REGION 8 Lower Brazos
Regional Flood Planning Group

Thursday, January 15, 2026

10:00 AM

Brazos River Authority, Lt. Gen. Phillip J. Ford Central Office

4600 Cobbs Dr., Waco, TX 76710

REGION 8 Lower Brazos
Regional Flood Planning Group

1. **Call Meeting to Order and Attendance**
2. **Public Input - comments on agenda items or flood planning issues (limited to 3 minutes each)**
3. **Consent Agenda**
   - **3.1. Approval of Minutes for the December 18, 2025, meeting**
   - **3.2. Approval and Certification of the Finance Report Expenditures**

No Finance Report

Meeting Minutes

REGION 8 - LOWER BRAZOS REGIONAL FLOOD PLANNING GROUP

Brazos River Authority, Lt. Gen. Phillip J. Ford Central Office,
4600 Cobbs Dr. Waco, TX 76710

10:00 a.m. – Thursday, December 18, 2025

Meeting agenda, materials, and audio recordings are available online at www.lowerbrazosflood.org

1. **Call Meeting to Order and Attendance**

Anthony Beach presided over the meeting in Waco, TX. Mr. Beach called the meeting to order at 10:00 am.

Anthony Beach	P	Alysha Girard	P
Bruce Bodson	P	Matt Phillips	P
Sujeeth Draksharam	P	Kristina Ramirez	P
Tim Finley	P	Jonathan Steiber	P
Russell Ford	A	Mark Vogler	P
Charlotte Gilpin	P	Brandon Wade	P

Quorum Present: **Yes.** A quorum is 7 of 12 voting members.

2. **Public Input - Public comments on agenda items or flood planning issues (limited to 3 minutes each)**
Anthony Beach opened the floor for public comments. No public comments.

3. **Consent Agenda**

3.1. **Approval of Minutes for the November 20, 2025 meeting**

3.2. **Report, Approval and Certification of the Finance Report Expenditures**

Anthony Beach opened the floor for approval of the consent agenda items as they were presented. Sujeeth Draksharam made the motion to approve the previous meeting minutes presented and Kristina Ramirez seconded the motion. The motion passed unanimously.

4. **Discussion and possible action on the report from the technical consultant.**

The Technical Consultant team provided an update on Tasks 2A and 2B. The Regional Flood Planning Group emphasized the importance of messaging on what future flood risk information represents. The Technical Consultant team agreed to ensure that documentation reflects the assumptions used to determine future flood risk metrics.

The Technical Consultant team provided an update on Task 3C. The RFPG discussed potential adjustments to the wording of the new and revised goals to ensure they convey their importance. The RFPG decided to add "at a minimum" to the short-term goal for implementing flood warning systems to emphasize the importance of this goal.

The Technical Consultant team led a discussion on Tasks 4C and 5B. The RFPG discussed the distribution of funding for performance of FMEs. The RFPG discussed the "rural" definition. The Technical Consultant Team agreed to provide more information on the "rural" definition and look at potential modifications to ensure rural county areas are not being overlooked.

Action item: Lower Brazos RFPG approval of the updated Flood Mitigation and Flood Management Goals.
Alysha Girard made the motion to accept the revised goal for flood warning systems with the addition of the word minimum in the Short-Term goal, and to accept the Ag goal as presented with the noted changes. The Ag goal will change to include both crop and livestock damages and add to the short-term goal to investigate additional data sources for a more accurate representation. Kristina Ramirez seconded the motion. Motion passed.

Action Item: Approval of submission of the Technical Memorandum as presented, with non-substantive changes, to the Texas Water Development Board by January 7, 2026.

5. **Discussion and potential action on the update of the Bylaws**

The planning group members were provided with the red line changes as part of the meeting materials. Alysha Girard made a motion for the adoption of the Bylaws as presented. Sujeeth Draksharam seconded the motion. Motion passed.

6. **Report from:**

6.1. **Texas Water Development Board (TWDB) staff**

Sara Magana provided the TWDB Report to the RFPG.

6.2. **Regional Planning Sponsor**

No Sponsor Report

6.3. **Lower Brazos RFPG Chair**

Alysha Girard provided the Chair report.

7. **Confirm next meeting date and discuss new business to be considered at next meeting**

The next regular meeting will be on Thursday, January 15, 2026, at 10:00AM.

Adjourn

Anthony Beach adjourned the meeting at 11:11 AM.

Approved by the Region 8 Lower Brazos RFPG at the meeting held on January 15, 2026.

Matt Phillips, Secretary

Alysha Girard, Chair

REGION 8 Lower Brazos
Regional Flood Planning Group

4. Presentation by the TWDB consultant developing the Nature-Based Solutions for Flood Resilience Guidance Manual

Nature-Based Solutions for Flood Resilience

Region 8 Lower Brazos Flood Planning Group

Texas Water Development Board

Freese and Nichols, Inc.

The Nature Conservancy

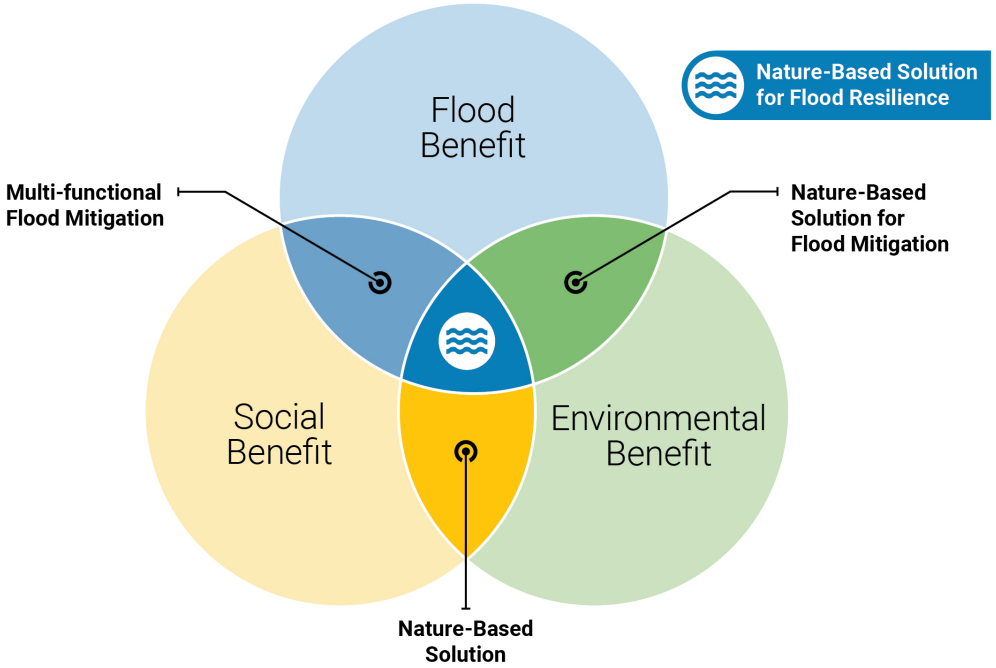
Agenda

- Definition and Examples of NBS for Flood Resilience
- Purpose of the NBS for Flood Resilience Guidance Manual
- Guidance Manual Content
- Publishing Schedule
- How to Incorporate NBS into RFPs
- Key Takeaways

TEXAS WATER DEVELOPMENT BOARD

Defining Nature-Based Solutions (NBS)

NBS use or imitate natural features and/or processes to increase resilience while providing sustainable benefits to people and the environment.



Co-benefits Examples:

- Water Supply and Drought Mitigation
- Water Quality and Public Health
- Urban Heat Reduction and Air Quality
- Recreation and Social Assets

TEXAS WATER DEVELOPMENT BOARD

NBS for Flood Resilience Spectrum

Traditional (Gray)	Hybrid	Natural
Hard, gray, engineered structures built to address development and flood risk reduction objectives	Combination of hard engineering solutions incorporated with natural and nature-based features to accomplish flood risk reduction objectives	Creation, protection, or restoration of natural systems or processes to accomplish flood risk reduction objectives

Adapted from the International Guidelines on Natural and Nature Based Features for Flood Risk Management

TEXAS WATER DEVELOPMENT BOARD

NBS for Flood Resilience Examples

Stream and Floodplain Restoration

Pilot Gully in Harris County

Wet Pond with Constructed Wetlands

Exploration Green in Harris County

Structural NBS for Flood Resilience

Watershed

- Stream Restoration
- Floodplain Restoration
- Levee Setback
- Wetland Restoration
- Playa Lake Restoration

Neighborhood

- Bioretention
- Vegetated Swale
- Permeable Pavement
- Vegetative Filter Strips
- Wet Ponds
- Constructed Wetlands
- Tree Trenches
- Rainwater Harvesting
- Stormwater Parks

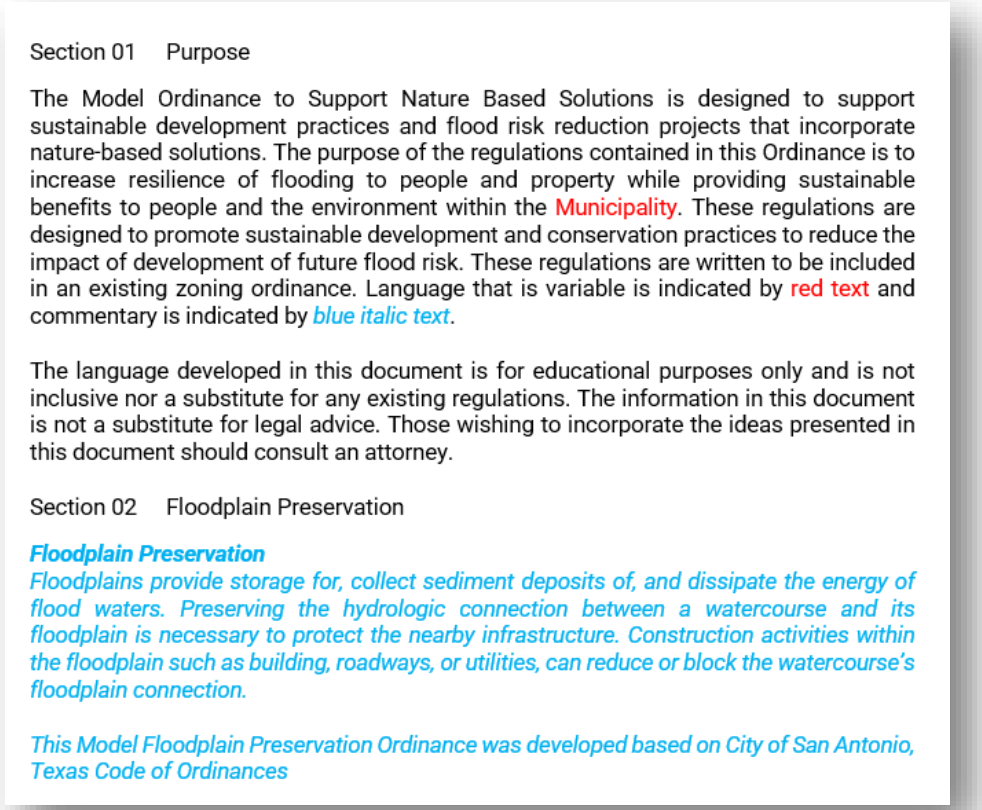
Coastal

- Beach Nourishment and Dune Restoration
- Coastal Marsh, Seagrass, and Prairie Restoration
- Natural Breakwaters and Oyster Reefs
- Waterfront Parks

Non-Structural NBS for Flood Resilience

- Property Acquisition and Conservation
- Regulating Development in Floodplains
- Promoting Native Vegetation in Design Criteria

Model Ordinance



Section 01 Purpose

The Model Ordinance to Support Nature Based Solutions is designed to support sustainable development practices and flood risk reduction projects that incorporate nature-based solutions. The purpose of the regulations contained in this Ordinance is to increase resilience of flooding to people and property while providing sustainable benefits to people and the environment within the Municipality. These regulations are designed to promote sustainable development and conservation practices to reduce the impact of development of future flood risk. These regulations are written to be included in an existing zoning ordinance. Language that is variable is indicated by red text and commentary is indicated by *blue italic text*.

The language developed in this document is for educational purposes only and is not inclusive nor a substitute for any existing regulations. The information in this document is not a substitute for legal advice. Those wishing to incorporate the ideas presented in this document should consult an attorney.

Section 02 Floodplain Preservation

Floodplain Preservation
Floodplains provide storage for, collect sediment deposits of, and dissipate the energy of flood waters. Preserving the hydrologic connection between a watercourse and its floodplain is necessary to protect the nearby infrastructure. Construction activities within the floodplain such as building, roadways, or utilities, can reduce or block the watercourse's floodplain connection.

This Model Floodplain Preservation Ordinance was developed based on City of San Antonio, Texas Code of Ordinances

TEXAS WATER DEVELOPMENT BOARD

NBS in the State Flood Plan

FMP Type	Recommended FMP Count
Low Water Crossing or Bridge Improvement	94
Infrastructure	148
Regional Detention Ponds	73
Regional Channel Improvements	79
Storm Drain Improvements	47
Dam Improvements, Maintenance, and Repair	5
Flood Walls and Levees	4
Coastal Protections	1
Nature-Based Solutions	**8**
Comprehensive Regional Projects	83
Property or Easement Acquisition	13
Elevation of Individual Structures	4
Flood Readiness and Resilience	53
Other	3
Total	**615**

TEXAS WATER DEVELOPMENT BOARD

Project Goals

01

Synthesize Research & **Guidance** on the use of NBS for Flood Mitigation into a **Single**, **Statewide Manual** for Texas Communities

02

Provide **Strategies & Tools** to Address Common **Barriers & Challenges**

03

Support The Implementation Of NBS Into The **Regional Flood Planning Process & Community-Driven Efforts**

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Intended Users

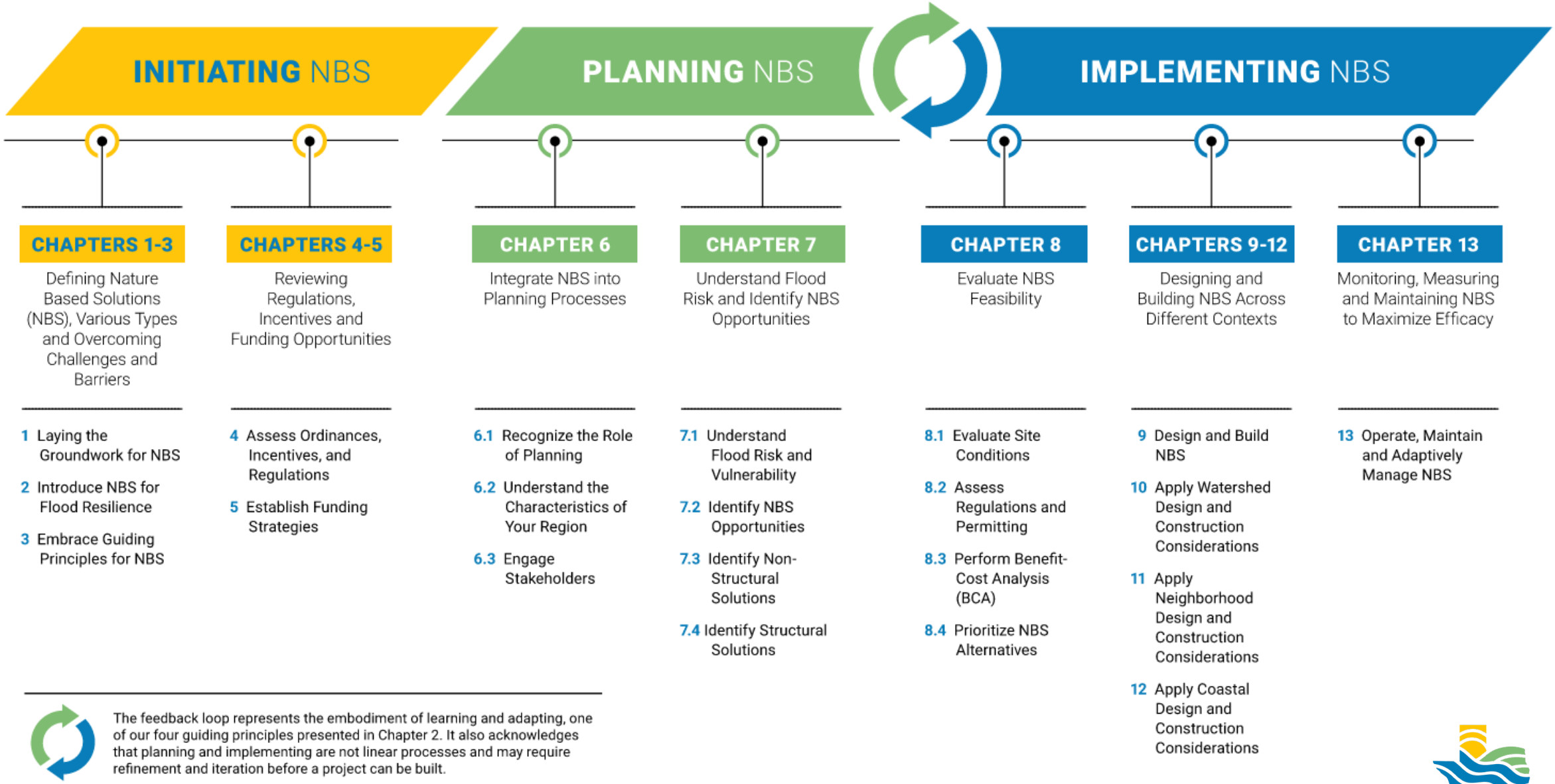
- Local government officials or representatives charged with planning, developing, or managing community infrastructure or assets
  - City Engineers
  - Floodplain Managers
  - Planners
  - Regional Flood Planning Group (RFPG)
- Practitioners
- Developers

City Engineer CIP Planning (Master Drainage Plans/Studies, Preliminary Engineering, etc.)

RFPG & Technical Consultant Teams Project alternative identification

Floodplain Administrator Example floodplain regulation, polices and incentives for more flood resilient community (e.g. floodplain buffers/setbacks)

TEXAS WATER DEVELOPMENT BOARD



TEXAS WATER DEVELOPMENT BOARD

NBS Guidance Manual Schedule

- **March 2025** Draft Guidance Manual for Public Comment
- **Summer 2026** Final Guidance Manual Published
- https://www.twdb.texas.gov/flood/research/Nature-based-Solutions-2022/index.asp

TEXAS WATER DEVELOPMENT BOARD

How to Incorporate NBS into RFPs?

Task 3	Task 4A	Task 4C	Task 5A
• Set goal for NBS implementation • Recommend NBS floodplain management practices	• Discuss NBS opportunities with local sponsors • Identify potential FMPs and FMSs	• Consider potential for co-benefits when selecting FMEs to evaluate • Develop NBS alternatives while performing FMEs	• Document project benefits, % NBS by cost • Include ecosystem services, co-benefits in project BCAs
NBS Guidance Manual Resource	**NBS Guidance Manual Resource**	**NBS Guidance Manual Resource**	**NBS Guidance Manual Resource**
• Guiding Principles • Example NBS floodplain management practices • Model Ordinance for NBS	• How to: developing a proactive stakeholder engagement strategy • How to: identify structural and non-structural solutions • Matrix of flood mitigation, environmental, and social benefits by NBS type	• Example alternative prioritization approach • Matrix of site suitability characteristics by NBS type	• How to: calculate expected flood damages • Monetary value of ecosystem services • Conceptual BCA for NBS

Key FMP Criteria to Capture NBS

- Nature-Based Solution (% by cost)
  - *Engineering Judgement*
- Other/Multiple Benefits

TEXAS WATER DEVELOPMENT BOARD

Key Takeaways – NBS for Flood Resilience

- Have more co-benefits than mono-functional flood infrastructure
- Should be considered in planning phase, before design begins
- Offer additional funding opportunities

TEXAS WATER DEVELOPMENT BOARD

Questions?

George Fowler, PE | George.Fowler@freese.com

Justin Kozak, PhD, CFM | Justin.Kozak@tnc.org

REGION 8 Lower Brazos
Regional Flood Planning Group

5. Discussion and possible action on the report from the technical consultant

REGION 8

Lower Brazos

Regional Flood Planning Group

Technical Consultant Update

January 15, 2025

Agenda

General and Schedule Updates

Task 4C & 5B – Performance of FMEs

General Updates

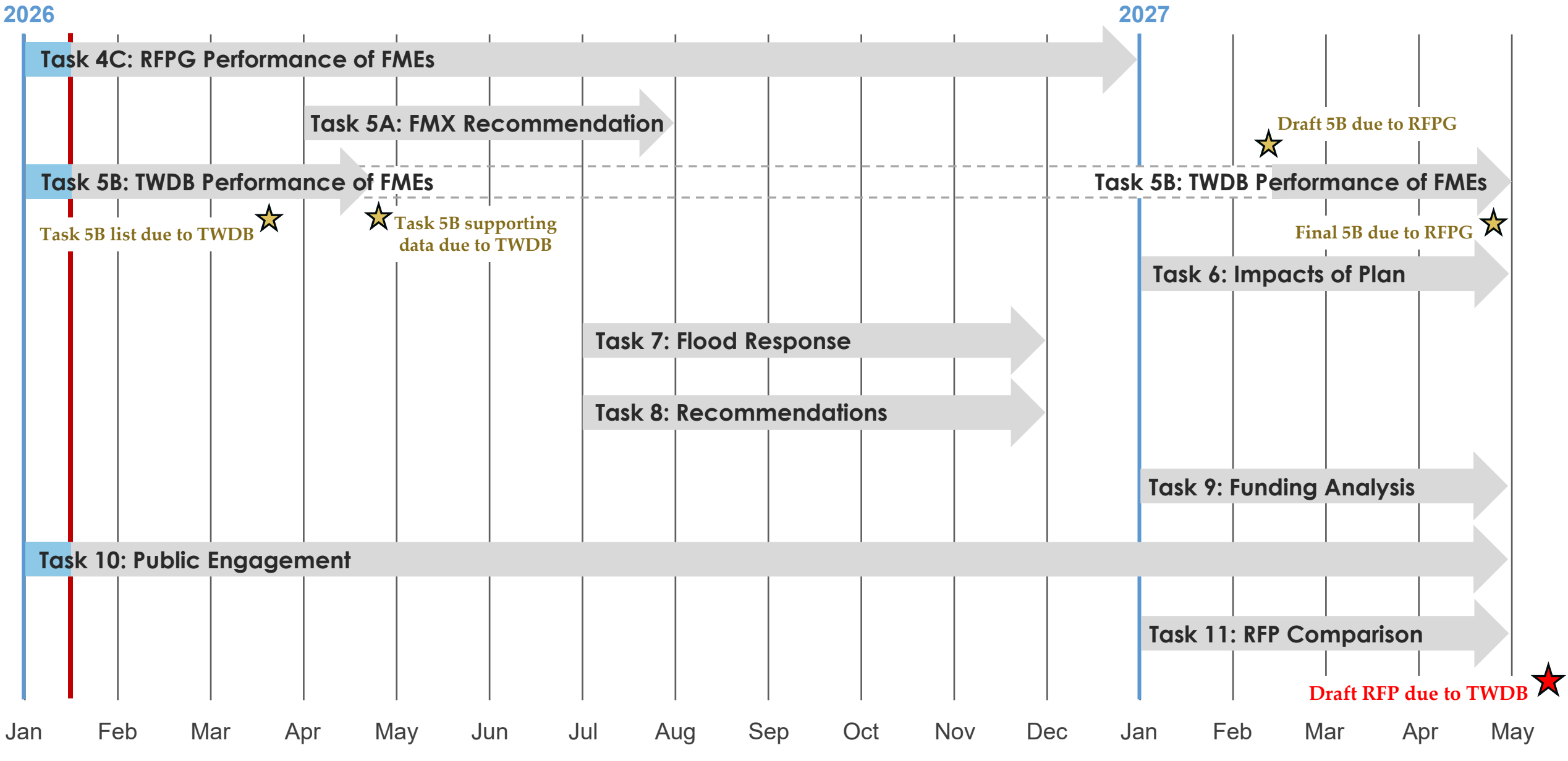
Task 4B – Tech Memo

- Submitted to TWDB on January 7th
- Confirmed to be administratively complete
- Awaiting comments or approval to proceed with Task 5A (FMX Recommendation)

Draft Chapters

- Developing draft Chapters 2, 3, and 4
- Will provide for RFPG review in March and April

Schedule Update



Task 4C: RFPG Performance of FMEs

Task 5B: TWDB Performance of FMEs

Ryan Londeen, PE, CFM

Rural Definition – Municipality and County

TWDB 2024 Intended Use Plan Definition (Original)

Rural County:

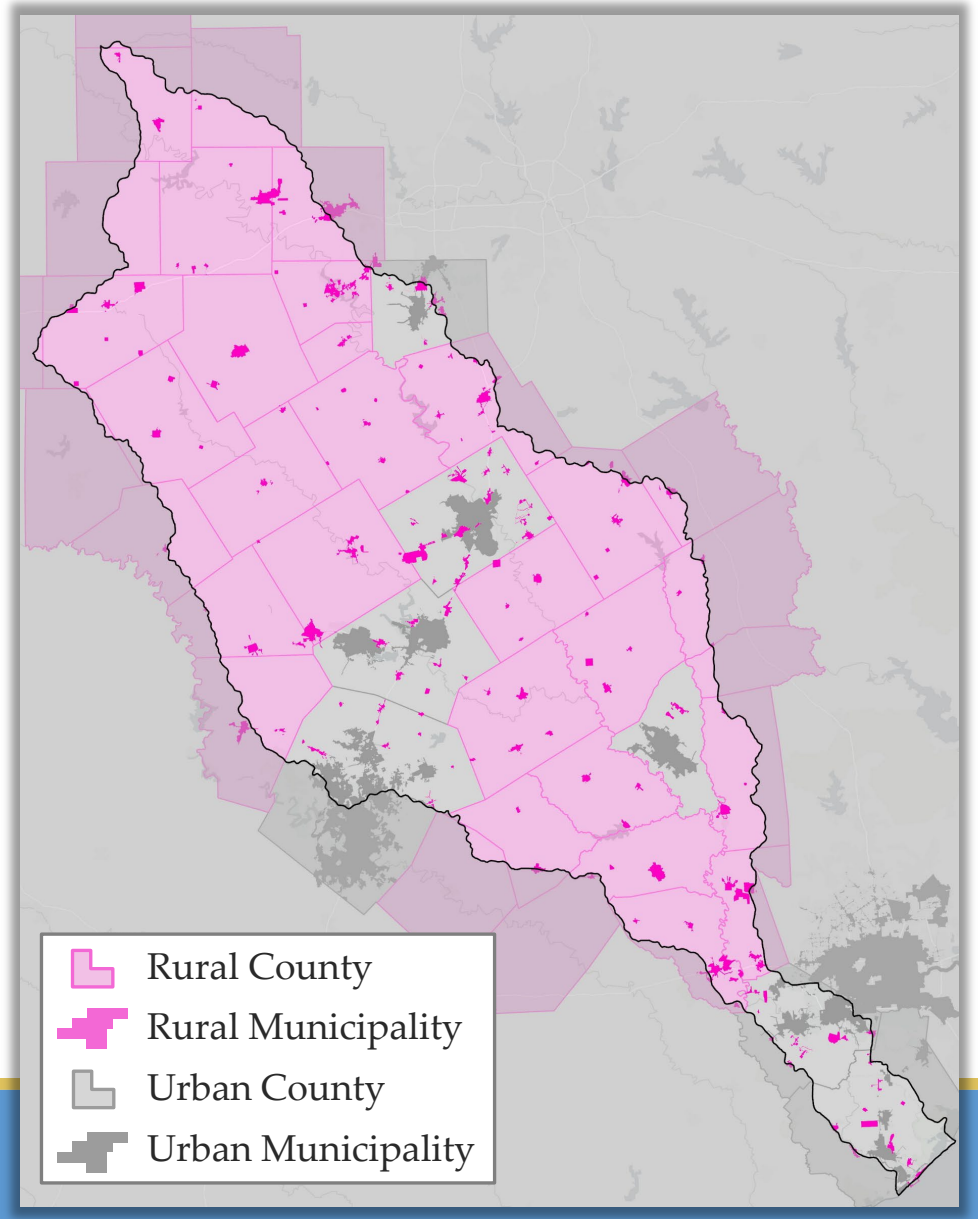
- No urban area with a population of more than 50,000

Rural Municipality:

- Population of 10,000 or less

OR

- Located within a rural county (municipality population less than 50,000)



Rural Definition – Municipality and County

TWDB 2024 Intended Use Plan Definition (Amended)

Rural County:

- No urban area with a population of more than 50,000

OR

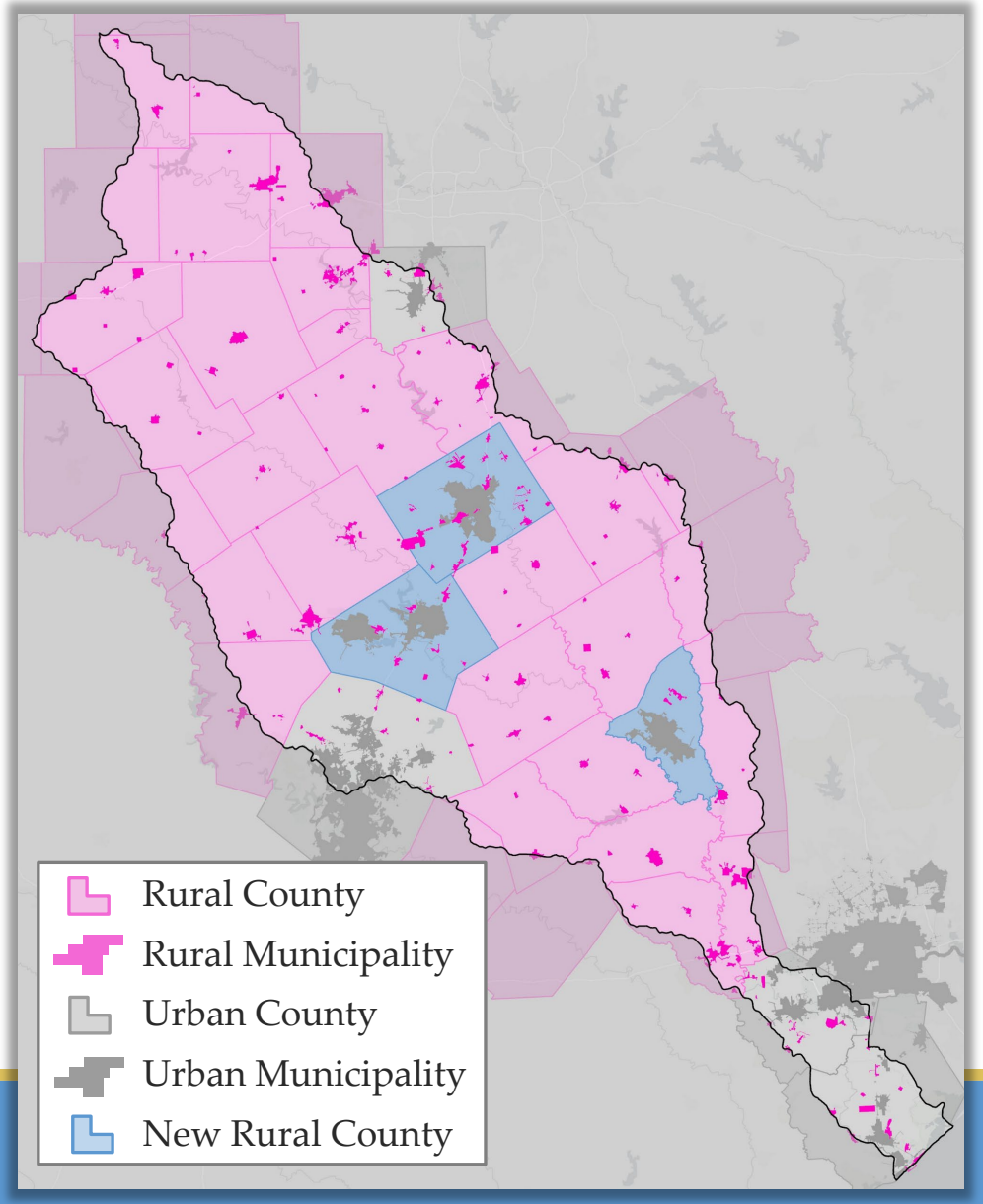
- **An unincorporated population less than 50,000**

Rural Municipality:

- Population of 10,000 or less

OR

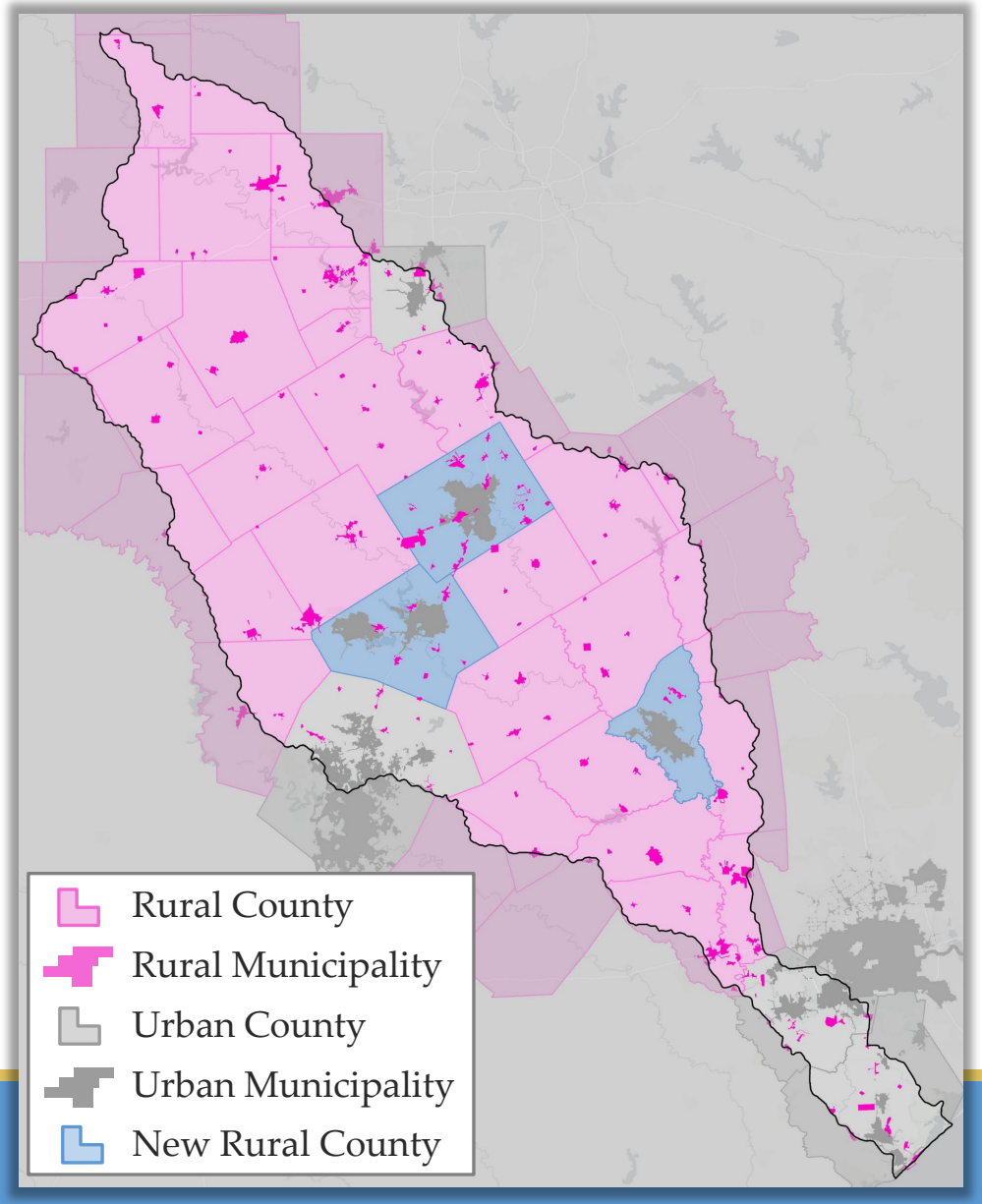
- Located within a rural county (municipality population less than 50,000)



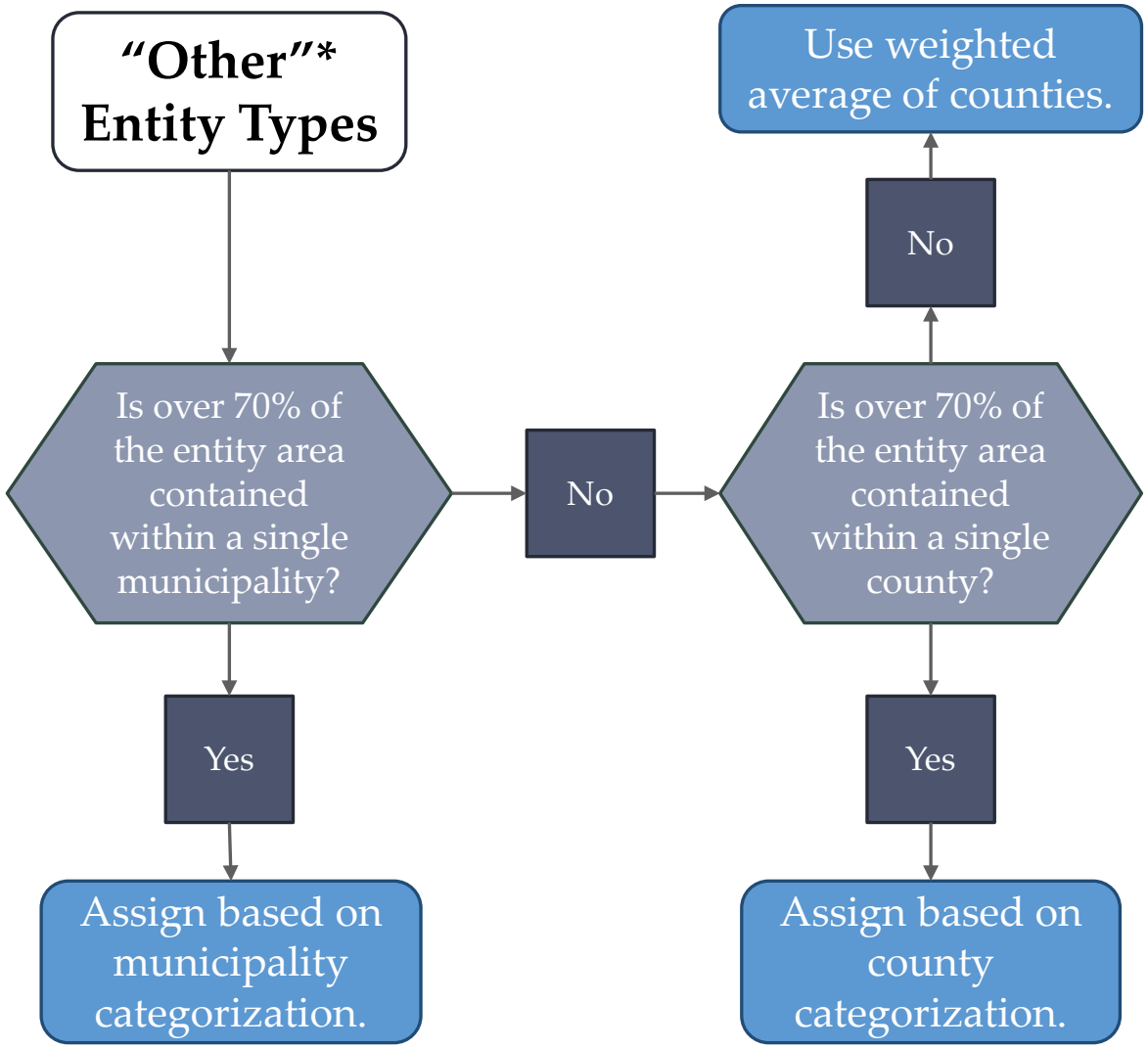
Rural Definition – Municipality and County

Urban County	Total Population	Unincorporated Population	% Population Unincorporated	% Area Unincorporated
Bell	**398,300**	**24,400**	**6%**	**84%**
Brazoria	398,500	145,531	37%	92%
Brazos*	**247,900**	**23,500**	**9%**	**82%**
Fort Bend*	935,400	598,100	64%	81%
Johnson	199,300	92,200	46%	89%
McLennan	**271,400**	**48,500**	**18%**	**86%**
Williamson*	717,000	205,500	29%	82%

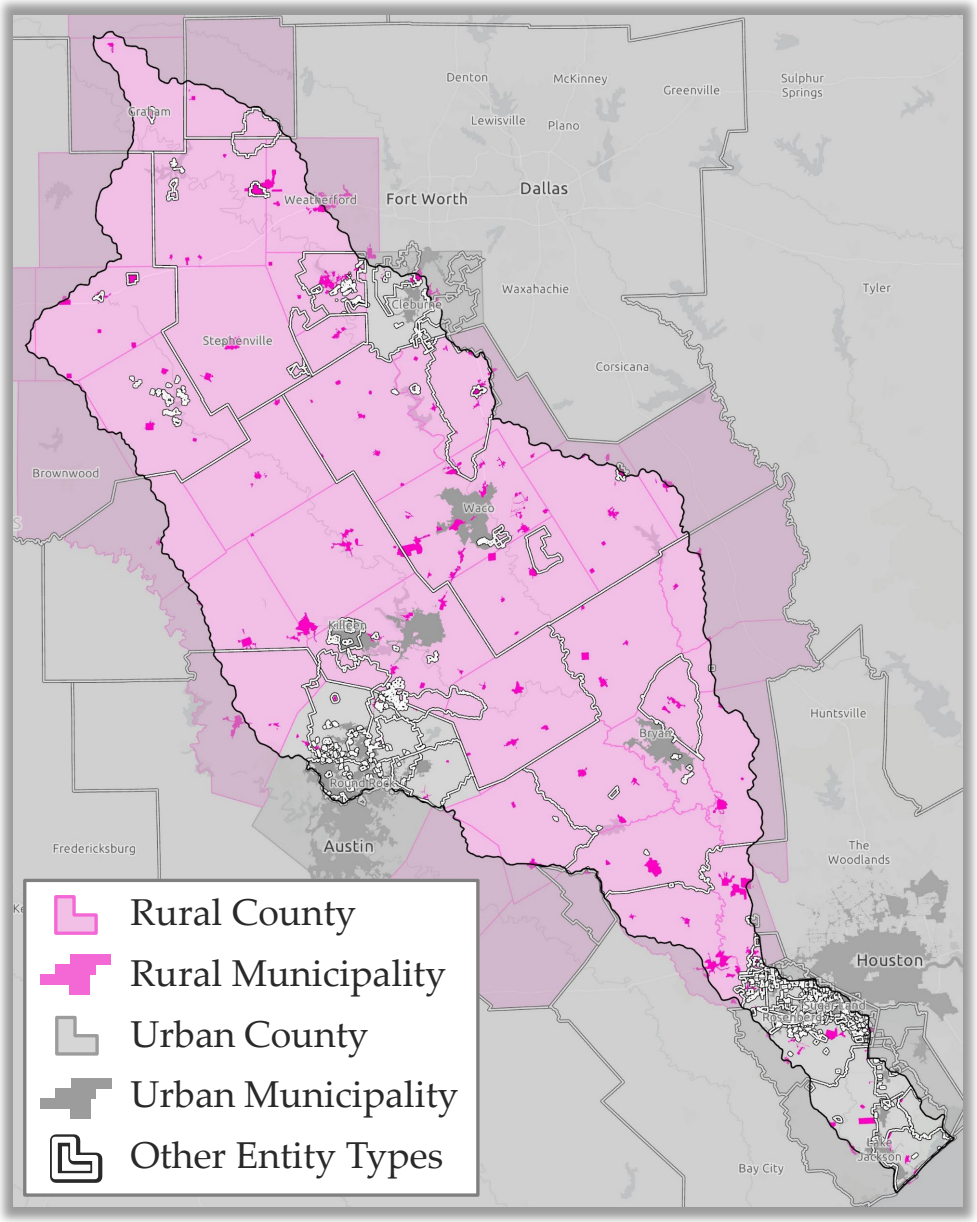
**Urban county with sponsored (recommended) FME in the plan*
Highest ranking FME for urban county has flood risk score of 4.1 / 5
Blue = counties added as "rural" under modified definition



Rural Definition – "Other" (Example)



*Other entities include municipal utility districts (MUDs), levee improvement districts (LIDs), drainage districts (DDs), councils of governments (COGs) and other entities with flood related authority.



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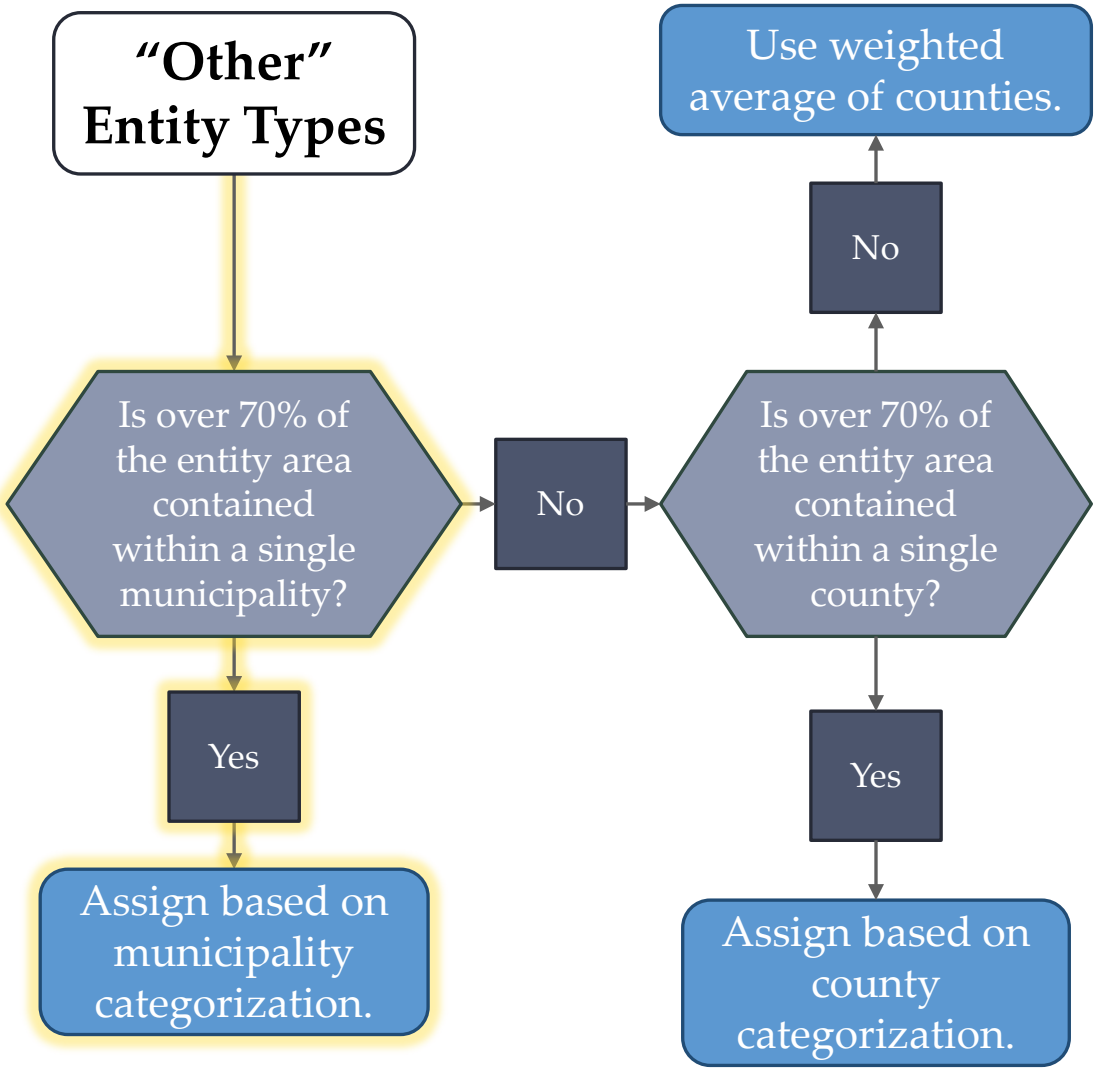

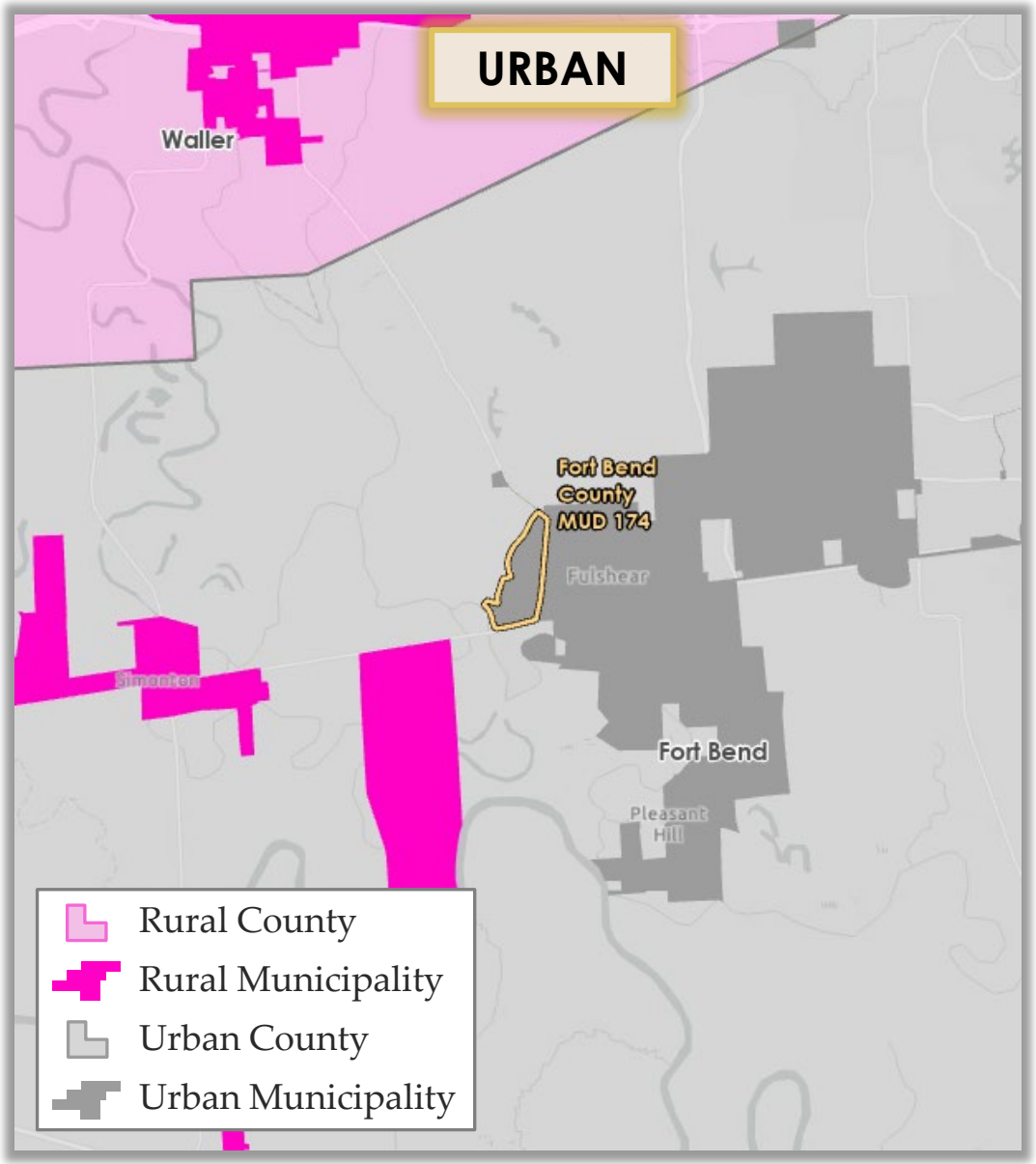

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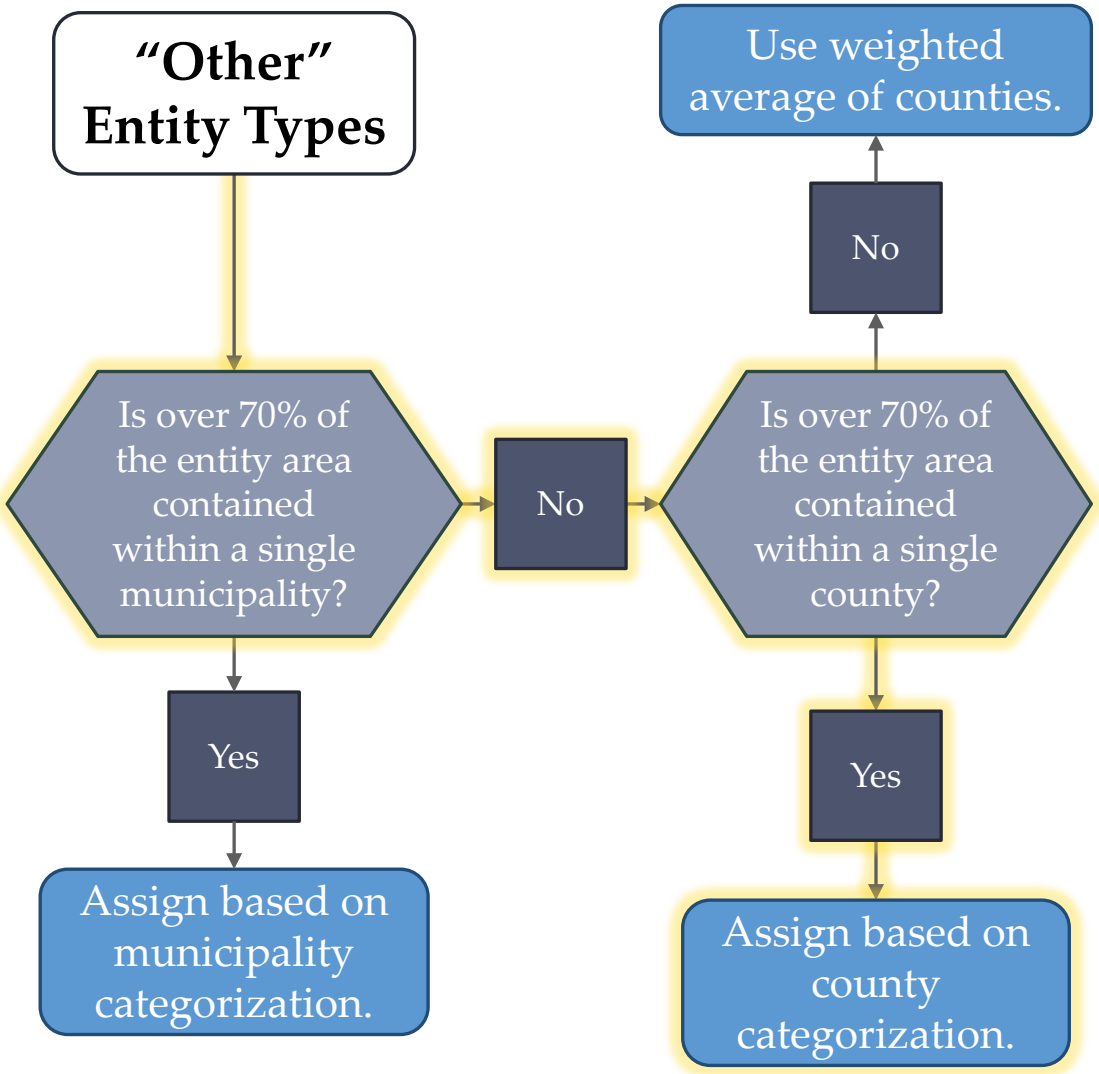

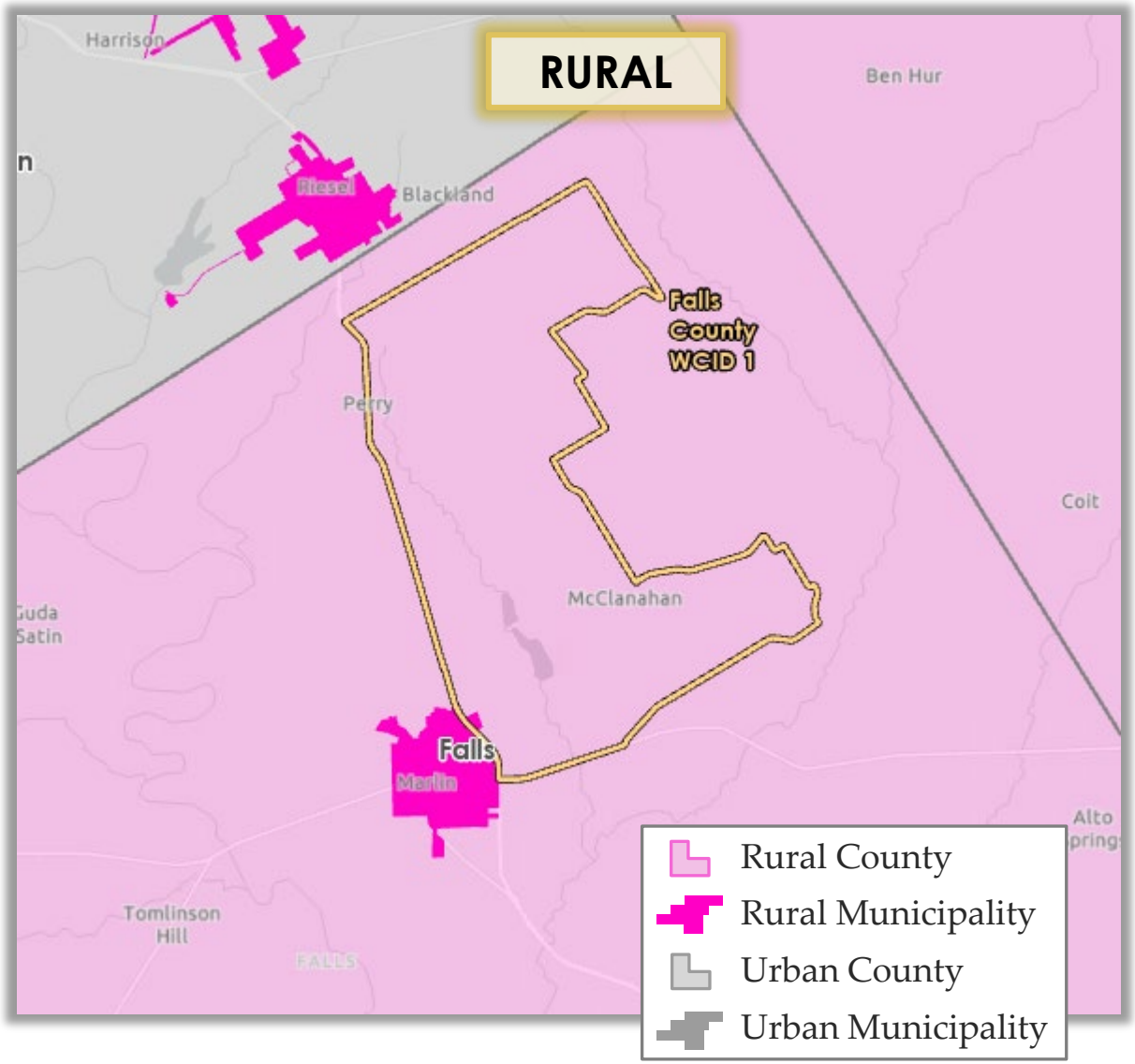

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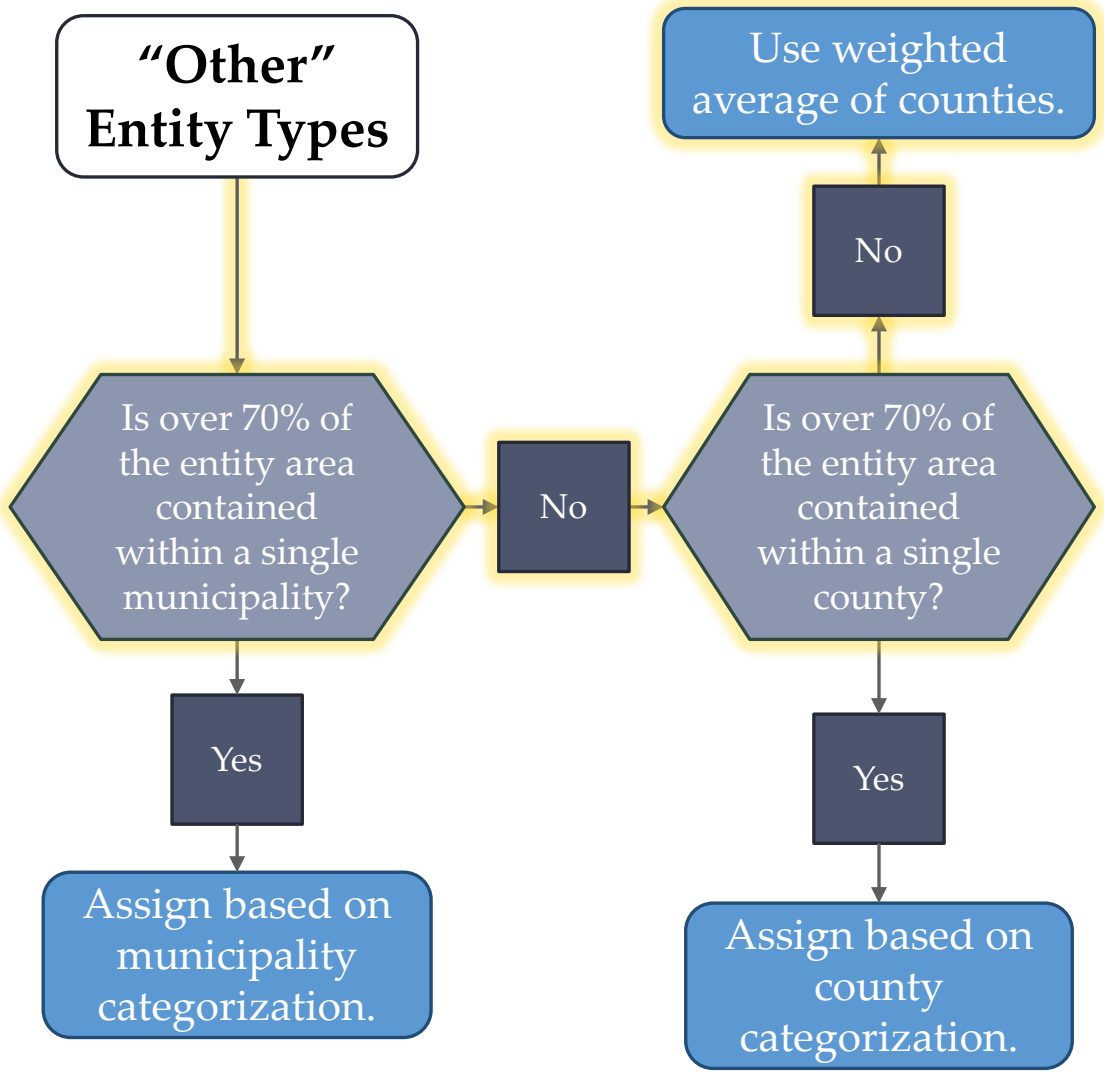
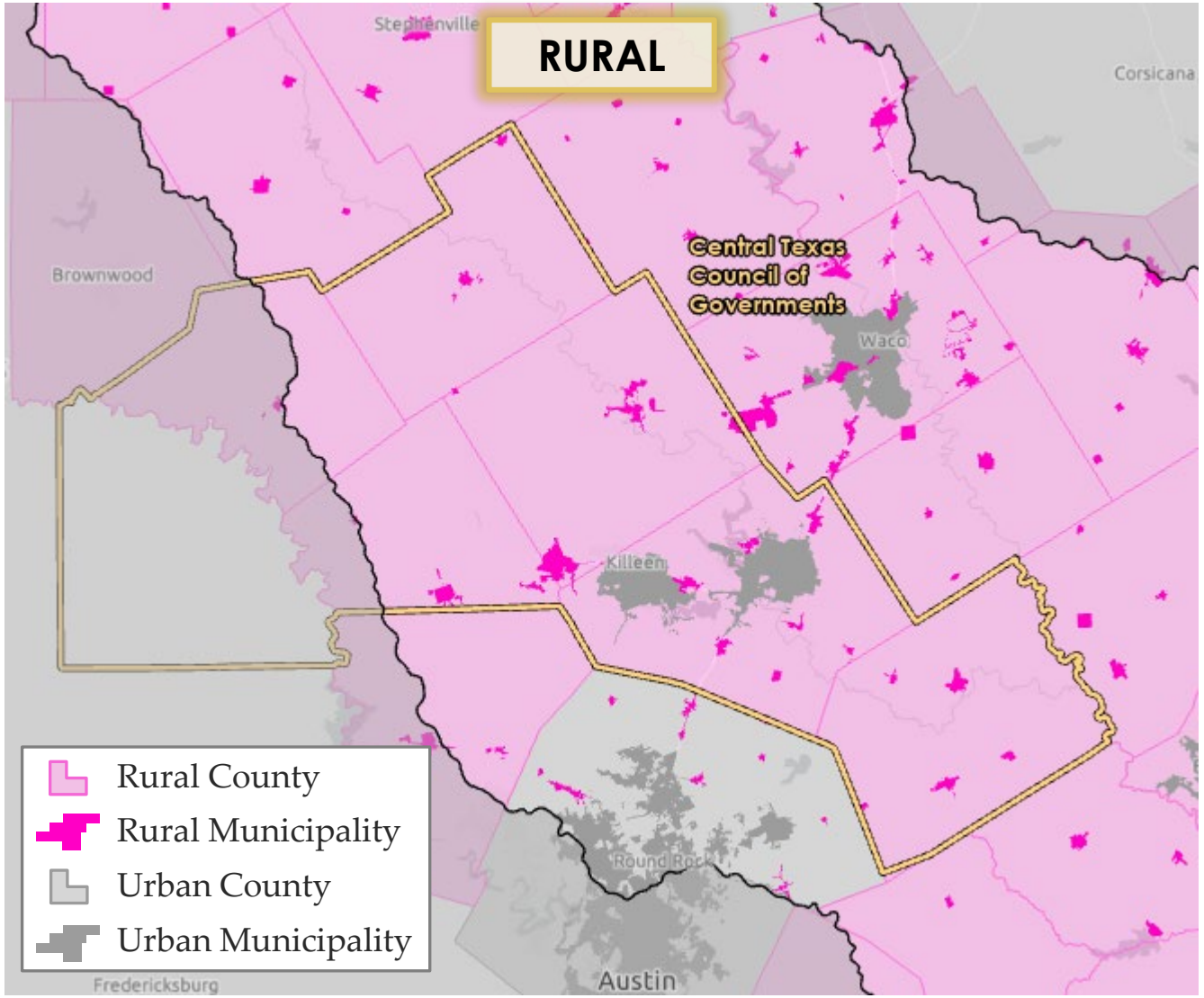


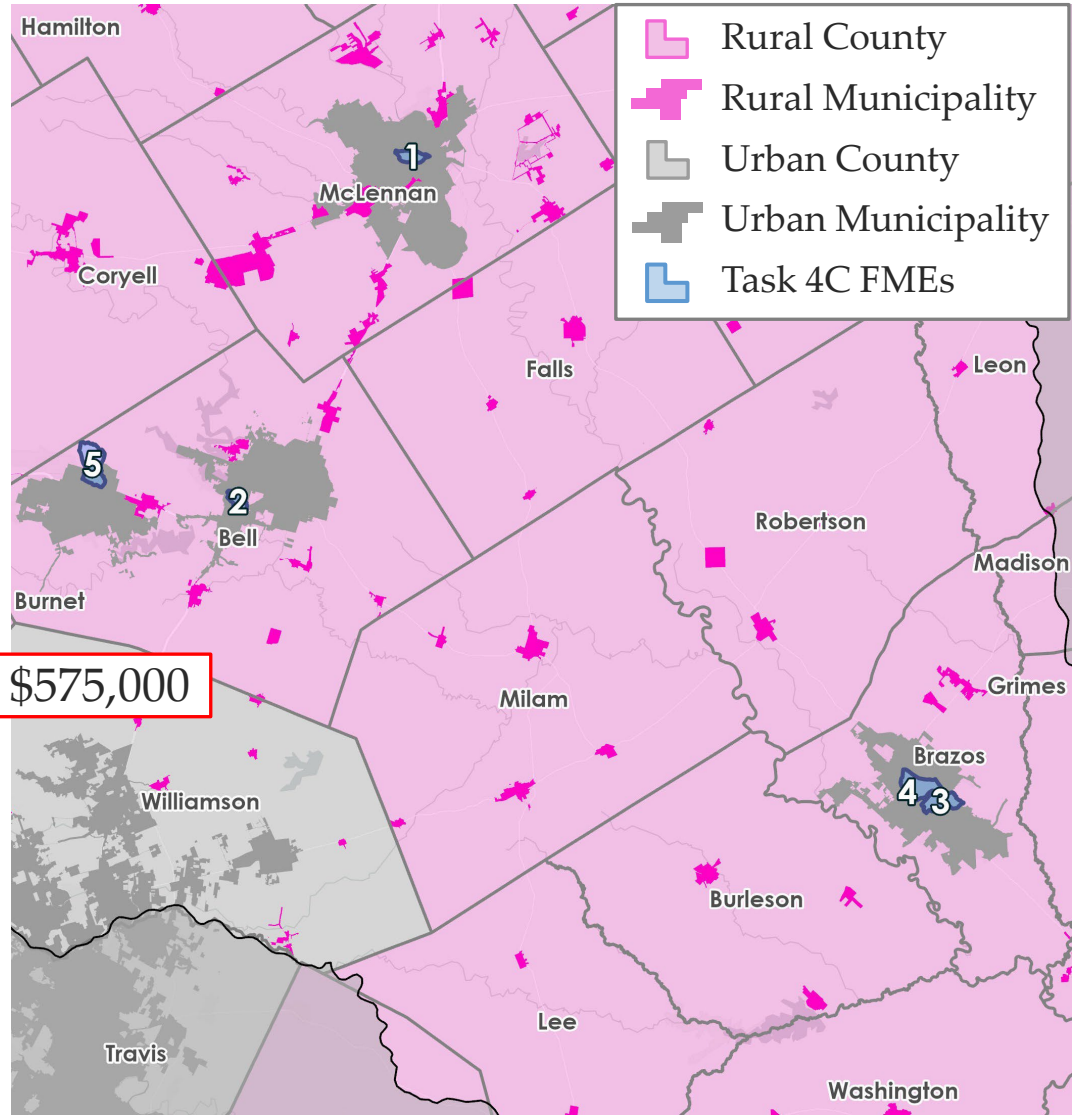


FMEs Selected for RFPG

Rank	FME Name	FME Sponsor	Draft FME Cost*	Running Total Cost
1	Barron's Branch Creek Improvements	City of Waco	$300,000	$300,000
2	Turtle Creek Channel & Drainage Improvements	City of Belton	$165,000	$465,000
3	Project Development for Wolf Pen Creek Watershed	City of College Station	$150,000	$615,000
4	Burton Creek Channel Improvements	City of Bryan	$265,000	$880,000
5	Long Branch Environmental Improvements	City of Killeen	$80,000	$960,000

*Final cost will be determined after coordination with sponsor and final scope is established

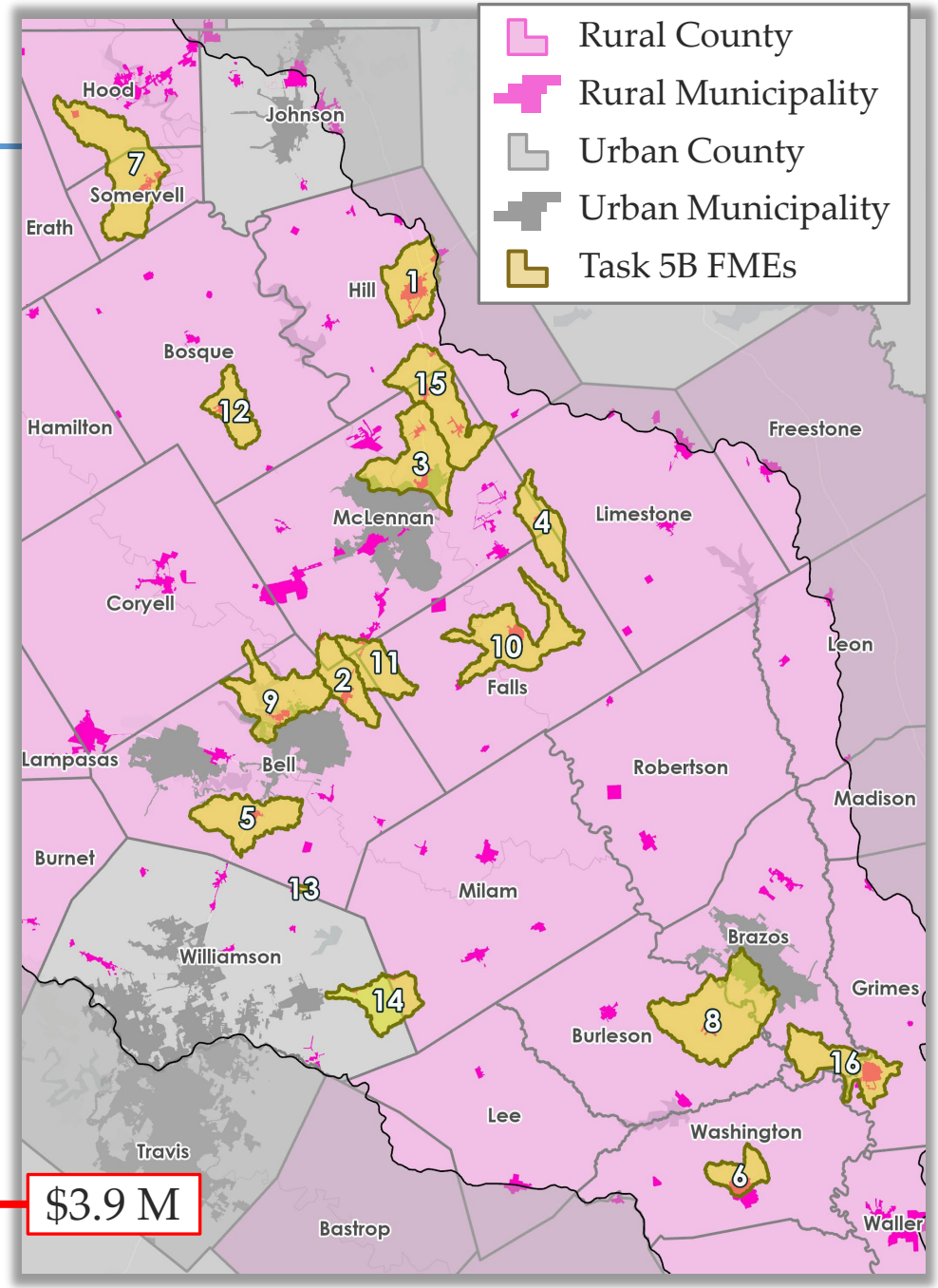
$575,000



FMEs Selected for TWDB

Rank	FME Name	Submitted	Draft FME Cost*	Running Total Cost
1	City of Hillsboro (Drainage Master Plan) DMP	2024 Amend	$300,000	$0.30 M
2	City of Troy DMP	2024 Amend	$250,000	$0.55 M
3	City of Lacy-Lakeview DMP	2024 Amend	$300,000	$0.85 M
4	City of Mart DMP	2024 Amend	$250,000	$1.10 M
5	Village of Salado DMP	2024 Amend	$250,000	$1.35 M
6	Big Sandy-New Year Creek DMP (Washington Co)	2023 RFP	$480,000	$1.83 M
7	Glen Rose DMP	2024 Amend	$300,000	$2.13 M
8	Old River Drainage Study (Burleson Co)	2024 Amend	$550,000	$2.68 M
9	Morgan's Point Resort DMP	2024 Amend	$500,000	$3.18 M
10	City of Marlin DMP	2024 Amend	$250,000	$3.43 M
11	CR 462 Crossing at Deer Creek (Falls Co)	2024 Amend	$95,000	$3.53 M
12	City of Clifton DMP	2024 Amend	$150,000	$3.68 M
13	W Clark & W Front St Storm Sewer (City of Bartlett)	2024 Amend	$15,000	$3.69 M
14	Brushy Creek & South FM 486 Crossing (Milam Co)	2024 Amend	$10,000	$3.70 M
15	City of West DMP	2024 Amend	$150,000	$3.85 M
16	City of Navasota DMP	2028 RFP	$350,000	$4.20 M

*Final cost will be determined after coordination with sponsor and final scope is established



Task 4C and 5B Scopes

FME Type

- Most high ranking FMEs are Drainage Master Plans (DMPs)
- Focused on small cities due to rural emphasis
- DMPs sometimes encompass more than just project planning
- Estimated costs reflect varying scopes of work

Sample Scope from FME Entry: Drainage master plan aimed at identifying and addressing short-term and long-term drainage issues. Includes developing models, assessing existing flood risk, identifying projects to mitigate risk, and reviewing city ordinances and design criteria.

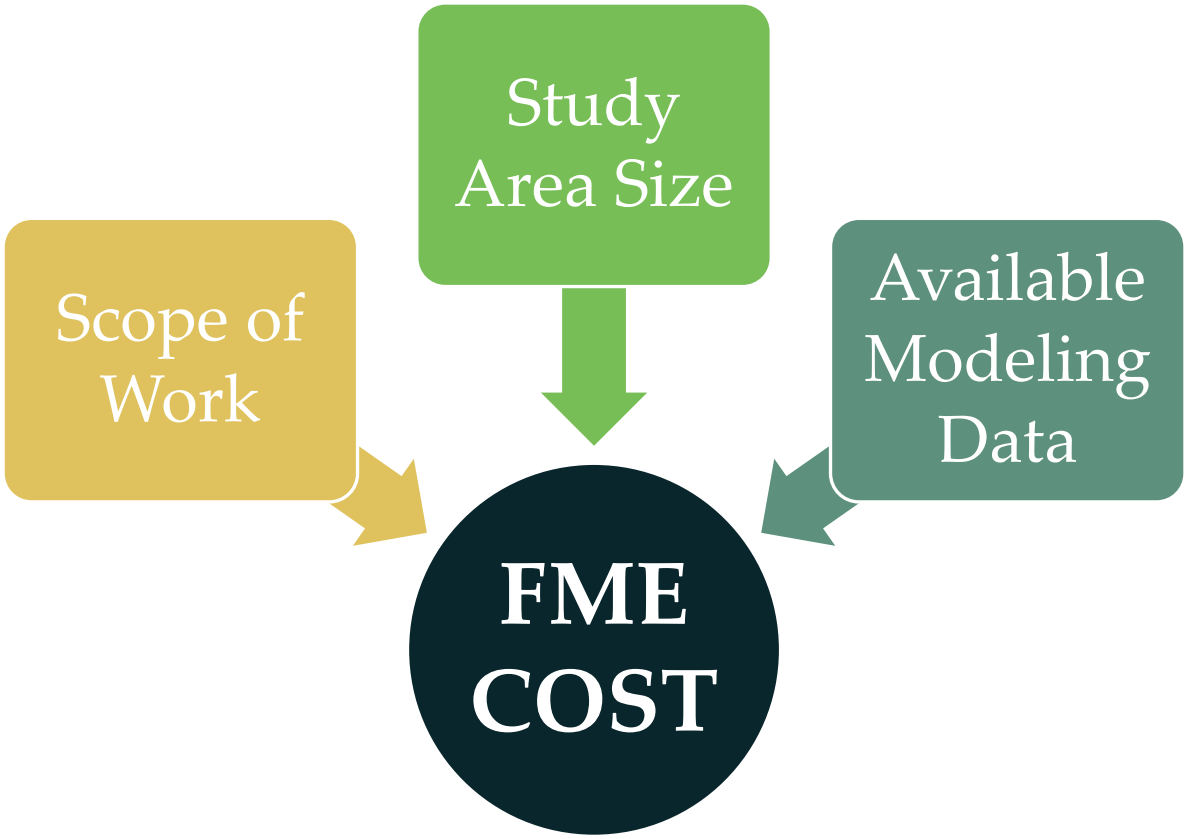
Proposed FME Scope for Drainage Master Plans

Key Scope Items

- Hydrologic and hydraulic analysis
- Regional flood risk assessment
- Project (FMP) identification and analysis (+1)
- Development of TWDB FMP metrics
- Documentation / Reporting
- Coordination with sponsoring community

Items NOT Included in Scope

- Survey
- Community-wide project development (full CIP)
- Comprehensive mapping
- Drainage Criteria development



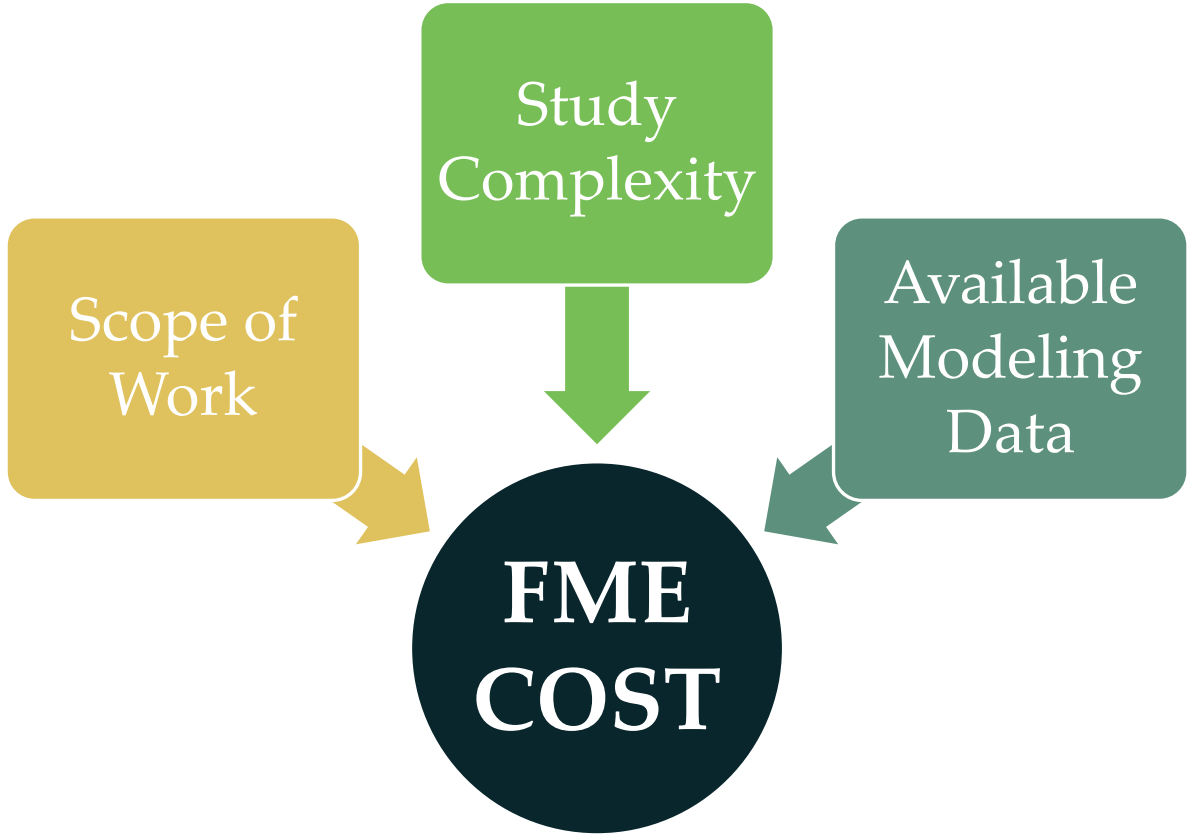
Proposed FME Scope for "FME to FMP"

Key Scope Items

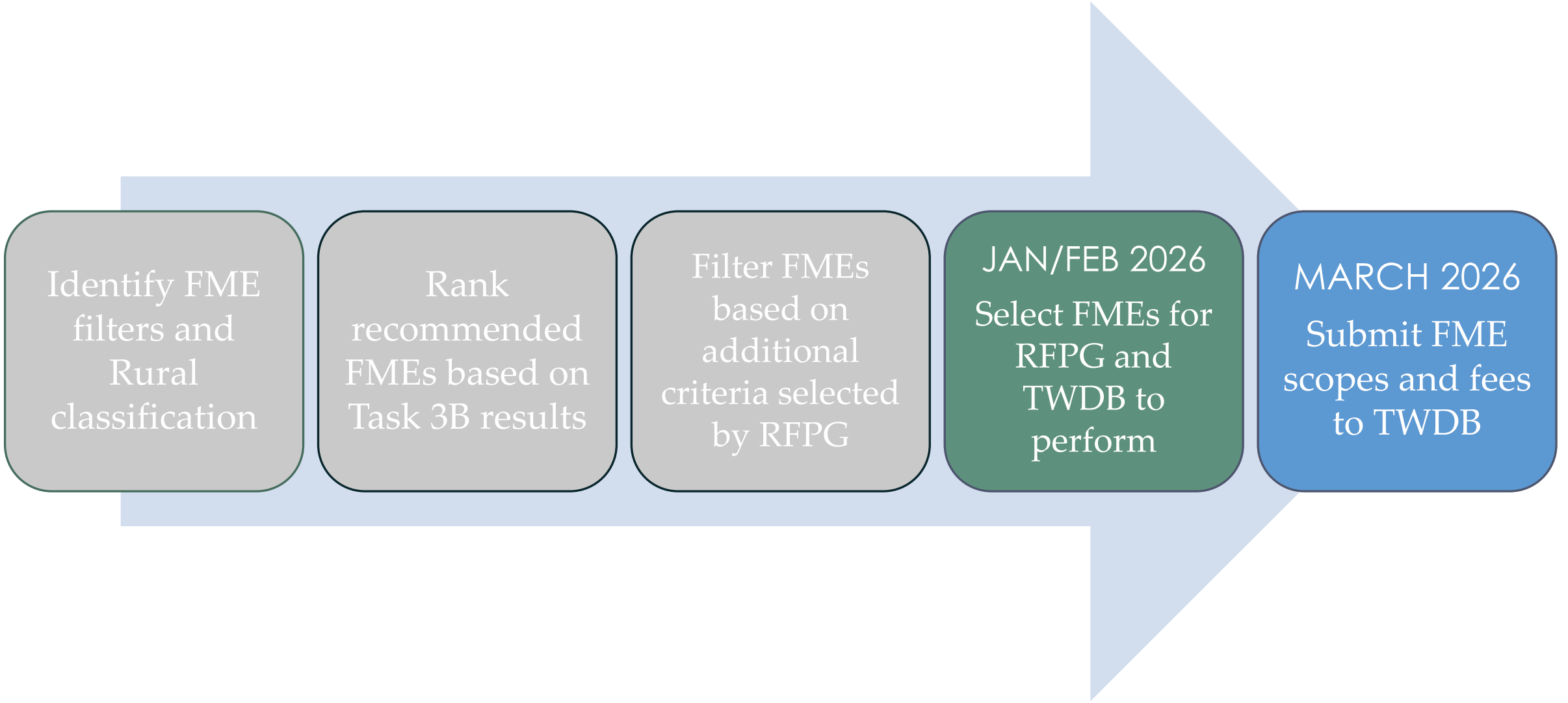
- Development or revisions to existing modeling
- Analysis and development of project(s) (FMP) as proposed by the sponsoring community
- Development of TWDB FMP metrics
- Documentation / Reporting
- Coordination with sponsoring community

Items NOT Included in Scope

- Survey
- Community-wide flood risk assessment
- Comprehensive mapping
- Engineering exceeding 30% design



Task 4C and 5B Next Steps



LOOKING AHEAD

FEBRUARY 2026

- Task 4C: RFPG Performance of FMEs
- Task 5B: TWDB Performance of FMEs

MARCH 2026

- Performance of FMEs: Update
- Draft Chapters 2 and 3 for Review

Gold = RFPG Decision or Vote

REGION 8 Lower Brazos
Regional Flood Planning Group

6. Report from:

6.1. Texas Water Development Board (TWDB) staff

6.2. Regional Planning Sponsor

6.3. Lower Brazos RFPG Chair

REGION 8 Lower Brazos
Regional Flood Planning Group

7. Confirm the next meeting date and discuss new business to be considered at the next meeting

3rd Thursday of the month for regular RFPG meetings – February 19, 2026, at 10:00 AM

REGION 8 Lower Brazos
Regional Flood Planning Group

8. Adjourn