North Central Texas Council of Governments

Planning to Reduce Future Flood Risk

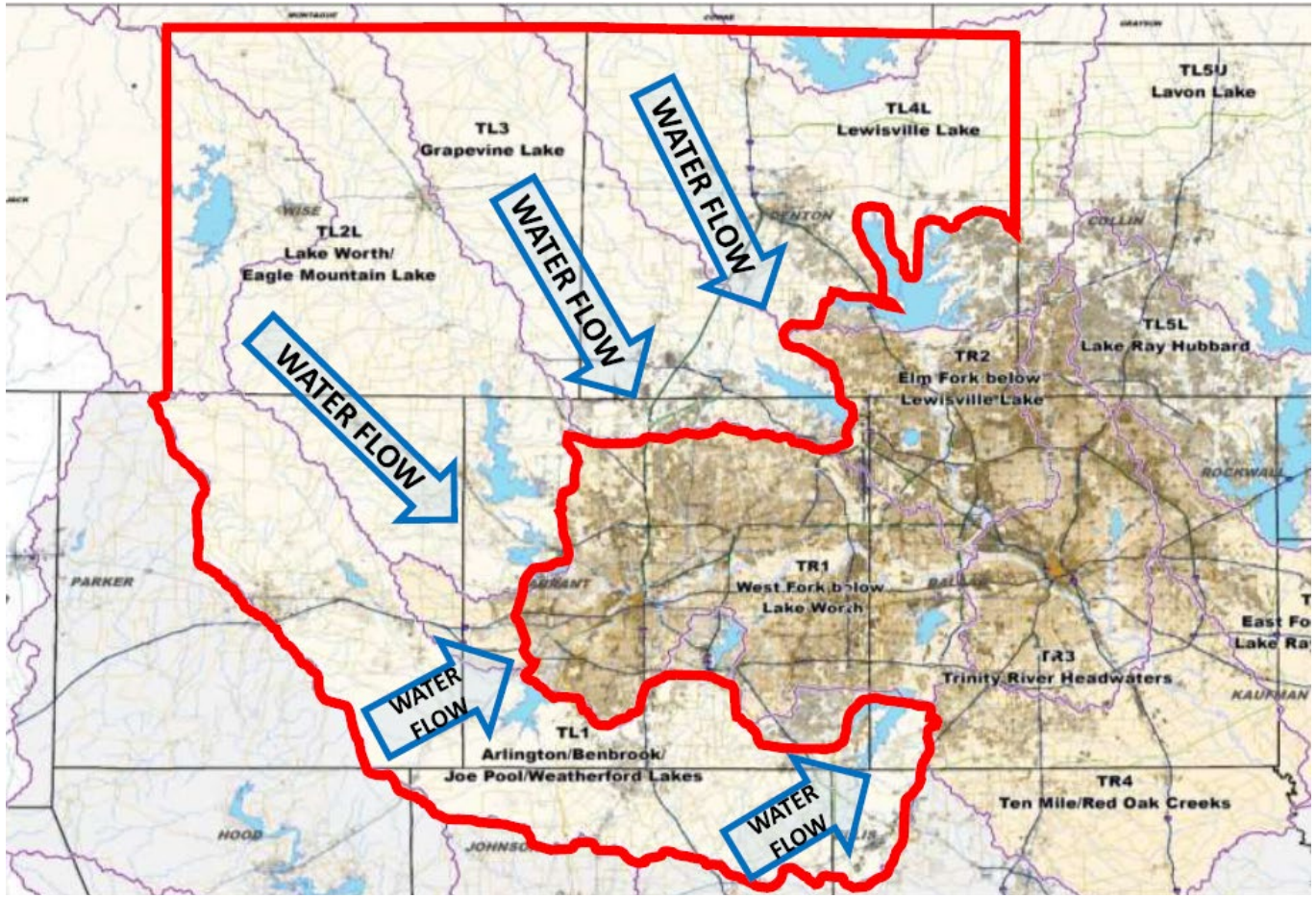
Floodplain Seminar for Elected Officials | November 1, 2024

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.

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



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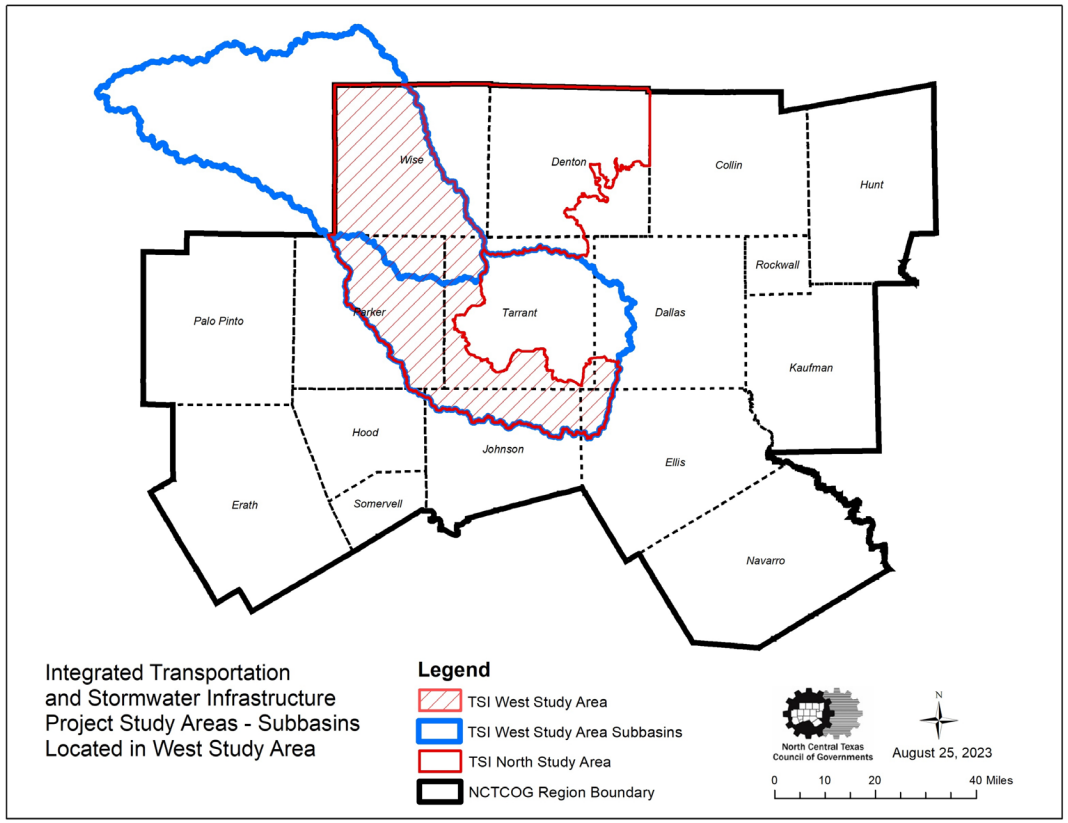
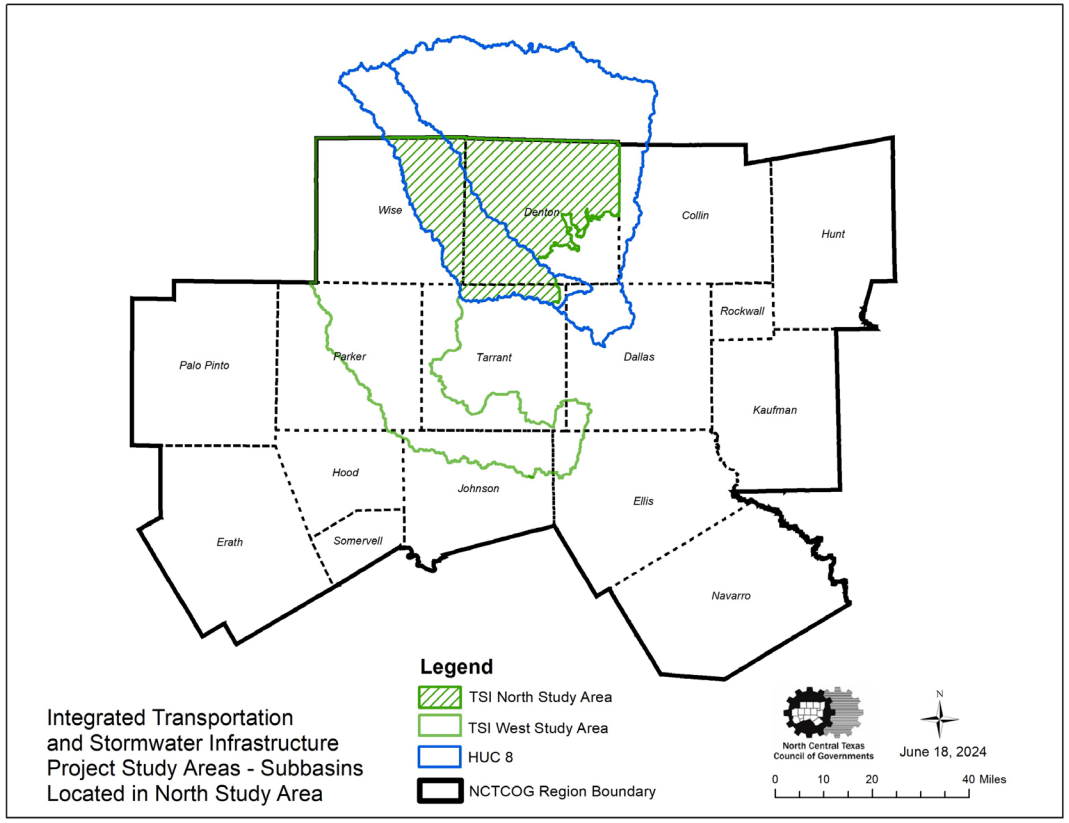
West and North Study Areas





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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

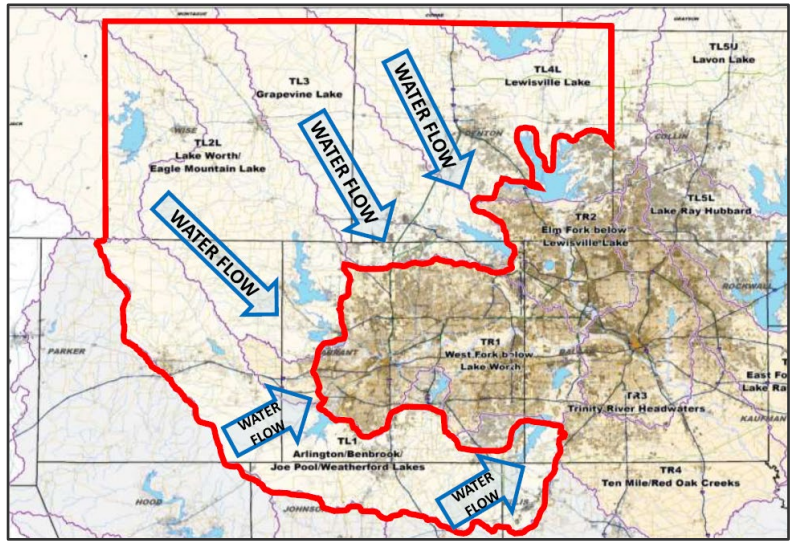
- Transportation spending is high and growing, including for asset management
- Rate of deterioration for transportation infrastructure increasing

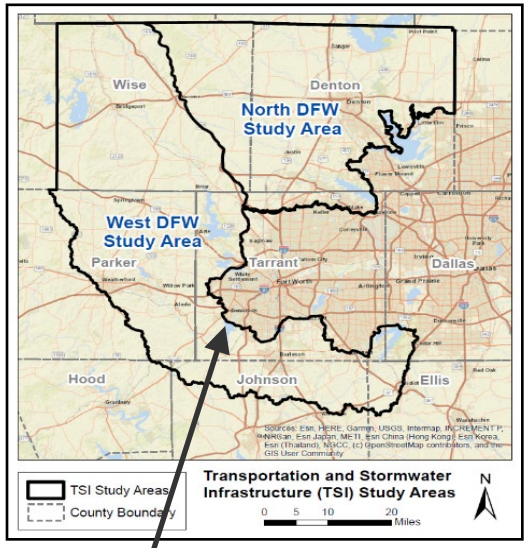
Response vs. Prevention

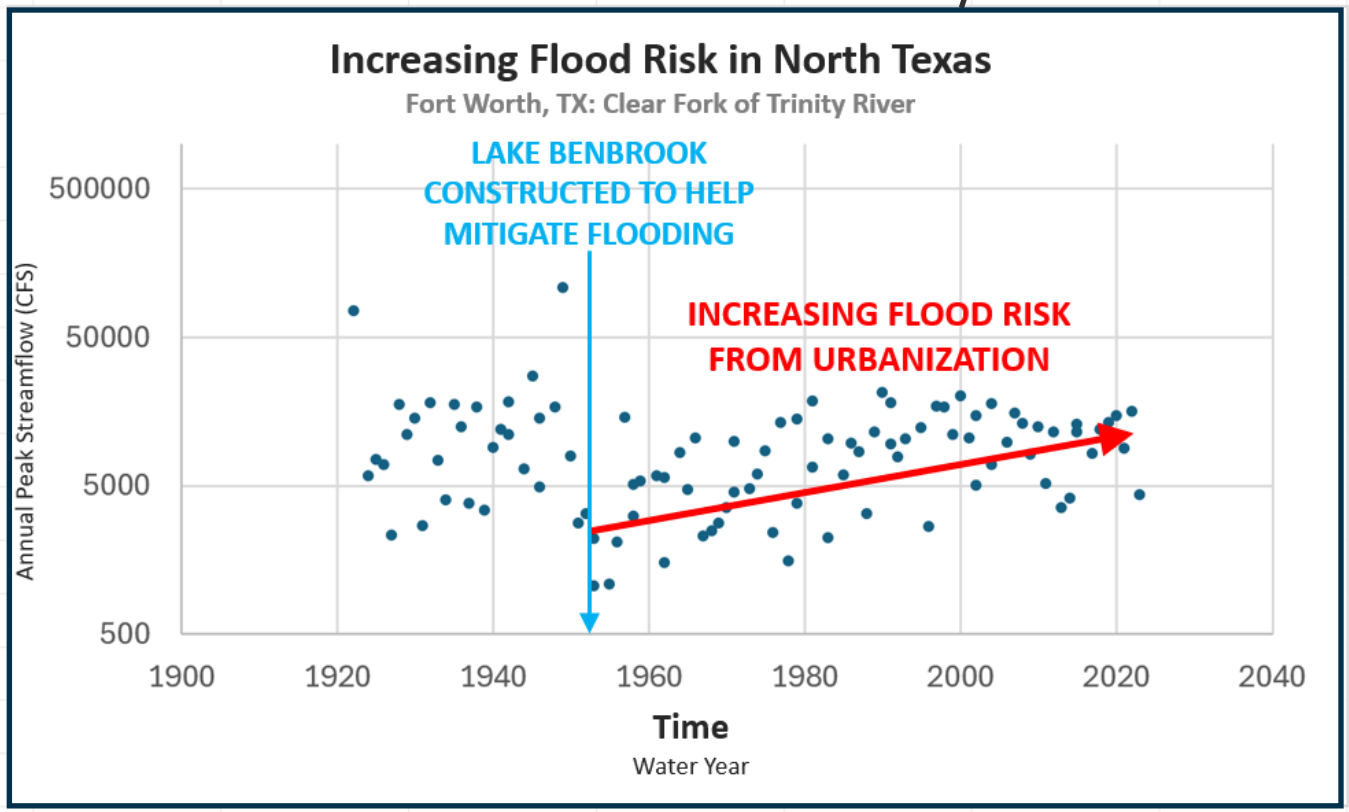
Sources: Flooded Area of Stores and Homes Near Downtown Fort Worth During Flood of 1949; https://texashistory.unt.edu/ark:/67531/metapth27965/: University of North Texas Libraries, The Portal to Texas History, https://texashistory.unt.edu; Tarrant County College NE, Heritage Room

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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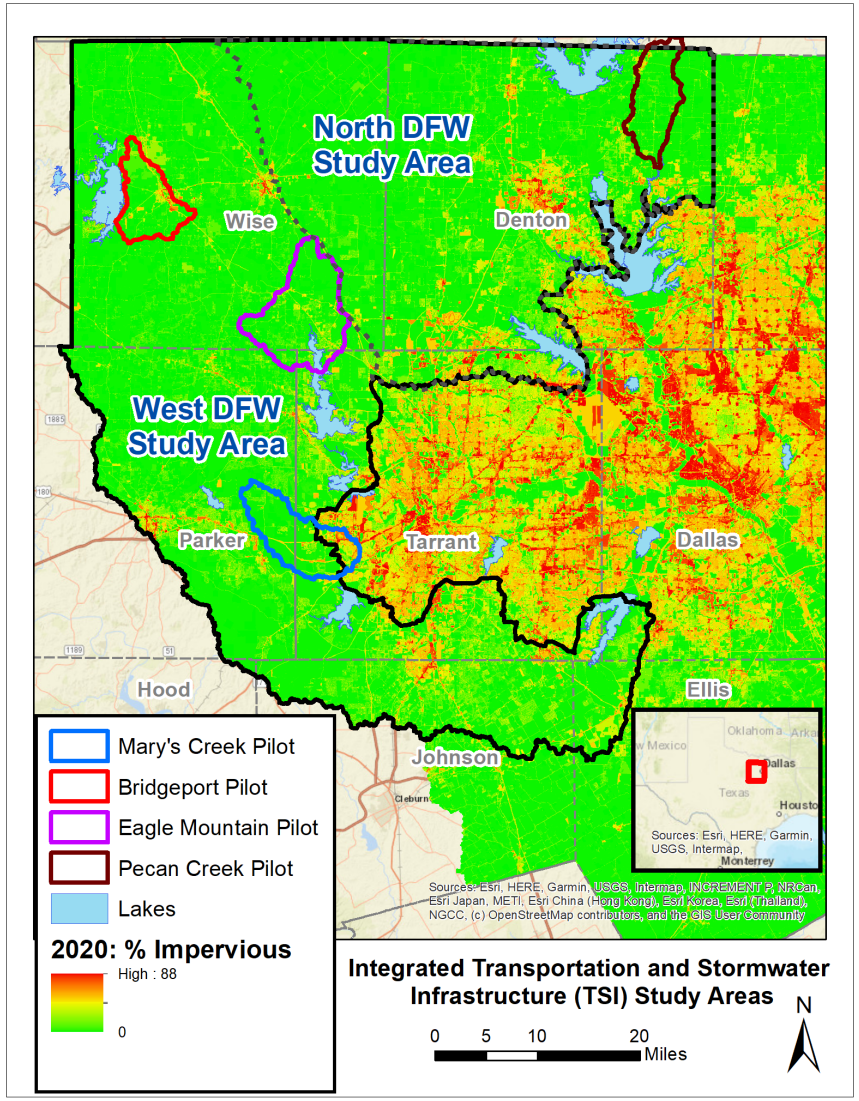
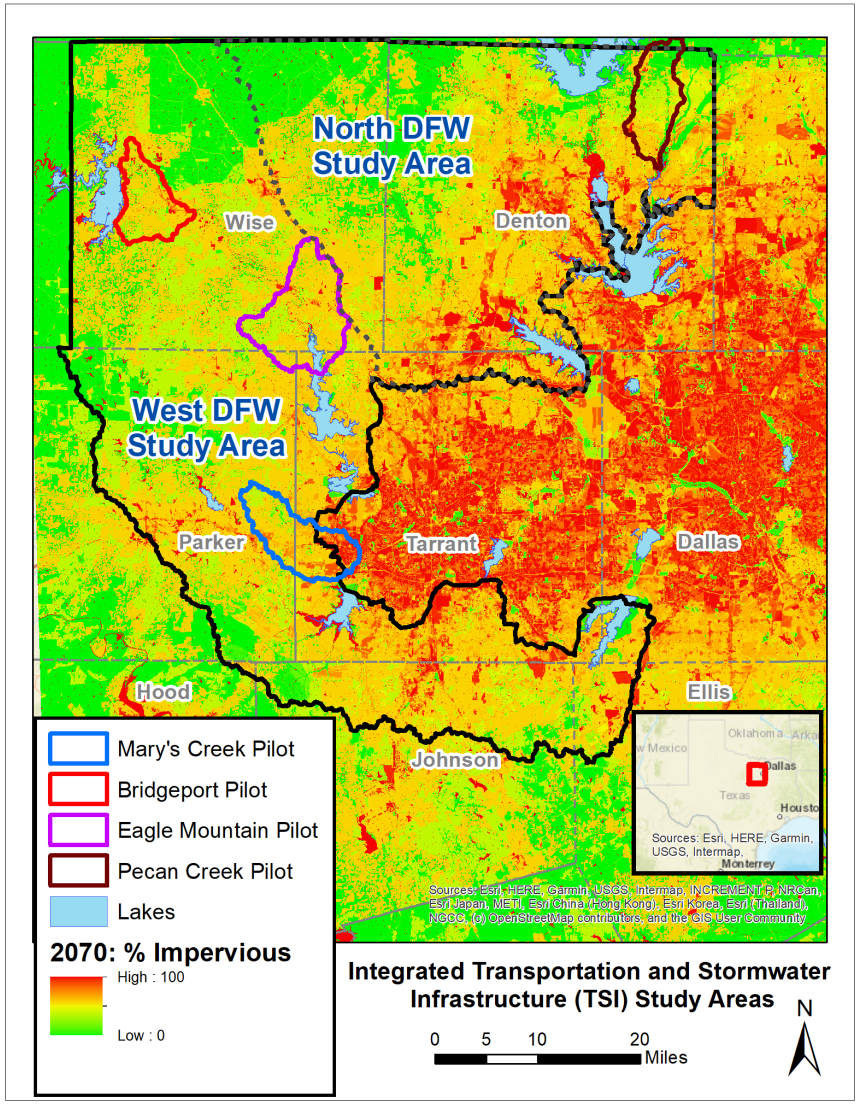
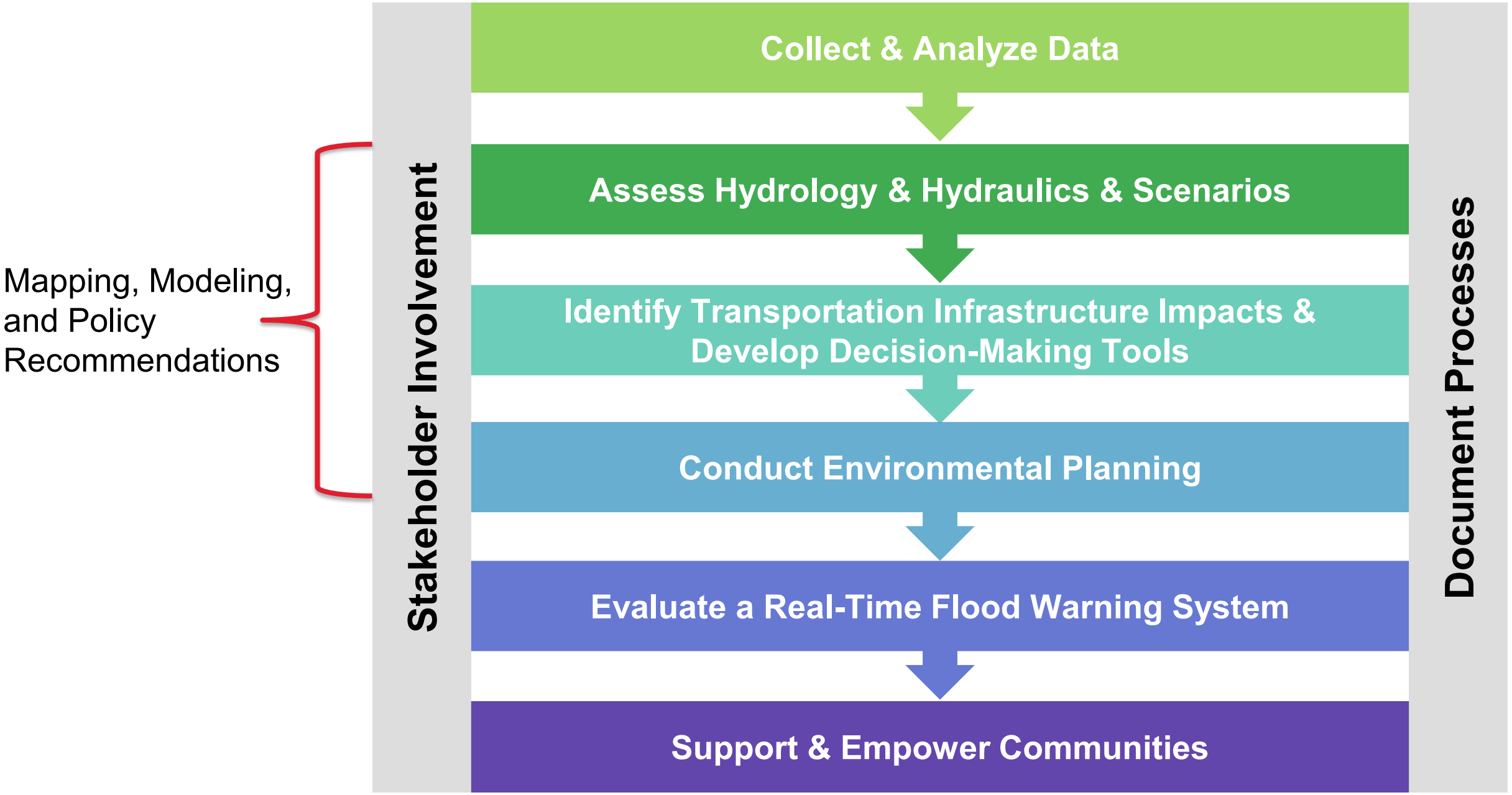
Typical Urbanization Adds Impervious Surfaces

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







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Benefits for Communities Outside the Study Areas

- 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

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

Note that these images are AI generated

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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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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

<u>West Study Area</u>

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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