North Central Texas Council of Governments

Flood Early Warning System Pre-Workshop Meeting

January 15, 2025

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.

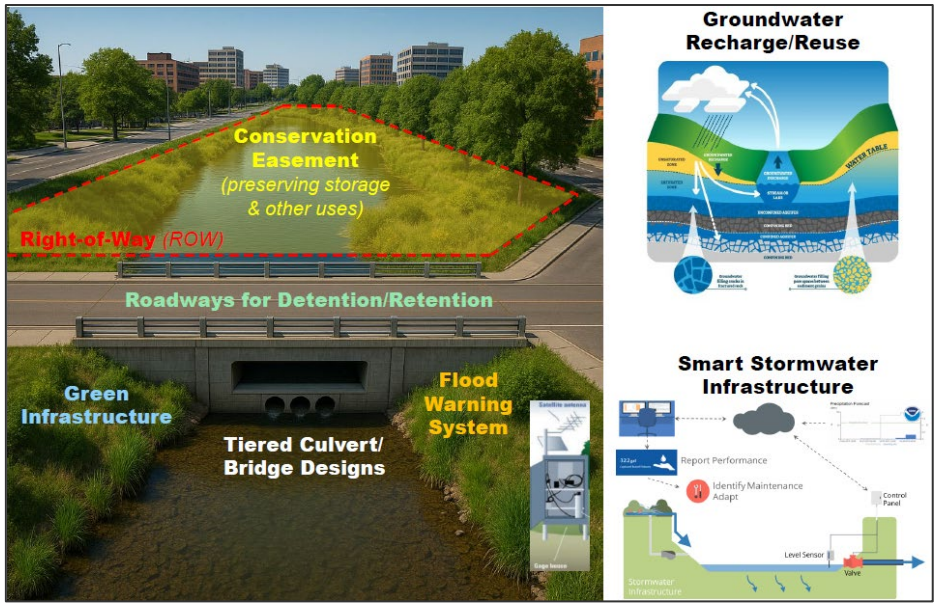
What keeps us up at night...

integrated Transportation & Stormwater Infrastructure

TSI Study Overview

TSI: *Integrated **T**ransportation and **S**tormwater **I**nfrastructure*

- **Proactive vs. Reactive**
- **Regional "System" Approach**



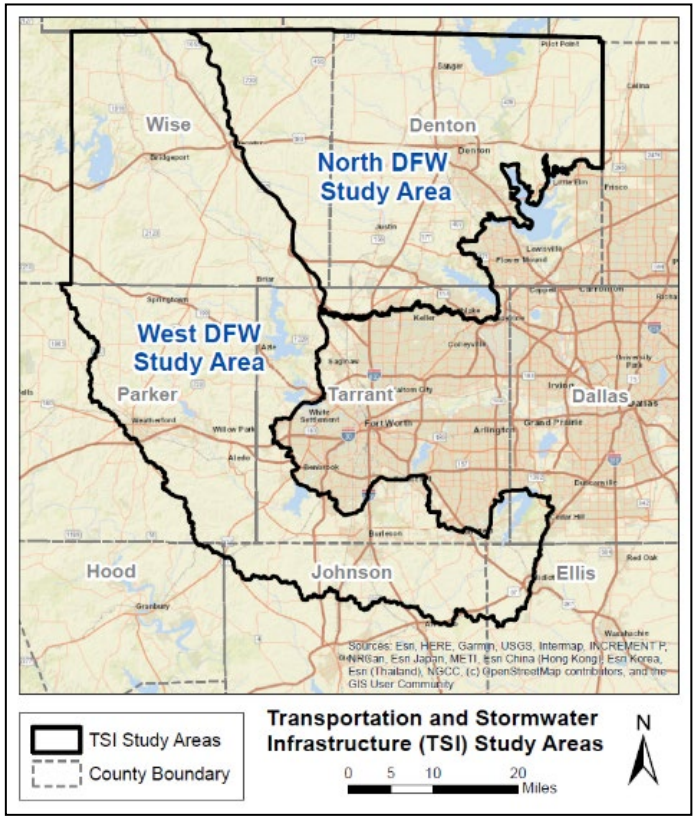
Objective: a 'roadmap' for communities

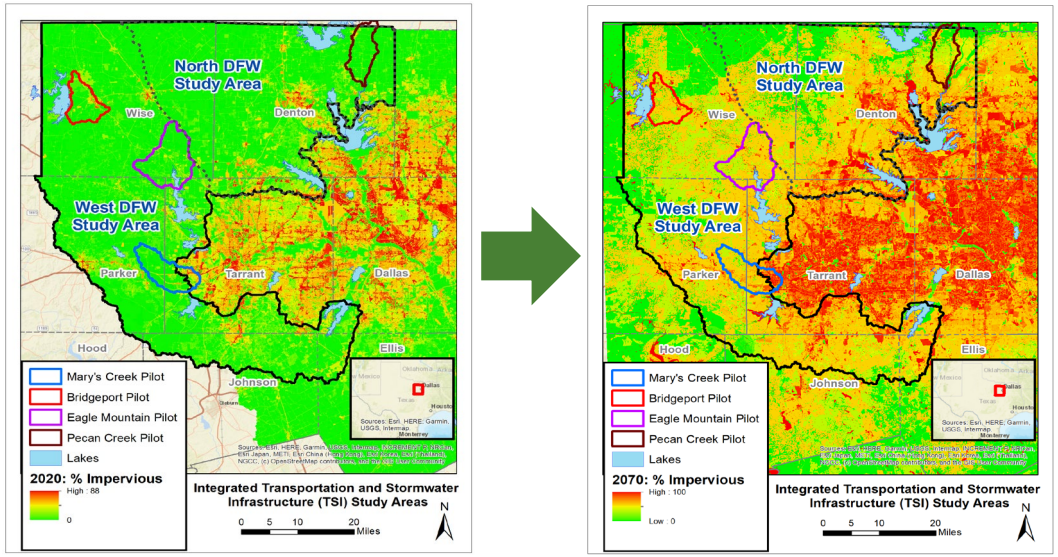
integrating **Transportation & Stormwater Infrastructure**

www.nctcog.org/tsi

By the End of Today's Session…

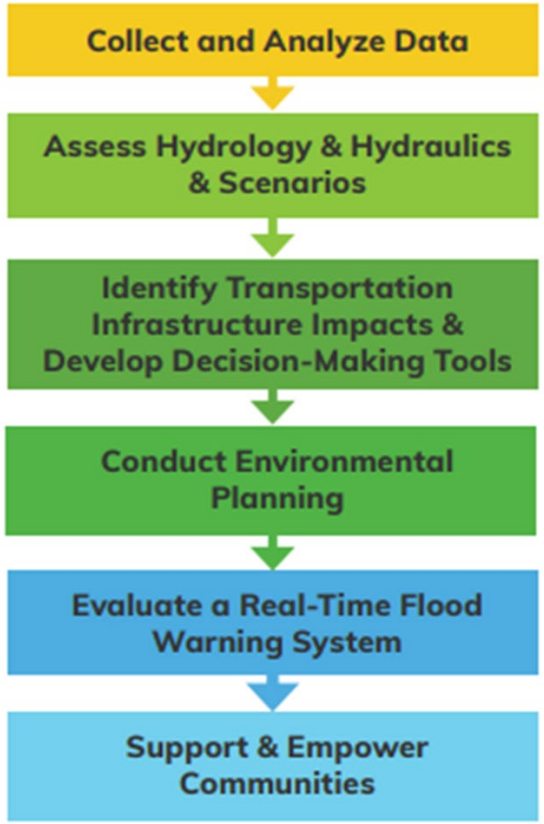
- You will:
  - Recognize the TSI concept at a high level and its emphasis on **proactive and integrated regional planning**
  - Understand the TSI Flood Early Warning System (FEWS) approach, including the **SOP and Masterplan**
  - **Discuss feedback** to help inform the draft FEWS results we will share at the February 17th workshop.



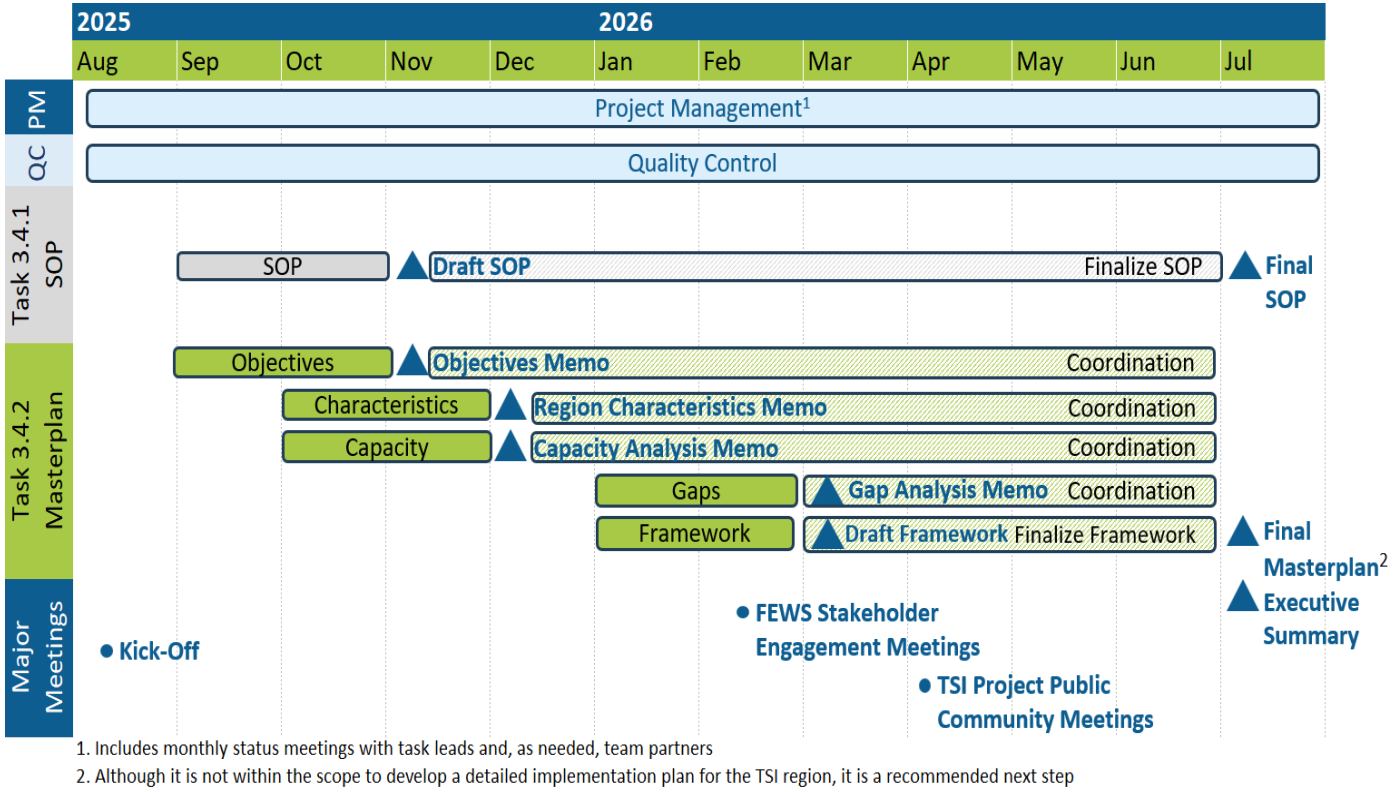


integrating Transportation & Stormwater Infrastructure

No Single Entity Can Solve This Alone



- Role of TSI
- How does FEWS fit into it?
- Timeline and results



1. Includes monthly status meetings with task leads and, as needed, team partners
2. Although it is not within the scope to develop a detailed implementation plan for the TSI region, it is a recommended next step

FEWS "Roadmap" to Inform Decision Makers

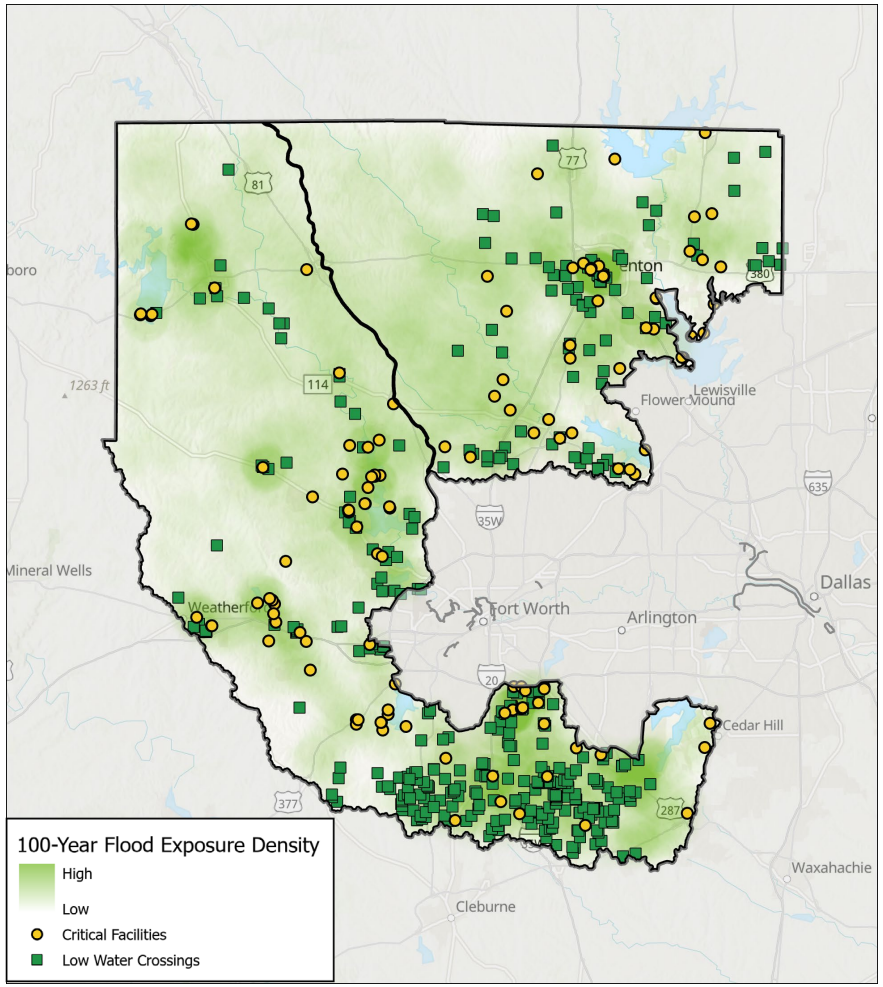
- **TSI FEWS Masterplan (Informed by SOP)**
  - Used to enhance or kick-start development of FEWS implementation
    1. Define objectives
    2. **Summarize regional characteristics (Examples Today)**
    3. **Document existing capacity (Examples Today)**
    4. Perform gap analysis
    5. Develop framework or "roadmap" for increasing capacity
    6. Develop implementation plan (beyond TSI scope)

Hydrological Value Chain in Flood Forecast and Early Warning (WMO, 2022)

Regional Characteristics Memo Example

- Regional Characteristics Memo
  - Intent: Summarizes the setting of the western eight-county Dallas/Fort Worth region so that the Flood Early Warning System (FEWS) can be sized and sited for real world conditions.
  - Key memo information includes:
    - Geographic Extent and Political Boundaries
    - Climate
    - Natural Environment
    - Built Environment
    - Hydrology and Watershed Response

County	2025 Population Estimate	TSI Study Region
Dallas	2,762,279	West
Tarrant	2,260,330	West, North
Denton	1,068,355	North
Ellis	239,923	West
Johnson	217,867	West
Parker	163,878	West
Wise	72,674	West, North
Hood	66,549	West



Structures at Risk, Critical Infrastructure, and Low Water Crossings (Source: TWDB)

Capacity Analysis Memo Example

- **Capacity Analysis Memo**
  - **Intent:** Summarizes available resources including key regional partners, monitoring hardware, software, and operations in the TSI region.
  - **Key memo information includes:**
    - Flood Warning System Available Hardware
      - Monitoring hardware
      - Available monitoring by entity
    - Flood Warning System Software
      - Data management
    - Flood Warning Systems Operations
      - Institutions and operational structure

2.2 AVAILABLE MONITORING BY ENTITY

Across Denton, Wise, and Tarrant County, there are at least 134 active rainfall and stage monitoring locations. These monitoring sites are owned and operated by the following entities:

- City of Fort Worth,
- National Weather Service (NWS),
- Trinity River Authority (TRA),
- Tarrant Regional Water District (TRWD),
- Texas Department of Transportation (TxDOT),
- United States Geological Survey (USGS)
- City of Grand Prairie, and
- Wise County

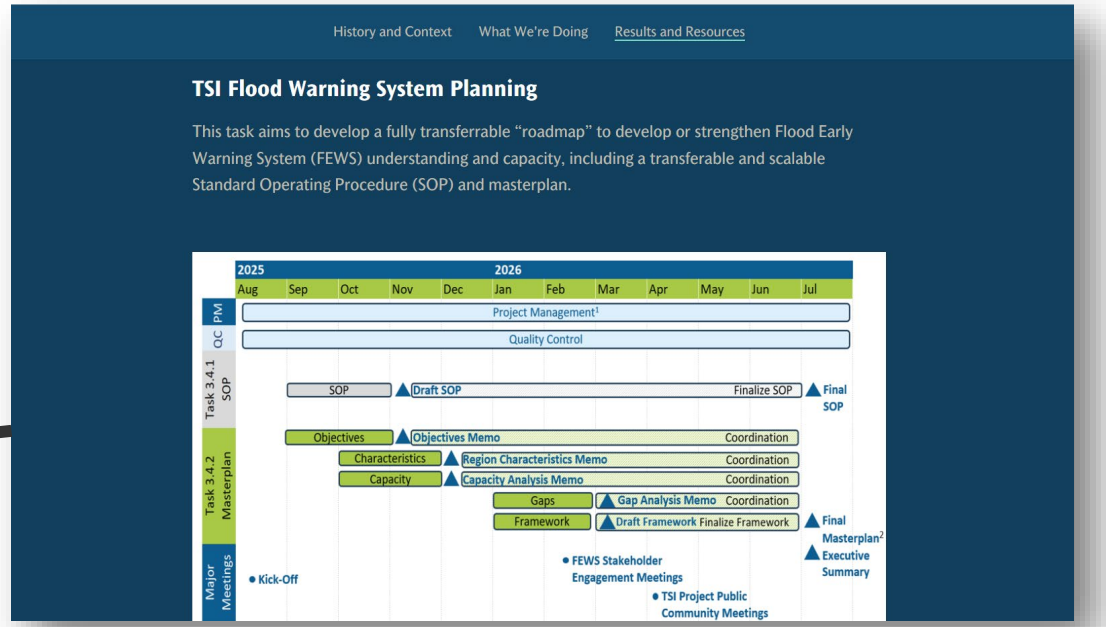
Entity	Subcategory	Communication Method	Transmission Frequency	Notes
City of Fort Worth (CFW)	WARN Dashboard	Radio	Every 1 to 10 minutes	ALERT2 protocol with TDMA time offsets; during flooding events, water level is reported by change in 1/10th foot or on an accelerated schedule (up to 16 reports/hour).
North Central Texas Council of Governments (NCTCOG)	FloodDataNTX Portal	Cellular; radio	Every 5 to 15 minutes	Aggregated cellular/radio feeds
Trinity River Authority (TRA)	Hydrology Dashboard	Cellular; radio	Every 5 to 15 minutes	ALERT2 protocol
Tarrant Regional Water District (TRWD)	AEM Elements 360	Cellular; radio	Every 5 to 15 minutes	ALERT2 protocol
Texas Department of Transportation (TxDOT)	RWIS / Environmental Stations	Cellular; IP	Every 1 to 5 minutes	LTE/4G cellular supported by LoneStar Advanced Traffic Management System (ATMS); wireless IP-based links for rural areas in Wise County
United States Geological Survey (USGS)	NWIS	Satellite	Hourly	Geostationary Operation Environmental Satellite (GOES)

Communication Methods by Entity

TSI FEWS Resources

TSI Website

TSI Story Map



http://nctcog.org/tsi

Join us at the February FEWS Workshop

Flood Warning System Stakeholder Workshop

- **Date**: February 17, 2026
- **Time**: 10:00 a.m. to 12:00 p.m.
- **Location**: NCTCOG Offices and Virtual via Microsoft Teams
- **Add to Your Calendar**: https://www.addevent.com/event/skb38xv9sqjc
- **Details**: The TSI study team will **share the draft TSI FWS Standard Operating Procedure (SOP) and the FWS Masterplan concept** and initial results within the TSI study area. The transferable and scalable SOP can be used by entities to develop or enhance their flood warning capacity and outlines the components included in the Masterplan: **(1) define objectives, (2) summarize regional characteristics, (3) document existing capacity, (4) perform gap analysis, (5) establish a framework, and (6) develop an implementation plan (beyond the scope of TSI).**

Feedback on TSI FEWS Approach?

Feedback/Questions on TSI FEWS Survey

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