New Braunfels Drainage Area Master Plan Project

Texas Regional Stormwater Conference
January 22, 2026

TEXAS WATER DEVELOPMENT BOARD

City of New Braunfels

FREESE AND NICHOLS

Presenters

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Project Manager

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Staff Engineer

New Braunfels, Texas

- Founded 1845 by Prince Carl Solms of Braunfels, Germany
- Located on I-35 corridor between San Antonio and Austin
- Guadalupe and Comal Rivers
- Flash flood alley

Catastrophic Flooding Meets Rapid Development

- One of the fastest-growing communities in the US
- Development around unmapped streams
- Majority of effective models are before 2010
- Atlas 14
- Lack of drainage projects in the CIP

Flood Infrastructure Fund (FIF) Program – Round 1 Cycle (2020)

Four Project Categories:

CATEGORY 1: Flood Protection Planning for Watersheds (before a flood event)

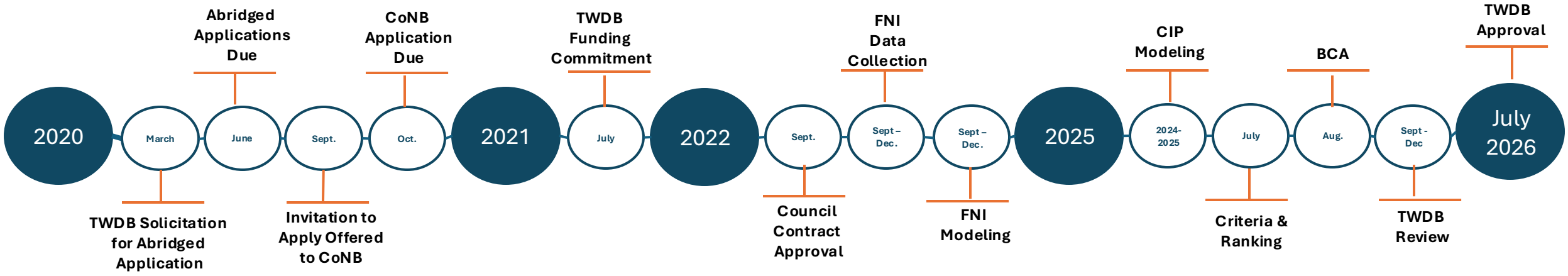
CATEGORY 2: Planning, Acquisition, Design, Construction, Rehabilitation (All combinations of these activities)

CATEGORY 3: Federal Award Matching Funds

CATEGORY 4: Measures immediately effective in protecting life and property

Financial assistance for structural and nonstructural solutions

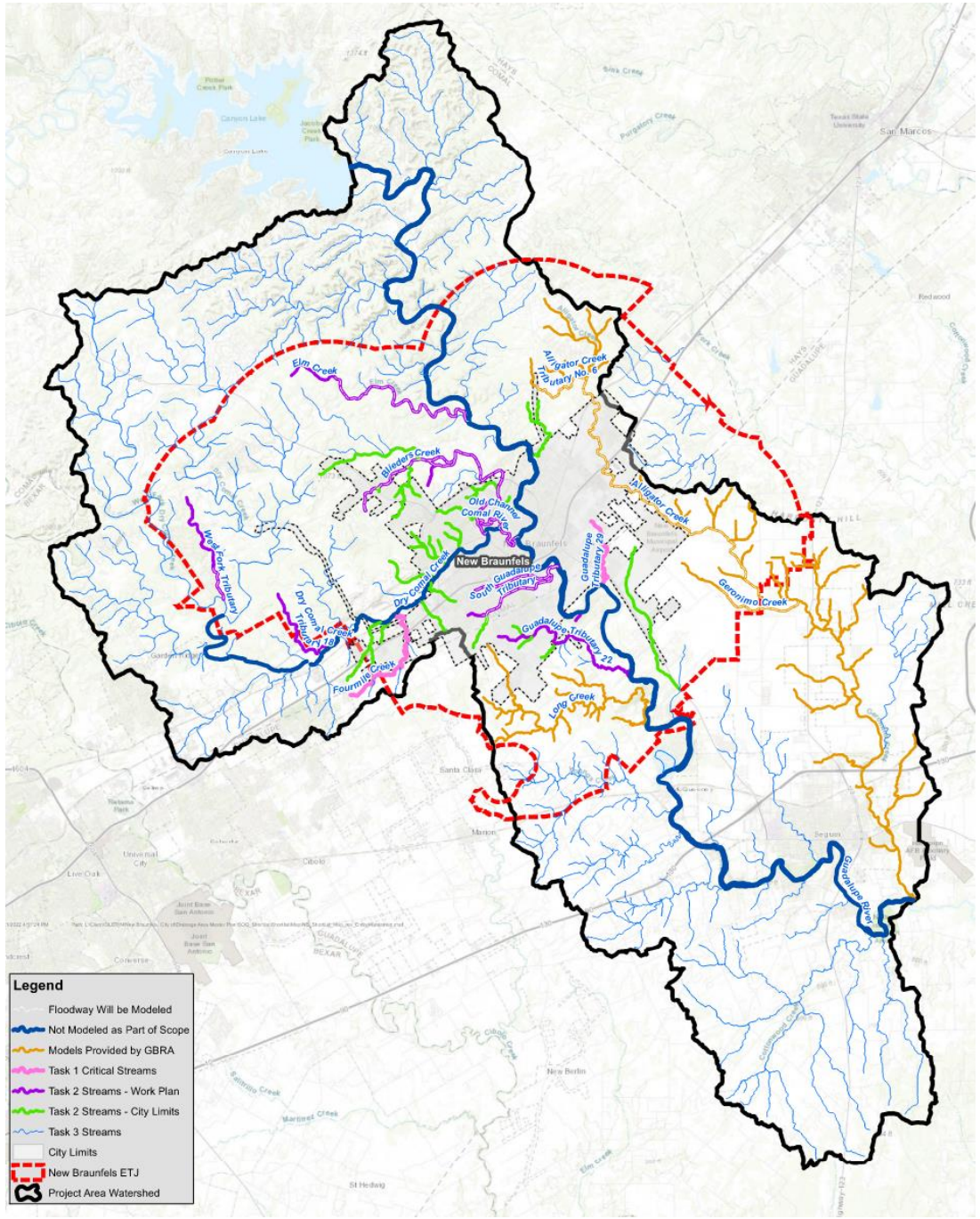
Projects must involve collaboration with others



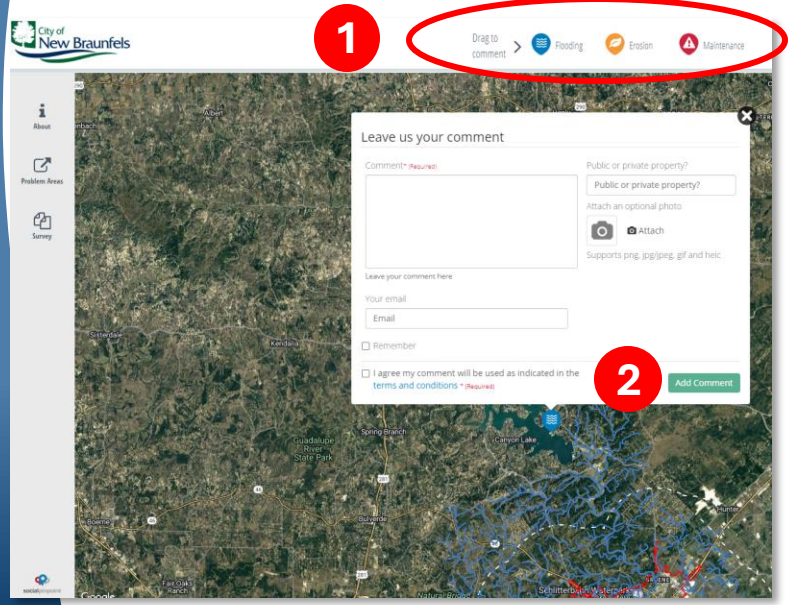
Scoping Phase

Scoping Coordination

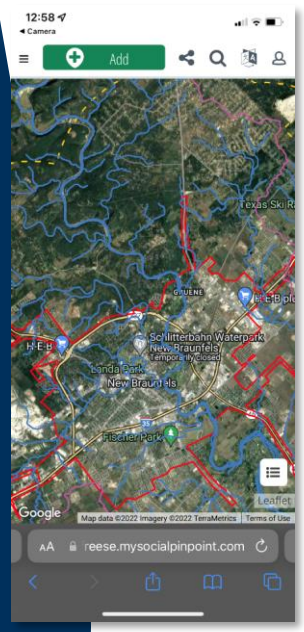
- TWDB Commitment elements missing from Scope of Work and Budget
  - Project Administration
  - Public Meetings
  - TWDB Coordination
  - Stakeholder Coordination
- Modeling and Mapping Limits
- Changing ETJ Limits
- Survey

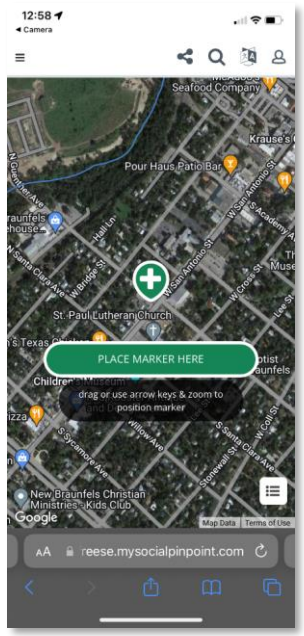


Project Implementation

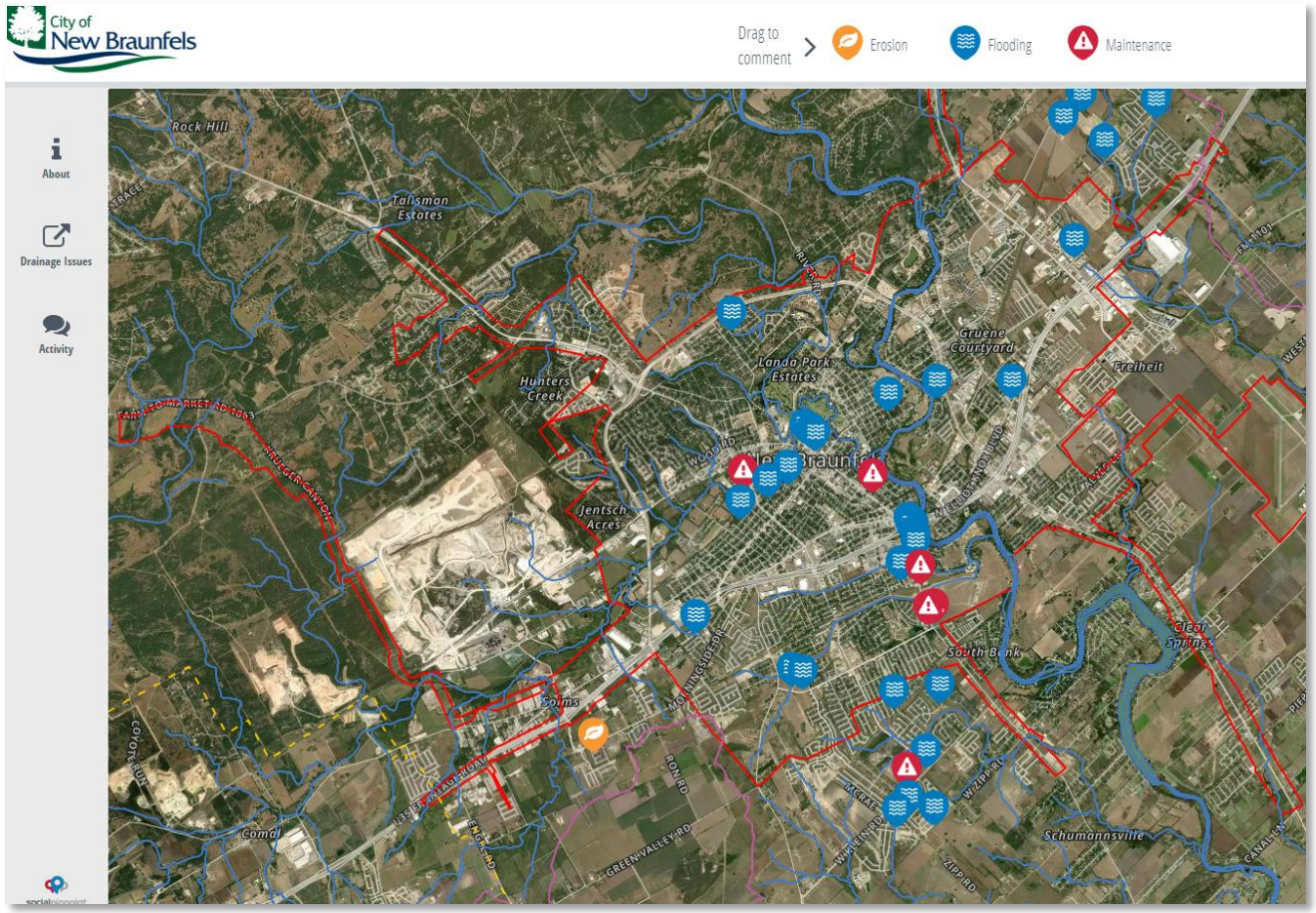


Online Feedback





Mobile Layout



Public Input Results

Project Implementation

Tasks 1 and 2: Floodplain Modeling and Mapping

Stakeholder Collaboration

- Public Meeting Invites
- As-builts
- Existing flood studies
- Existing and Future Land Use Assumptions

Data Collection

- GLO Coordination
- GBRA Coordination
- Survey Data

Tasks 3: 2D ROM Model

Task 4: Education Campaign and Webmap

Access, Plan, Mitigate

- Review and download available FEMA effective and LOMR models

Atlas 14 Adoption

One Water New Braunfels

- NBU
- GBRA

Tasks 5: Prioritized List of Regional Flood Control Projects

Developing Regional CIP Projects

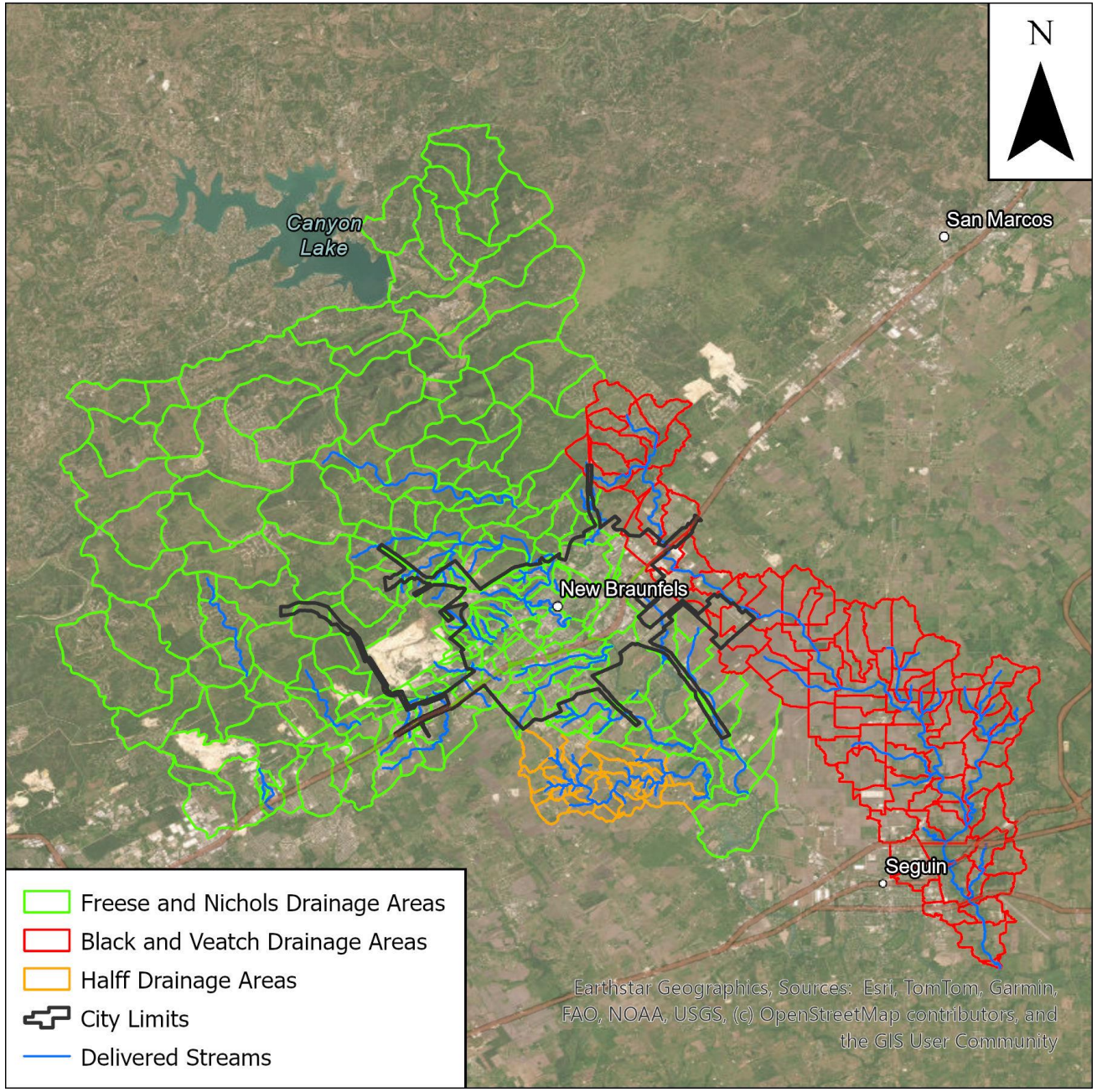
Modeling Process

Modeling Methods
- 2D ROM
- High Level Hotspot Analysis
- 1D Steady State
- Detailed Existing Analysis

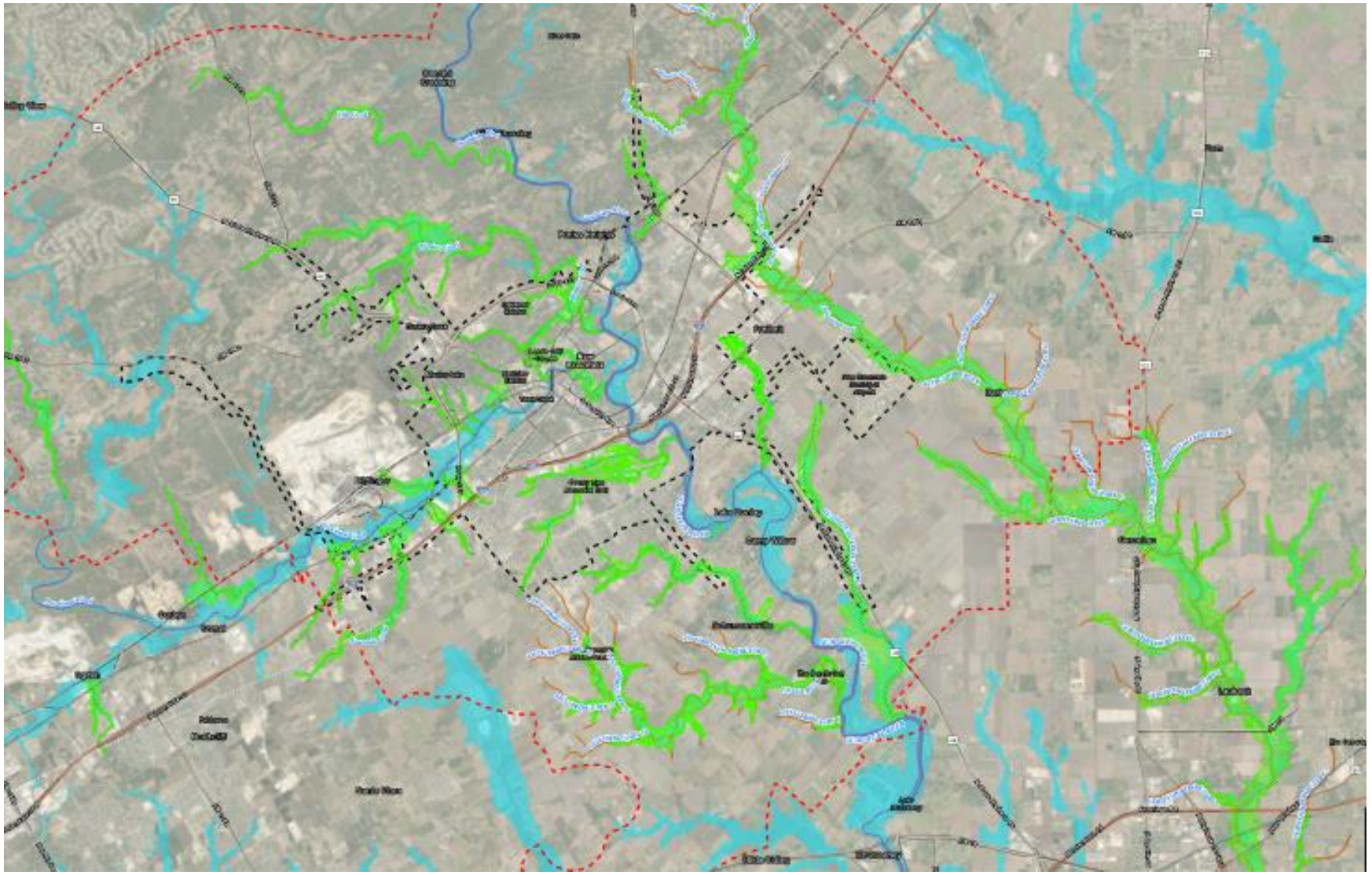
New Hydrologic Parameters
- 500 Sub-basins (~333 sq mi)
- TCs
- CN & LU
- Routing

9 Dams

New Hydraulic Models



Existing Conditions



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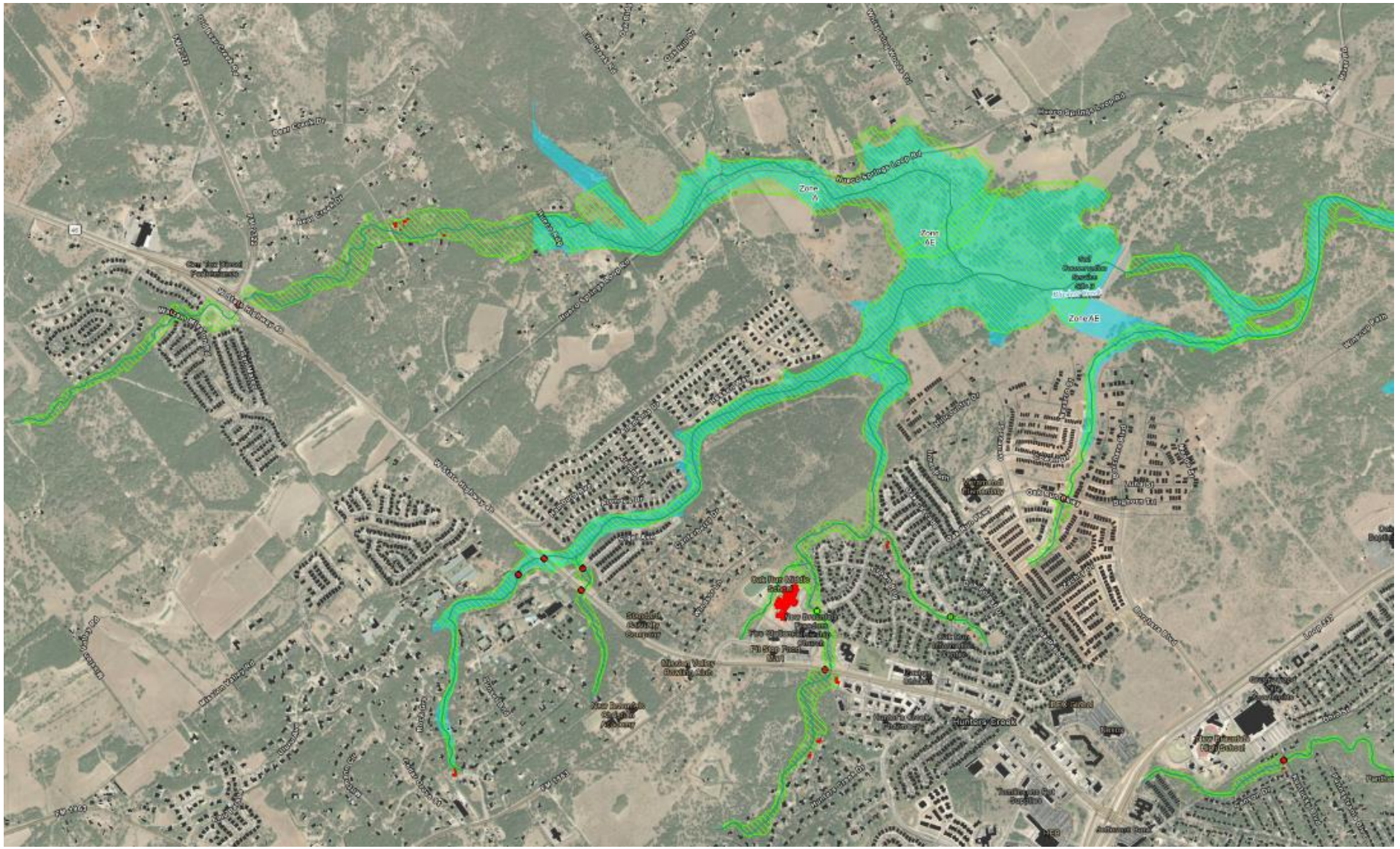
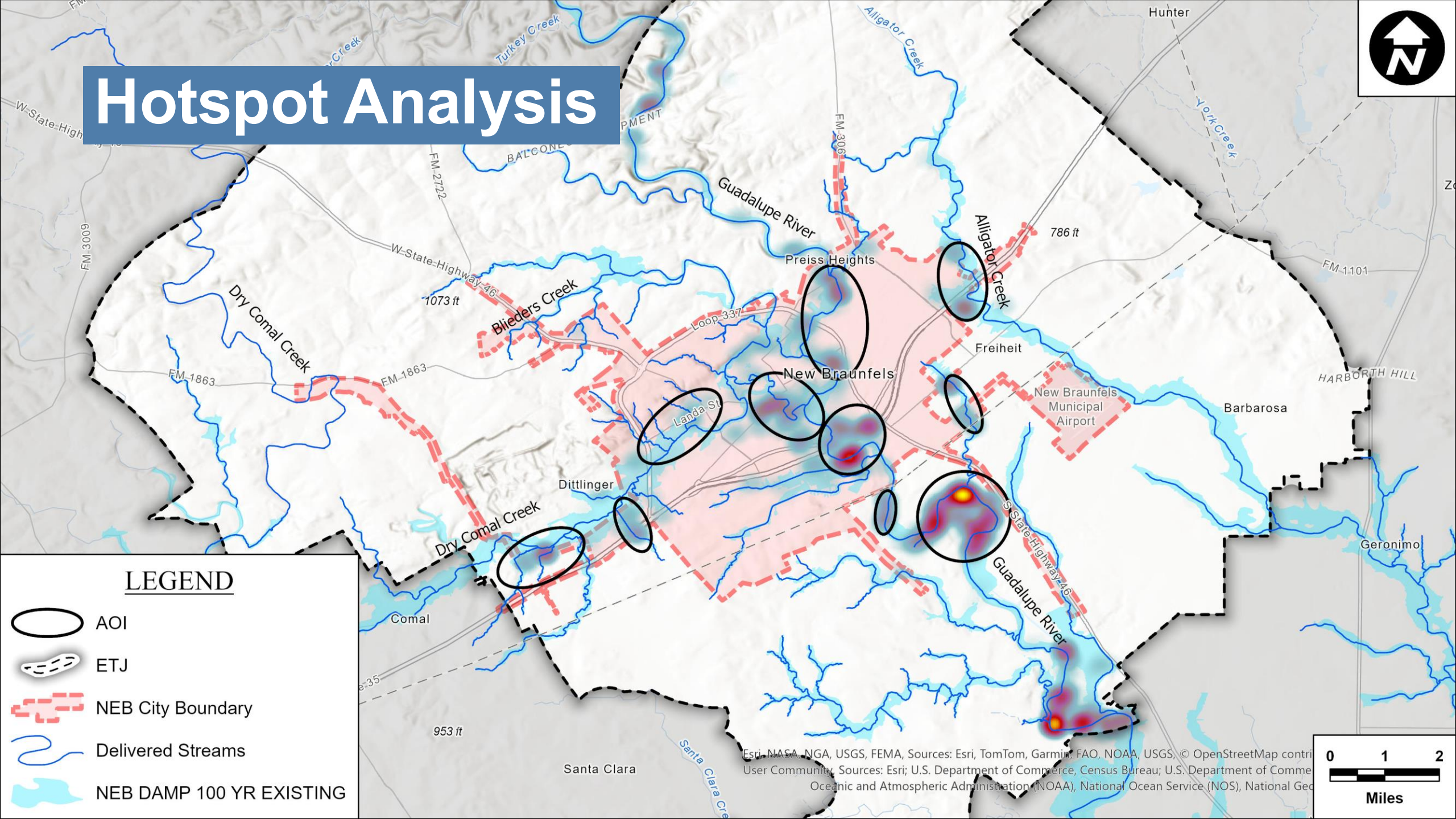
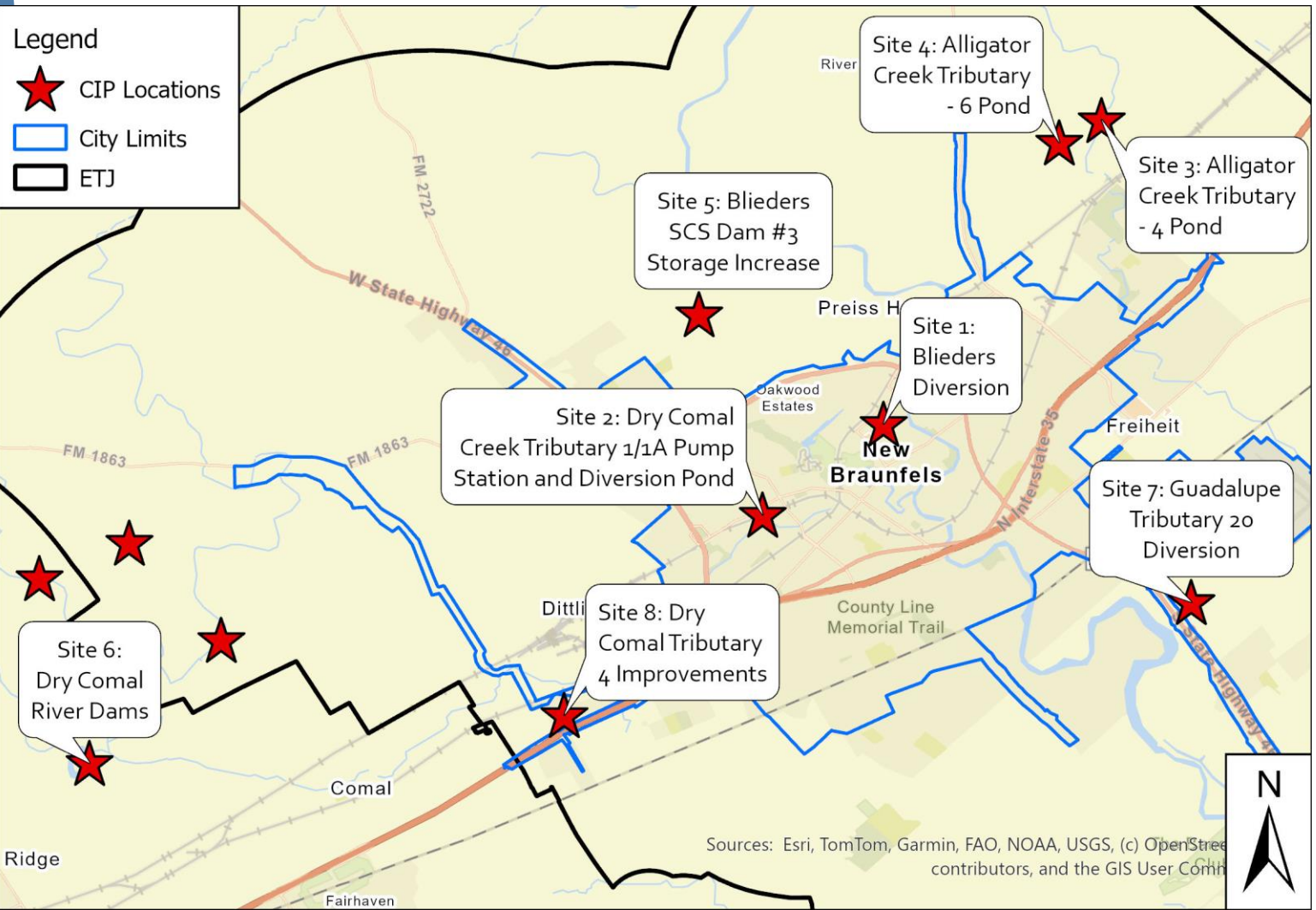


Hotspot Analysis



Project Sites



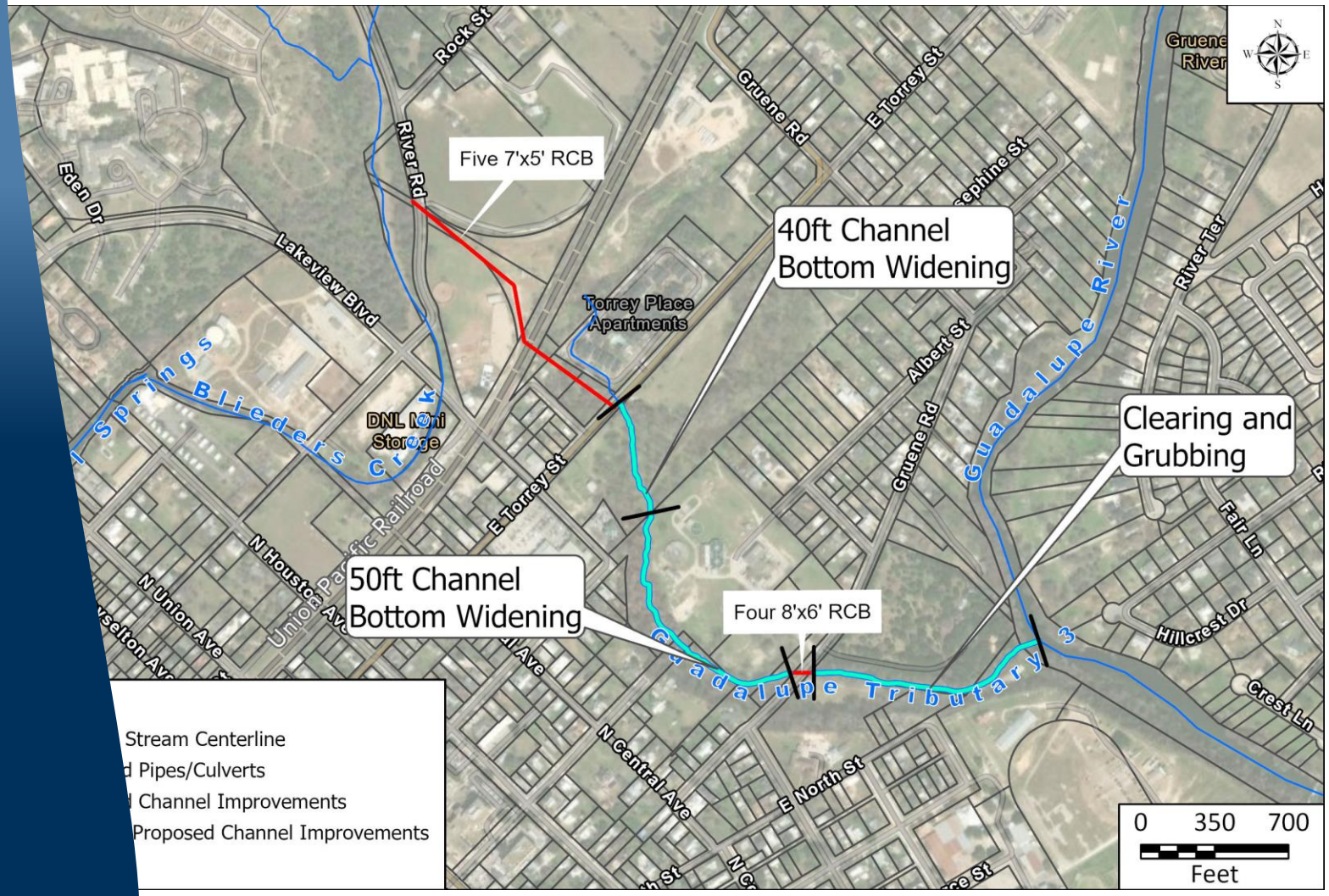
Project Sites:

- Site 1: Blieders Diversion
- Site 2: Dry Comal Creek Tributary 1/1A Pump Station and Diversion Pond
- Site 3: Alligator Creek Tributary 4 - Pond
- Site 4: Alligator Creek Tributary 6 - Pond
- Site 5: Blieders SCS Dam #3 Storage Increase
- Site 6: Dry Comal River Dams
- Site 7: Guadalupe Tributary 20 Diversion
- Site 8: Dry Comal Tributary 4 Improvements

CIP Ranking and Criteria

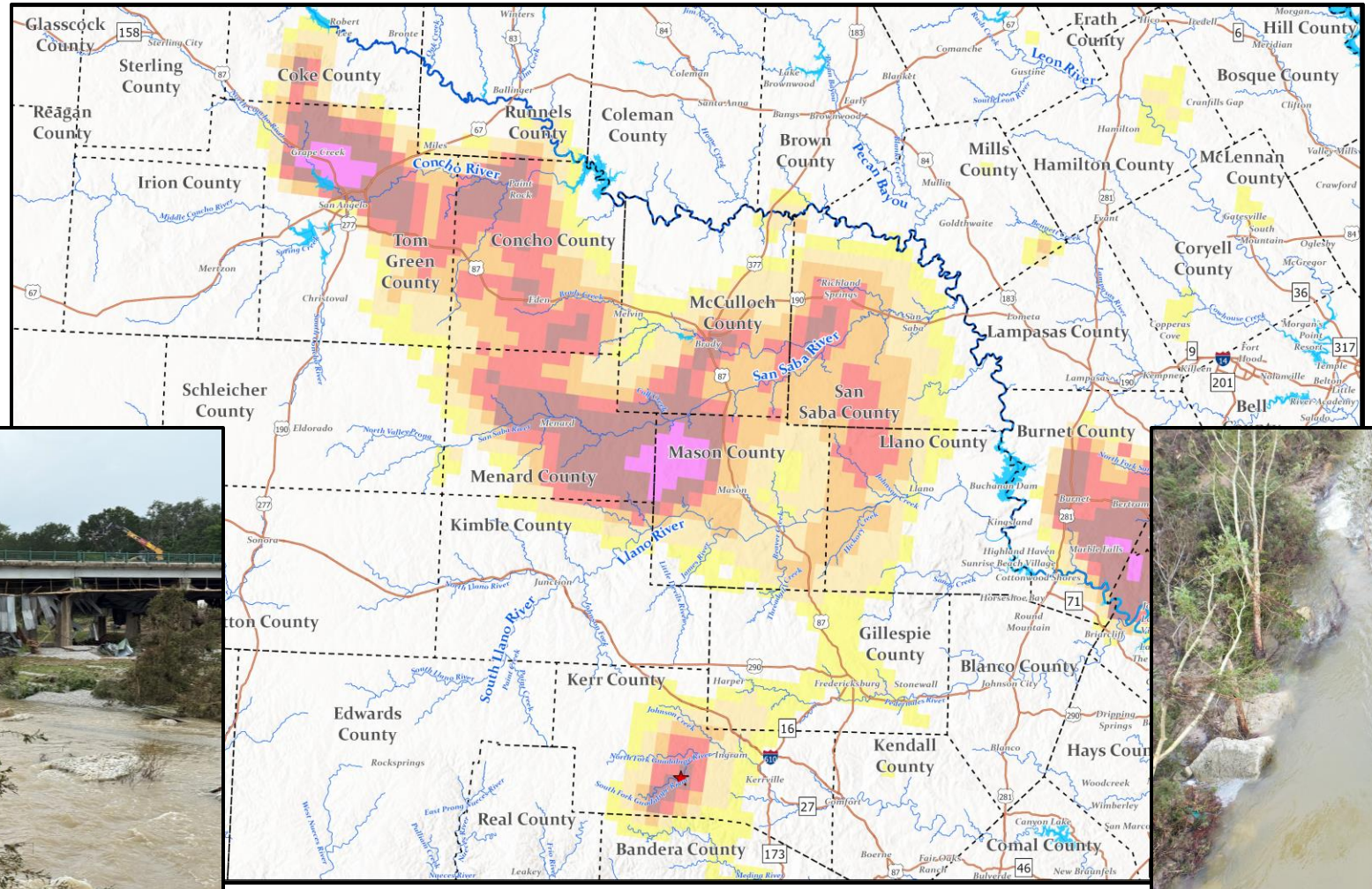
Criteria	Structure Flooding Reduction	Critical Facilities Flooding Reduction	Improve LWC Level of Service	Cost Per Structure Removed	Social Vulnerability Index	Sum	Weight	Rank
Structure Flooding Reduction		1.5	2.4	2.3	2.3	8.6	0.21	2
Critical Facilities Flooding Reduction	2.5		2.8	2.7	2.5	10.4	0.26	1
Improve LWC Level of Service	1.6	1.3		2.2	2.1	7.1	0.18	4
Cost Per Structure Removed	1.7	1.3	1.8		2.3	7.2	0.18	3
Social Vulnerability Index	1.7	1.5	1.9	1.7		6.8	0.17	5

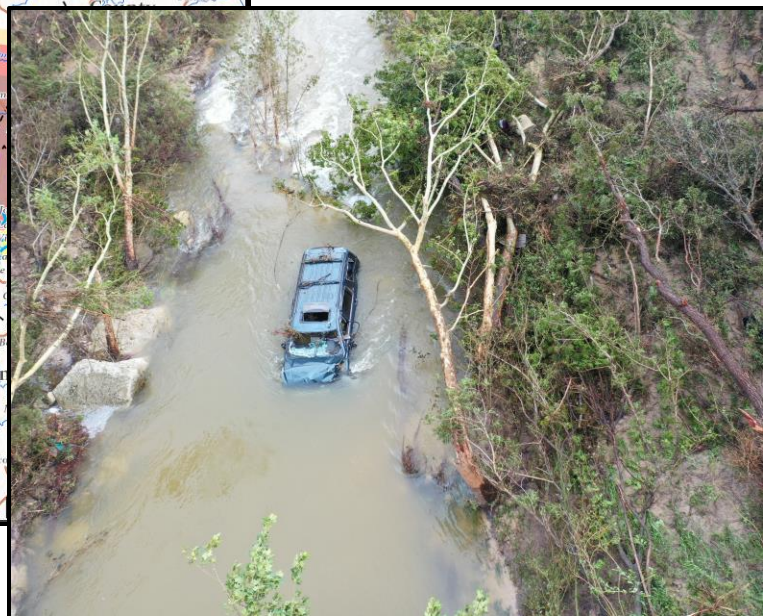
Project Case Study: Blieders Diversion



- **Install new drainage structures:** Construct five 7'x5' RCB culverts to divert ~1,700 cfs from Blieders Creek to Guadalupe Tributary 3
- **Enhance channel capacity:** Clear vegetation along ~3000’ and widen ~1,400’ of Guadalupe Tributary 3
- **Upgrade road crossing:** Replace existing pipes at Gruene Road with four 8'x6' RCBs

Next Steps

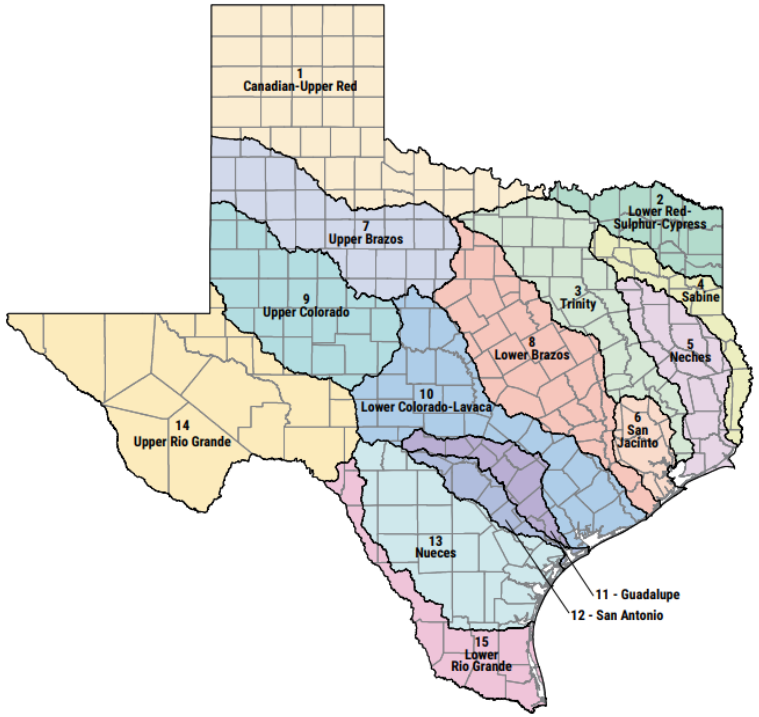

Glasscock County
Sterling County
Coke County
Reagan County
Irion County
Tom Green County
Concho County
Runnels County
Coleman County
Brown County
Mills County
Hamilton County
Erath County
Hill County
Bosque County
McLennan County
Coryell County
Lampasas County
Bell
Burnet County
Llano County
San Saba County
McCulloch County
Mason County
Menard County
Kimble County
Schleicher County
Gillespie County
Blanco County
Kendall County
Kerr County
Edwards County
Real County
Bandera County
Comal County
Hays County
Concho River
Pecan Bayou
Leon River
San Saba River
Llano River
South Llano River



Regional Flood Plan (RFP) Incorporation

- Community decision to incorporate in RFP
- Contact your RFP technical team
  - Find your region and point of contact: https://www.twdb.texas.gov/flood/planning/regions/index.asp
  - Confirm deadline with technical team (Fall 2026)
- RFP as FMS, FME or FMP
- FME to FMP
- Must be in State Flood Plan (SFP) to be eligible for FIF funding

Figure ES-2. The 15 flood planning regions designated by the TWDB on April 9, 2020



Texas Water Development Board. 2024. State Flood Plan 2024. Texas Water Development Board, Austin, TX. Available at: https://www.twdb.texas.gov/flood/planning/sfp/2024/doc/SFP-2024.pdf

FIF Funding Request Process

- Two-step application process:
  - Abridged Applications
  - Full Financial Assistance Applications
- FMS, FME, or FMP in the 2024 SFP to submit for the 2026-2027 cycle
- Monitor the FIF website for release of the FIF Intended Use Plan (IUP)
  - https://www.twdb.texas.gov/financial/programs/fif/index.asp
  - anticipated release in January 2026
- ***Anticipated*** schedule for process (based on 2024-2025 cycle)
  - Draft IUP sometime in January 2026 with 30-day public comment period, due Feb 2026
  - Solicitation for Abridged Applications in January 2026 with submittals due in April/May
  - Final IUP to TWDB Board March 2026
  - Projects reviewed and scored Summer 2026; prioritized list published for public comment
  - First round of invitations to submit full application in Fall 2026.

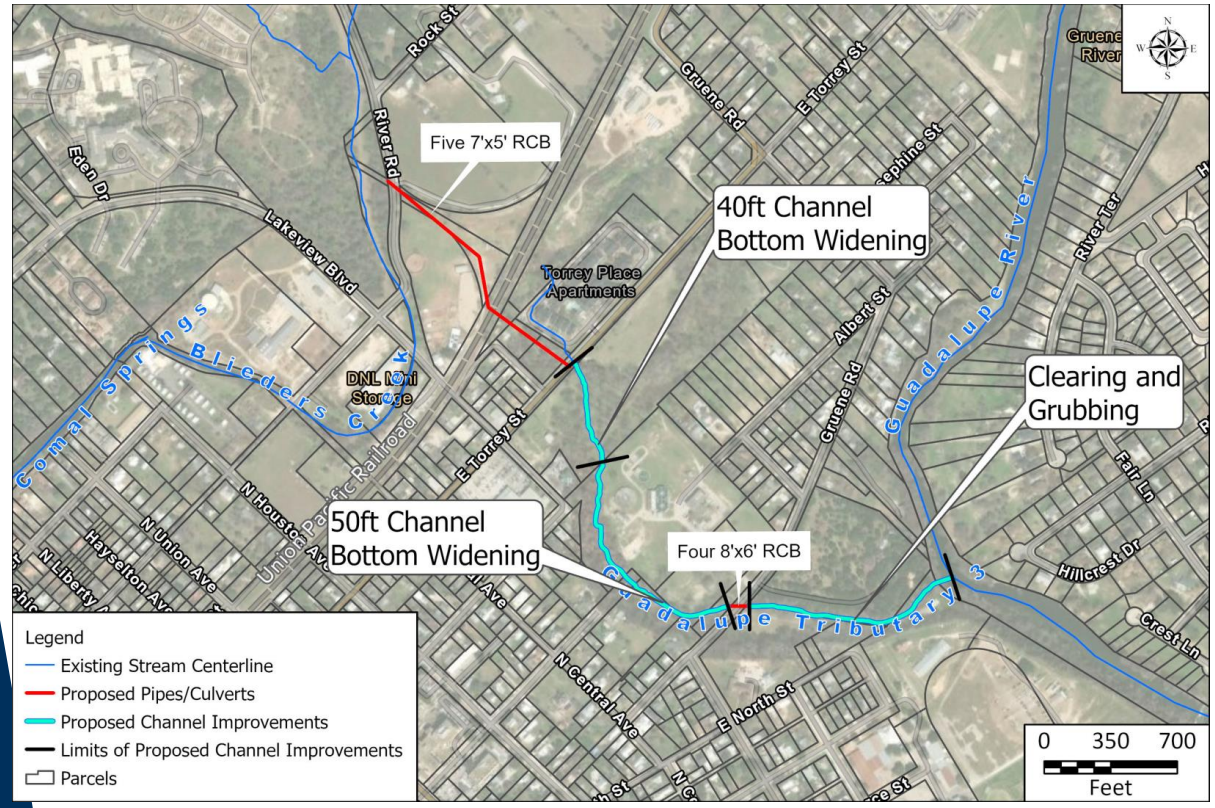
FIF Co-Benefits: Water, Nature, and Community

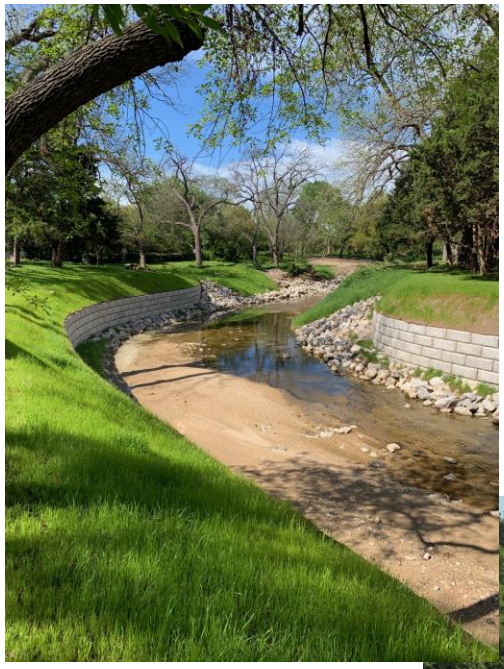
- Water supply and reliability improvements
- Nature-based or green features
- Environmental and community benefits
- Improved mobility during floods

Cost, O&M, and Implementation Factors

- Benefit–cost analysis (BCA)
- Long term operations and maintenance burden
- Permitting and implementation complexity

Enhancing FIF Grant Selection





Thank you!

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