



## Nueces Regional Flood Planning Group Meeting

May 16, 2022

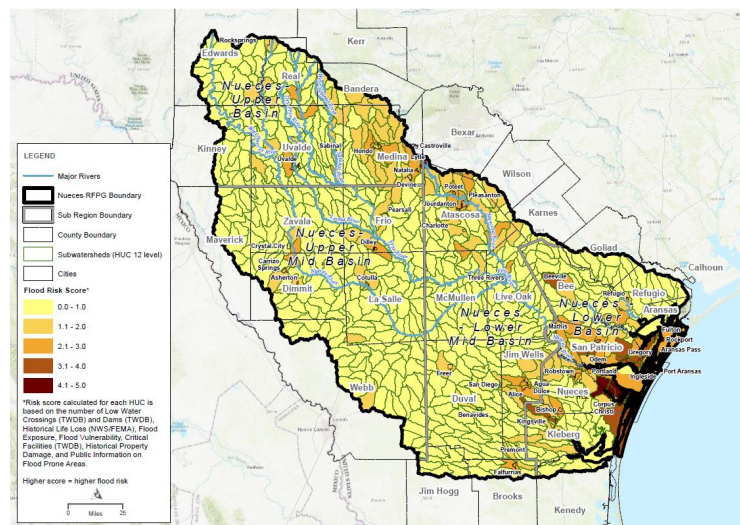


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## Agenda Item 8. Status of Flood Risk Mapping Update

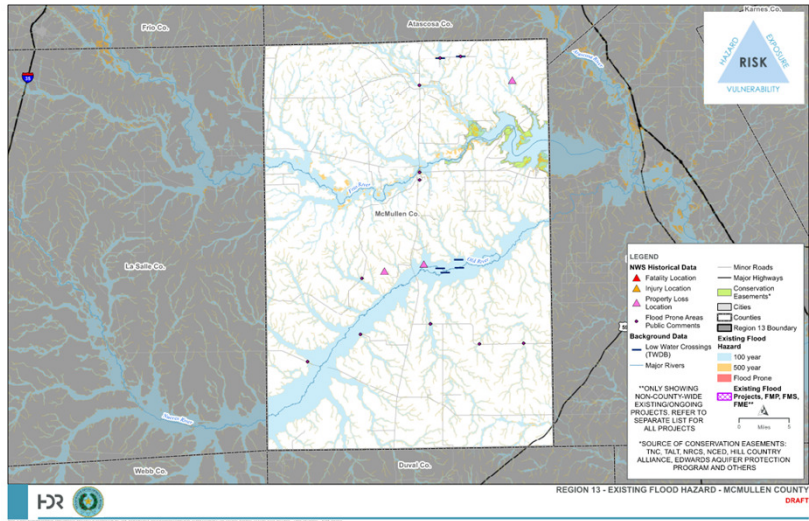
- Objective: Understand areas of highest flood risk
- Updated Flood Risk Score
  - Life Loss – Low Water Crossings (15%)
  - Life Loss – Hazardous Dams (10%)
  - Historical Life Loss (15%)
  - Property Damage – # of buildings in floodplain (15%)
  - Property Damage – # of buildings in the floodplain within a high vulnerability area (15%)
  - Property Damage – Critical Facilities in the floodplain (15%)
  - Historical Property Damage (7.5%)
  - Reported Flood Prone Areas (7.5%)



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## Agenda Item 8. Status of Flood Risk Mapping Update

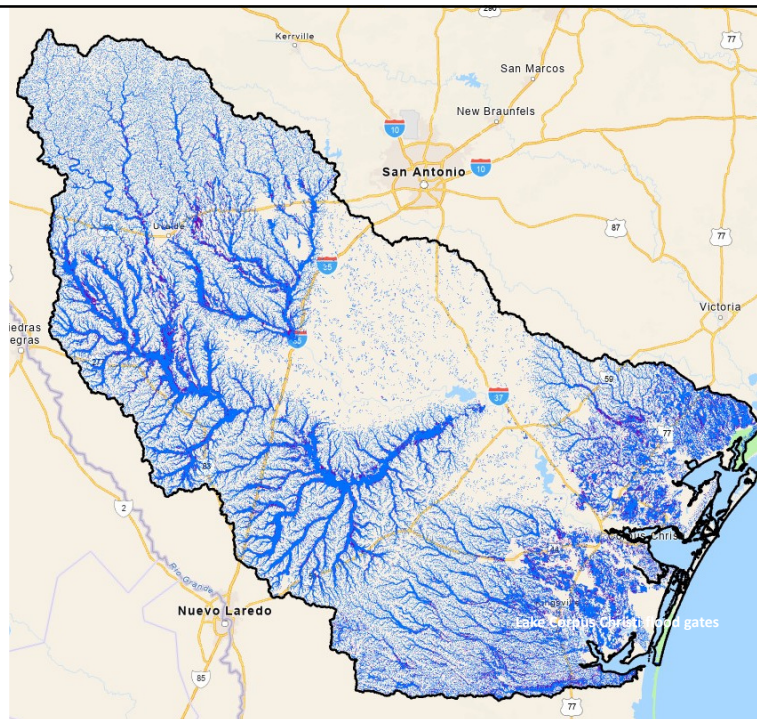
- Updated County-based Flood Risk Maps
- Future Updates to incorporate into revised plan (July 2023)
  - Incorporate Fathom data
  - Incorporate future coastal rise



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## Agenda Item 8. Status of Flood Risk Mapping Update

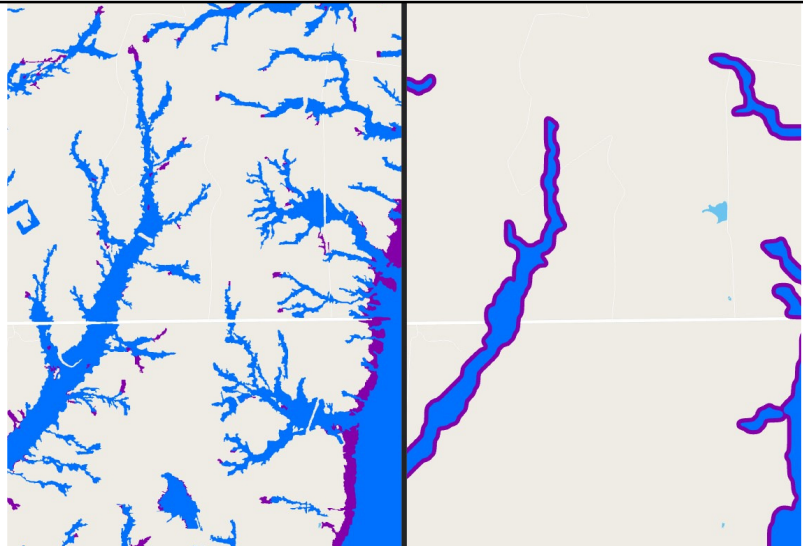
- **Fathom Update**
- New fathom improves resolution of ground surface from 30 meters to 1 meter
- Increases processing time
- Improves flood extent accuracy



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## Agenda Item 8. Status of Flood Risk Mapping Update

- **Fathom Update**
  - Increased definition of floodplain
  - Likely to increase the amount of exposed and vulnerable structures



New Fathom

Old Fathom

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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

- **Steps to Preliminary FMX list**
  1. Extract potential FMXs from Hazard Mitigation Plans and Drainage Master Plans
  2. Stakeholder Outreach
    - Regional meetings: 4 "road shows"
    - Individual Interviews: 20 stakeholders interviewed
      - Refined/added new FMXs to the list
  3. Review of list for compliance with TWDB requirements
  4. Evaluation of gaps

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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

- **Screening: Review of list for compliance with TWDB requirements**
- TWDB has specific requirements that must be evaluated for all Projects/Evaluations/Strategies
  - Is the project confirmed by the community?
  - Is there a reasonable cost estimate?
  - FME: knowledge gap?
  - FMS: estimated flood risk reduction?
  - FMP:
    - Discrete, not a set of project? Not an entire capital program or drainage master plan?
    - Mitigation for 1% annual chance event? Drainage area > 1 sq mi?
    - Flooding threatens life and property? Emergency need? Historical flood events?
    - Sufficient & reliable data? If not, consider an FME.

### Region 13 Nueces Regional Flood Plan FME/FMS/FMP Reviews

DATE:		SPONSOR POC:	
SPONSOR:		EMAIL:	
PHONE NUMBER:		CONSULTANT POC:	
CONSULTANT:		EMAIL:	
PHONE NUMBER:			

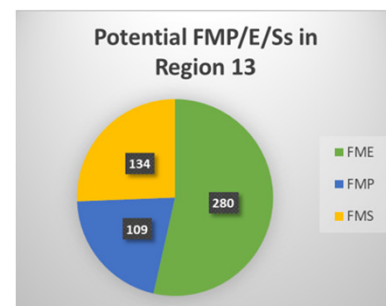
Instructions: Fill out one table for each FMP/FMS/FME with sponsor. Add copies of table for each additional project as needed.

Project Name:	FME <input type="checkbox"/>	FMS <input type="checkbox"/>	FMP <input type="checkbox"/>	Y	N	N/A
<b>General:</b>						
1	Has this project already been completed? (If yes, not an eligible project)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Is there still a community want/read for this project?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1	If no, please specify why and if there is a replacement project in the notes section below					
3	Is there an identified funding source for this project?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FME Specific:</b>						
4	Is there a reasonable planning level cost estimate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Is there a flood risk knowledge gap in the proposed area?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FMS Specific:</b>						
6	Is there a reasonable planning level cost estimate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Is there an estimated flood risk reduction associated with this strategy?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FMP Specific:</b>						
8	Does the FMP represent a discrete project or set of projects?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Does the FMP entail an entire capital program or drainage masterplan? (If yes, not an eligible FMP or should be split into discrete projects)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Does this project provide flood mitigation for the 1% annual chance flood event? (Must be yes to be eligible)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Is the drainage area for this project greater than or equal to 1 square mile or are there instances of flooding of critical facilities or transportation routes? (Must be yes to be eligible)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Does the project area have any of the following? (Prioritization based on yes responses):					
12.1	- Prone to flooding that threatens life and property			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.2	- Meets an emergency need			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.3	- Historic flooding events			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Is there sufficient/reliable data to assess the project i.e. modeling, mapping (If no, consider on FME)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Has the FMP had an evaluation that includes:					
14.1	- Detailed hydrologic and hydraulic models that quantify the reduced impacts from flood events and the associated benefits and costs? (If no, consider on FME)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2	- An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.3	- A demonstration that the FMP will have no adverse impact on neighboring areas? (If no, consider on FME or project is infeasible)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.4	- A description of all other potential risks, benefits, and impacts?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Is the benefit-cost ratio > 1.0?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Notes:</b>						
Potentially Feasible <input type="checkbox"/> Infeasible <input type="checkbox"/>						

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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

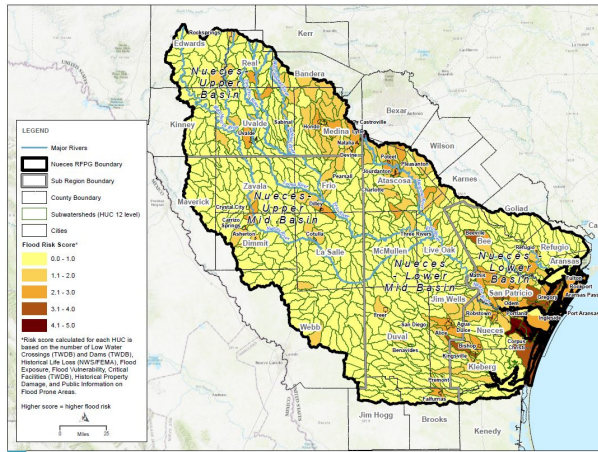
- **Review of list for compliance with TWDB requirements**
- FMP (cont.)
  - Has detailed H&H model to quantify flood reduction? If not, consider an FME.
  - Potential use of federal/other funds?
  - No adverse impact?
  - A description of all other risks, benefits, and impacts?
  - BCA > 1.0?
- FMX screening process in spreadsheets
  - Converted the screening process above to a spreadsheet process
  - Gathered project information from hazard mitigation plans, drainage masterplans, stakeholder interviews and roadshows on flood-related projects needed
  - Filtered out funded projects that are ongoing or proposed per TWDB guidance
  - Assigned flood-related projects to FMPs, FMEs and FMSs based on TWDB RFPG Exhibit C guidelines
  - Screened projects based on the above criteria



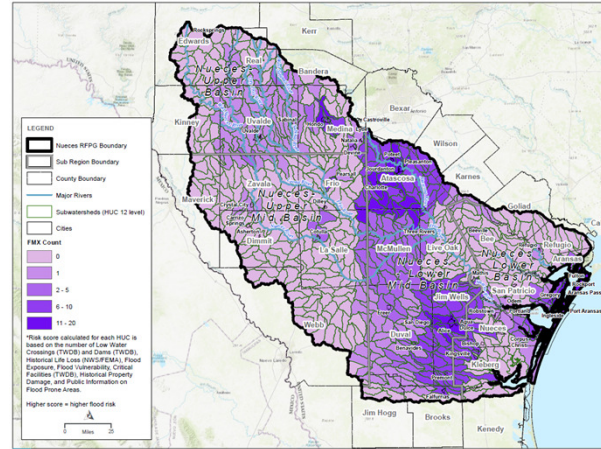
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## Agenda Item 9. Risk/ FMX Project Gaps

- General Assessment of How FMXs Related to Need
- Indication of Where Needs are Unmet
- Detailed Analysis is Needed for Additional Understanding



Highest Risk of Flood by HUC12 Watersheds

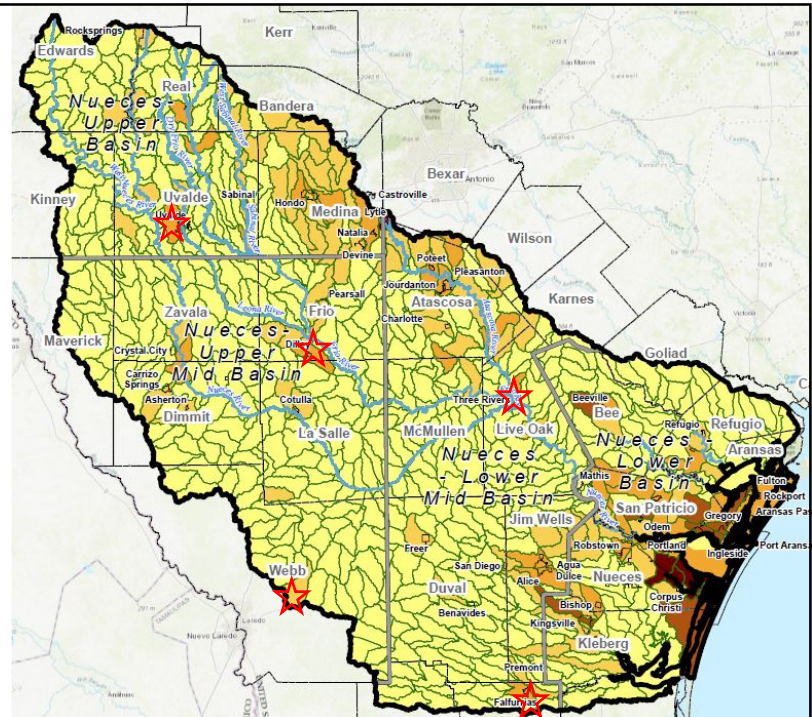


Number of Potential FMXs by HUC12 Watersheds

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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

- **How To Address Gaps (High Risk Areas)**
- Areas identified as high risk but no studies or projects to address need (Goal 5 – reduce # of structures in floodplain)
  - City Uvalde – City wide drainage study
  - City Dilley – Martin Branch
  - Webb County – Subdivision near I59 / Becerra Creek
  - City of Three Rivers
  - City of Falfurrias



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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

- How To Address Gaps (Goals)

Goal #	Name of Study	Sponsor
1 – Low Water Crossings	Nueces Basin low water crossing study and upgrade prioritization	Nueces River Authority
2 – High Hazard Dams	Nueces Basin High Hazard Dam identification and risk assessment	TCEQ / Texas State Soil Conservation and Water Conservation Board (TSSWCB)
3 – Regional Coordination / Flood Warning Systems	Nueces Basin early flood warning system	Nueces River Authority
4 – Flood Map Updates	Nueces Basin Floodplain Map Updates	Nueces River Authority
6 – Min. Flood Standards	Nueces Basin Minimum Flood Management Standards	Nueces River Authority

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## Agenda Item 9. FME/FMP/FMS and Input on How to Address Gaps

- How To Address Gaps (Goals)

Goal #	Name of Study	Sponsor
7 – Nature Based Practices	Nueces Basin Assessment of Flood Mitigation and Performance of Nature-based Solutions (NBS)	The Nature Conservancy
7 – Nature Based Practices	Scaling Up Nature Based Solutions (NBS) in the Nueces Flood Planning Region to support community resilience and enhance flood and hazard mitigation planning	The Nature Conservancy
8 – Flood Public Information Campaign	Nueces Basin flood public information campaign	Nueces River Authority

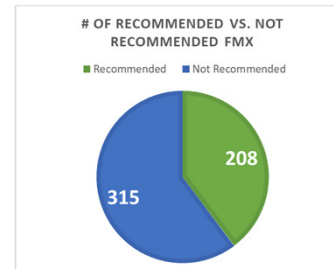
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## Agenda Item 9. List of FME, FMP, FMS to Evaluate in Chapter 5 as Recommended Strategies

### • Recommended Strategies

#### • TWDB Guidance

- Not every conceivable FMX will be recommended in the regional plan.
- Must decide which FMX will be recommended
- List must be sensible
- Best use of limited resources
- Primary function must be flood risk reduction
- Must include quantifiable flood risk reduction benefits.



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## Agenda Item 10. Summary of Flood Response Information and Activities (Task 7)

- RFPGs to consider and summarize flood preparedness, response and recovery phases (highlighted below)
- Plan is to include a written summary of:
  - current state of flood preparedness in the region and summary of entity roles and responsibilities
  - entities involved and actions taken/planned for flood recovery
- Use to develop Chapter 8 recommendations, such as how policies can be implemented prior to storm events and how they may reduce the need for preparation for a response to flood events

Figure 6: The four phases of emergency management (FEMA, 1998)

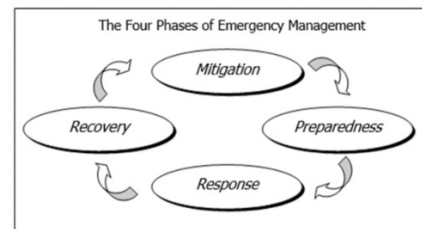


Table 18: Definition and examples of the four phases of emergency management<sup>A</sup>

	General definition	Example projects (not an exhaustive list)
<b>Flood mitigation</b>	"The implementation of actions, including both structural and non-structural solutions, to reduce flood risk to protect against the loss of life and property." (Title 31 Texas Administrative Code §361.10(k))	See Section 3.2(2-3) examples of structural and non-structural Flood Mitigation Projects.
<b>Flood preparedness</b>	Actions, aside from mitigation, that are taken before flood events to prepare for flood response activities	Developing emergency management and evacuation plans, preparing staging areas, and building flood early warning systems
<b>Flood response</b>	Actions taken during and in the immediate aftermath of a flood event	Conducting evacuations, providing shelters, closing flooded roads, and operating flood warning systems
<b>Flood recovery</b>	Actions taken after a flood event involving repairs or other actions necessary to return to pre-event conditions	Repairs to damaged infrastructure, storm event debris removal

<sup>A</sup> Table adapted from *Animals in Disaster, Module A, Awareness and Preparedness* (FEMA, 1998)

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## Agenda Item 10. Flood Response Info and Activities (Task 7)

Agency	State or Federal	Role	Region 13 specific notes	Actions within Region 13
Texas General Land Office	State	Restoring critical infrastructure and mitigating future damage through resilient community planning. More than \$14 billion have been allocated for recovery and mitigation.	GLO Region 3 serves Aransas, Kenedy, Kleberg, Nueces, Refugio, and San Patricio Counties	Fulton Beach Road Projection (Aransas), Shell Point Ranch Wetlands Protection (Aransas), Lamar Beach Road Protection (Aransas), Flour Bluff Living Shoreline (Aransas), Newcomb's Point Shoreline Stabilization (Aransas), Little Bay Restoration Initiative (Aransas), Baffin Bay Watershed Monitoring and Management Plan (Kenedy, Kleberg), Tern Island and Triangle Tree Island Rookery Habitat Protection (Kleberg), Coastal Bend Gulf Barrier Island Conservation (Kleberg), Aransas National Wildlife Refuge Dagger Point Shoreline Preservation (Nueces), Portland Living Shoreline (Nueces), Nueces River Delta Shoreline Stabilization (Nueces, San Patricio), Guadalupe Delta Estuary Restoration (Refugio), Guadalupe River and Delta Wildlife Management Area Acquisition (Refugio), Indian Point Marsh Area Living Shoreline (San Patricio), Corpus Christi Bay Wastewater, Stormwater Quality and Pollution Management Improvements (San Patricio)
Texas Water Development Board	State	Designated as the State National Flood Insurance Program (NFIP) Coordinating Agency for Texas. TWDB administers the state and regional flood planning process with the flood planning regions.	Not applicable	Not applicable
Texas Park and Wildlife Department	State	Texas Parks and Wildlife Game Wardens are often first on the scene to assist local law enforcement to search for and rescue flood victims.	Not applicable	Not applicable

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## Agenda Item 10. Flood Response Info and Activities (Task 7)

Agency	State or Federal	Role	Region 13 specific notes	Actions within Region 13
Texas Division of Emergency Management (TDEM)	State	Ensure the state and its local governments respond to and recover from emergencies and disasters and implement plans and programs to help prevent or lessen the impact of emergencies and disasters	Region 3 serves Aransas, Bee, Brooks, Dimmit, Duval, Edwards, Jim Hogg, Jim Wells, Kenedy, Kinney, Kleberg, LaSalle, Live Oak, Maverick, Nueces Real, Refugio, San Patricio, Uvalde, Webb, and Zavala. Region 6 serves Atascosa, Bandera, Bexar, Frio, Goliad, Kames, Kerr, McMullen, Medina, Wilson	Not applicable
Texas State Soil and Water Conservation Board	State	Works to ensure that the State's network of over 2,000 flood control dams are protecting lives and property by providing operation, maintenance, and structural repair grants to local government sponsors.	Flood control dams within Region 13 counties are eligible	Not applicable
Texas Department of Transportation	State	TxDOT has been working with state and federal emergency planners to refine the evacuation process for emergencies such as hurricanes and flash floods	Evacuation routes have been defined for Corpus Christi, including Aransas Pass and Port Aransas	Evacuation routes include counties in Region 13
Texas Engineering Extension Service	State	Established to enhance the capabilities of emergency responders and local officials to prepare for, respond to, and recover from catastrophic events resulting from natural events, etc. TEEEX is the sponsoring agency for Texas Task Force 1, which includes one of the country's most extensive water rescue program.	Not applicable	Not applicable

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## **Agenda Item 11. Subcommittee results on administrative/ regulatory/ legislative flood mitigation recommendations (Task 8)**

- Legislative recommendations necessary to facilitate floodplain management and flood mitigation planning
- Regulatory or administrative recommendations
- Additional recommendations RFPG desires to achieve goals
- Recommendations regarding potential, new revenue-raising opportunities and/or regional flood authorities that could fund development, operation and maintenance of floodplain management



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## **Agenda Item 11. Administrative/ regulatory/ legislative flood mitigation recommendations**

- Subcommittee met on May 3<sup>rd</sup> to discuss draft Region 13 recommendations and provided follow-up comment
- *Administrative Recommendations*
  - RFPG role to facilitate public information/ public education activities
  - TWDB
    - Identify and eliminate barriers that prevent agencies from working together
    - Funding mechanism for small communities to receive dedicated funding for FMX
    - Use project list from RFP to help connect local communities to grant programs
    - Roadmap on how flood agencies work together
    - Use hybrid approach for structural engineered and nature- based solutions for flood mitigation
  - Local Region 13 public entities to continue to support administrative activities

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## Agenda Item 11. Administrative/ regulatory/ legislative flood mitigation recommendations

- *Regulatory/Policy Recommendations*
  - Support adoption of 2015 or 2018 versions of International Building Code
  - Develop program to provide support to rural communities for flood management activities, including toolkit resources for FPA
  - Empower County governments with greater regulatory control over land development activities
- *Legislative Recommendations*
  - Continue to provide TWDB funding for state mandated regional flood planning activities
  - Consider enabling legislation to allow creation of a regional flood authority or funding river authority to support counties/ cities
  - Support policies to address Texas' flood risk needs
  - Funding to state agencies for flood planning initiatives, including technical support for developing building standards
  - Funding for public information campaigns to increase community awareness of flood issues
  - Direct TCEQ to work with TPWD and TxDOT, and others to support removal of debris and/or sediment from major floods
  - Dedicated program to fund the implementation of projects identified through road/bridge assessments
  - Dedicated program to fund maintenance of drainage and culvert systems
  - Dedicated program to support nature-based practices and promote land coverage studies

**Action requested: to adopt recommendations for inclusion in the draft 2023 Nueces Regional Flood Plan**

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## Agenda Item 12. TWDB Information Comments on Tech Memo

- Task 2A
  - List of previous studies
    - TWDB sponsored Flood Protection Study w/ Medina County and Community of D'Hanis completed in 2011
    - Bee County FIF withdrawn, but may still be considered for future funding

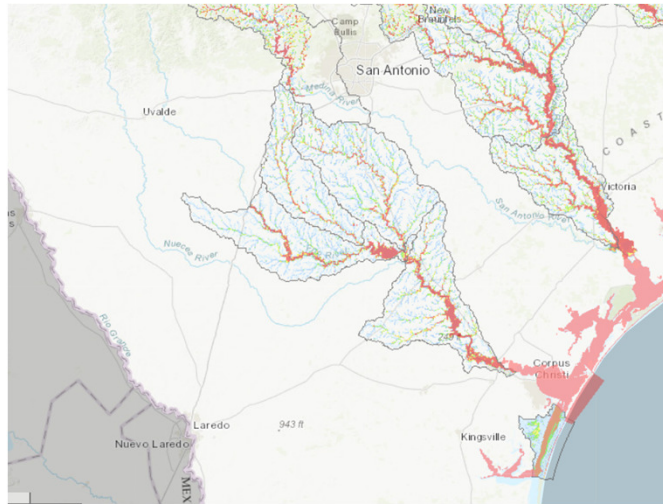


TWDB D'Hanis Flood Study, Medina County (2011)

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## Agenda Item 12. TWDB Information Comments on Tech Memo

- Task 2A
  - Please consider USGS Estimated BFE Viewer

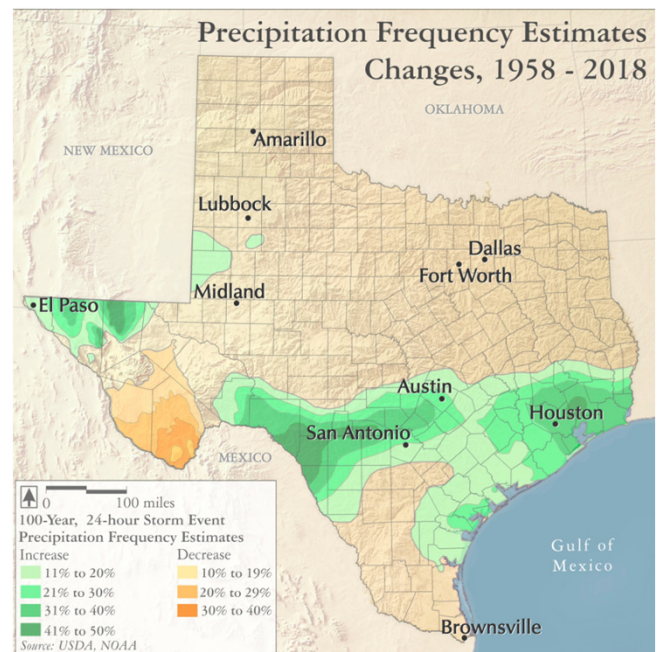


USGS Estimated BFE Viewer (estBFE)

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## Agenda Item 12. TWDB Information Comments on Tech Memo

- Task 3B
  - Please consider baseline data or information to add greater context.
    - Example: increase NFIP participation from 90% to 95%
- Task 4B
  - Consider impact of new Atlas 14 rainfall data as "Factors to Consider" when determine if mapping inadequate
  - Consider defining "Emergency Need"
  - Consider defining how infrastructure will be classified as damaged or failing
  - Consider more detailed descriptions to clarify FMXs
  - Consider updating solution descriptions to make clear why they are considered either an FMS or FMP



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