

Sabine Regional Flood Planning Group Meeting  
Sabine River Authority Main Office, Orange TX  
September 21, 2021  
11:00 AM

NOTE: This meeting will be conducted in person and via Zoom

<https://zoom.us/j/6418597377?pwd=a2svTVhpbzJML1h3M3Y3SXVHaWV5QT09>

**Location:** Meeting will be held at the Sabine River Authority of Texas, Main Office, Hwy 87 N, Orange, TX 77632.

If you wish to provide written comments prior to or after the meeting, please email your comments to [comments@sabine-rfpg.org](mailto:comments@sabine-rfpg.org) and include "Region 4. Sabine River Flood Planning Group Meeting" in the subject line of the email.

This meeting is a public meeting under Chapter 551 of the Texas Government Code.

If you choose to participate in the meeting using the conference call number below, please be prepared to identify yourself. So, we can record your attendance. Telephone conference call phone number:

<b>Phone Number:</b>	<b>+1 346 248 7799</b>
<b>Meeting Number:</b>	<b>641 859 7377</b>
<b>Access Code:</b>	<b>857302.</b>

Additional information may be obtained from:

Mark Howard  
RMPD Division Manager  
Sabine River Authority of Texas  
12777 Hwy 87 N.  
Orange, Texas 77632  
(409) 746-2192  
[mhoward@sratx.org](mailto:mhoward@sratx.org).

# **Sabine RFPG meeting**

**Sabine River Authority, Orange, TX**

**September 21, 2021 – 10:00 AM  
AGENDA**

1. Call to Order.

Presenter: Johnny Trahan, Chair

2. Roll Call.

Presenter: Mark Howard for Jeff Roges, Secretary

3. Welcome, Meeting Facilitation Information, and Instructions.

Presenter: Johnny Trahan, Chair

4. Receive public comments (public comments limited to 3 minutes per speaker).

Presenter: Johnny Trahan, Chair

5. Discussion and Approval of minutes from the previous Region 4 Sabine RFPG meeting held July 14, 2021.

Presenter: Johnny Trahan, Chair

6. Update from Chair.

Presenter: Johnny Trahan, Chair

7. Update from the Texas Water Development Board

Presenter: Ryke Moore

8. Region 5. Neches RFPG Report.

Presenter: Don Carona

9. Update from Freese and Nichols.

Presenter: Mat Leclair / Mike Reedy

10. Consider date and agenda items for next meeting.

Presenter: Johnny Trahan, Chair

11. Adjourn.

Presenter: Johnny Trahan, Chair

**AGENDA ITEM 1: CALL TO ORDER**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

Chair Johnny Trahan will call the meeting to order.

Time: \_\_\_\_\_

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**RECOMMENDED ACTION**

No action required.

## AGENDA ITEM 2: ROLL CALL

**PRESENTED BY: JEFF ROGERS, SECRETARY**

### SUPPORTING INFORMATION

<u>Voting Member</u>	<u>Interest Category</u>	<u>Present (V-Virtual, P-Physical)/ Absent ( ) / Alternate Present (*)</u>
James (Bill) Bruce	<i>Agricultural interests</i>	
Johnny Trahan	<i>Counties</i>	
Francis X. Shannon	<i>Electric generating utilities</i>	
Clyde V. "Tad" McKee III	<i>Environmental interests</i>	
Don Carona	<i>Flood districts</i>	
Nikki Davis	<i>Industries</i>	
Alton Bradley	<i>Municipalities</i>	
Michelle Falgout	<i>Public</i>	
Travis Williams	<i>River authorities</i>	
Jeff Rogers	<i>Small business</i>	
Roman D. Griffin	<i>Water districts</i>	
Ross Gordon	<i>Water utilities</i>	

<u>Non-voting Member</u>	<u>Agency</u>	<u>Present (V-Virtual, P-Physical)/ Absent ( ) / Alternate Present (*)</u>
Colleen Jones	General Land Office (GLO)	
Kathy Saucedo	Texas Commission on Environmental Quality (TCEQ)	
Manuel Martinez	Texas Department of Agriculture (TDA)	
Brian Hurtuk	Texas Division of Emergency Management (TDEM)	
Robert (Bob) Baker	Texas Parks and Wildlife Department (TPWD)	
Trey Watson	Texas State Soil and Water Conservation Board (TSSWCB)	
Ryke Moore	Texas Water Development Board (TWDB)	

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### RECOMMENDED ACTION

Number of voting members or alternates present. \_\_\_\_\_

Seven voting members are required for a quorum.

Quorum is present, Yes, or No?

**AGENDA ITEM 3: WELCOME, MEETING FACILITATION  
INFORMATION, AND INSTRUCTIONS**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

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**RECOMMENDED ACTION**

No action required.

**AGENDA ITEM 4: PUBLIC COMMENTS**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

Receive public comments (public comments limited to 3 minutes per speaker)

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**RECOMMENDED ACTION**

No action required.

**AGENDA ITEM 5: DISCUSSION AND APPROVAL OF MINUTES**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

Discussion and approval of minutes from the previous Region 4 Sabine RFPG meeting held July 14, 2021.

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**RECOMMENDED ACTION**

Discuss and approve minutes.

**MOTION: \_\_\_\_\_ SECOND: \_\_\_\_\_ APPROVED: \_\_\_\_\_**



**Meeting Minutes**  
**Region 4. Sabine Flood Planning Group Meeting**  
**August 11, 2021, 10:00pm**  
**Windom Civic Center, Center, TX**

Voting Member	Interest Category	Present (x) / Absent ( ) / Alternate Present (*)
James (Bill) Bruce	Agriculture Interests	x
Johnny Trahan	Counties	x
Francis X. Shannon	Electric Generating Utilities	x
Clyde V. McKee III	Environmental Interests	x
Don Carona	Flood Districts	x
Nikki Davis	Industries	x
Alton Bradley	Municipalities	x
Michelle Falgout	Public	x
Travis Williams	River Authorities	x
Jeff Rogers	Small Business	x
Roman D. Griffin	Water Districts	x
Ross Gordon	Water Utilities	x

Voting Members: 12

Voting Members Present: **10**

Quorum: **Yes**

Non-Voting Member	Interest Category	Present (x) / Absent ( ) / Alternate Present (*)
Jenifer Harris for Colleen Jones	General Land Office	x
Kathy Saucedo	Texas Commission on Environmental Quality	
Manuel Martinez	Texas Department of Agriculture	x
Brian Hurtuk	Texas Division of Emergency Management	x
Robert (Bob) Baker	Texas Parks and Wildlife	x
Trey Watson	Texas State Soil and Water Conservation Board	
Ryke Moore	Texas Water Development Board	x

Other Meeting Attendees:

- Mike Reedy (FNI)
- Mat Leclair (FNI)
- Cory Stull (FNI)
- John Grounds (LJA)
- Robert Adams (TPWD)

**Agenda Item 1: Call to Order**

- Johnny Trahan called the meeting to order at 10:04am

**Agenda Item 2: Roll Call**

- Quorum confirmed.

**Agenda Item 3: Welcome, Meeting Facilitation Information, and Instructions**

- Johnny Trahan noted that there are some rules in place that will allow the group to continue virtual meetings.

**Agenda Item 4: Receive general public comments (public comments limited to 3 minutes per speaker).**

- No public comments.

**Agenda Item 5: Discussion and Approval of minutes from the previous Region 4 Sabine RFPG meeting held May 26, 2021.**

- Bill Bruce motions to approve minutes
- Motion is seconded
- Vote passes to approve minutes from July 14, RFPG meeting.

**Agenda Item 6: Updates from Chairman**

- Levey system moving forward for Orange County.
- A representative has been named for the Gulf Coast Protection District.
- According to Ryke the Sabine RFPG is on schedule.
- Travis Williams commented about the additional funding for the Flood Planning Groups and that Johnny Trahan provided the requested letter to the TWDB

**Agenda Item 7: Update from the Texas Water Development Board**

- TWDB did receive the survey from Johnny Trahan and the board would be working on amending contracts over the next several months.

**Agenda Item 8: Region 5. Neches RFPG Report.**

- Don Carona: Neches RFPG is having their meeting on the following day, August 12, so there was nothing to report.

**Agenda Item 9: Update from Freese and Nichols**

- Mat Leclair presented on updates from the consulting team on:
  - o RFP schedule,
  - o Task 1 updates,
  - o Updates and discussion of the public & stakeholder survey,
    - Link of survey will be sent out to group,
  - o Task 2 Approach,
  - o Discussion of existing conditions flood risk public meetings,
    - Public meeting date discussion  
September 14<sup>th</sup> for Orange.

**Agenda Item 10: Consider date and agenda items for next meeting.**

- Johnny Trahan recommends September 21<sup>st</sup>, 11 AM at Sabine River Authority and available on Zoom.
- RFPG agrees on Aug. 21<sup>st</sup> at 11am for September monthly meeting.

**Agenda Item 11: Adjourn**

- Meeting Adjourned at 12:05pm

**AGENDA ITEM 6: CONSIDER APPROVAL OF EXPENSE FOR  
AUGUST MEETING**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

Rental fee for the City of Center John D. Wyndham Civic Center in the  
amount of \$350.00

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**RECOMMENDED ACTION**

**MOTION: \_\_\_\_\_**

**SECOND: \_\_\_\_\_**

**APPROVED: \_\_\_\_\_**

**AGENDA ITEM 7: UPDATE FROM CHAIRMAN.**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

- Consider approving expenses for August meeting at City of Center Civic Center
  
- Discussion of public meetings location and date

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**RECOMMENDED ACTION**

No action required.

**AGENDA ITEM 8: UPDATE FROM THE TEXAS  
WATER DEVELOPMENT BOARD.**

**PRESENTED BY: RYKE MOORE, TWDB**

**SUPPORTING INFORMATION**

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**RECOMMENDED ACTION**

No action required.

**AGENDA ITEM 9: REGION 5. NECHES RFPG REPORT.**

**PRESENTED BY: DON CARONA**

**SUPPORTING INFORMATION**

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**RECOMMENDED ACTION**

No action required.

**AGENDA ITEM 10: UPDATE FROM CONSULTANT,  
FREESE AND NICHOLS**

**PRESENTED BY: MIKE REEDY**

**SUPPORTING INFORMATION**

- Schedule
- Task 1 Updates
- Data Collection & Stakeholder Outreach
- Flood Risk Update
- Flood Management Goals and Practices
- Task 4 Preview
- RFPG Member Action Items
- Upcoming Discussions in future RFPG meetings
- Discussion

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**RECOMMENDED ACTION**

No action required.





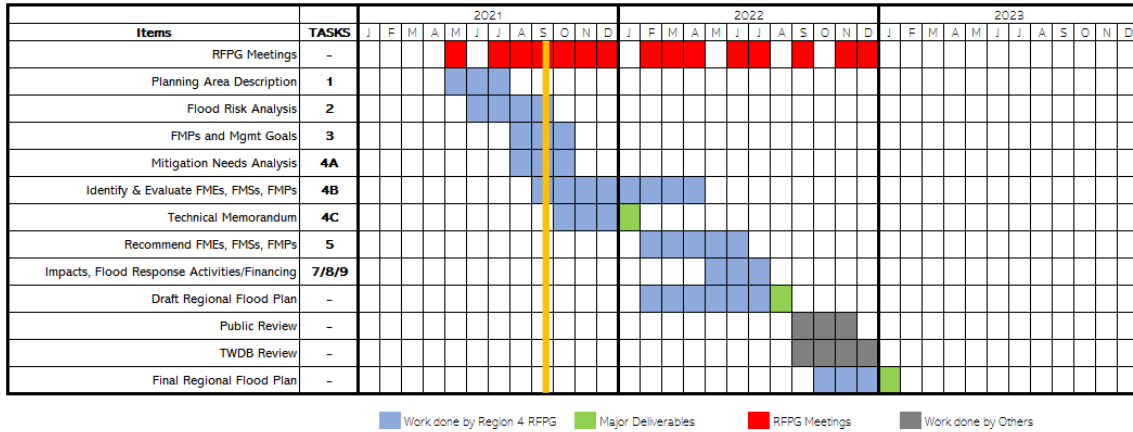
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## Regional Flood Plan Updates

- Schedule
- Task 1 Updates
- Data Collection & Stakeholder Outreach
- Flood Risk Update
- Flood Management Goals and Practices
- Task 4 Preview
- RFPG Member Action Items
- Upcoming Discussions in future RFPG meetings
- Discussion

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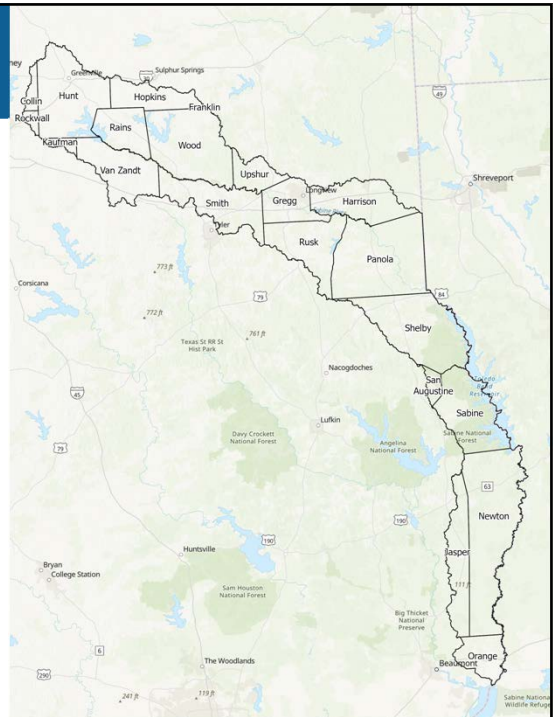
## Planning Schedule



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## Task 1 – Region Description

- 21 counties
- 7,450 square miles (12<sup>th</sup>)
- 6,455 stream miles (11<sup>th</sup>)
- 585,132 2019 population estimate (14<sup>th</sup>)
- \$525,184,329 in National Flood Insurance Program (NFIP) claims between 1975-2019 (4<sup>th</sup>)
- \$898 claims per capita (3<sup>rd</sup>)



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## Data Collection & Stakeholder Outreach

### REGION 4 SABINE REGIONAL FLOOD PLANNING GROUP

#### The SABINE RFPG Engagement Survey is LIVE!

To assemble the best version of the flood plan for the Sabine Regional Flood Area, we need the input of members of the public and stakeholders like you!

#### What is the Sabine RFPG Engagement Survey?

The Sabine Regional Flood Planning Group (RFPG) Engagement Survey is designed to utilize input from stakeholders and members of the public to compile information about known flood issues, flood risk concerns, flood projects/strategies, and other flood related priorities. Acquiring this information is critical in constructing the Sabine Regional Flood Plan.

The Engagement Survey includes a unique questionnaire for either stakeholders or members of the public to complete. In addition, all participants will be able to utilize an interactive map to help identify areas of flood risk in the region. Stakeholders will be able to provide additional flood information that may be incorporated in the regional flood plan.

As a reminder, survey responses will be accepted until September 30. The estimated time to complete the survey is 45 minutes. We look forward to receiving your response and thank you in advance for your time, effort, and consideration.

#### Get Involved!

We are looking for your help to develop the first-ever flood plan for the Sabine Region. Please use the links below to provide your input.

#### WHICH OPTION BELOW BEST DESCRIBES YOU?



#### MEMBER OF THE PUBLIC

- I am a person interested in the regional flood planning process.

[GO TO THE PUBLIC PAGE](#)



#### REGIONAL STAKEHOLDER

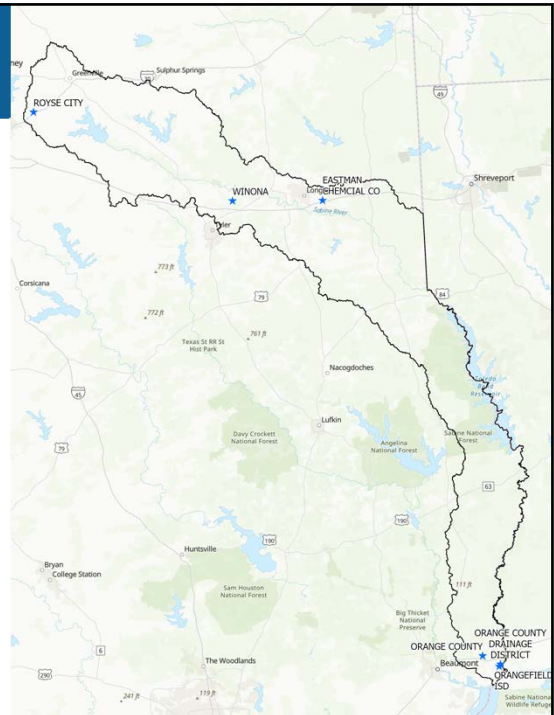
- I am a representative of a non-governmental organization with flood-related interests.
- I am the floodplain manager for a community participating in the National Flood Insurance Program (NFIP).
- I am a public-sector employee with flood-related responsibilities.
- I am an elected or appointed official with flood-related responsibilities.

[GO TO THE STAKEHOLDER PAGE](#)

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## Survey Response Data

- 128 Stakeholders Contacted
- 7 Stakeholders Completed Survey
- Outreach strategy
  - Contact non-responsive stakeholders by phone
  - Additional strategies?



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## Public Survey

- 8 Public Map Responses
  - All in Orange County
- 9 Public Survey Responses
  - Many did not disclose zip code



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## Task 2 – Existing Flood Hazard

- GOALS:
  1. Perform existing and future flood risk analyses
    - a. Hazard
    - b. Exposure
    - c. Vulnerability
- Hazard: Floodplain Quilt + Survey info
  - Determine location and magnitude of 1% and 0.2% AEP events
- Exposure: who/what might be exposed
  - Identify who and what might be harmed
- Vulnerability: critical structures + SVI
  - Identify vulnerability of communities and critical facilities
- **Maps made available to the public**

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## Task 2 – Existing Flood Hazard

- Sabine’s challenge: Limited detailed study within the Sabine River basin
- TWDB Requirements: 100yr and 500yr
  - Existing Conditions
  - Future Conditions
- Most of the data is either Zone A (NFHL) or 100yr BLE
  - Very little 500yr data
- Fathom Data
  - 100yr and 1000yr...no 500yr at this time.
  - 500yr expected to come in October 2021 with new round of Fathom data

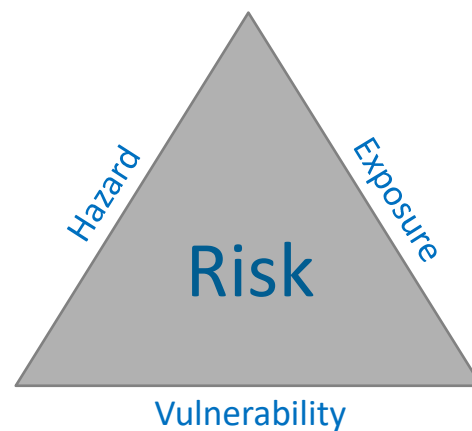
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## Task 2A – Existing Flood Exposure

Flood Hazard  
Analysis

Flood Exposure  
Analyses

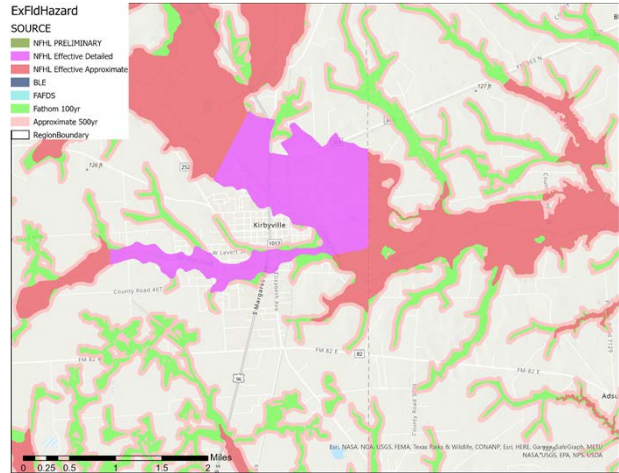
Vulnerability  
Analyses



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## Fathom Data Overview

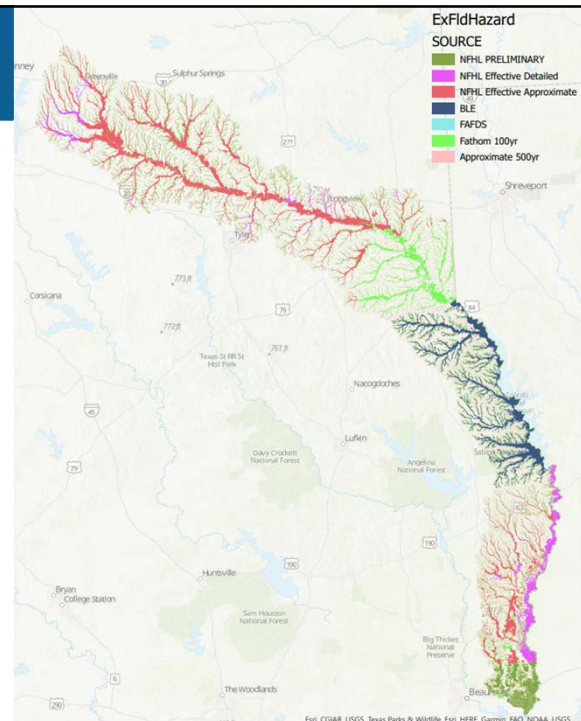
- Nationwide model
- Current Fathom Data
  - 100yr, 1000yr inundation limits
  - Requires assumption of approximate 500yr
  - Modeled and mapped on 30 m grid
- Expected Updated Fathom Data
  - 100yr, 500yr inundation limits
  - Modeled on 30 m grid, Mapped using LiDAR
  - More accurate than previous
  - Still lowest on TWDB priority



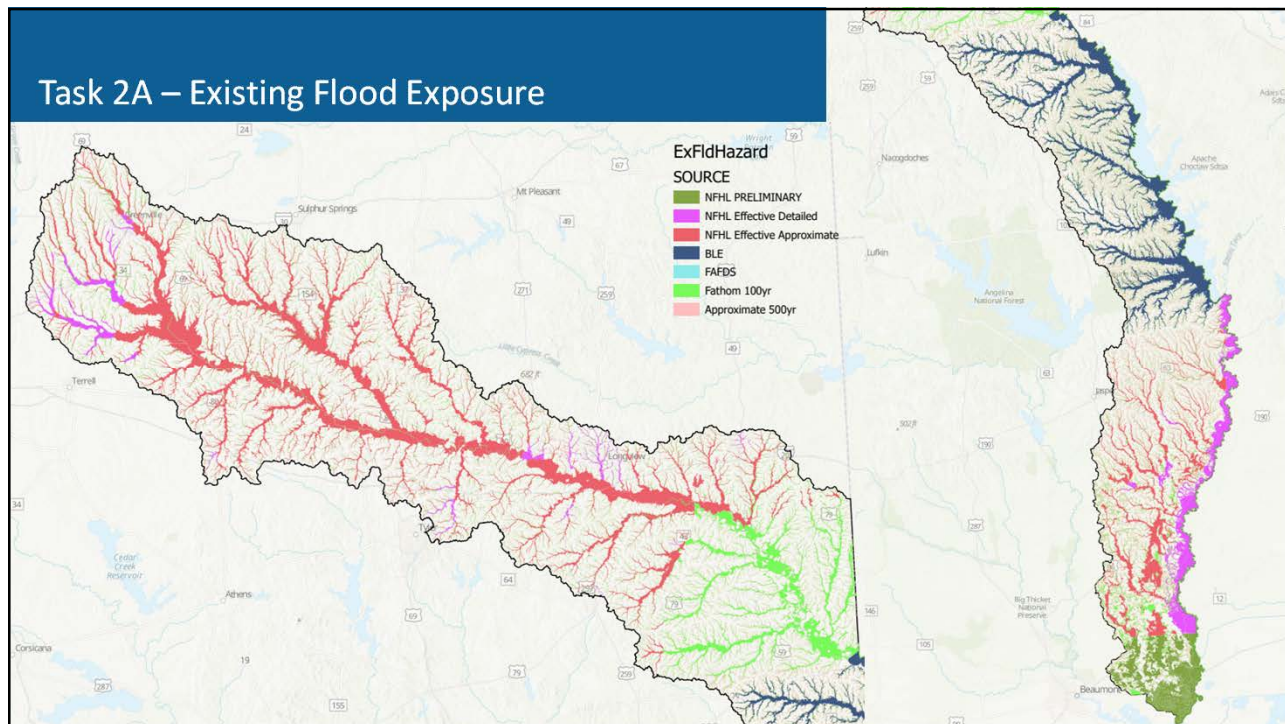
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## Task 2A – Existing Flood Exposure

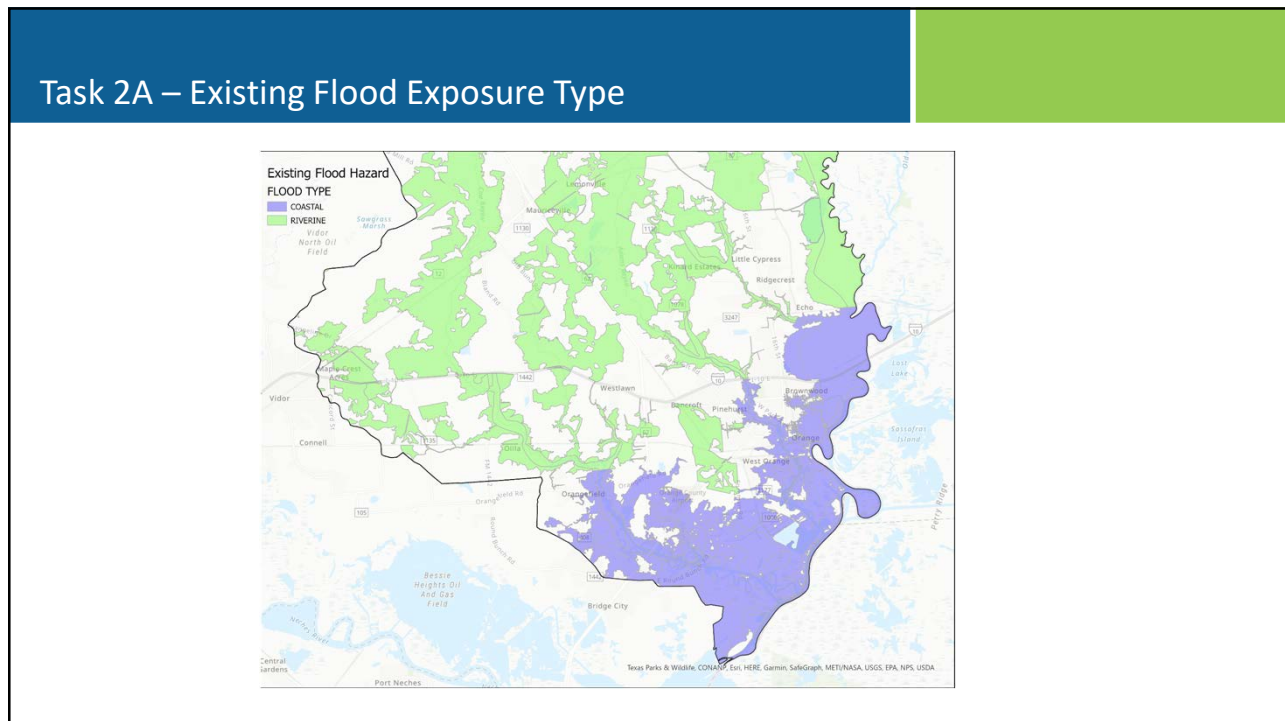
- Floodplain Data Priority
  - Effective Flood Hazard Data
  - Pending Flood Hazard Data
  - Preliminary Flood Hazard Data
  - Base Level Engineering (BLE)
  - First American Flood Data Services (FAFDS)
  - Fathom
- Updated Fathom Data coming in October



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## Task 2A – Existing Flood Exposure



Structures



Population



Roadways



Agriculture



Critical  
Facilities

- When developing FMEs, FMPs, and FMSs, the RFP will consider flood risk to:
  - People
  - Private Property
  - Public Infrastructure

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## Social Vulnerability Index

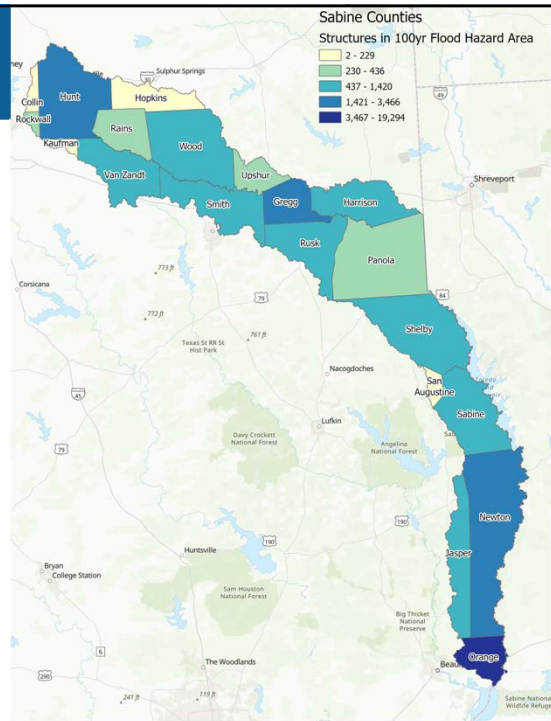
- Social Vulnerability Index (SVI) is intended as the proxy for resilience for this planning cycle.
- FEMA defines vulnerability as the measure of the capacity to weather, resist, or recover from the impacts of a hazard in the long term as well as the short term.
- U.S Centers for Disease Control and Prevention (CDC) SVI ranks each Census tract (subdivisions of counties) on 15 social factors,
  - Poverty
  - Lack of vehicle access
  - Crowded housing that influence a community's ability to prepare for, respond to, and recover from a disaster.
- TWDB provided SVI for each identified building

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## Task 2A – Existing Flood Exposure

- 100-YR Structure Impacts
  - 40,177 Structures (8% of all Structures)
  - 48% of at-risk structures located in Orange County

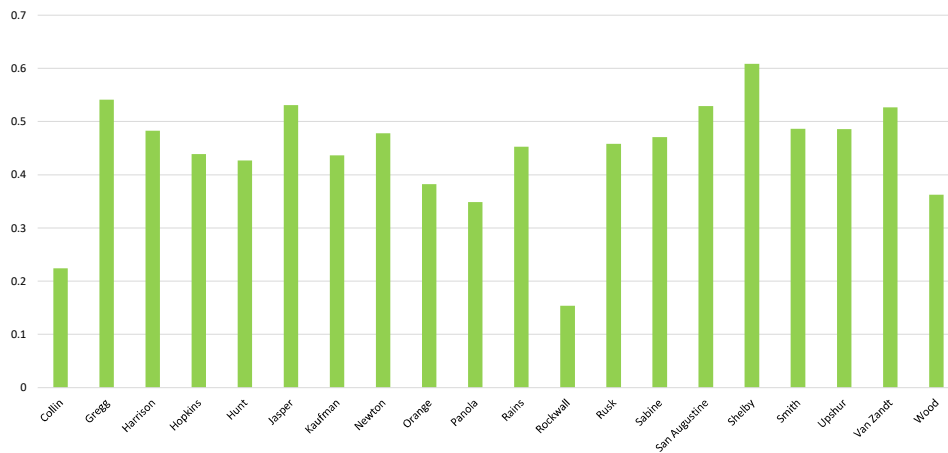


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## Task 2A – Existing Flood Exposure

- SVI used to identify communities that may need support before, during or after disasters
- Higher SVI indicates greater need for support

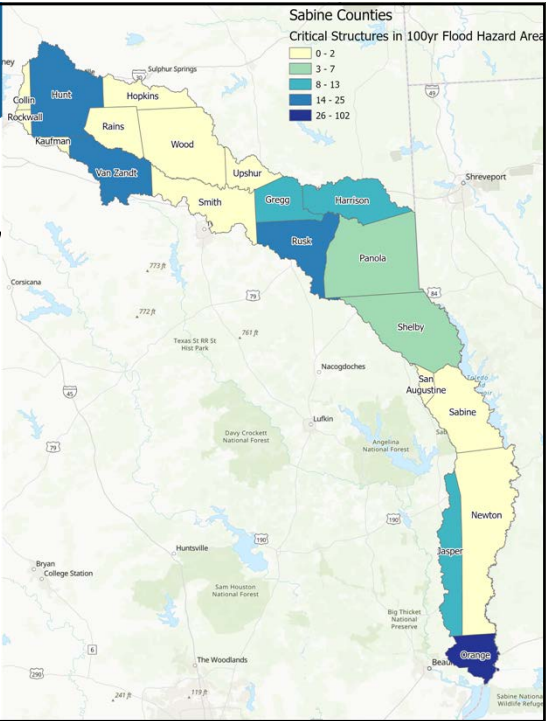
Average SVI of Structures in 100-Yr Flood Hazard Area by County



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## Task 2A – Existing Flood Exposure

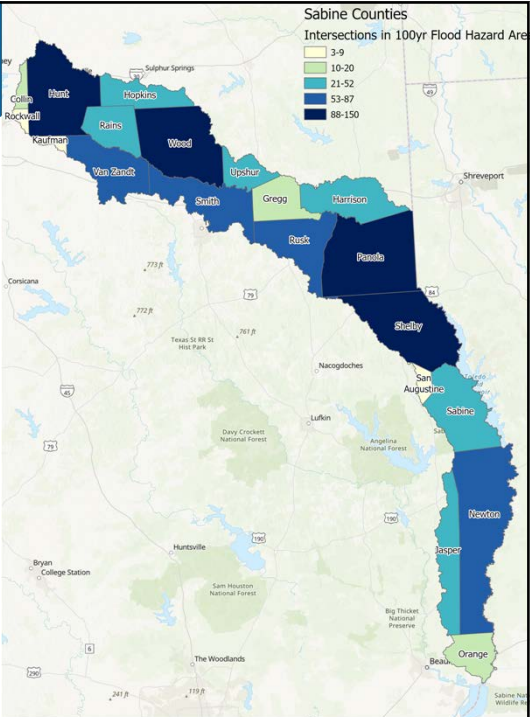
- 209 Critical Structures located within 100yr
  - 5% of all Critical Structures
  - 50% of at-risk Critical Structures located in Orange County
- Critical Facilities
  - Schools
  - Medical
  - Emergency Facilities
  - Public Infrastructure
    - WTP/WWTP
    - Airports
  - Energy Producing Facilities



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## Task 2A – Existing Flood Exposure

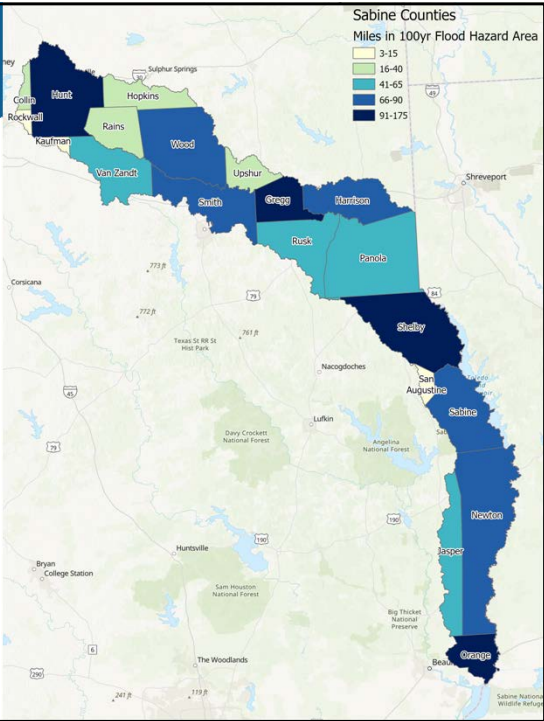
- Roadway Crossings
  - 1,138 Total TxDOT Road intersection with streams
- Low Water Crossings
  - 91 Identified
  - Survey Data will supplement when received



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## Task 2A – Existing Flood Exposure

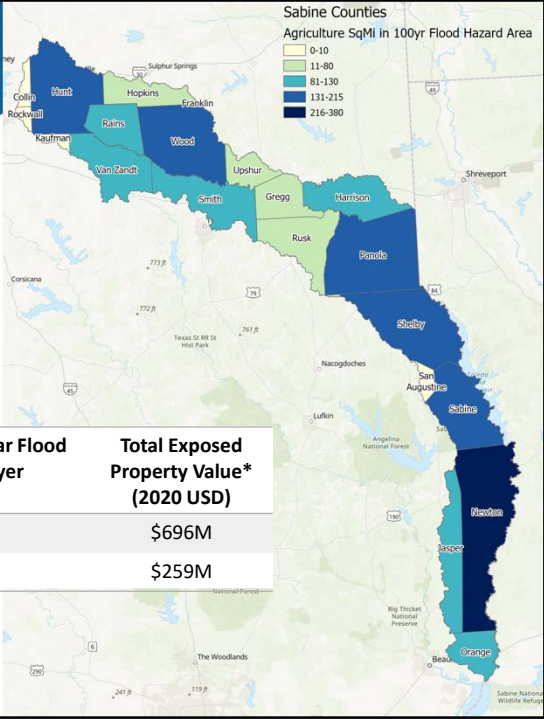
- Roadway Segments
  - 1,283 miles of potential road inundation in 100-year event based on horizontal intersection
  - 9.3% of total TxDOT roadways in region



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## Task 2A – Existing Flood Exposure

- Agricultural Impacts
  - 2,278 sq mi in 100-yr Flood Hazard Layer
  - Farming: 536 sq miles
  - Forestry: 1,430 sq miles
  - Ranching: 240 sq miles



Land Classification	Area in Region (sq mi)	Area in 100-year Flood Hazard Layer (sq mi)	Total Exposed Property Value* (2020 USD)
Cropland	1,016	536	\$696M
Ranchland	2,058	240	\$259M

\*based on Land Values 2020 Summary (USDA)

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## Task 2 – Public Meeting

- Public Meeting Required to present Existing Conditions Flood Hazards
- Electronic and Paper Options
- **Actions Items**
  - Identify Date(s), Time(s), Location(s)
  - Longview/Orange
  - October 25 – Nov 8
  - Evening



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## Task 3A & 3B Overview



### Minimum Standards

- Identify and reduce risk of impact to life and property

# 3A

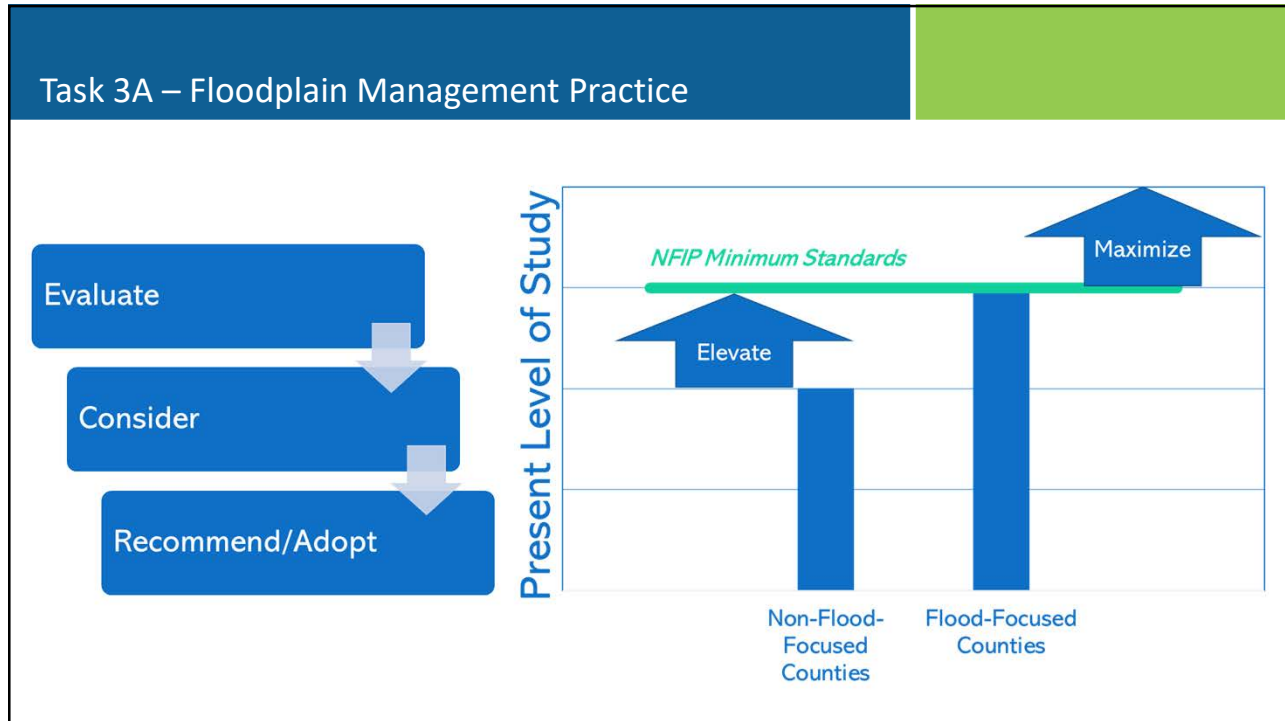
# 3B



### Goals

- Define overarching flood mitigation and floodplain management goals

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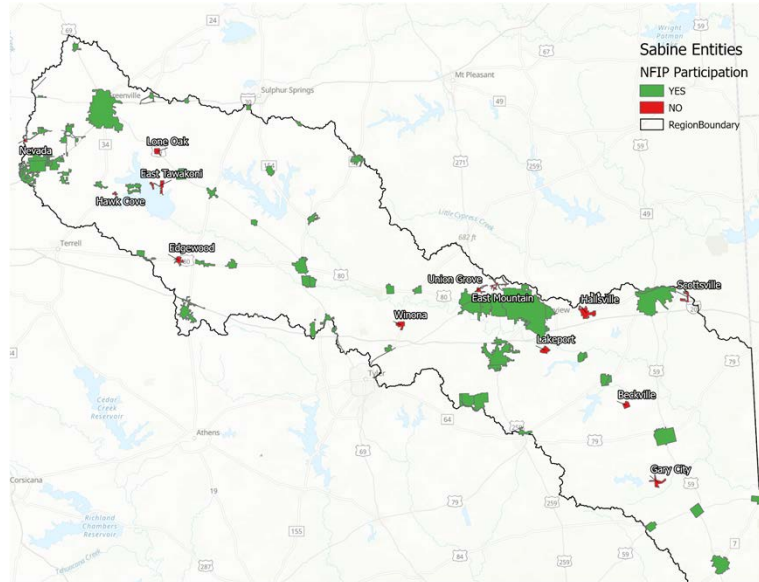
### Task 3A – Data Collection & Evaluate

Entity	Floodplain management regulations	Adopted minimum regulations	NFIP Participant	Higher Standards Adopted	Floodplain Management Practices	Level of enforcement of practices	Existing Stormwater or Drainage Fee
County 1	Yes	Yes	Yes	No	Moderate	Moderate	Yes
City 1	No	No	No	No	Low	Low	No
Special Purpose District	Unknown	No	No	No	None	None	No

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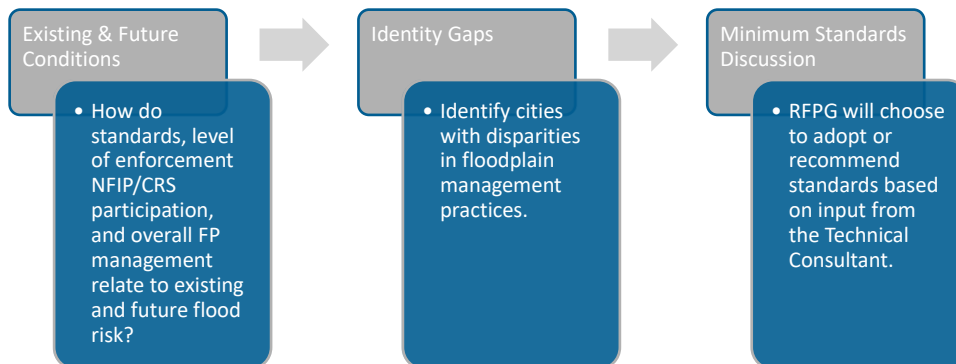
## Task 3A – Floodplain Management Practices

- NFIP Participation
  - 100% of Counties participate
  - 82% of Municipalities participate
  - 13 Municipalities do not participate
  - 19,000 population in non-participating communities



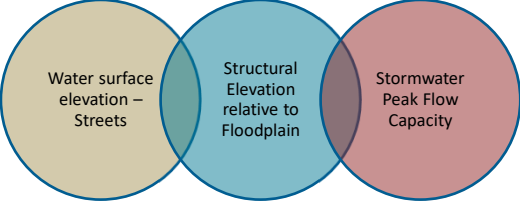
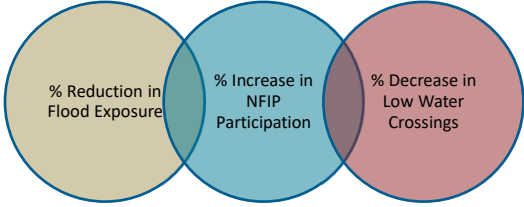
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## Task 3A - Analysis






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## Standards vs. Goals



Standards	Goals
<ul style="list-style-type: none"> <li>Establish consistent protocols for floodplain management that can be universally applied</li> <li>Examples:</li> </ul>	<ul style="list-style-type: none"> <li>Set specific timelines and goalposts to implement proven flood mitigation measures, reducing future risk for people and property.</li> <li>Must be measurable and have a timeframe!</li> <li>Examples:</li> </ul>
	

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## Goals Must Be

**Specific & Achievable**
**Reduce Residual Risk**
**Recommended or Required**

**Short-term (10 years) &/or Long-Term (30 years)**
**Regionwide Or Subregional**

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## Task 3B: SMART Goals

- TWDB Technical Guidance Exhibit C:
- “RFPGs must identify specific and achievable flood mitigation and floodplain management goals that, when implemented, will demonstrate progress towards this overarching goal”
- RFPG will vote to approve goals at October Meeting



**S**pecific  
**M**easurable  
**A**ttainable  
**R**elevant  
**T**ime-bound

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## Task 3B: TWDB Table 10

- Here’s what was provided as a starting point

	Short Term (10 year)	Long Term (30 year)
1.	Reduce 5-year moving average of flood-related fatalities in the flood planning region by 50% by 2033.	Eliminate the occurrence of all flood-related fatalities in the flood planning region by 2053.
2.	Reduce 5-year moving average of flood-related injuries in the flood planning region by 75% by 2033.	Eliminate the occurrence of flood-related injuries in the flood planning region by 2053.
3.	Reduce exposure of existing structures in the current 1% annual chance floodplain by elevating, acquiring, relocating, or otherwise providing flood protection to 1,000 structures by 2033.	Reduce exposure of existing structures in the current 1% annual chance floodplain by elevating, acquiring, relocating, or otherwise providing flood protection to 10,000 structures by 2053.
4.	Remove 1% annual chance floodplain from the 5% of structures in the floodplain by 2033.	Remove 1% annual chance floodplain from 20% of structures in the floodplain by 2053.
5.	Remove 10% annual chance floodplain from 15% of low water crossings in the floodplain by 2033.	Remove 10% annual chance floodplain from 50% of low water crossings in the floodplain by 2053.
6.	By 2033, increase the coverage of flood hazard data across the region by completing studies in 50% of the areas identified as having current	By 2053, have complete coverage of flood hazard data across the region by completing studies in 100% of the areas identified as having current

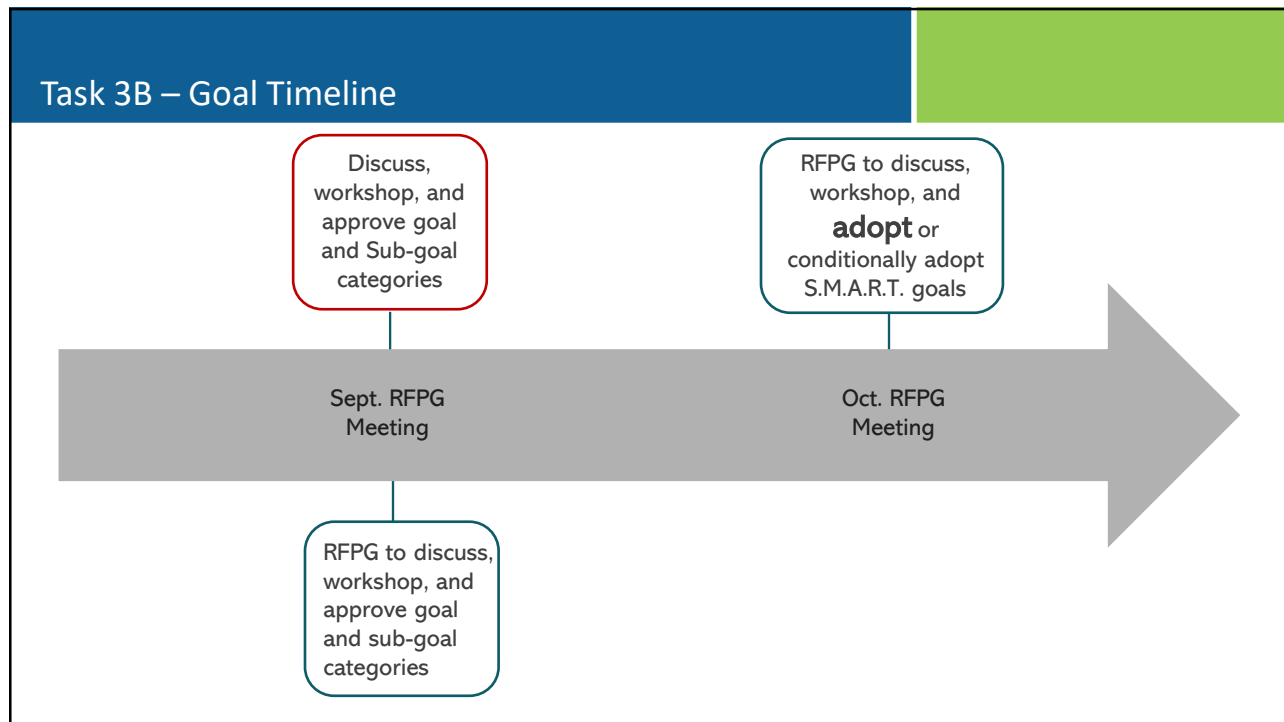


### Goal Categories

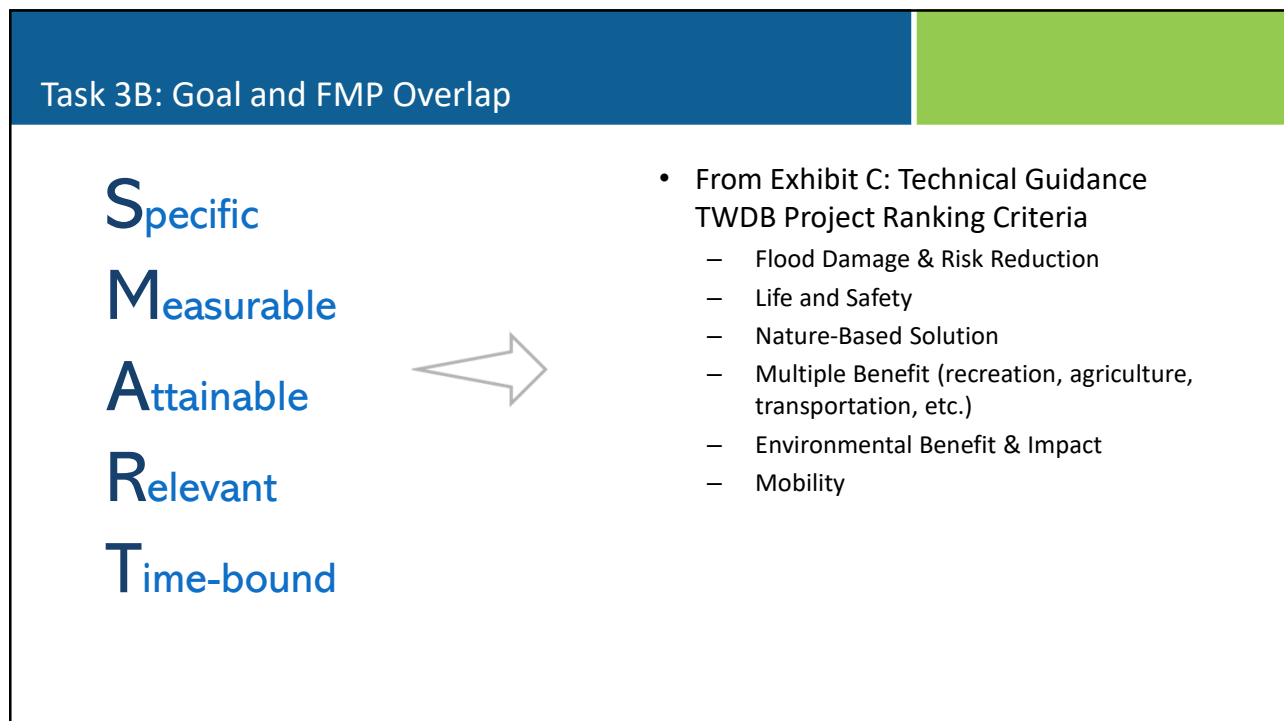


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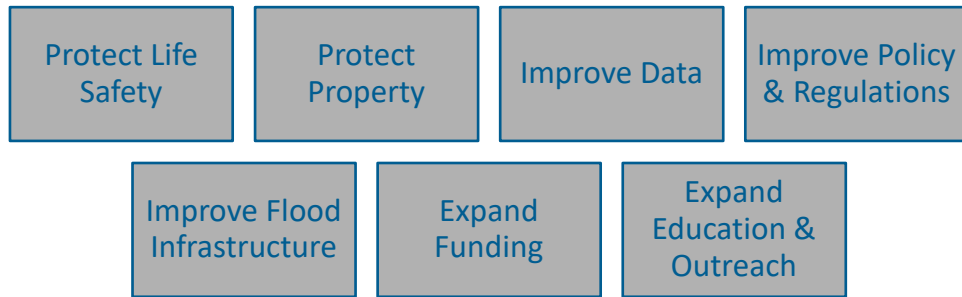


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## Task 3B: Goal Categories



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## Task 3B: Goal Categories

Discuss and Fill Gaps in  
Goal and Sub-Goal  
Categories

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### Task 3B: Goal Categories

- Protect Life Safety
- Protect Property
- Improve Data
- Improve Policy & Regulations
- Improve Flood Infrastructure
- Expand Funding
- Expand Education & Outreach

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### Protect Life Safety


- Reduce number of deaths
- Reduce number of injuries
- Improve emergency access and response (including mobility and access to shelter)
- (Additional)

 ACTION NEEDED {

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## Protect Property


- Remove floodplain structures (residential, commercial, public)
- Reduce impacts to Critical Facilities (medical, schools, emergency, power generating)
- Reduce impacts to economic and agricultural production
- (Additional)

 ACTION NEEDED

39

## Improve Data


- Identify and assess existing flood infrastructure within the Region
- Improve understanding of flood risk; Increase extent and improve detail of H&H modeling and mapping
- Develop and maintain critical infrastructure database
- (Additional)

 ACTION NEEDED

40

## Improve Policy and Regulations


- Increase Community NFIP/CRS participation
- Enhance local code, drainage criteria manuals and development standards (higher standards, land use ordinances)
- Improve enforcement of floodplain management regulations
- Improve interjurisdictional coordination
- (Additional)

 ACTION NEEDED

41

## Improve Flood Mitigation Projects


- Increase sustainability and resiliency
- Incorporate use of green infrastructure /nature-based solutions
- Provide benefits to socially vulnerable and low/moderate income areas
- Provide multi-benefits to community, environmental and cultural resources
- Improve asset management, operation, and maintenance efforts
- (Additional)

 ACTION NEEDED

42

## Expand Funding


- Expand eligibility for and use of funding programs (Local, State, Federal, Public/Private Partnerships)
- Increase communities with dedicated stormwater funding mechanisms
- Encourage public-private partnerships
- (Additional)

 ACTION NEEDED

43

## Expand Education & Outreach

- Improve flood awareness and disaster preparedness
- Increase number of flood insurance policyholders
- Encourage individuals to purchase flood insurance
- (Additional)

 ACTION NEEDED

44

## Task 3B: MENTIMETER – Interactive Session

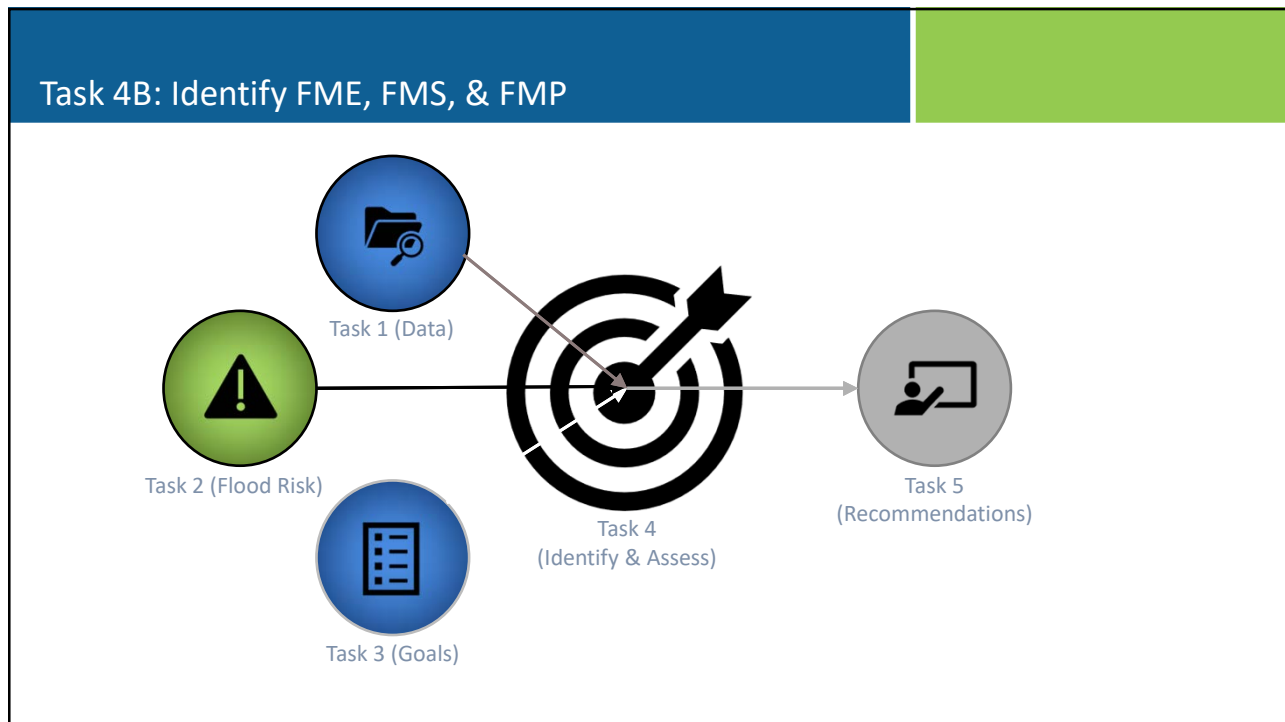
- Transfer to Mentimeter

45

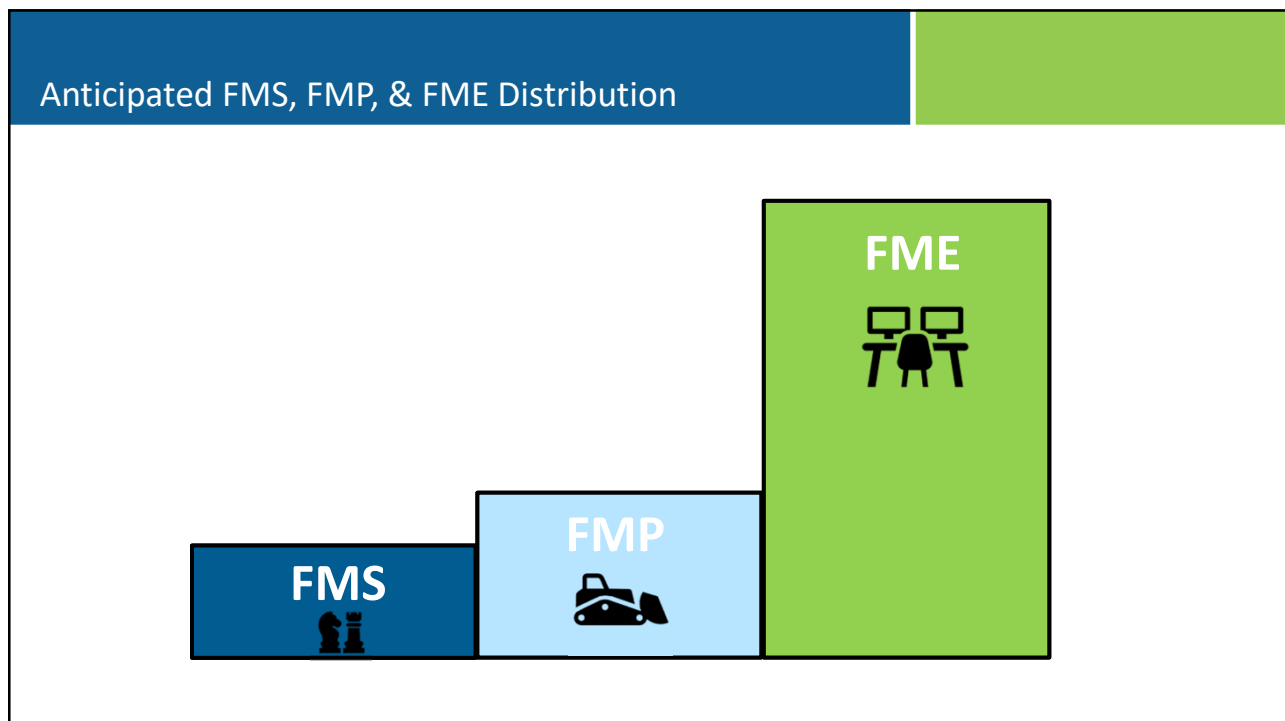
## Upcoming Discussions in October

- Task 4 – Flood Mitigation Needs Analysis
  - 4A: Mitigation Needs Analysis
    - Identify most flood-prone areas
    - Identify knowledge gaps and areas with emergency need
  - 4B: Flood Management Evaluations (FME), Flood Management Strategies (FMS), Flood Mitigation Projects (FMP)
    - **FME:** Watershed planning (H&H Analyses, Mapping Updates, Regional studies, etc.
    - **FMS:** Strategies which can be implemented to reduce risk of flooding, freeboard requirements, no adverse impact, etc.
    - **FMP:** Bridge improvements, dam improvements, flood walls, levees, channel improvements, regional detention, property acquisition, flood readiness and resilience, etc.
  - 4C: Technical Memorandum

46

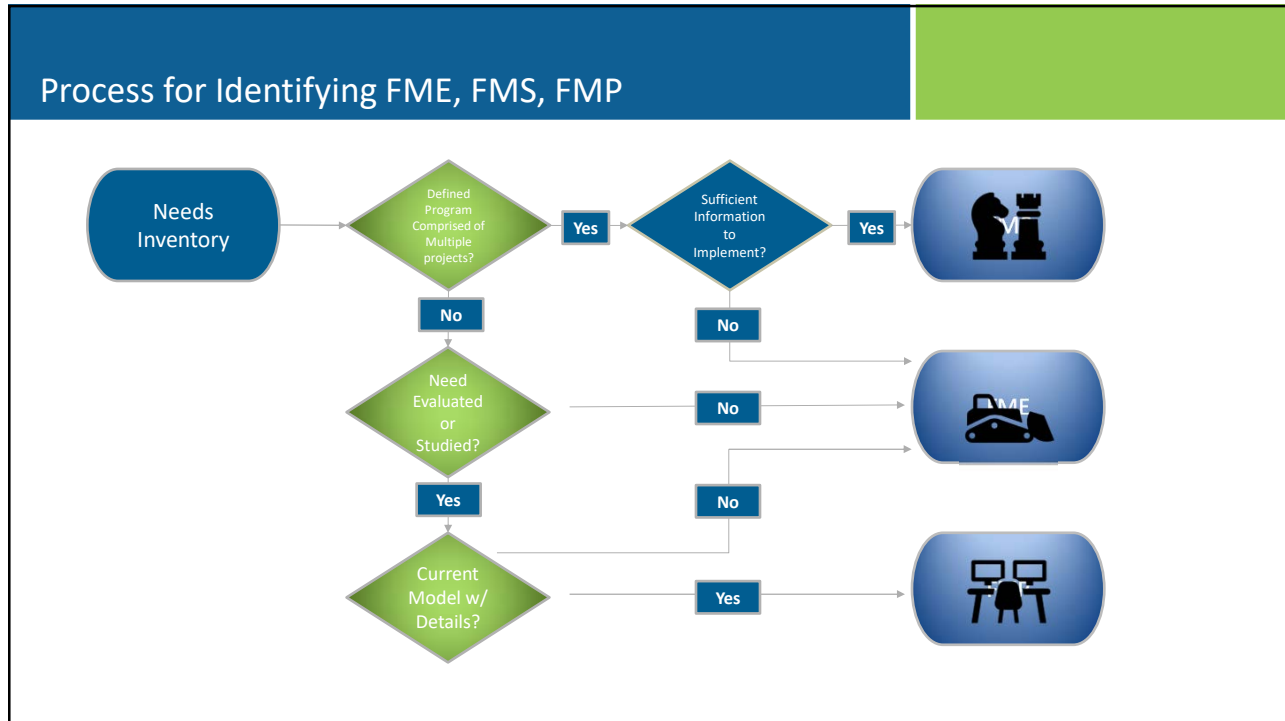


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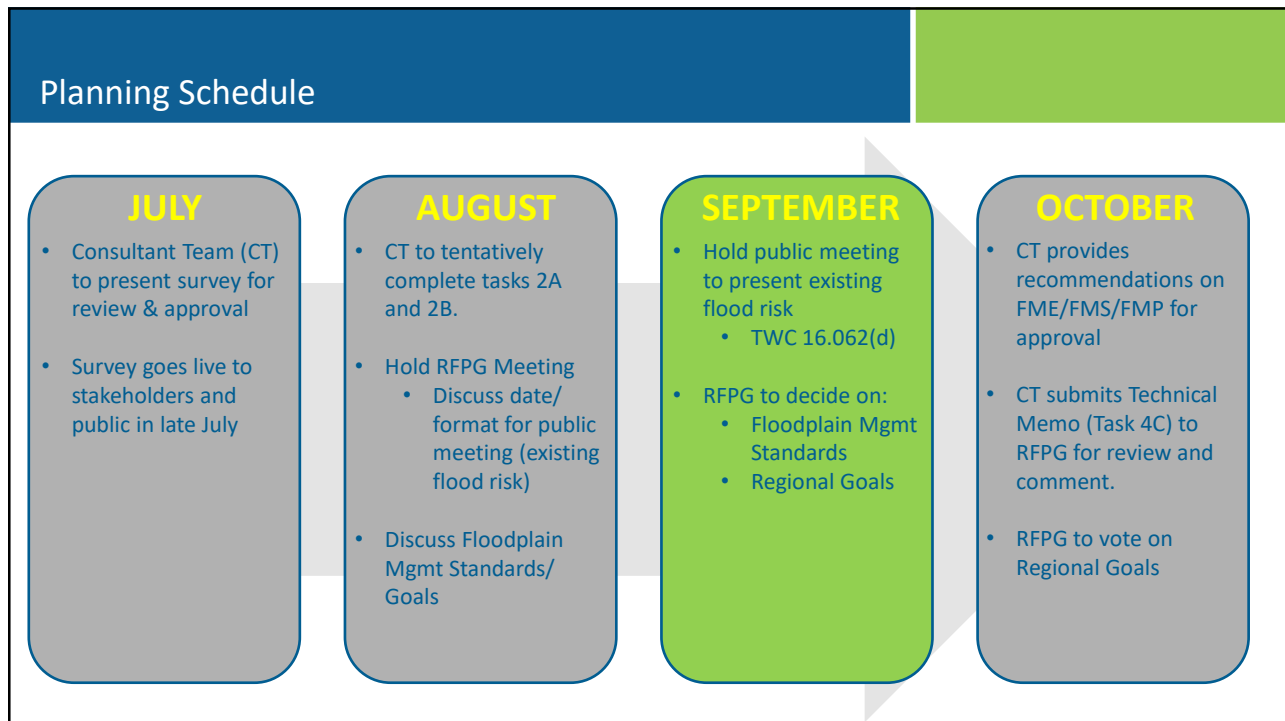


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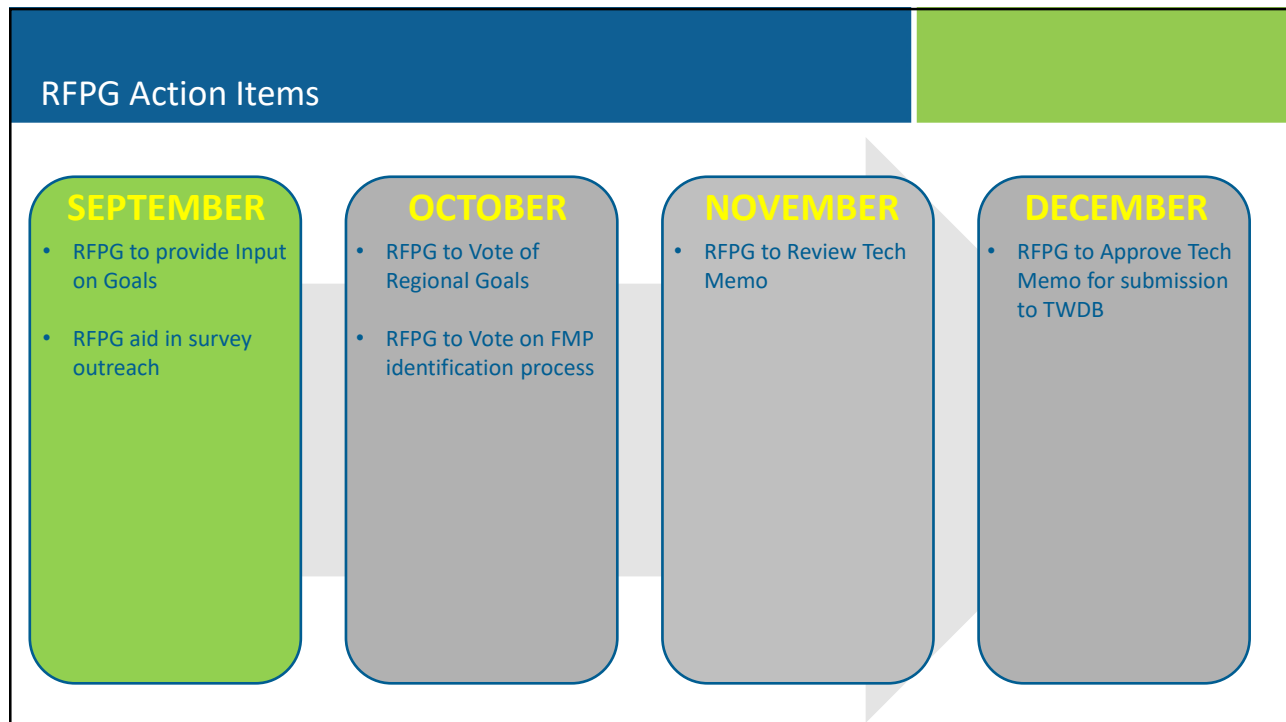




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## Discussion / Questions

52

## Task 1.3 – Key Historic Flood Events

- Count of insured structures with flood damage

Year	Storm	Date Range for When Water First Entered the Structure		Filed Claims	Paid Claims	Flood Damages
2017	Hurricane Harvey	8/21/2017	9/13/2017	3,207	2,854	~\$350M
2019	TS Imelda	9/17/2019	9/25/2019	1,690	1,621	~\$164M
2008	Hurricane Ike	9/1/2008	9/20/2008	1,655	1,498	~\$140M
2016 (March)		3/8/2016	3/15/2016	167	151	~\$12M
2002 (Oct/Nov)		10/20/2002	11/5/2002	160	142	~\$3M
2006 (October)		10/14/2006	10/31/2006	81	70	~\$2M
2005	Hurricane Rita	9/18/2005	9/30/2005	293	76	~\$1.5M

**AGENDA ITEM 11: CONSIDER DATE AND AGENDA  
ITEMS FOR NEXT MEETING.**

**RESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

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**RECOMMENDED ACTION**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

**AGENDA ITEM 12: ADJOURNMENT**

**PRESENTED BY: JOHNNY TRAHAN, CHAIR**

**SUPPORTING INFORMATION**

There being no other business, Chair Trahan will adjourn the meeting.

TIME: \_\_\_\_\_

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**RECOMMENDED ACTION**

**MOTION: \_\_\_\_\_ SECOND: \_\_\_\_\_ APPROVED: \_\_\_\_\_**