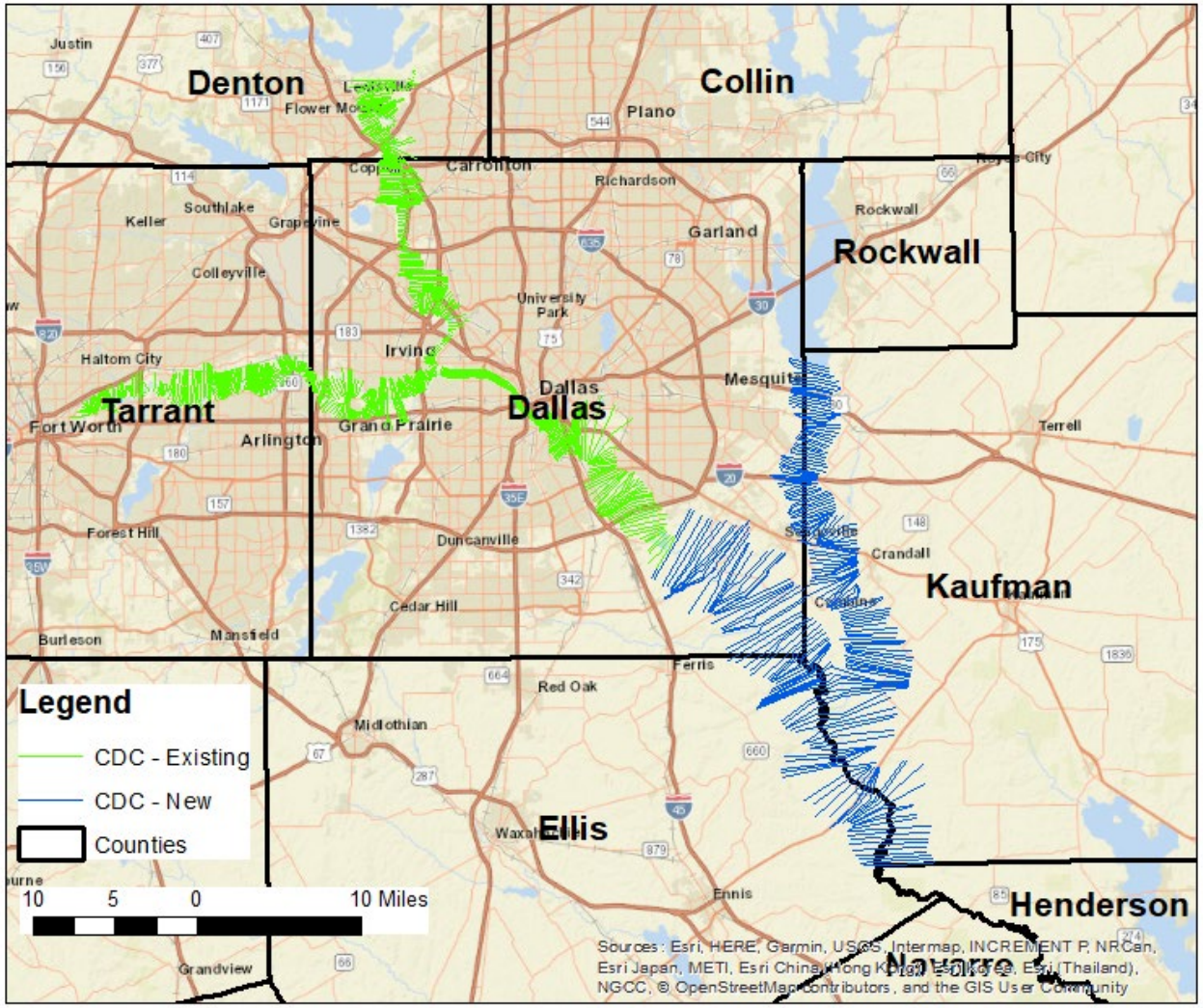
NFIP-CDC Model Extension: Trinity Main Stem and East Fork Trinity

Deliverables

- Future land use HEC-HMS Model (Trinity Main Stem extension and East Fork)
- Extended CDC HEC-RAS Model
- Inundation area shapefiles for future flood events
- Project study report

Benefits

- Stabilization of flood risk along East Fork and Main Stem to Henderson County
- Opens the door for new opportunities and new member communities



USACE as a Technical Advisor

September 2024

Trinity River Common Vision Steering Committee

C. Landon Erickson, P.E.

Lead Hydraulic Engineer, Water Resources

US Army Corps of Engineers

Fort Worth District

Overview

- **What?** The Fort Worth District Water Resources Branch serves as a technical advisor & source of funding assistance to our local, state & federal partners
- **Why?** Aligns with USACE mission and vision of collaborative engineering solutions
  - **Discussion Topics:**
    - Historical and Extreme Flooding
    - Trinity River Common Vision Program
      - Support to Flood Management Task Force
      - Role as Technical Advisor
    - Funding Assistance to Communities
    - Water Management
    - Trinity Operations Study
    - Precipitation: Texas Storm Study
    - Hydraulics: Base Level Engineering
    - Hydrology: Watershed Hydrology Assessments
    - Other Scenarios: Regional Storm Shifting
    - Using the Data: Community Flood Assessments
- **Outcome:**
  - Innovative resources, data, and support to enable community awareness and resiliency against flooding
  - **Enables taking action and setting policy**

USACE MISSION: Deliver vital engineering solutions, in collaboration with our partners, to secure our Nation, energize our economy, and reduce disaster risk

USACE VISION: Engineering solutions for our Nation's toughest challenges

Historical Flooding

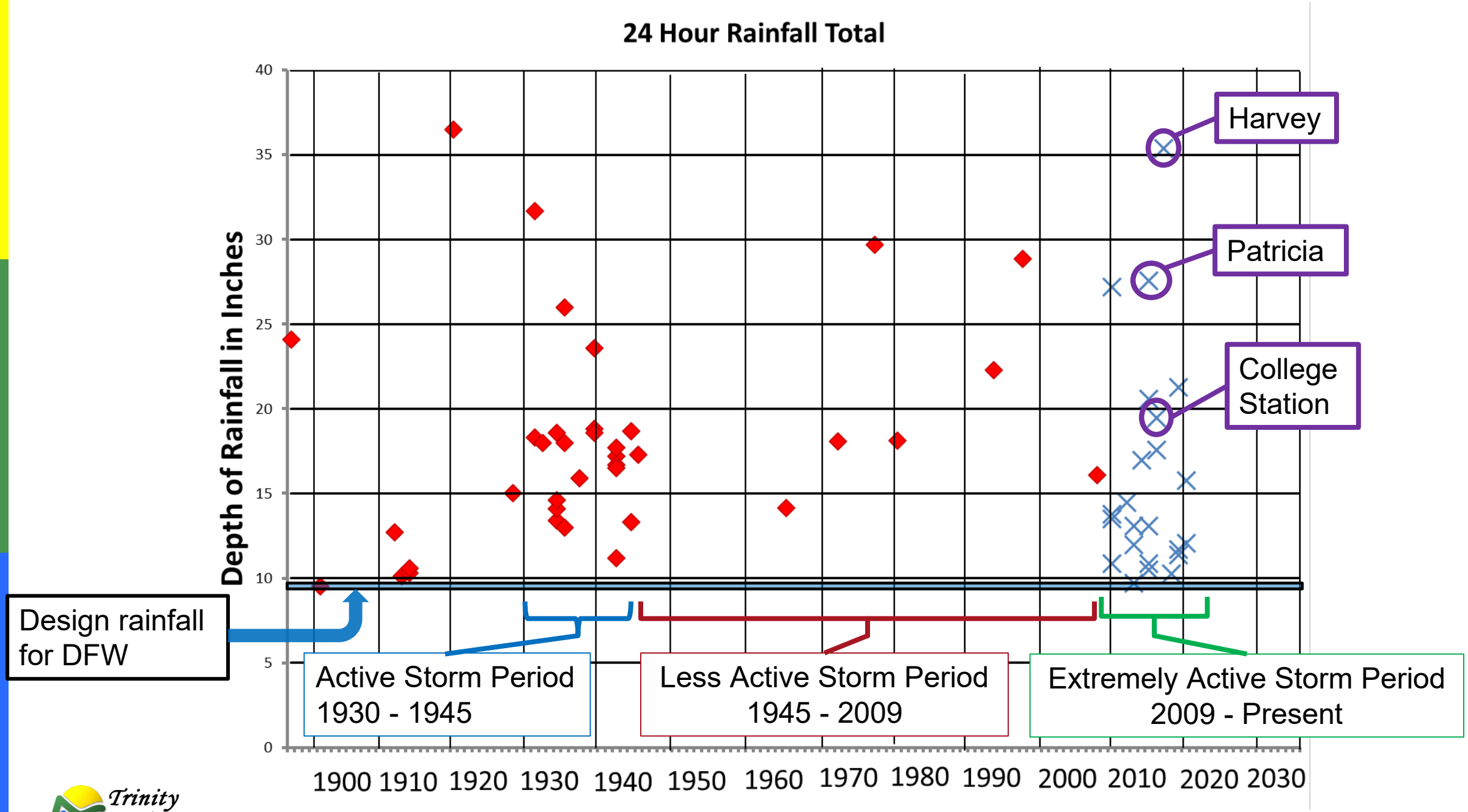
Sources: Aerial View of Flood in Fort Worth in 1949, photograph, May 17, 1949; (https://texashistory.unt.edu/ark:/67531/metapth40670/: University of North Texas Libraries, The Portal to Texas History, https://texashistory.unt.edu ; Lockheed Martin Aeronautics Company, Fort Worth.

Sources: Flooded Area of Stores and Homes Near Downtown Fort Worth During Flood of 1949; https://texashistory.unt.edu/ark:/67531/metapth27965/: University of North Texas Libraries, The Portal to Texas History, https://texashistory.unt.edu; Tarrant County College NE, Heritage Room

Fort Worth – April 1922 (11" of rain in 2 days) and May 1949 (~11" of rain overnight):

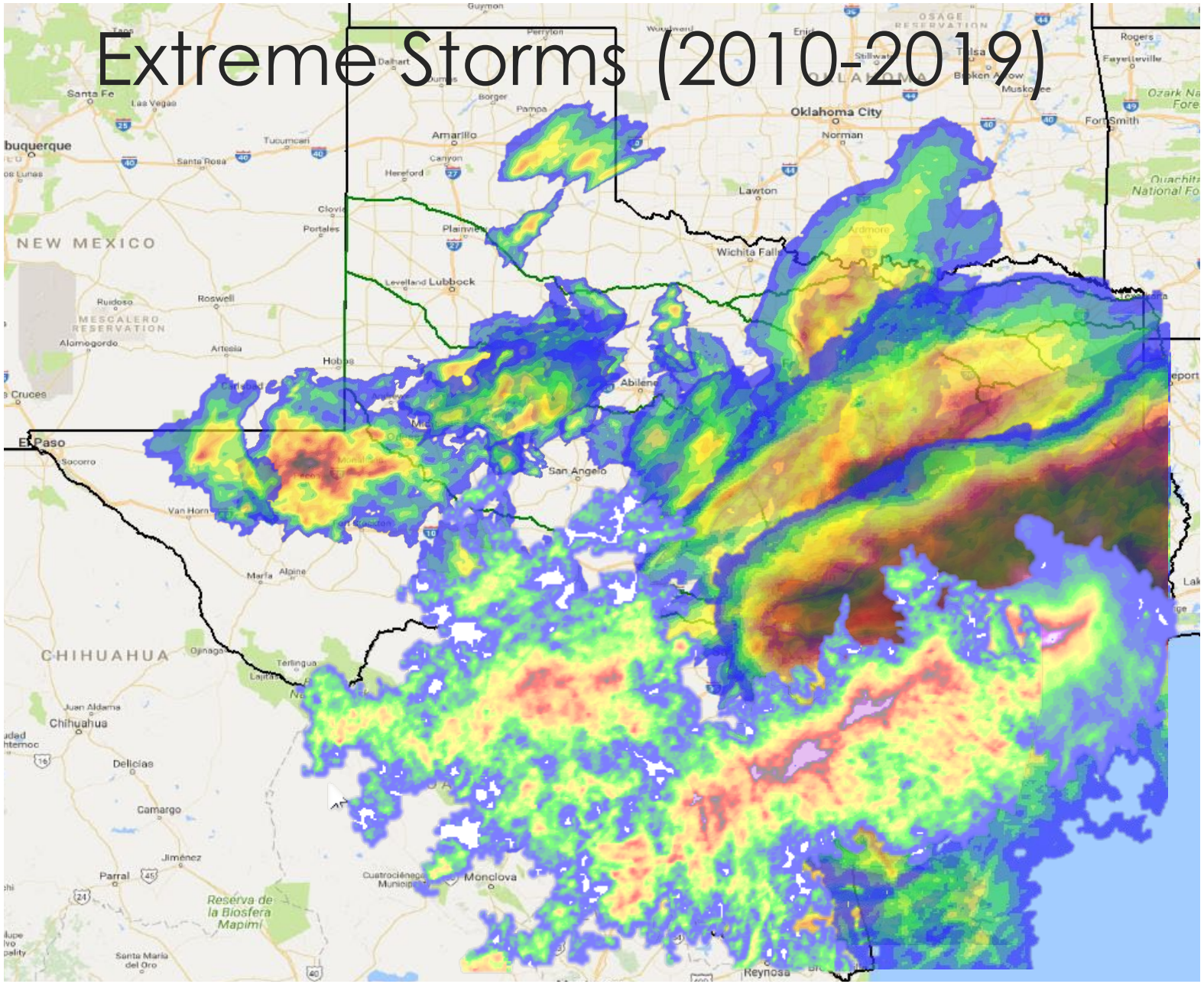
- Levees breached, dozens of deaths & millions in damages
- *Motivated countywide effort to prevent further flooding and provide adequate water supply.*
- ***Resulted in extensive improvements to flood control infrastructure***
  - Water District (established in 1924)
  - USACE Fort Worth District (established in 1950)

Trinity COMMON VISION



Trinity COMMON VISION

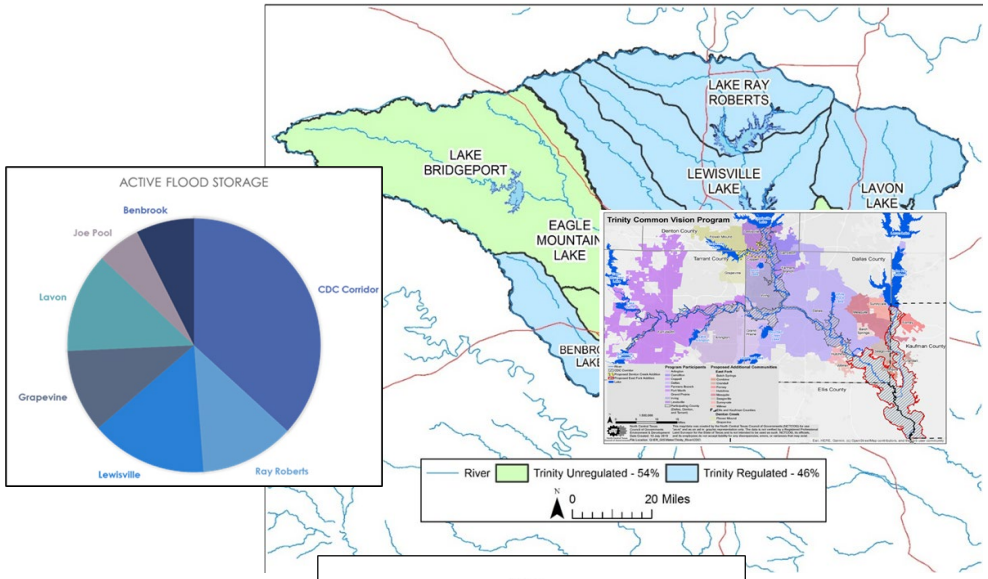
Extreme Storms (2010-2019)

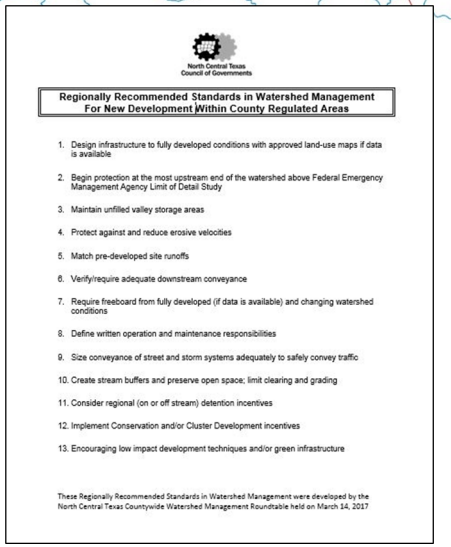


Trinity
COMMON VISION

Trinity River Common Vision Program

- Administered by NCTCOG
- Supported by communities along Trinity River Corridor
- Innovative and proactive regional floodplain management program
- Resources
  - Flood Management Task Force (FMTF)
  - Steering Committee
  - Technical advice and reviews – USACE
- Goals
  - Oversight
  - Reduced community risk
  - Increase resources, funding, personnel
  - Bring 160+ communities together
- Status
  - More communities joining
  - Many spinoff programs
  - Tools, analysis and data





North Central Texas Council of Governments

Regionally Recommended Standards in Watershed Management For New Development Within County Regulated Areas

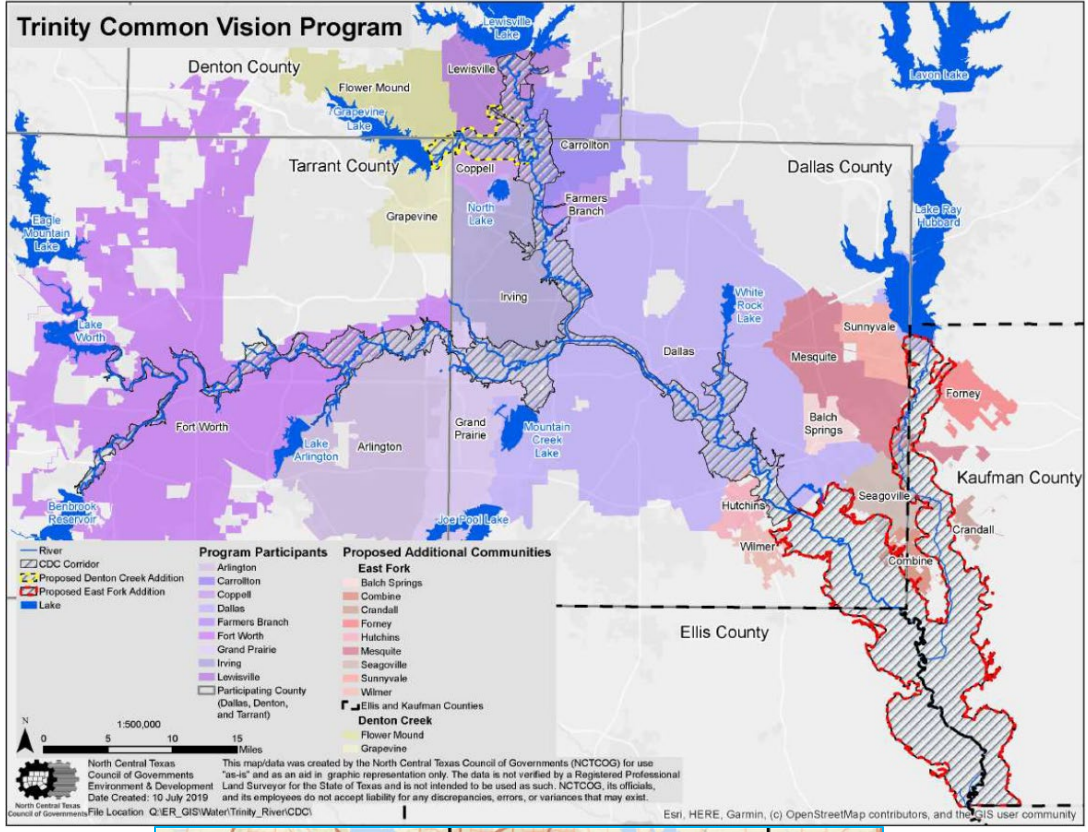
1. Design infrastructure to fully developed conditions with approved land-use maps if data is available
2. Begin protection at the most upstream end of the watershed above Federal Emergency Management Agency Limit of Detail Study
3. Maintain unfilled valley storage areas
4. Protect against and reduce erosive velocities
5. Match pre-developed site runoffs
6. Verify/require adequate downstream conveyance
7. Require freeboard from fully developed (if data is available) and changing watershed conditions
8. Define written operation and maintenance responsibilities
9. Size conveyance of street and storm systems adequately to safely convey traffic
10. Create stream buffers and preserve open space; limit clearing and grading
11. Consider regional (on or off stream) detention incentives
12. Implement Conservation and/or Cluster Development incentives
13. Encouraging low impact development techniques and/or green infrastructure

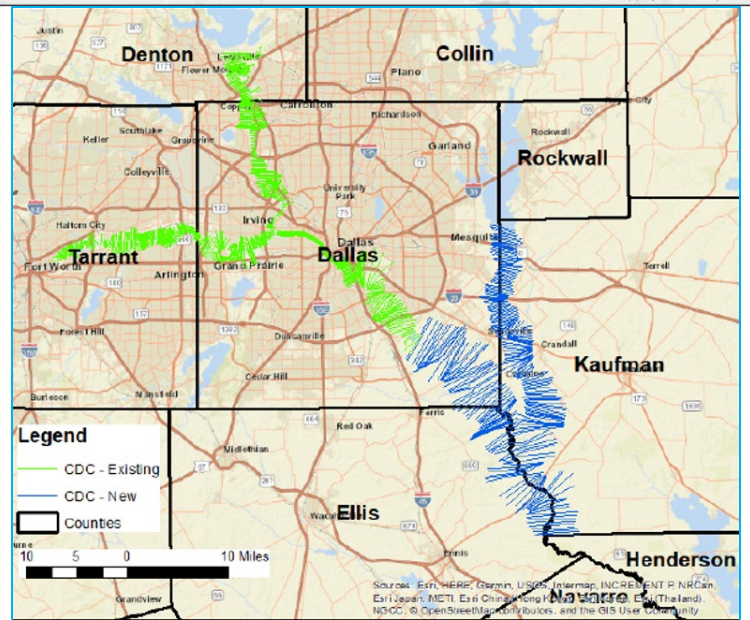
These Regionally Recommended Standards in Watershed Management were developed by the North Central Texas Countywide Watershed Management Roundtable held on March 14, 2017

Trinity COMMON VISION

Support to Flood Management Task Force

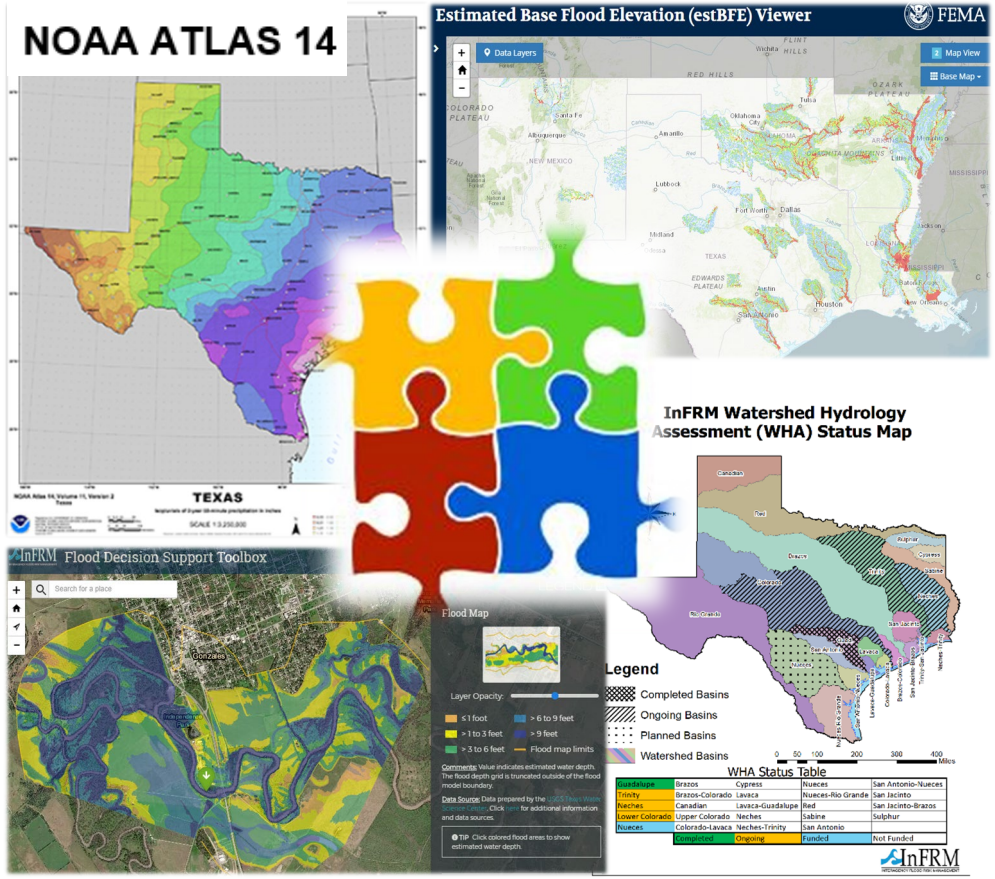
- **What?** Serve as a technical advisor to FMTF for flooding-related questions and initiatives.
  - **Example:** helped create first-ever consolidated National Flood Insurance Program (NFIP) and Corridor Development Certificate (CDC) model
    - Culmination of over $2.5 million in Federal contributions spent
    - Update of geo-referenced and consolidated Upper Trinity NFIP-CDC model
    - Trinity Main Stem and East Fork Trinity CDC model extension
    - Assisting updates to NFIP-CDC manual
- **Why?**
  - Innovative support helps inform and stabilize flood risk during development
    - Regulating development to future conditions vs. todays
- **Result:**
  - Tailored and consistent support
  - Collaborative, authoritative, and best available flood risk information along Upper Trinity River





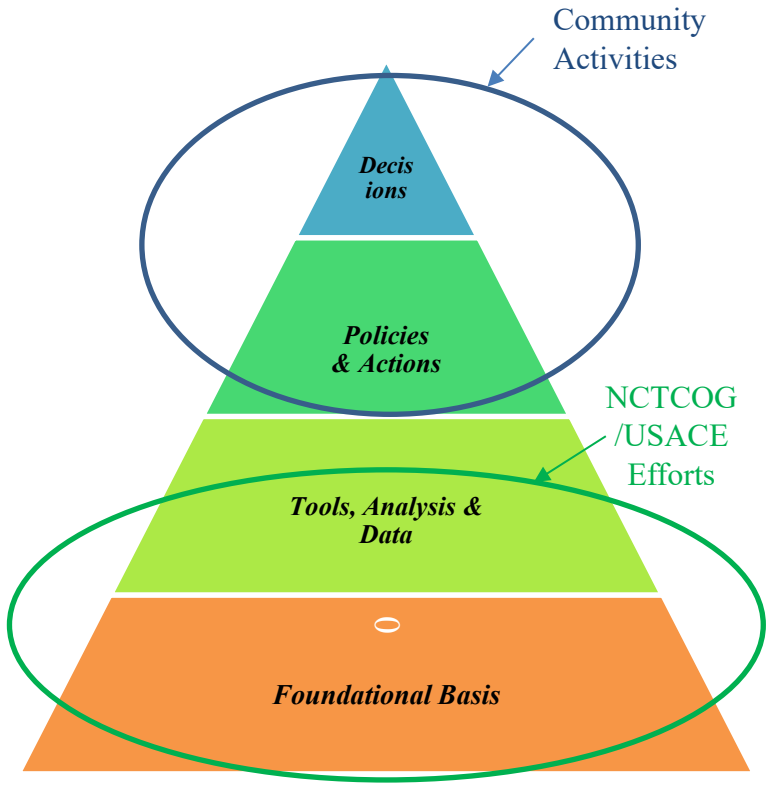
Role as Technical Advisor

- **What?** Technical advisor for many local, state, and federal activities, providing:
  - Support to Upper Trinity FMTF, Regional/State Flood Planning Effort, State/Federal, and other flood mitigation initiatives
  - Interagency Flood Risk Management (InFRM): www.InFRM.US
  - National & regional resources (planners, program managers, scientist & engineers): leverage expertise for Transportation and Stormwater Integration (TSI) effort
  - Guidance for regional flood risk management modeling and analysis
  - Industry standard software/applications for water resources analysis (HEC, RiverWare) & models for Texas
  - Preparedness and resiliency tools and initiatives (storm shifts, FIA & LifeSim)
  - Real-time flood forecasting and inundation mapping (CWMS & RTS)
  - Involved in various compliance programs (Section 404, Section 10, Section 408)
- **Why?** Uniquely postured to serve as technical expert, data & information supplier, and provider of valuable tools/resources and analysis
- **Outcome:**
  - Saving citizens across Texas billions of $'s and providing innovative and non-regulatory resources for flood risk reduction, while establishing a high-quality reputation with partners



Common Vision - Flood Risk Products and Uses

- Historical knowledge (30+ year program)
- Latest data and analysis
- Tools with state-of-the-art technologies
- Planning/preparedness/response
- Scenario planning
- Emergency response (real-time mapping)
- Environmental
- Communities have an opportunity to better understand flood risk, not just the 100-year
- Communities can take actions and shift policy
- Can be leveraged for other purposes



USACE as a Technical Advisor

Trinity COMMON VISION

One of a kind regional floodplain management program

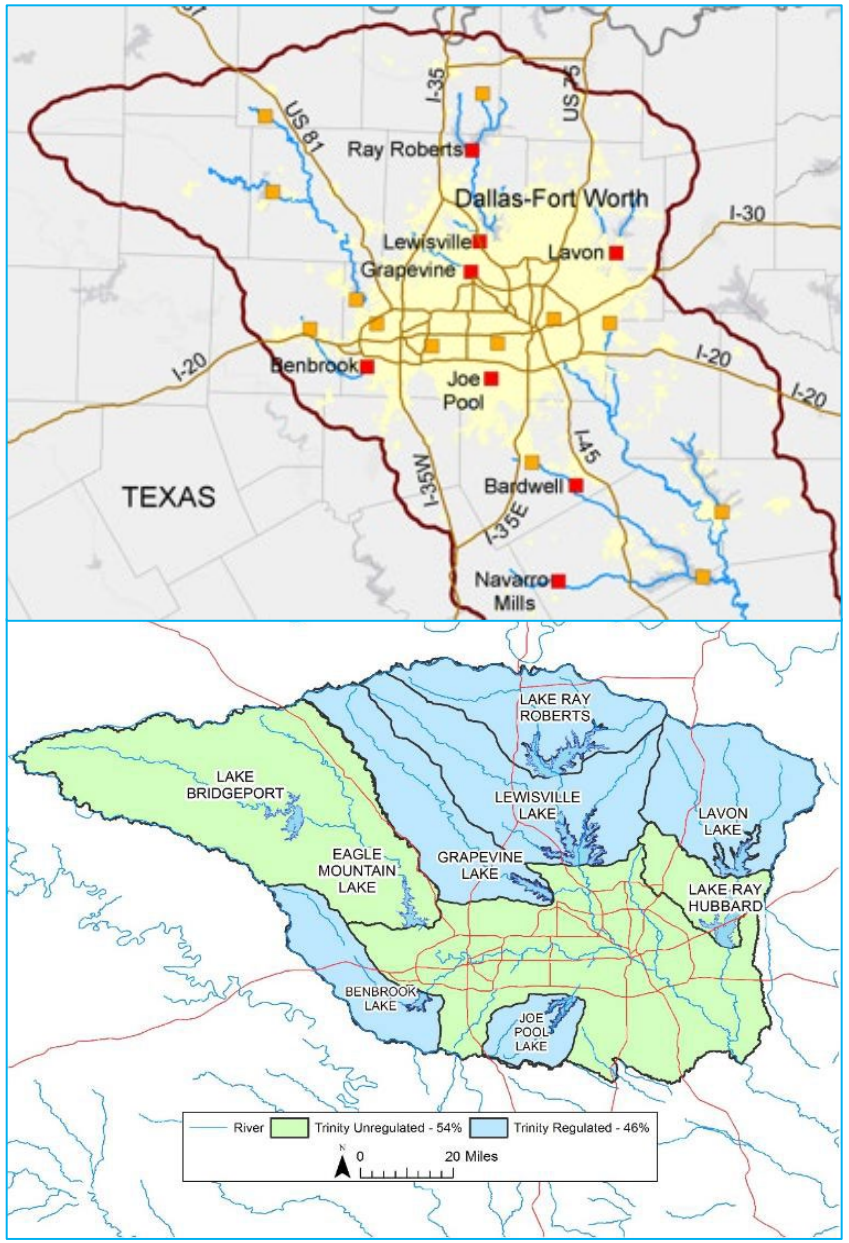
Funding Assistance to Communities

- **What?** Annual reoccurring appropriations
  - **Continuing Authorities Program (CAP)**. Requires cost sharing, https://www.swd.usace.army.mil/About/Directorates--Offices/ProgramsOffices/Programs--Directorate/PlanningDirectorate/Planning--Division/CAP/Division/CAP/
    - Should meet USACE analysis and modeling standards as well as utilize USACE approved applications
  - Section 14 Emergency Streambank and Shoreline Protection: < $5M federal
  - Section 103 Coastal Hurricane and Storm Damage Reduction Projects: < $5M federal
  - Section 107 Navigation Improvements Project: < $10M federal
  - Section 111 Restoration Related to Federal Navigation: < 10M federal
  - Section 204 Regional Sediment Management: < $10M federal
  - Section 205 Flood Protection Projects: <$10M federal
  - Section 206 & 1135 Aquatic Ecosystems and Environmental Restoration Projects (non--USACE and USACE areas): < $10M federal
  - Section 208 Channel Clearing for Flood Reduction: <$500k federal
  - **Planning Assistance to States (PAS).** Funding for a broad range of studies from flooding to water availability. Requires cost sharing.
  - **Flood Plain Management Services (FPMS).** Assists communities with floodplain related studies. Funding may be 100% Federal, reimbursable, or cost shared.
  - Silver Jackets – Federal, state and local collaboration for flood risk reduction
- **Why?** Funding assistance to enable community resiliency
- **Outcome:** Designed and constructed billions of $'s in statewide flood damage reduction projects, including coastal

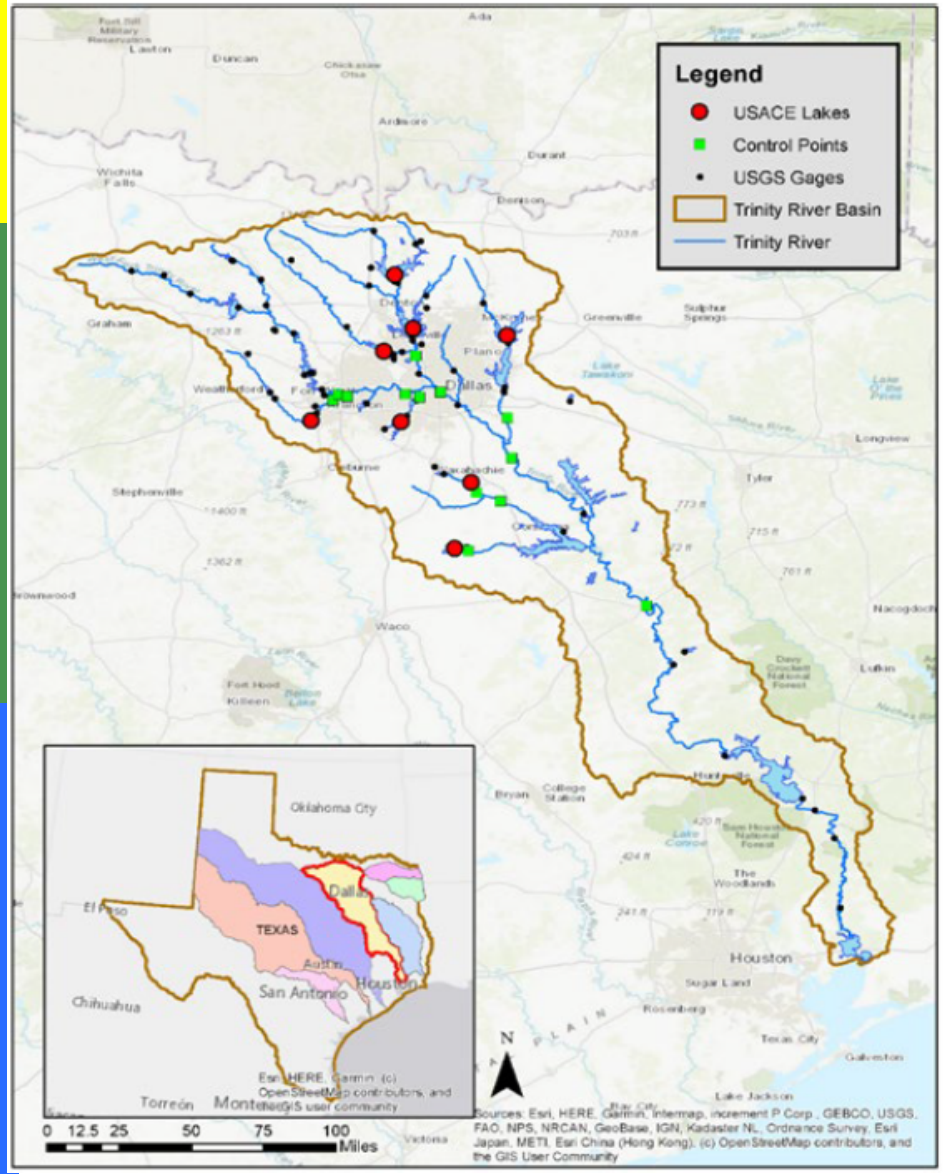
Water Management

US Army Corps of Engineers (USACE) Dam Operations

- **What?**
  - Operates 25 multipurpose reservoirs
    - **6 for DFW area**
  - Helps maintain safe river conditions for impacted areas regulated by dams
  - Reservoirs establish and maintain river conditions in 7 river systems
    - **Supplies 60% of water for DFW Metroplex**
  - Funding partner for the network of stream and precipitation gages across the state
- **Why?**
  - Flood risk management, water supply, environmental, and recreation
- **Outcome:**
  - Reduces disaster risk
  - $100B+ damages prevented



Trinity Operations Study



PURPOSE AND SCOPE

- Ground up approach to identify flexible USACE reservoir operation plans to better serve the reservoir's authorized purposes and stakeholders.
- Several phases including an Outreach and Planning Phase, Modeling and Analysis Phase(s), and Water Control Manual codification.
- The goal of the project will be to understand system weaknesses and maximize flood damage reduction and water supply benefits by re-evaluating the Reservoir Operation Plans stated in the Water Control Manuals.

Current Stakeholder Study Partners

- City of Dallas
- City of Denton
- City of Grapevine
- Dallas County Park Cities MUD
- NCTCOG
- North Texas Municipal Water District
- Tarrant Regional Water District
- Trinity River Authority
- Upper Trinity Regional Water District
- Looking for more!
- Contact USACE

Scope of Work

- SOW still under development. Possible tasks that are under consideration include:
  - Control Point Flow Investigation
  - Seasonal Rule Curve Analysis
  - Environmental Low Flow Analysis
  - FIRO Analysis/Water Supply Resiliency

SCHEDULE & BUDGET

- Fall 2023 – Fall 2026
- $400,000

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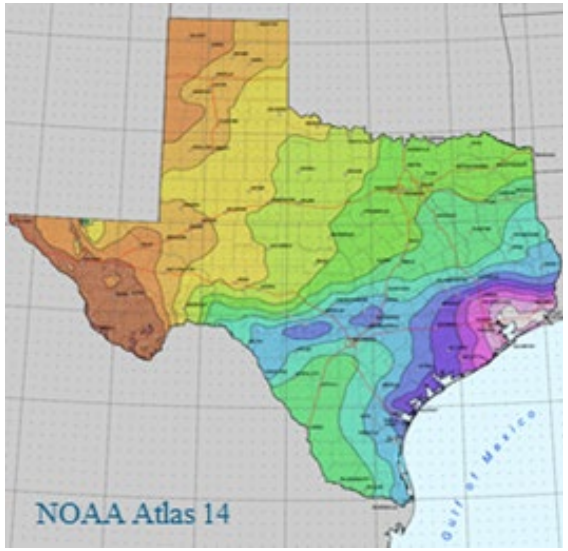
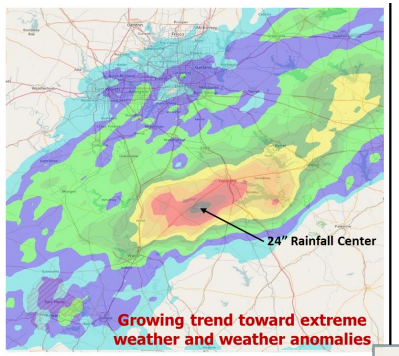
US Army Corps of Engineers

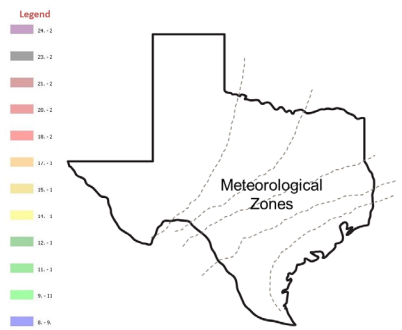
U.S. Army Corps of Engineers
Fort Worth District (SWF)
819 Taylor Street
Fort Worth, TX 76102

Precipitation: NOAA Atlas 14 & Texas Storm Study

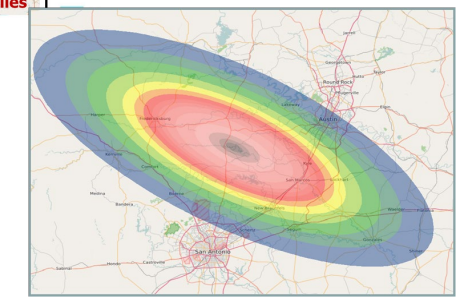
- **What?**
  - **NOAA Atlas 14:** precipitation frequency estimates for designing, building and operating infrastructure to withstand the forces of heavy precipitation and floods.
  - **Texas Storm Study:** Divide Texas into storm regions and develop a list (catalog)of applicable historical storms that would be appropriate for each of the geographic storm regions
- **Why?**
  - **NOAA Atlas 14** precipitation frequency estimates are used by engineers and planners to bring knowledge of flood hazards into land use and development decisions, including managing and designing stormwater infrastructure
  - **Texas Storm Study** results help make sense of what "design storms" are appropriate to use across Texas
- **Outcome**
  - **NOAA Atlas 14** estimates represent vastly improved data in terms of both period of record and station density, statistical techniques, and spatial interpolation that accounts for variation in terrain
  - **Texas Storm Study** documents parameters and a list of storms, based on region, that engineers and scientist can rely upon







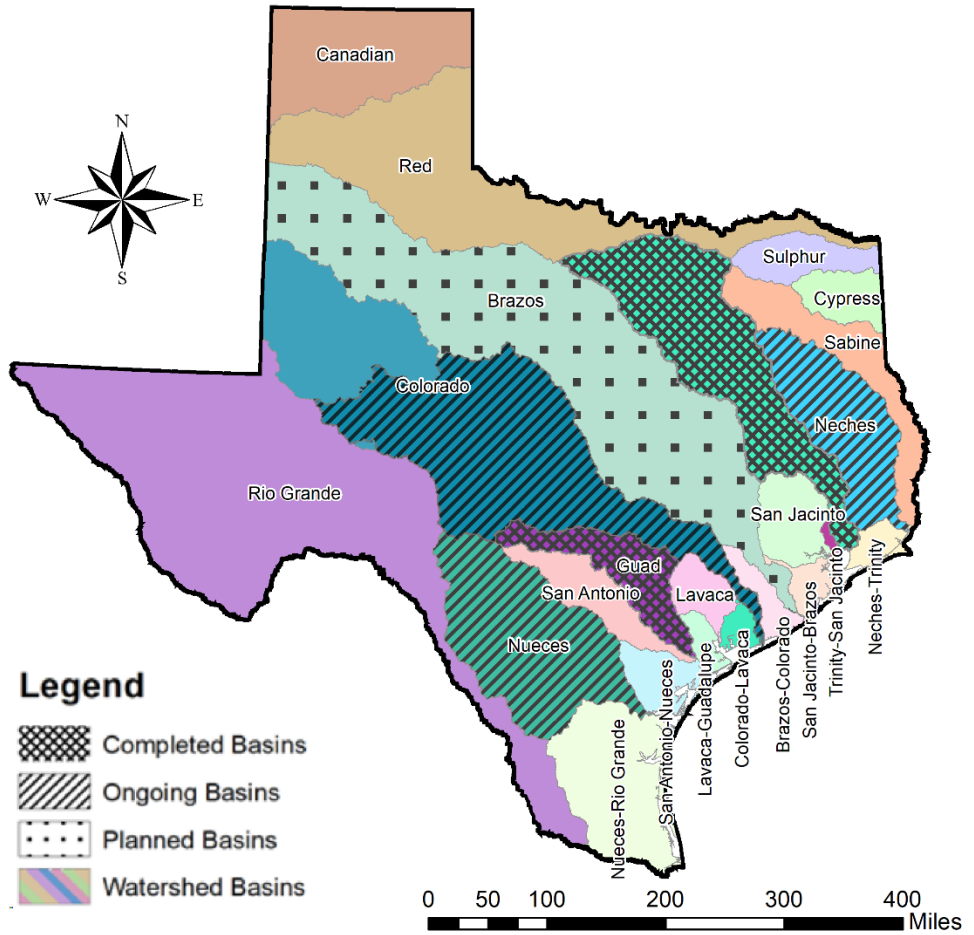
Storm Inventory



Hydrology: Watershed Hydrology Assessment (WHA)

- **What?** Latest & state of the art best estimate for the potential of flooding
  - Hydrology study (i.e., determines how much water) for large rivers and streams
  - Data is incorporated into larger modeling efforts
  - Incorporates NOAA Atlas 14 point-precipitation rainfall totals
  - Accounts for regulated flow from dams
- **Why?**
  - Hydrology remains the single largest source of uncertainty in our understanding of flood risk
  - Available hydrology information is generally dated and obsolete
- **Outcome:**
  - WHA produce consistent 100-yr and other frequency flows across the river basin, based on all available hydrologic information
  - Provides design data and suggests areas where flood hazard information may need to be updated
  - **Trinity River Watershed Hydrology Assessment**
    - Objective: Recently completed high quality hydrology study of 700-mile-long Trinity River Basin (18,000 square miles)
    - Outcome: Innovative and quality information for use in regional flood studies

InFRM Watershed Hydrology Assessment (WHA) Status Map

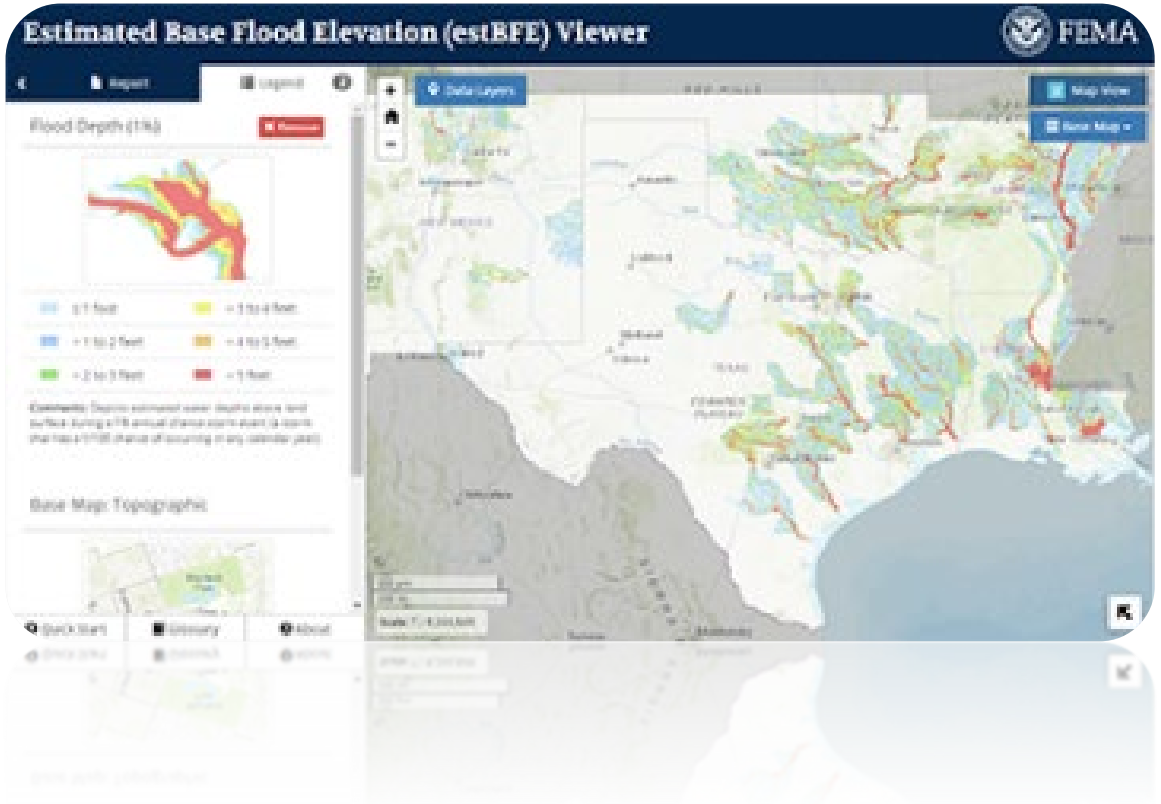


WHA Status Table

Guadalupe	Brazos	Cypress	Red	San Jacinto
Trinity	Brazos-Colorado	Lavaca	Rio Grande	San Jacinto-Brazos
Neches	Canadian	Lavaca-Guadalupe	Sabine	Sulphur
Lower Colorado	Upper Colorado	Neches-Trinity	San Antonio	
Nueces	Colorado-Lavaca	Nueces-Rio Grande	San Antonio-Nueces	
	Completed	Ongoing	Funded	Not Funded

Hydraulics: Base Level Engineering (BLE)

- **What?**
  - Watershed-wide engineering modeling method that leverages high resolution ground elevation, automated model building techniques, and manual model review to prepare broad and accurate flood risk data.
- **Why?**
  - Centralized and available flood hazard analysis to support floodplain management activities and development review, while increasing risk awareness for individuals.
- **Outcome:**
  - Quickly determine the flood risk for various events throughout multiple watersheds at various recurrence intervals (i.e., 10yr, 100yr, 500yr).
  - Allows Federal, State, and local governments, as well as individuals, to access and use flood risk information.

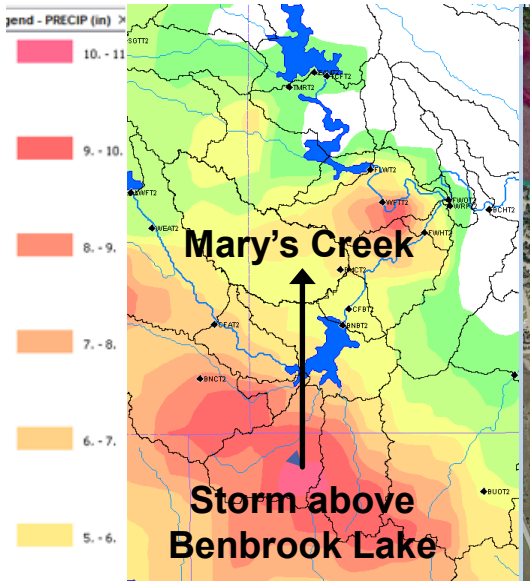


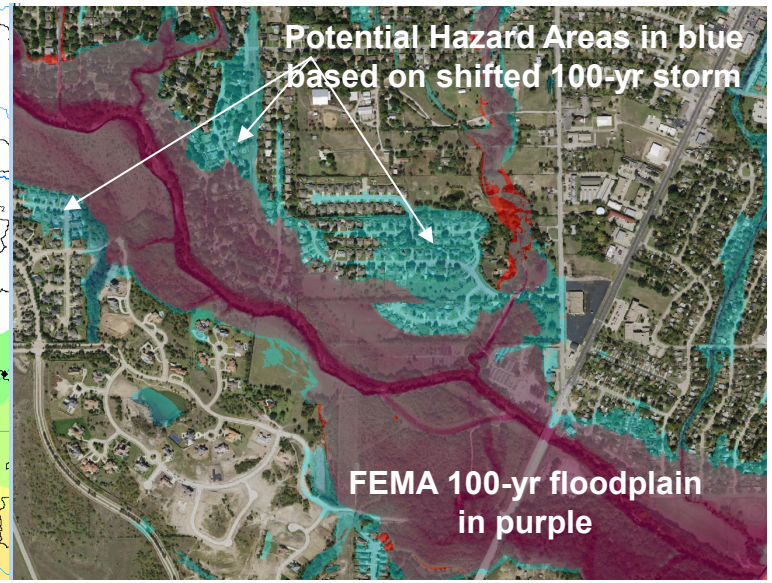
https://webapps.usgs.gov/infrm/estBFE/

Other Scenarios: Regional Storm Shifting

- **What?**
  - Storm shifting to simulate the impact of actual regional storms if they occurred somewhere else
  - Makes science of meteorology more **relatable**
- **Why?** Questionable historic records and lack of safety factors
  - A watershed may have experienced a disproportionate number of small or large historic rainfall events
  - No factor of safety in Flood Risk Management
- **Outcome:**
  - Storm shifting provides informative, relatable, and non-regulatory data to help communities better understand and mitigate their flood risk
  - Valuable non-regulatory planning and design guidance for more resilient communities
  - Can be used in EM Action/Hazard Mitigation Plans

- **Dallas County, TX**
  - **Objective:** Assist with community desire for data-driven information to inform implementing higher standards in local floodplain management and emergency preparedness/response
  - Provides informative, relatable, and non-regulatory information to enable action ($100,000 USACE & $35,000 partner contributions)
  - **Outcome:** Collaborative & compelling results for several storms/scenarios. https://www.nctcog.org/envir/watershed-management/storm-shifting
- **Mary's Creek, DFW, TX**
  - **Objective:** Address uncertainty associated with determination of flood potential
  - Shifted 100-year± storm from June 2000 ~15 miles
  - **Outcome:** Flood potential is greater than previously understood





Using the Data: Community Flood Assessments

- **What?** Updates and enhancement of flood models
  - Leverage existing engineering information, including:
    - Precipitation: NOAA Atlas 14 and Texas Storm Study
    - Hydrology: Watershed Hydrology Assessment
    - Hydraulics: Base Level Engineering
    - Leverage land use and other available data
  - Refine and enhance as appropriate
    - Add/update hydraulic structures information (i.e., bridges, culverts, dams, etc.)
    - Add additional subbasins and other detail to hydrology model to create more flow data
    - Conduct regional storm shifting as additional relatable scenarios
- **Why?** To aid critical flood studies & emergency management, to inform development, & technological improvements
- **Outcome:**
  - Collaborative and enhanced flood models
  - Best available tools, analysis, and data with many flood risk awareness and resilience applications
  - Communities can take action and set policies related to flood risk

A CFA is an innovative and relatable tool to assist community planning and action, helping promote flood hazard awareness and resiliency

Final products include floodplain & engineering data for 5-yr, 10-yr, 100-yr & storm shifted events

WHA *Improved* HYDROLOGY

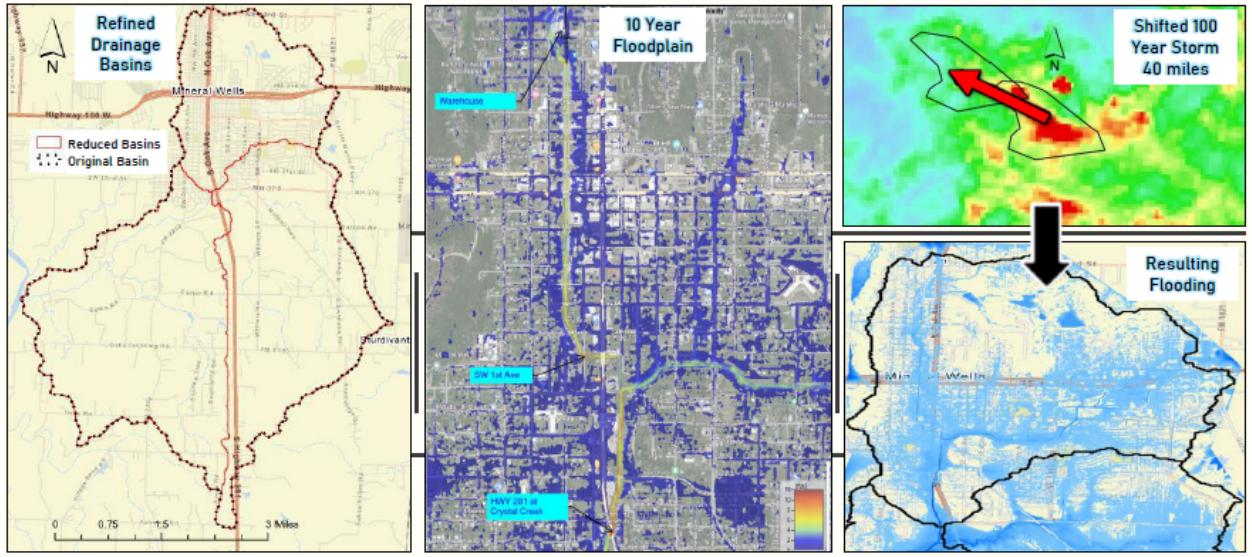
Incorporated and tailored latest InFRM Watershed Hydrology Assessment (WHA) to understand *how much* water https://webapps.usgs.gov/infrm/whav/

BLE *Enhanced* HYDRAULICS

Leveraged and enhanced Base Level Engineering (BLE) hydraulics to assess *where* water will flow during flooding https://webapps.usgs.gov/infrm/estBFE/

RAIN *Relatable* STORM SHIFTING

Shifted relatable regional storms to better understand and mitigate *true* flood risk https://www.nctcog.org/envir/watershed-management/storm-shifting



Questions & Contact

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Action Items

FY23 Steering Committee Meeting Summary Approval

Trinity
COMMON VISION

2023 Trinity COMMON VISION Steering Committee Meeting Summary

- NCTCOG staff are seeking approval of the 2023 Trinity COMMON VISION Steering Committee Meeting Summary.
- Link to the 2023 summary.
- Vote to approve.

FY25 Work Program and Budget

Trinity
COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

Click here for draft of the FY25 Work Program.

Continuation of existing Ongoing Support Activities and Technical Activities

- Ongoing Trinity River COMMON VISION Information and Task Force Committee Support
- Ongoing CDC Process and mapping support
- Continued sponsorship of FEMA's NFIP training courses.
- Ongoing effort to explore partnership and outreach opportunities
- Continued exploration of regional cooperative detention/retention strategies
- Administrative Coordination for Regional Flood Warning Software Program
- Maintenance of the CDC Application and Tracking Website
- Participation in the Trinity Regional Flood Planning Group

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

Continuation of existing Ongoing Support Activities and Technical Activities

- Participation in the Model Consolidation Committee will continue into FY25
- Updating the CDC Manual to the 5th Edition will continue into FY25
- Continuing East Fork Trinity and Denton Creek Integration
- Update Communities' Acreage in Floodplain (FIRM).
- No change anticipated in cost shares

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

- Additional program activities for FY25
  - Track and Provide Updates on Relevant Bills during Texas Legislative Sessions: NCTCOG staff will track relevant bills during Texas legislative sessions and provide updates on legislation that align with the COMMON VISION Program's core values and mission.
    - Concept modeled after Regional Transportation Council Legislative Program.
- Legislative Categories
  - Flood Mitigation and Infrastructure Development Assistance
  - Floodplain Mapping and Risk Assessment
  - Land Use and Development in Floodplains

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

Flood Mitigation and Infrastructure Development Assistance

- Ensures effective mitigation measures and infrastructure improvements in flood prone areas.
- Advocates for increased state funding to sustain long-term flood mitigation projects.
- Expands the role of local governments in planning and executing floodplain development by providing technical assistance.
- Promotes public-private partnerships to finance and accelerate flood-control infrastructure projects.

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

Floodplain Mapping and Risk Assessment

- Improve the floodplain maps to ensure effective planning and reduce the risk to property and public safety.
- Call for a statewide initiative to accelerate floodplain map updates, particularly in rapidly developing regions.

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

Land Use and Development in Floodplains

- Develop stronger land-use policies to control development in flood-prone areas and limit risk to new and existing developments.
- Strengthen zoning laws to prevent or restrict development in high-risk floodplain areas.
- Promote smart growth initiatives that focus on sustainable urban planning, incorporating green infrastructure like permeable pavements and retention ponds in floodplain areas.

Trinity COMMON VISION

FY2025 Trinity River Common Vision Draft Work Program Discussion

- Additional program activities for FY25
  - Migrate the Trinity River CDC Website (www.trinityrivercdc.com) to the NCTCOG webpage: NCTCOG is consolidating stand-alone websites back into the NCTCOG-owned domain and working on migrating the Trinity CDC website and built-in features as soon as possible to not lose service.
  - Coordination for Flood Science Training: NCTCOG will continue to offer relevant training to our region's floodplain professionals. NCTCOG is exploring opportunities to partner with the USACE to offer training regarding flood science. The USACE's Hydrologic Engineering Center supports water resources management responsibilities with research, training, planning analysis, and technical assistance. NCTCOG will work with the USACE to promote the use of free online training offered by USACE that includes but is not limited to 1D/2D modeling, HEC-RAS, HEC-HMS, and other flood science-related topics. NCTCOG will also explore offering training on using the CDC model for city staff and developers.

Request for Use of Deferred Revenue Balance

Trinity
COMMON VISION

Deferred Revenue Balance

- COMMON VISION cost share unchanged from 1995-2022; increased in 2023; no increase anticipated in near future
- Unspent funds accumulated over past ~10 years
- Approximately $110,000 in deferred revenue balance
- NCTCOG seeks to maintain several months' expenses in case of non-payment of cost shares
- NCTCOG seeking to use some of deferred revenue balance to fund:
  - USACE development of Corridor Development Certificate Program training
  - Matching funds for USACE involvement in TSI-North Study Area

Trinity COMMON VISION

USACE Development of Corridor Development Certificate Program Training

- Training requested by Flood Management Task Force
- Increased city/county staff familiarity with permit process
- Smooth transition if city/county experiences staff turnover
- Potential to reduce staff hours used during permit process
- Training would be recorded and made available to participating entities
- Seeking approval of amount not to exceed: $40,000

Trinity
COMMON VISION

Matching Funds for USACE Involvement in TSI-North Study Area

- Transportation and Stormwater Infrastructure Study provides benefits to communities within and outside the study areas
- USACE involvement provides:
  - Level of authority to study
  - Quality control of data and methodology
  - Consistent oversight of both study areas
- TSI-North funds from Texas General Land Office lack compatibility with USACE agreement process
- Seeking approval of amount not to exceed: $30,000

Trinity COMMON VISION

Requested Steering Committee Action

- Request COMMON VISION Steering Committee approval of:
  - Use of deferred revenue balance not to exceed $40,000 for USACE Development of Corridor Development Certificate Program Training
  - Use of deferred revenue balance not to exceed $30,000 for matching funds for USACE involvement in TSI-North Study Area

Trinity COMMON VISION

Contact

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Trinity COMMON VISION

The cost share for cities is based on acreage within the floodplain. The cost per acre to communities is ~$1.73.

“Any other Political subdivision with a voting member on the Steering Committee will pay 5%.”

There will not be an increase to the cost share or rate for FY2025.

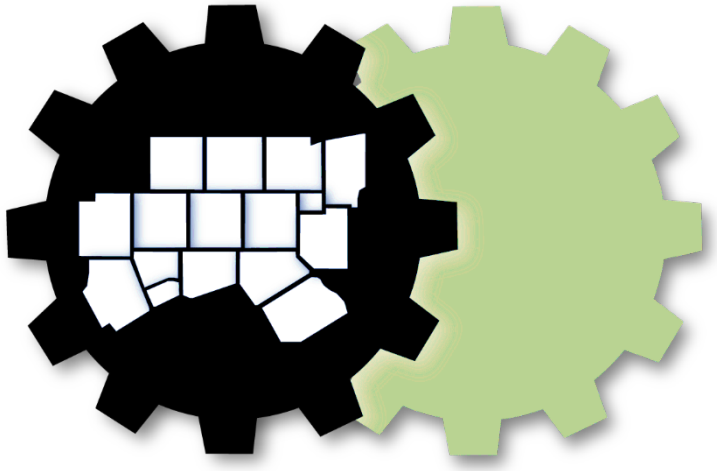
COST SHARES FOR CURRENT COMMON VISION PARTICIPANTS		
Participant	**Acres in Floodplain (FIRM)**	**Cost Share**
Arlington	3,351	$5,802.78
Carrollton	5,941	$10,287.77
Coppell	1,490	$2,580.17
Dallas	25,787	$44,654.18
Farmers Branch	1,472	$2,549.00
Fort Worth	16,261	$28,158.44
Grand Prairie	8,498	$14,715.60
Irving	7,757	$13,432.44
Lewisville	3,072	$5,319.65
Seagoville	2,776	$3,192.00
Dallas County		$10,000.00
Denton County		$5,000.00
Kaufman County		$10,000.00
Tarrant County		$7,500.00
TRWD		$7,500.00
TRA		N/A
Program Cost		**$170,692.03**

Trinity COMMON VISION

FY2025 Trinity River Common Vision
Draft Work Program Discussion

- NCTCOG staff are seeking approval of the FY2025 Trinity COMMON VISION Work Program and Budget.
- Click here for draft of the FY25 Work Program.
- Vote to approve.

Trinity COMMON VISION



ROUNDTABLE

Trinity
COMMON VISION

Upcoming Events & Meetings

- **29th L0273 Floodplain Management Course**
  - Monday, September 30 – October 3 · 8:00am – 5:00pm
- **Certified Floodplain Manager Exam**
  - Friday, October 4 · 8:00am – 11am; 1 pm – 4pm
- **Transportation & Stormwater Infrastructure Technical Advisory Group Meeting**
  - Friday, October 25 · 10:30am – 12:00pm
- **Floodplain Seminar for Elected Officials and Municipal Staff**
  - Friday, November 1 · 9:30 – 11:30am

Trinity
COMMON VISION

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