



**December 16, 2021**





1. Call to order



## 2. Roll call



## 3. Approval of minutes

Region 3 Trinity Flood Planning Group Hybrid Meeting  
Thursday, November 18, 2021  
10:00 a.m.  
Cook Education Center at Navarro College  
Meeting Room  
3100 W. Collin St.  
Corsicana, TX 75110

The Region 3 Trinity Flood Planning Group held a meeting, in person as well as virtual, on Thursday, November 18, 2021 at 10:00 AM. Acting Chairman Glenn Clingenpeel called the meeting to order at 10:05 AM.

Voting Members Present:

Melissa Bookhout  
Lissa Shepard  
Sano Blocker  
Jordan Macha  
Rachel Ickert  
Matt Robinson  
Sarah Standifer  
Andrew Isbell  
Glenn Clingenpeel  
Chad Ballard (absent)  
Mike Rickman - alt. Galen Roberts attended  
Scott Harris

Eleven voting members were present, constituting a quorum.

Ex Officio Members Present:

Adam Whisenant  
Rob Barthen  
Andrea Sanders  
Steve Bednarz  
Brooke Bacuetes  
Richard Bagans  
Humberto (Bert) Galvan  
Greg Waller  
Ellen Buchanan  
Todd Burrer (absent)  
Jerry Cotter  
Lisa McCracken  
Diane Howe (absent)  
Edith Marvin (absent)  
Justin Bower (absent)  
Lonnie Hunt

### Approval of the Minutes of the Last Meeting

Motion: Rachel Ickert moved to approve the minutes as presented;  
Second: Galen Roberts; Action: Minutes were unanimously approved.

### Acknowledgement of written public comments received

No written public comments were received.

### Receive registered public comments on specific agenda items – limit 3 minutes per person

No registered public comments were received.

### TWDB Update

Richard Bagans with TWDB gave an update on a few changes since the last meeting including the following:

Additional funding contracts for money allocated by the legislature have been sent out to all the regions.

TWDB hosted a webinar about contract amendments on November 2<sup>nd</sup>. Slides and recordings are posted publicly on their website.

The Draft Technical Memo deliverables need to be reviewed and approved by January 7<sup>th</sup> before they are submitted. Specific deliverables regarding GIS files have received an extension until March. Technical Consultants were sent a clarification email regarding the Exhibit D deliverables.

The Draft Technical Memo will become the Final Technical Memo after it has been approved by the group.

### Discussion and potential action to authorize the Planning Group Sponsor to negotiate and execute an amendment to the Regional Flood Planning Grant contract with the TWDB, to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget.

Glenn Clingenpeel stated that the amendment would add extra money to the Group's contract with the TWDB that the legislature had allocated

specifically for the flood planning purpose. The money would be used to fund three additional tasks:

Task 11 – Outreach and data collection to support Tasks 1-9

Task 12 – Perform FMEs & Identify, evaluate and recommend more FMPs

Task 13 – Prepare and adopt Amended Regional Flood Plan

Motion: Sarah Sandifer moved to authorize the Trinity River Authority to negotiate and execute an amendment to the Regional Flood Planning Grant contract with the TWDB, to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget.; Second: Lissa Shepard; Action: Motion approved unanimously.

Discussion and potential action to authorize the Planning Group Sponsor to negotiate and execute an amendment to the Regional Flood Planning Grant subcontract with the technical consultant, Halff Associates, Inc, to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget

Glenn Clingenpeel explained that TRA would need to amend their contract with the technical consultants to incorporate the additional funding and scope of work approved in the prior agenda item.

Rachel Ickert abstained from voting on this item due to a potential conflict of interest.

Motion: Scott Harris moved to authorize the Trinity River Authority to negotiate and execute an amendment to the Regional Flood Planning Grant subcontract with the technical consultant, Halff Associates, Inc, to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget; Second: Matt Robinson; Action: Motion approved unanimously.

#### Update from Region 3 Technical Consultant

- a. Chapter 1 Planning Area Description – Stephanie Griffin with Halff Associates gave an overview of Chapter 1. This covers Population Density, Land Use by Land Cover, Social Vulnerability Index and Flood Quilt. It is currently out for public and planning group comments and feedback.
- b. Chapter 2 Future Condition Flood Risk Analyses – Jarred Overbey with Halff Associates gave a presentation on what Fathom Data is, how it works, and how it will be incorporated into the flood planning process.

Andrew Isbell asked whether this was future or existing conditions. Jarred stated that the data represent existing conditions and that they will base future conditions on those findings.





5. # of Locations where roads flood
6. Communities not participating in the NFIP
7. Social Vulnerability Index Rating
8. # of reported flood concerns
9. # of FEMA claims
- 10.# of historical storms
- 11.Damages from historical storms
- 12.# of areas with a history of flooding
- 13.# of areas that need mitigation
- 14.% Inadequate inundation mapping

There was a question regarding the historic storms frequency map and what the map included. Dr. Rivera stated that it was color-coded based on NOAA's storm data, however, the definition of what constitutes a storm was not known. Greg Waller with NWS stated that the definition on storms needs to be in the documentation for clarification on how the dataset is used in regards to storm frequency. The consultant team agreed to research the issue and provide clarification via email.

Dr. Rivera continued his explanation of the scoring categories within the HUC-12 areas. He stated that a low score does not mean there is no flood risk. He further stated that the final map is based on all 14 categories.

Andrew Isbell and Rachel Ickert brought up the risk of flooding in areas that have potential of future growth, and suggested that these areas be highlighted somehow. There was general consensus on this point, and the consultant team was asked to look into and help the group identify areas with significant future growth and risks.

- ii. Update on Task 4B – Process for Identifying FME, FMS, FMP - Consider approval of process to identify potential FMEs and potentially feasible FMSs and FMPs – Dr. Rivera gave an overview of the proposed process

**FMEs:** sources of identified FMEs included survey responses, results of Flood Risk Evaluation (Task 2), results of Needs Analysis (Task 4A), Hazard Mitigation Action Plans (HMAP), FIF applications not chosen for funding, and County or City Drainage Master Plan.

**FMPs:** sources of identified FMPs included were potential project information from Master Plans/Drainage Studies from the City of Mont Belvieu, City of Burleson, City of Sachse, North Central Texas Council of Governments (NCTCOG) and Corridor Development Certificate (CDC) Model.

Reem Zoun, Director of Flood Planning at TWDB, clarified that the FMSs were kept as a category as an opportunity for the group to identify

potential flood risk reduction activities that did not exactly fit as an FME or FMP, and thereby provides flexibility.

Motion: Scott Harris moved to approve the process to identify potential FMEs, and potentially feasible FMSs and FMPs.; Second: Rachel Ickert;  
Action: Motion approved unanimously.

- iii. Task 4C Technical Memorandum – Stephanie Griffin updated the group on the Technical Memo. The memo is being put together and will be sent out to the group. There will need to be a meeting mid-December for consideration and approval on the Technical Memo, which is due to TWDB January 7, 2022.
  - iv. Task 4C Technical Memorandum Addendum – Due to the delayed release of the Fathom Data, TWDB has allowed a few extra months to address three specific topics under Task 4C. Those three topics will be included in the Tech Memo Addendum and should be available for the group by the end of January. The group will need to approve the addendum in February in order to submit to TWDB by March 7, 2022 deadline.
- e. Task 8 Administrative, Regulatory and Legislative Recommendations – Stephanie Griffin with Halff Associates led the discussion.
- i. Ms. Griffin stated that potential topics for recommendations in this chapter included:
    - Administrative
    - Regulatory
    - Legislative
    - Other

She asked the Group if there were any recommendations to be added. None were brought forward and there was no further discussion.

- f. Task 10 – Public Participation and Plan Adoption - Public Outreach Updates – Colby Walton with Cooksey gave brief update.
- i. E-newsletter – inaugural edition is being developed, with a planned release date sometime in December of 2021.
  - ii. Media outreach – Mr. Walton stated that they plan to use media in the basin area, speak to editors/editorial boards, local officials, and newspapers in the basin in order to increase public participation.

Update on Future Deadlines – Stephanie Griffin provided a list of deadline dates in the coming months.

- Early December 2021 – RFPG approves Tech Memo;

- January 7, 2022 – (no meeting) Consultant submits Tech Memo to TWDB;
- End of January 2022 – RFPG begins review of draft Tech Memo Addendum;
- Mid-February 2022 – RFPG approves Tech Memo Addendum & Consultant introduces Chapter 5;
- March 7, 2022 – (no meeting) Consultant submits Tech Memo Addendum to TWDB; and
- April 2022 – RFPG review Chapter 2 and Chapter 4; Consultant provides update on Chapter 5; and Consultant introduces additional chapters.

#### Meeting date for Next meeting

The following dates were approved for the next three meetings:

December 16, 2021 at 10:00 a.m. – location to be determined  
 February 17, 2022 at 10:00 a.m. – location to be determined  
 April 21, 2022 at 9:00 a.m. – location to be determined

#### Consider establishing Technical Subcommittee(s)

It was determined that no subcommittees were required at this time. No action was taken.

#### Updates from Liaisons Region 5 and 6

Region 5 Neches RFPG – No update was provided from the Region 5 liaisons.  
 Region 6 San Jacinto RFPG – No update was provided from the Region 6 liaisons.

#### Update from Planning Group Sponsor

Glenn Clingenpeel stated that TRA had received a FIF grant that, while separate and apart from the Regional Flood Planning process, would nonetheless feed a lot of information into the planning process. He stated that Halff Associates would be the consultants for that grant as well, which would further help the flow of information from the FIF grant into the flood planning process.

Richard Bagans stated that Dallas County and Kaufman County had also received FIF grants.

#### Review administrative costs requiring certification –

Mr. Clingenpeel stated that he had received a request for reimbursement from one of the Group members. Mr. Bagans clarified that in order to be reimbursed, members must submit the exact mileage

traveled for the meeting with a map showing an appropriate route was taken. He added that the member must state that they are not eligible for reimbursement from another entity for the miles travelled.

Mr. Clingenpeel stated that the request was in order, that there were sufficient funds available, and that the request was certified, pending receipt of a map and confirmation that the member was not eligible for reimbursement from another entity.

Note: all required information has been received subsequent to the meeting, and the request is being processed.

#### Receive general public comments

Mr. Clingenpeel opened the meeting to public comments. No members of the public indicated they wished to make comments, and the public comment period was closed.

#### Announcements

Stephanie Griffin stated FEMA had published an RFI with 18 points/topics in it on which FEMA is soliciting input. Specifically, they are looking for feedback and direction on the minimum standards for the FEMA Floodplain Program. Ms. Griffin stated that the Texas Floodplain Management Association is working on a response and offered to provide information on that effort to anyone who is interested.

Scott Harris stated that the voting position for Water Districts has been posted and is open until December.

#### Agenda items for next meeting –

- Travel policy
- Approval of Technical Memo
- Technical Committee

#### Other Business

N/A

#### Adjourn:

The meeting was adjourned at 1:32 p.m.

THE ABOVE AND FOREGOING ARE CERTIFIED TO BE TRUE AND CORRECT MINUTES  
OF THE REGULAR MEETING OF THE REGION 3 TRINITY FLOOD PLANNING GROUP  
HELD NOVEMBER 18, 2021.

\_\_\_\_\_  
SCOTT HARRIS, Secretary  
REGION 3 TRINITY FLOOD  
PLANNING GROUP


\_\_\_\_\_  
Date

\_\_\_\_\_  
GLENN CLINGENPEEL, Chair  
REGION 3 TRINITY FLOOD  
PLANNING GROUP

\_\_\_\_\_  
Date



## 4. Acknowledgement of written comments received



## 5. Public comments on agenda items



## 6. TWDB update





## 7. Consultant update



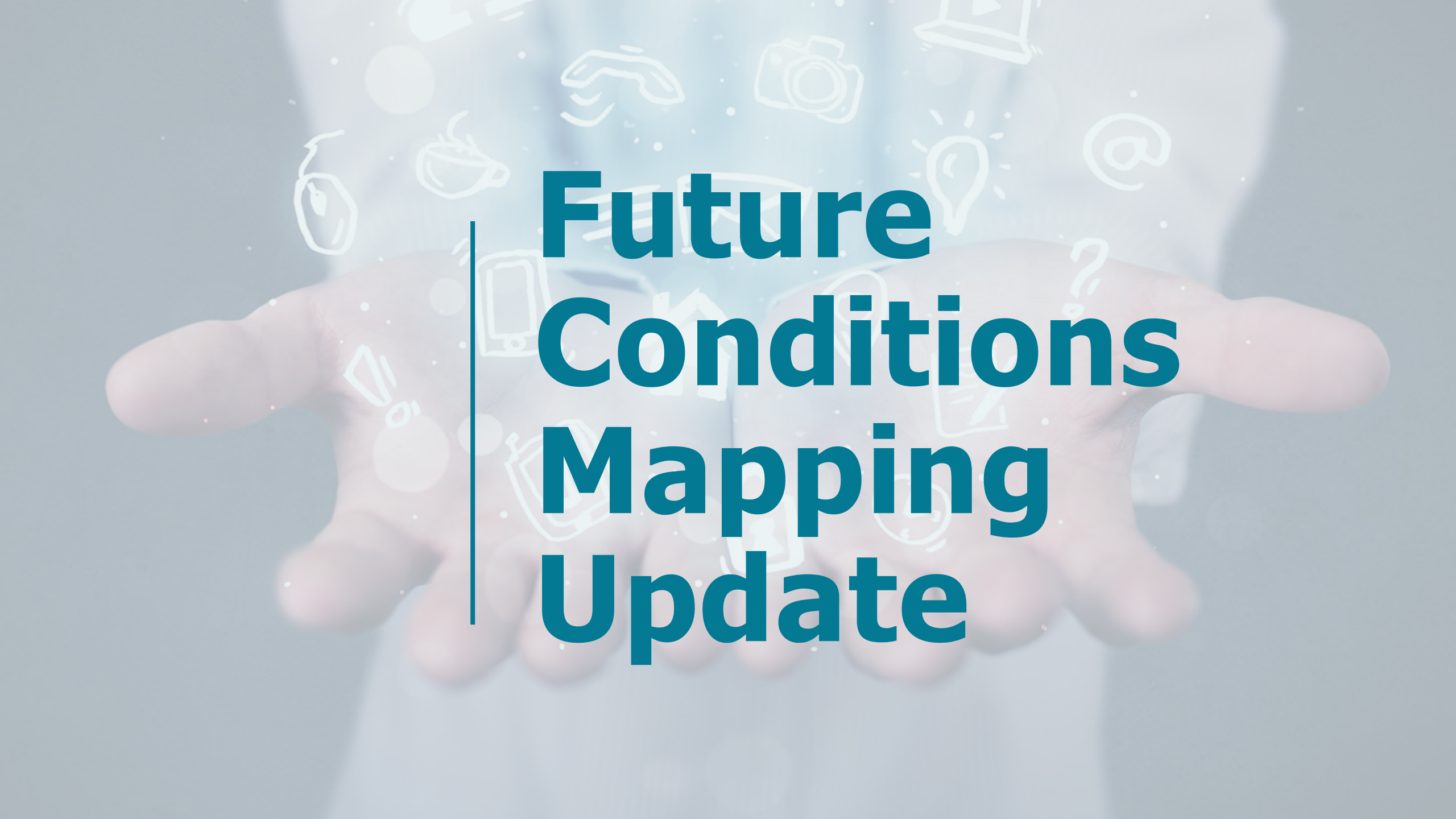
# CONSULTANT UPDATE

- Chapter 2 Flood Risk Analysis
  - Future conditions
- Chapter 3 Floodplain Management Practices and Goals
  - Proposed edits to goals
  - Consider approval of goals
- Chapter 4 Flood Mitigation Needs & Potentially Feasible Solutions
  - Consider approval of Tech Memo (Task 4C)
  - Task 4A scoring criteria update



# Ch. 2 Flood Risk Analysis

Future Conditions

A hand is shown holding a glowing, translucent sphere. The sphere is filled with various white icons representing different concepts: a camera, a lightbulb, a question mark, a magnifying glass, a smartphone, a house, a person, a gear, a speech bubble, a handshake, and an '@' symbol. The background is a soft, out-of-focus blue-grey color.

# **Future Conditions Mapping Update**



# Future Conditions Assessment (100-Yr)

## Future Land Use Hydraulic Model Comparison

Location	Average WSEL Change Existing Vs Future 100yr (ft)	Average WSEL Change Existing 100yr vs 500yr (ft)
Parker County	0.1	0.8
Grand Prairie	0.2	1.4
Sherman	0.7	1.0
Texarkana	0.6	1.8
Corsicana	0.2	1.0

## 2D Modeling with Climate Change Increase Comparison

Location	Average WSEL Change Existing Vs Future 100yr (ft)	Average WSEL Change Existing 100yr vs 500yr (ft)
Dallas	0.2	Unavailable
Upper Calcasieu	0.4	1.7





# Future Conditions Assessment (500-Year)

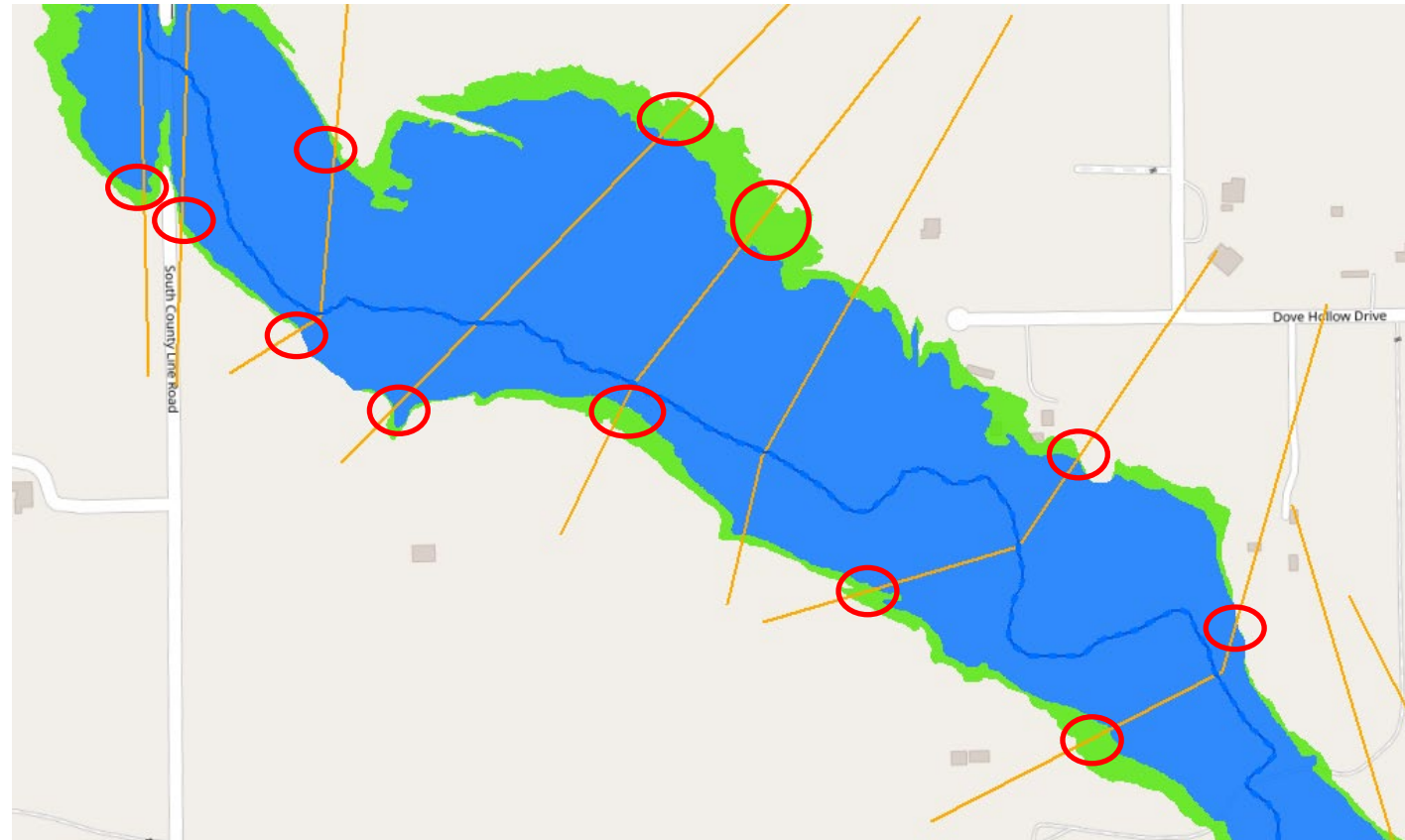
## Regional Delta Development

- Existing 100-Yr and 500-Yr Floodplain Top Width Assessment

FUTURE FLOOD HAZARD

### Key To Features

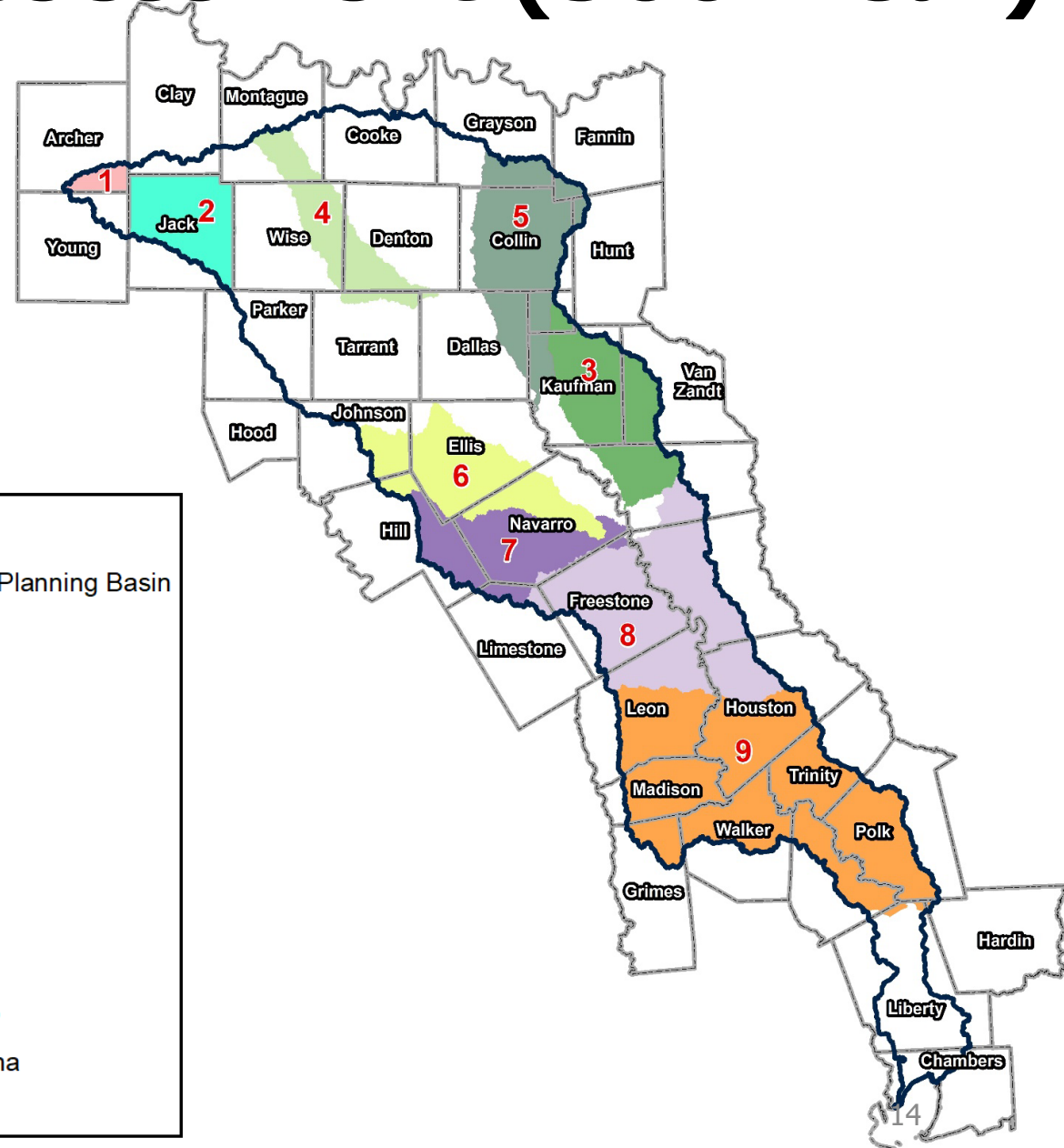
-  Stream
-  Cross Section
-  100-Year Mapping
-  500-Year Mapping



# Future Conditions Assessment (500-Year)

## Regional Delta Development

- Top Width Assessment Data Areas



### Key To Features

- Trinity Regional Flood Planning Basin
- Regional County
- Delta Assessment Areas**
- Archer
- Cedar
- Chambers
- Denton
- East Fork Trinity
- Jack
- Lower Trinity-Kickapoo
- Lower Trinity-Tehuacana
- Richland

FUTURE FLOOD HAZARD

# Future Conditions Assessment (500-Year)

## Future Horizontal Delta Comparison

Location	Average Top Width Change Existing 100yr vs 500yr (ft)
1. Archer	30.8
2. Jack	32.2
3. Denton	32.6
4. Cedar	30.8
5. East Fork Trinity	42.6
6. Chambers	37.2
7. Richland	44.5
8. Lower Trinity-Tehuacana	36.3
9. Lower Trinity Kickapoo	47.6

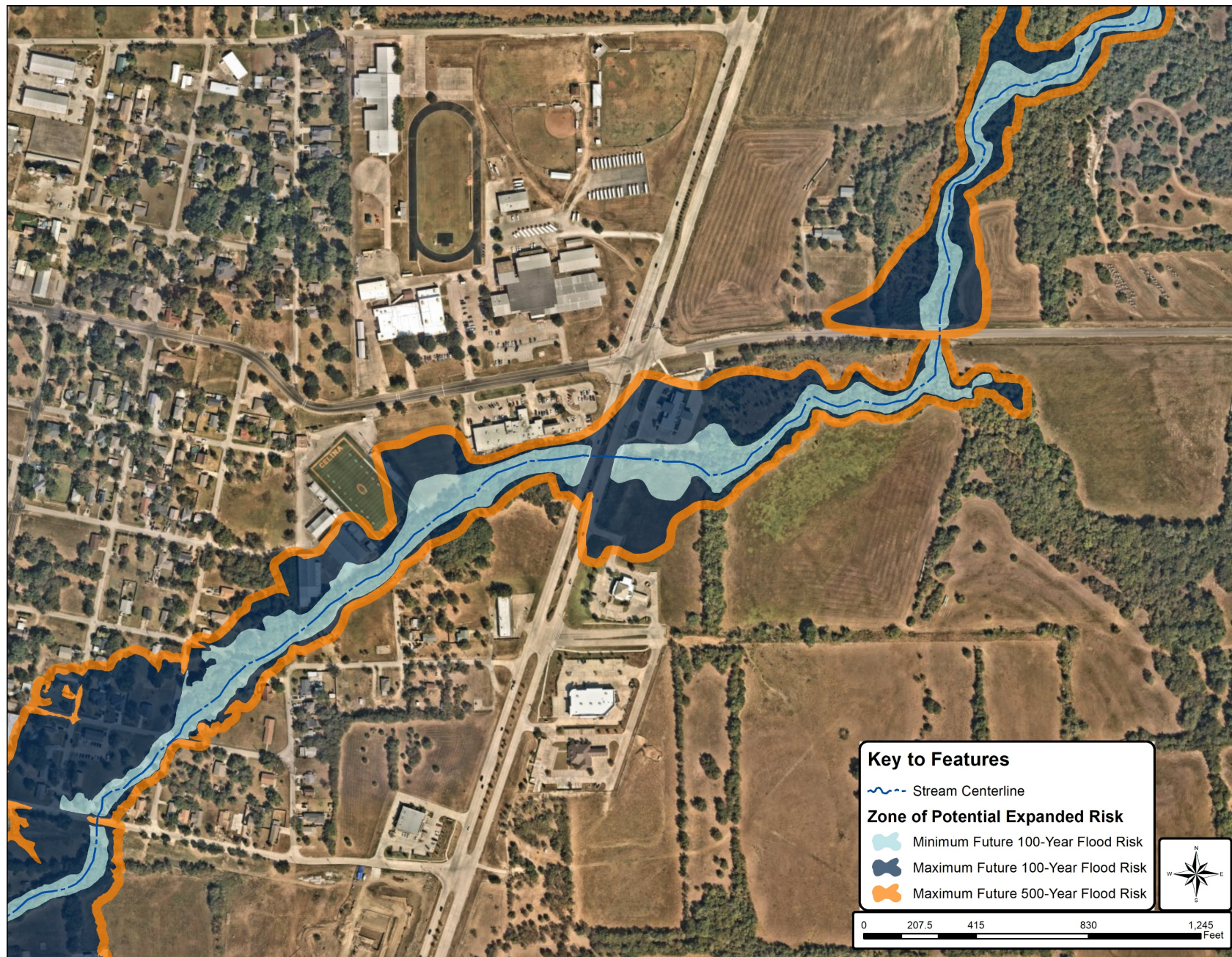
**Average Horizontal Delta:**  
**38 ft**

**FUTURE FLOOD HAZARD**



# Future Conditions Flood Risk Assessment (500-Yr)

FUTURE FLOOD HAZARD



# Task 2B – Proposed Future Conditions Methodology

## FUTURE FLOOD HAZARD

	Best Available		→		→		→		Most Approximate	
	Local Floodplain (if determined current)		NFHL AE		BLE		NFHL A / FAFDS		No FEMA or Better than Quilt	
	100YR	500YR	100YR	500YR	100YR	500YR	100YR	500YR	100YR	500YR
Existing	Local Study (if provided)	Local Study (if provided)	Floodplain quilt 100YR	Floodplain quilt 500YR	BLE 100YR	BLE 500YR	Zone A	Fathom 500YR or included as floodplain gaps	Fathom 100YR	Fathom 500YR
Future	Local Study (if provided)	Local Study (if provided)	Range between Existing 100-year and 500- year	Horizontal Delta Buffer	Range between BLE Existing 100-year and 500- year	Horizontal Delta Buffer	Range between Zone A Existing 100-year and Fathom 500-year	Horizontal Delta Buffer	Range between Fathom Existing 100-year and 500- year	Horizontal Delta Buffer





# Ch. 3 Floodplain Management Goals

# Region 3 Trinity RFPG: Draft Specific Goal Statements

As Reviewed and Approved by Region 3 RFPG on 09/23/21

## Goal 1. Improving Flood Warning & Public Safety

Improve the dissemination of information regarding early flood recognition and danger, emergency response procedures, and post-flood recovery actions.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Increase the number of communities with flood warning programs that can detect flood threats and provide timely warning of impending flood danger.	Initiated	Maintained
B	Improve safety at low water crossings by adding warning systems/signage or improving low water crossings in high-risk areas	100 crossings	300 crossings

## Goal 2. Improving Flood Analyses

Increase the number and extent of regional flood planning studies (FMEs) and analyses to better prepare communities for implementing flood mitigation projects.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Increase the availability of flood hazard data that uses the best available land use and precipitation data to reduce gaps in floodplain mapping.	25% gap reduction	95% gap reduction
B	Increase the number of entities that conduct detailed studies of localized/urban flooding impacts within the FPR.	Establish a baseline measurement	30%
C	Increase the number of communities that utilize latest and most appropriate precipitation and land use data as a basis for design criteria and flood prevention regulations.	Establish a baseline measurement	30%

## Goal 3. Reducing Property Damage & Loss

Increase the number and extent of protective regulatory measures and programs to limit future risk and reduce flood damage in the flood planning region.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Increase the number of entities that have floodplain standards that meet or exceed the NFIP-minimum standards.	5	25
B	Reduce the number of structures within the 1% floodplain (i.e. through structural projects, property buyouts, acquisitions, and/or relocations).	5%	10%
C	Reduce the vulnerability of agriculture, ranching and forestry to flood-related losses.	Establish a baseline measurement	30%

## Goal 4. Floodplain Preservation

Maintain the natural and beneficial functions of floodplains by preservation and conservation programs.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Increase the acreage of publicly protected natural areas for flood and ecosystem purposes to reduce future impacts of flooding.	Establish a baseline measurement	10%
B	Increase the number of entities that designate the 1% annual chance floodplain on Future Land Use plans that serve as the basis for zoning regulations	20	50
C	Avoid new exposure to flood hazards by adopting comprehensive plans or subdivision regulations that direct development away from the floodplain.	Establish a baseline measurement	10%

## Goal 5. Flood Infrastructure Improvement

Reduce flood risk and mitigate flood hazards to life and property through the maintenance and rehabilitation of existing infrastructure and implementation of new flood infrastructure projects.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Increase the number of nature-based practices as part of flood risk reduction projects.	Establish a baseline measurement	30%
B	Improve flood infrastructure and maintain streams and drainage channels to protect agricultural lands from flooding	Establish a baseline measurement	10%

## Goal 6. Expanding Flood Education & Outreach

Increase the amount of flood education and outreach opportunities to improve awareness of flood hazards and future participation throughout the flood planning region (FPR).

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Improve the participation of community stakeholder entities in the regional flood planning process.	35%	90%
B	Increase the number of local entities that host annual public outreach and education activities to improve awareness of flood hazards, benefits of flood planning, and procedures associated with emergency response associated with flooding.	Establish a baseline measurement	50
C	Increase the number of communities that work cooperatively as part of an overall floodplain management program.	5	25

**Goal 7. Expand Funding**

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
A	Expand eligibility for and use of funding programs (Local, State, Federal, Public/Private Partnerships, etc.)	Establish a baseline measurement	
B	Increase communities with dedicated stormwater funding mechanisms	10%	30%

DRAFT

# Proposed Movement of Goal 7.A

- Original Text: Expand eligibility for and use of funding programs (Local, State, Federal, Public/Private Partnerships, etc.)
- No FMEs, FMPs or FMSs align with goal

Chapter 3

Chapter 8





# Proposed adjustments to goals based on QC review

- Goal 4.B

- Original text: Increase the number of entities that designate the 1% annual chance floodplain on Future Land Use plans that serve as the basis for zoning regulations
- Proposed text: Increase the number of entities that **designate include** the 1% annual chance floodplain on Future Land Use plans ~~that serve as the basis for zoning regulations~~

- Goal 5.B

- Original text: Improve flood infrastructure and maintain streams and drainage channels to protect agricultural lands from flooding
- Proposed text: Improve flood infrastructure and maintain streams and drainage channels to ~~protect~~ **reduce flood risk to** agricultural lands ~~from flooding~~

- Goal 7.A

- Original Text: Expand eligibility for and use of funding programs (Local, State, Federal, Public/Private Partnerships, etc.)
- Proposed text: Expand eligibility for and use of funding **for stormwater and flood mitigation solutions programs** (Local, State, Federal, Public/Private Partnerships, etc.)



# Items for Possible Inclusion

## FMEs

- Dams & Levees
  - Emergency Action Plans
  - Failure Inundation Studies
  - Identify/Evaluate High Hazard Dams
- Retention/Detention Ponds
- Critical Facilities

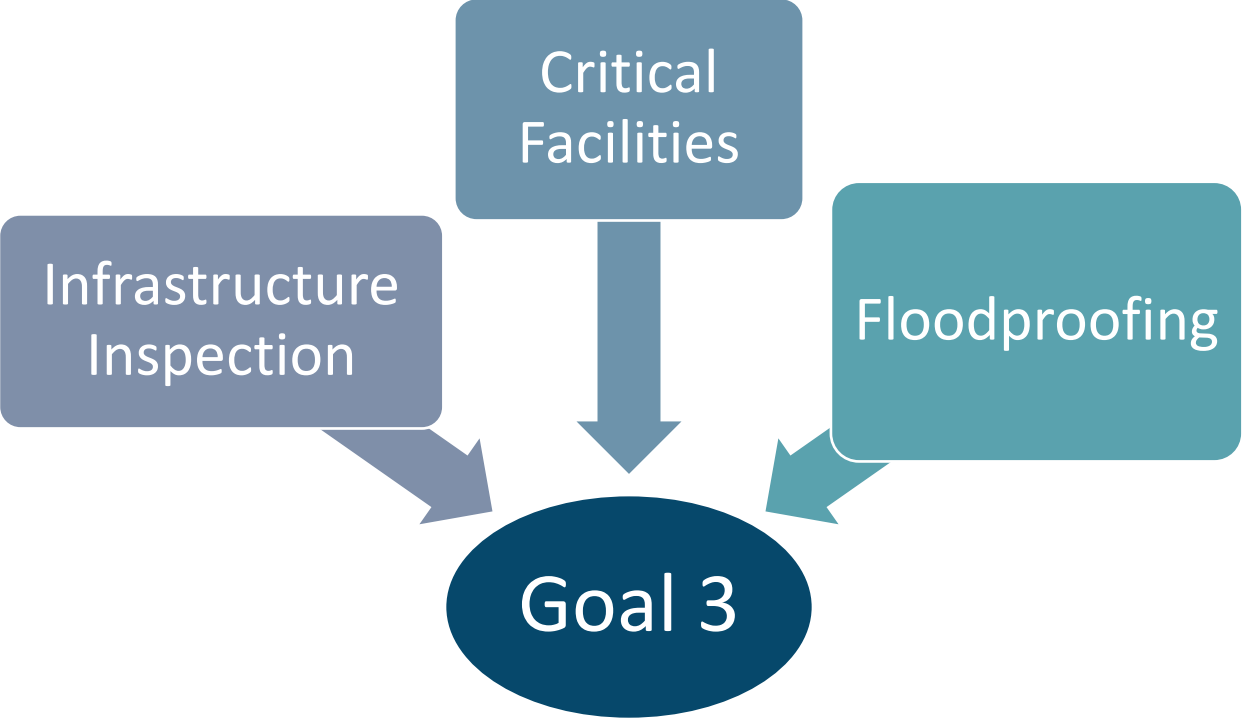
## FMPs

- Railroads
- Street Drainage

## FMSs

- Infrastructure Inspection
- Floodproofing
  - Structures
  - Critical Facilities

# Current Classification

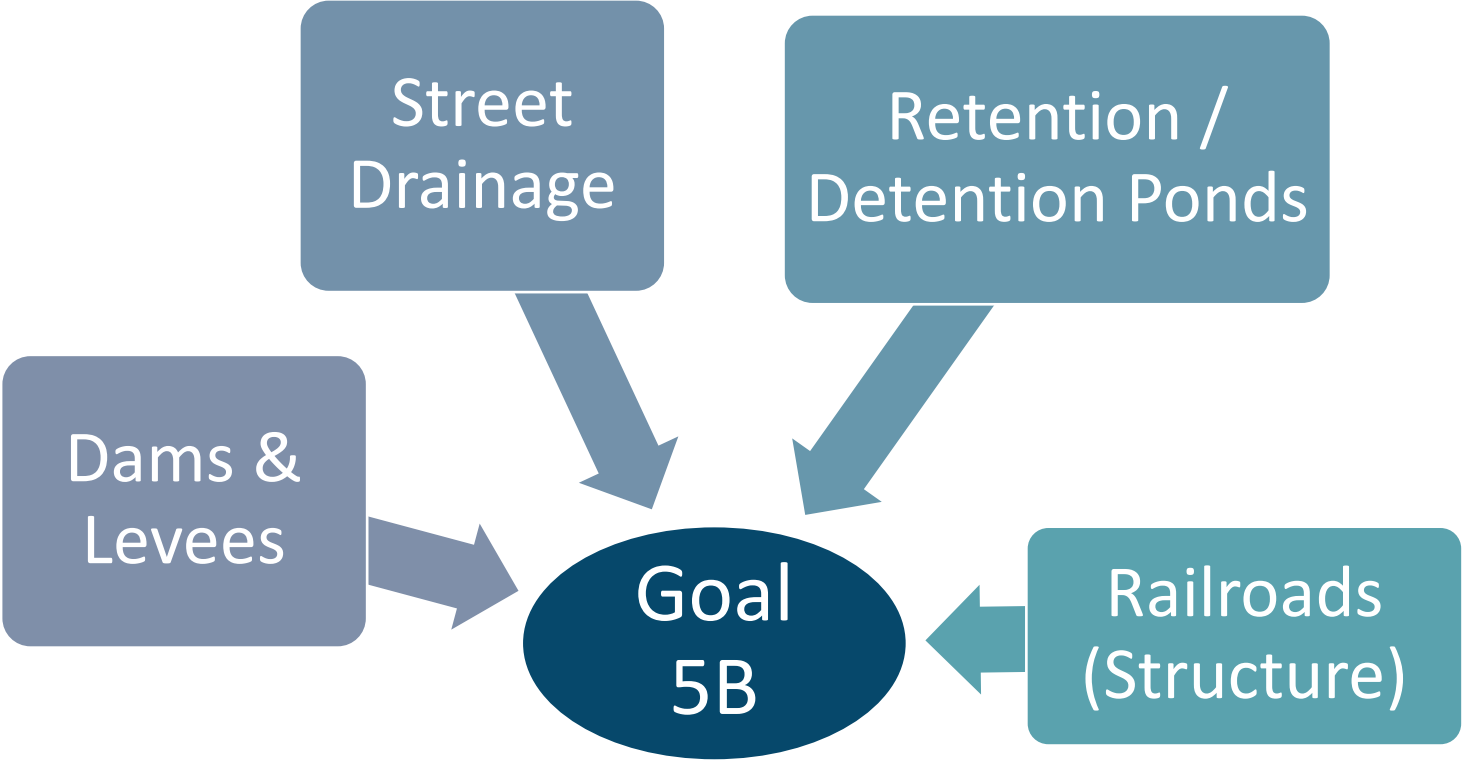


# Goal 3. Reducing Property Damage & Loss

Increase the number and extent of protective regulatory measures and programs to limit future risk and reduce flood damage in the flood planning region.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
<b>A</b>	Increase the number of entities that have floodplain standards that meet or exceed the NFIP-minimum standards.	5	25
<b>B</b>	Reduce the number of structures within the 1% floodplain (i.e. through structural projects, property buyouts, acquisitions, and/or relocations).	5%	10%
<b>C</b>	Reduce the vulnerability of agriculture, ranching and forestry to flood-related losses.	Establish a baseline measurement	30%
<b>D</b>	Reduce the number of critical facilities within the 1% floodplain	5%	10%
<b>E</b>	When relocation and/or elevation adjustment is not possible, increase the number of non-residential facilities that implement floodproofing	5	25

# Current Classification



# Goal 5. Flood Infrastructure Improvement

Reduce flood risk and mitigate flood hazards to life and property through the maintenance and rehabilitation of existing infrastructure and implementation of new flood infrastructure projects.

Goals	Specific Goal Statements	Short Term (2033)	Long Term (2053)
<b>A</b>	Increase the number of nature-based practices as part of flood risk reduction projects.	Establish a baseline measurement	30%
<b>B</b>	Improve flood infrastructure and properly maintain streams and drainage channels to protect agricultural lands from flooding	5 stream miles	50 stream miles
<b>C</b>	Improve urban drainage infrastructure to minimize flood risk	50 miles	500 miles
<b>D</b>	Perform annual inspections to maintain existing dams, levees, ponds and other flood mitigation structures	Establish a baseline measurement	10%

Consider approval of edits to goals

An underwater photograph showing the surface of the water with gentle waves and bubbles. The scene is dimly lit, creating a serene and slightly mysterious atmosphere. The water is a deep teal color, and the light from above creates a soft glow on the surface.

# Ch. 4 Flood Mitigation Needs & Potentially Feasible Solutions

# Technical Memorandum (Task 4C)

- Tech Memo
  - Introduction to Regional Flood Planning Process and Trinity Region
  - Explanation of each attachment
  - Attachments
    - List of political subdivisions with flood-related authority/responsibility
    - List of previous flood studies and models
    - Goals
    - Process to identify potentially feasible FMSs and FMPs
    - Lists of potential FMEs and potentially feasible FMPs and FMSs
    - Associated geodatabase

## Schedule

Nov 23, 2021: Preliminary Draft Tech Memo sent to RFPG

Dec 9, 2021: Draft Tech Memo posted to website and distributed for public review via email

Today: RFPG considers approval of Tech Memo

Jan 7, 2022: Tech Memo due to TWDB

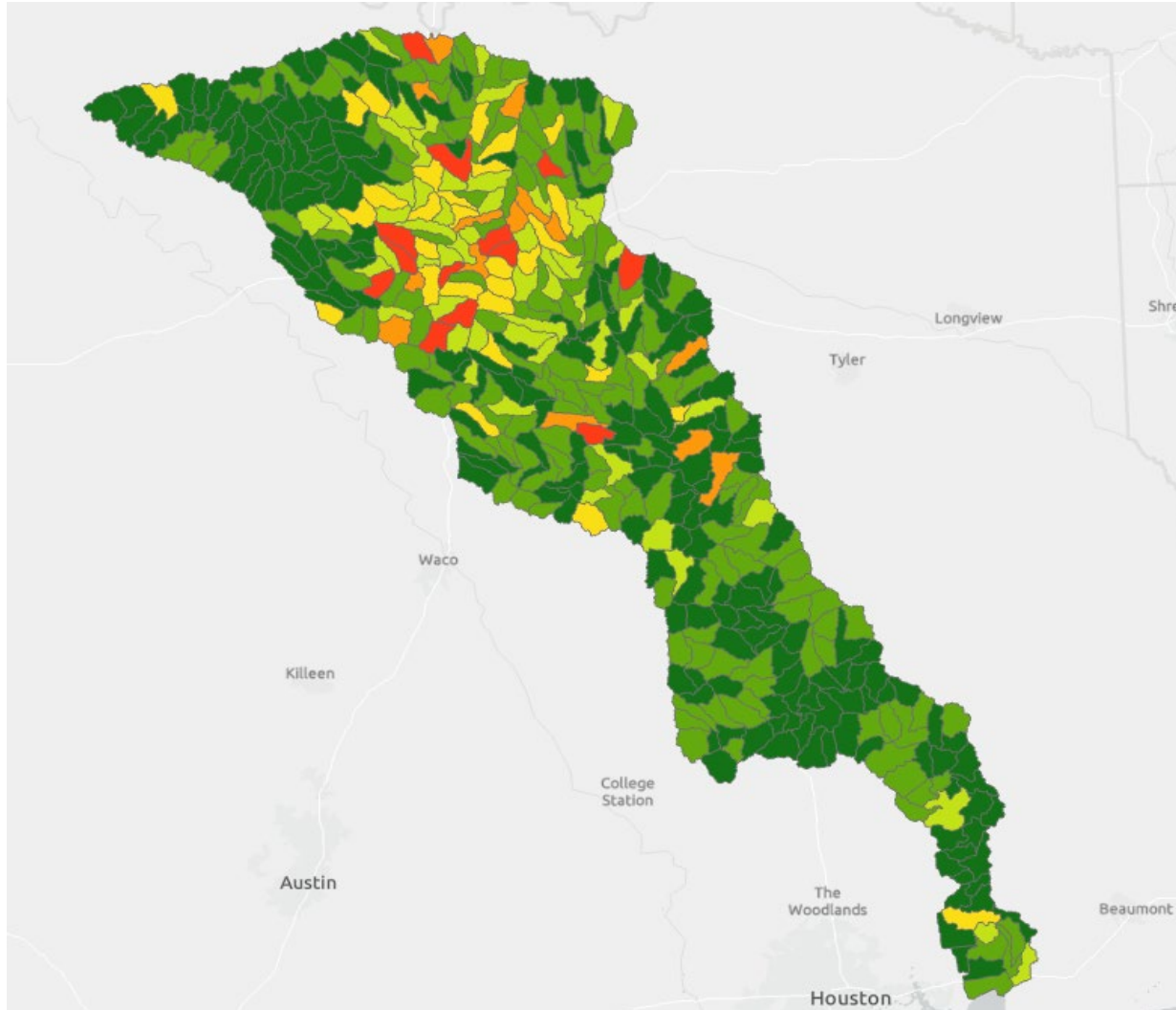




Consider approval of Technical  
Memorandum

# Task 4A - Scoring Categories

## Historic Storms - Frequency



Questions were raised during previous RFPG meeting:

- What is considered a storm event?
- What is the associated frequency of these storms?
- Is this dataset reliable?
- How sensitive are the results to this category?



**Storm Events Database**

**Data Access**

- [Search](#)
- [Bulk Data Download \(CSV\)](#)
- [Storm Data Publication](#)

**Documentation**

- [Database Details](#)
- [Version History](#)
- [Storm Data FAQ](#)
- [NOAA's NWS Documentation](#)
- [Tornado EF Scale](#)

**External Resources**

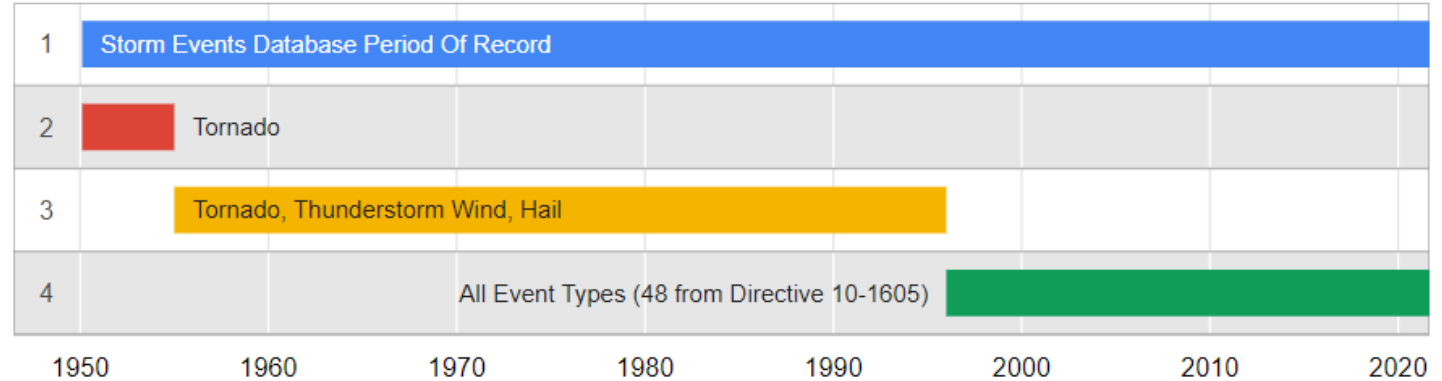
- [NOAA's SPC Reports](#)
- [NOAA's SPC WCM Page](#)
- [NOAA's NWS Damage Assessment Toolkit](#)
- [NOAA's Tsunami Database](#)
- [ESRI/FEMA Civil Air Patrol Images](#)
- [SHELDUS](#)
- [USDA Cause of Loss Data](#)

## Storm Events Database

The database currently contains data from **January 1950 to August 2021**, as entered by NOAA's National Weather Service (NWS). Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The following timelines show the different time spans for each period of unique data collection and processing procedures. Select below for detailed descriptions of each data collection type.

<a href="#">Event Types</a>	<a href="#">Collection Sources</a>	<a href="#">Supplemental Information</a>
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**Event Types Available:**





# Storm Events Database

Storm Data Disclaimer. Storm Data is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents:

- a. The occurrence of storms and other significant weather phenomena having **sufficient intensity** to cause loss of life, injuries, significant property damage, and/or disruption to commerce;
- b. Rare, unusual, weather phenomena that generate media attention, such as snow flurries in South Florida or the San Diego coastal area; and
- c. Other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occur in connection with another event.

Source:

*NATIONAL WEATHER SERVICE INSTRUCTION 10-1605*

*JULY 26, 2021*

*Performance and Evaluation, NWSPD 10-16*

*STORM DATA PREPARATION*

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

# Storm Events Database Categories (48)

## 2.1.1 Storm Data Event Table.

Event Name	Designator	Event Name	Designator	Event Name	Designator	Event Name	Designator
Astronomical Low Tide	Z	Freezing Fog	Z	Marine Lightning	M	Thunderstorm Wind	C
Avalanche	Z	Hail	C	Marine Strong Wind	M	Tornado	C
Blizzard	Z	Heat	Z	Marine Thunderstorm Wind	M	Tropical Depression	Z
Coastal Flood	Z	Heavy Rain	C	Marine Tropical Depression	M	Tropical Storm	Z
Cold/Wind Chill	Z	Heavy Snow	Z	Marine Tropical Storm	M	Tsunami	Z
Debris Flow	C	High Surf	Z	Rip Current	Z	Volcanic Ash	Z
Dense Fog	Z	High Wind	Z	Seiche	Z	Waterspout	M
Dense Smoke	Z	Hurricane (Typhoon)	Z	Sleet	Z	Wildfire	Z
Drought	Z	Ice Storm	Z	Sneaker Wave	Z	Winter Storm	Z
Dust Devil	C	Lake-Effect Snow	Z	Storm Surge/Tide	Z	Winter Weather	Z
Dust Storm	Z	Lakeshore Flood	Z	Strong Wind	Z		
Excessive Heat	Z	Lightning	C				
Extreme Cold/Wind Chill	Z	Marine Dense Fog	M				
Flash Flood	C	Marine Hail	M				
Flood	C	Marine Heavy Freezing Spray	M				
Frost/Freeze	Z	Marine High Wind	M				
Funnel Cloud	C	Marine Hurricane/Typhoon	M				

Legend: There are three designators: C – County/Parish; Z – Zone; and M – Marine Zone.

**Table 1.** Storm Data Event Table.

# Storm Events (837 between 1996 – 2020)

## Flood

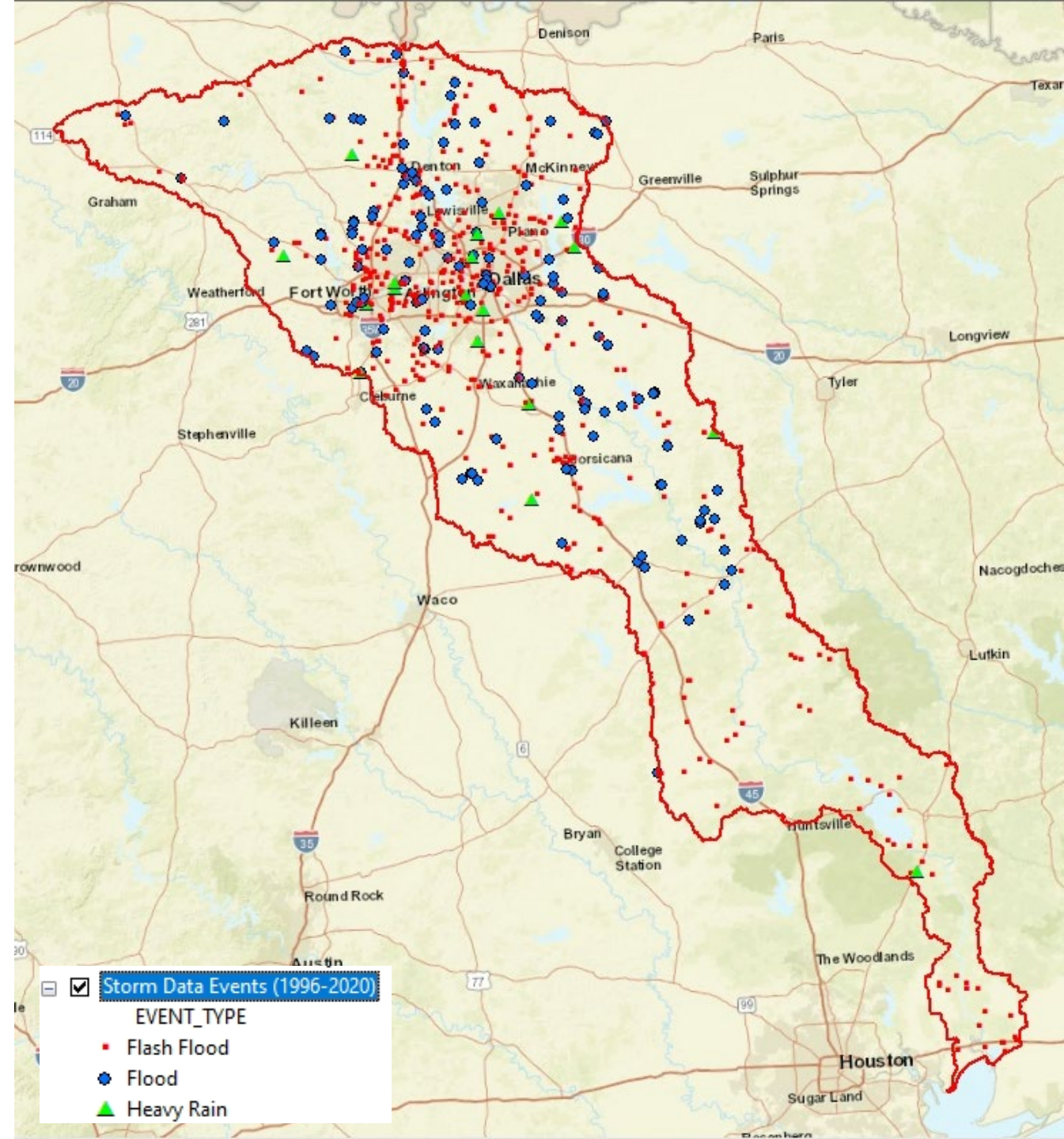
- 158 Events
  - Dam / Levee Break – 3
  - Heavy Rain – 152
  - Heavy Rain / Tropical Storm - 3

## Flash Flood

- 660 Events
  - Dam / Levee Break – 1
  - Heavy Rain – 628
  - Heavy Rain / Tropical Storm – 15
  - Other - 16

## Heavy Rain

- 19 Events

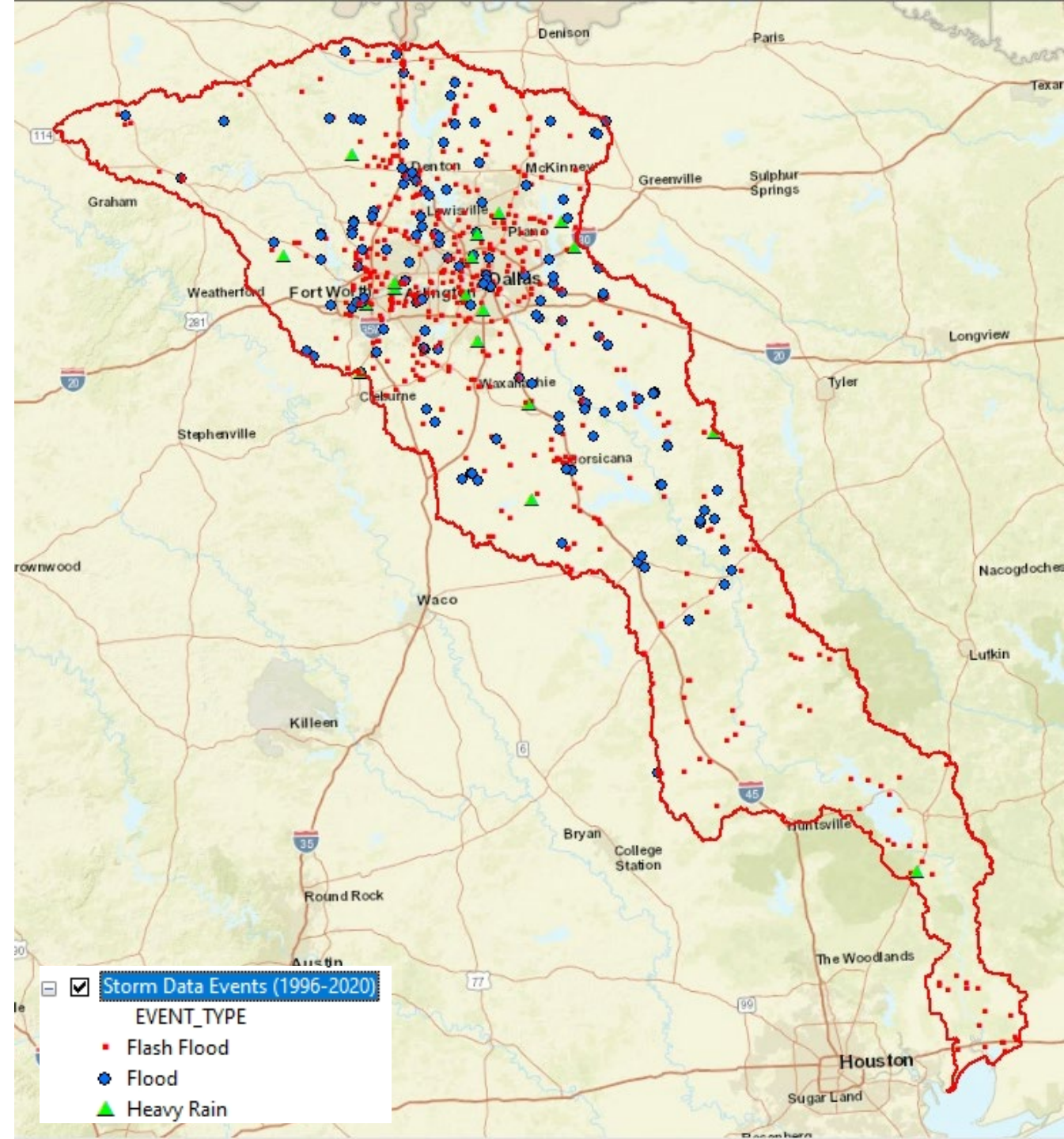




# Storm Events (837 between 1996 – 2020)

## Sources (45)

- 911 Call Center
- Automated Weather Sensor System
- Broadcast Media
- County Official
- Department of Highways
- Emergency Manager
- Fire Department/Rescue
- Law Enforcement
- Mesonet
- Newspaper
- National Weather Service Employee
- Official NWS Observations
- Public
- River / Stream gage
- Social Media
- Trained Spotter





# Storm Events Narrative Examples

“Flash flooding after a severe thunderstorm led to a man being swept away near the railroad tracks.”

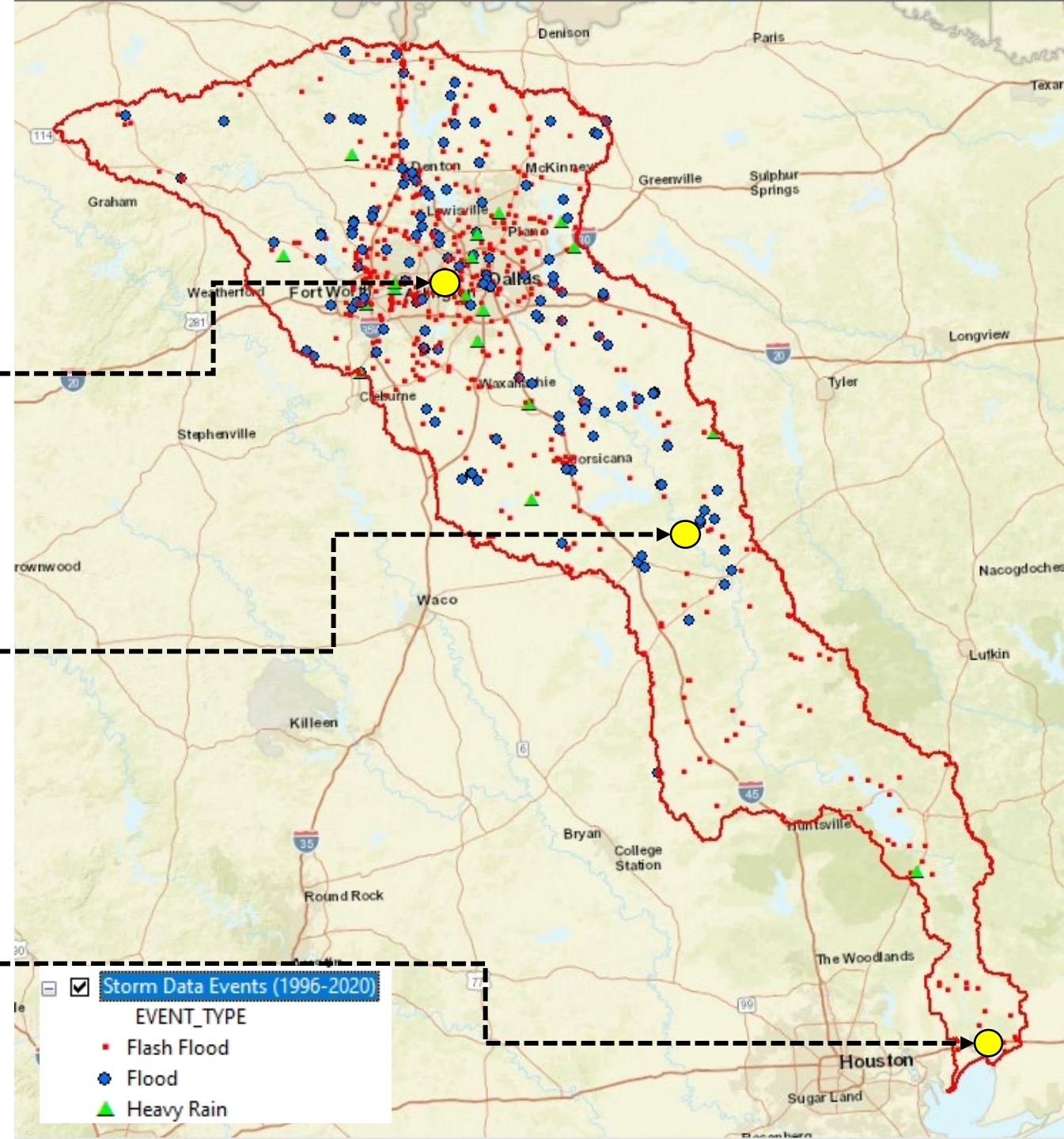
Source - Broadcast Media

“Numerous roads were closed due to flash flooding that resulted from heavy thunderstorms that produced 4-8in of rain across the county in less than 8 hrs. Portions of HW 79 in Palestine were closed.”

Source - Emergency Manager

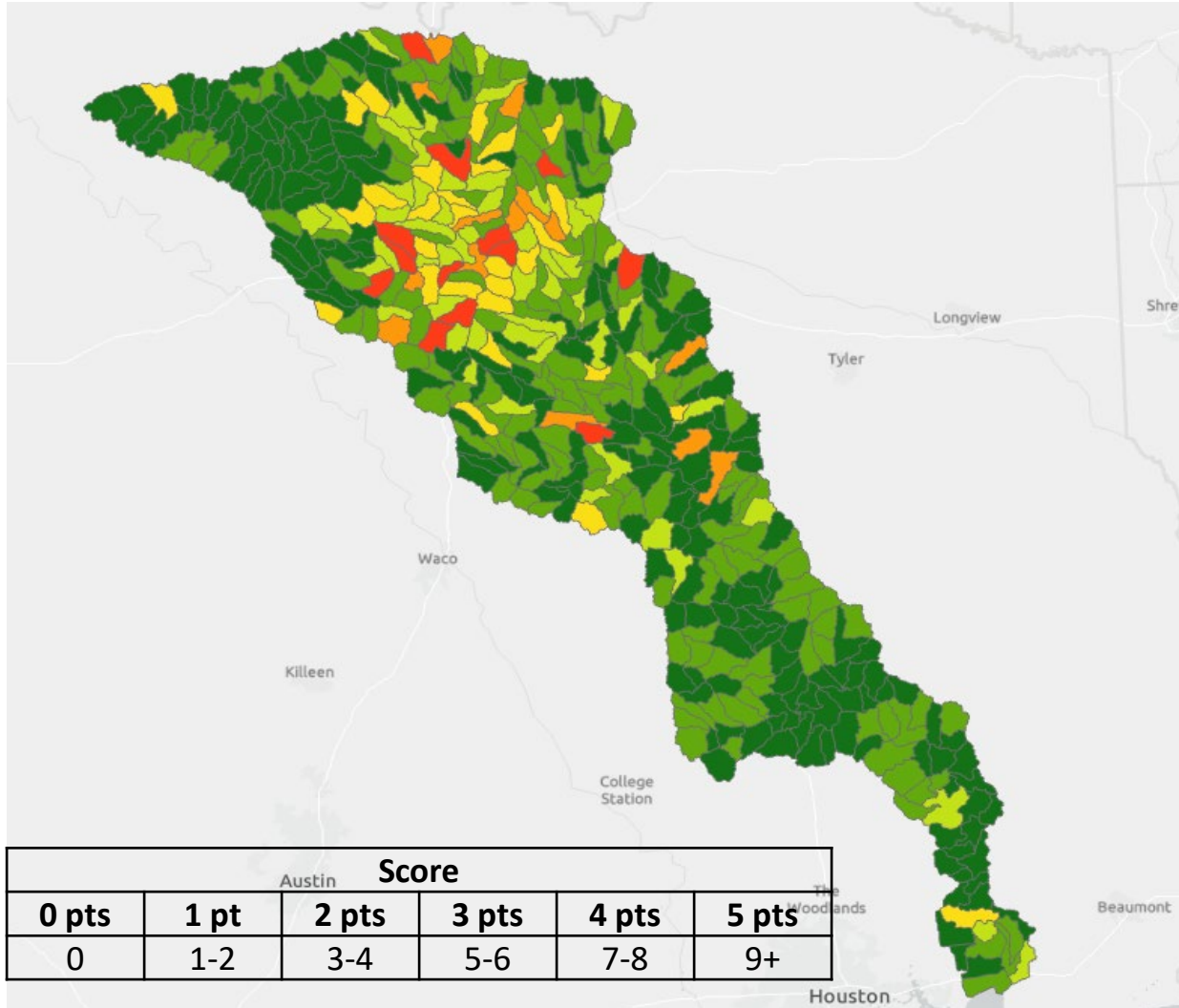
“Heavy rainfall due to slow moving thunderstorms produced brief road closures along Interstate 10, with 4ft of water reported over the road at the intersection of Highway 61 and the interstate.”

Source - Law Enforcement



# Task 4A – Storm Events Database

## Storm Data Events



Based on previous discussion, the TC recommends keeping this Category in the Task 4A process.

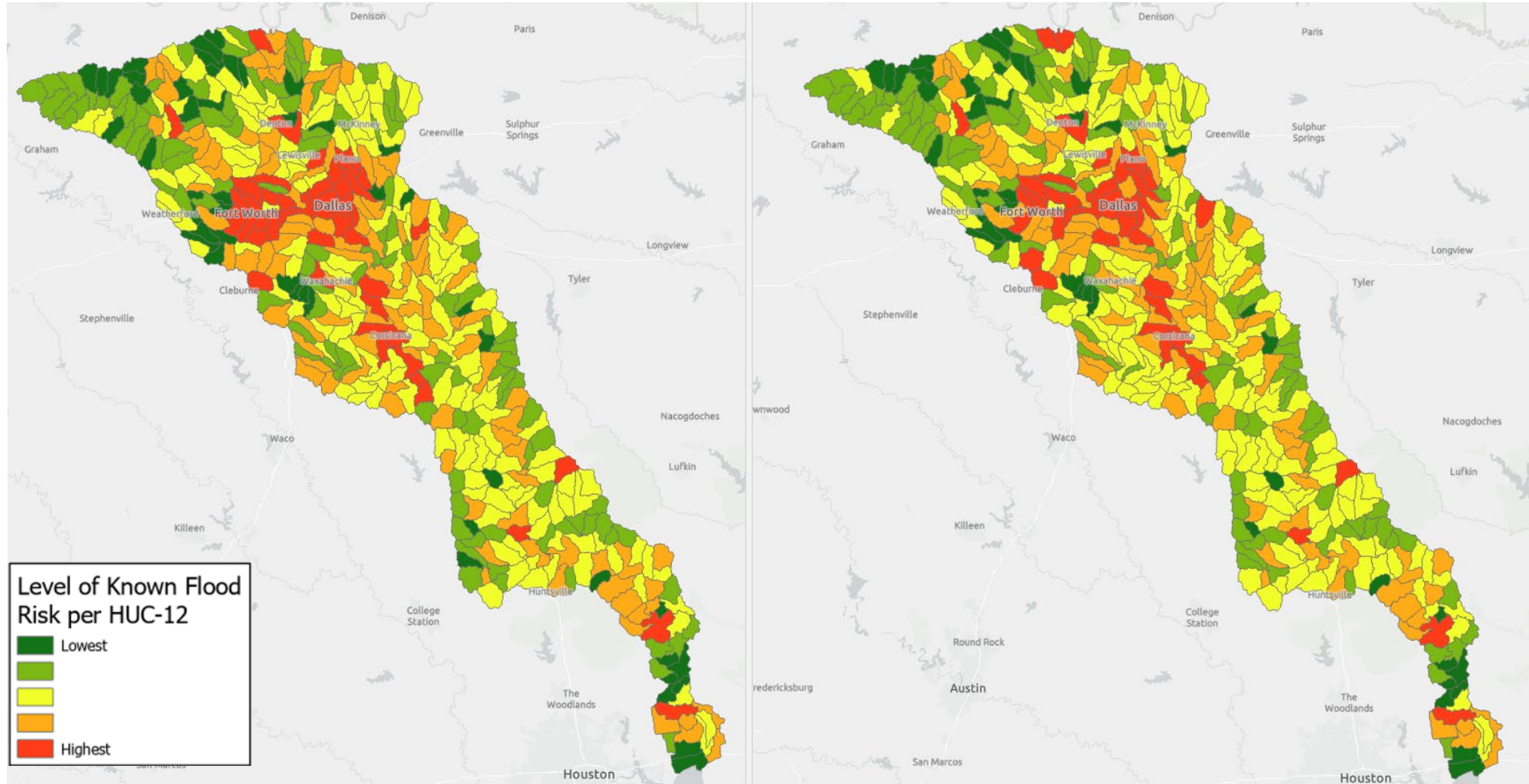


# Task 4A Results – Sensitivity Comparison

14 Categories  
(current)

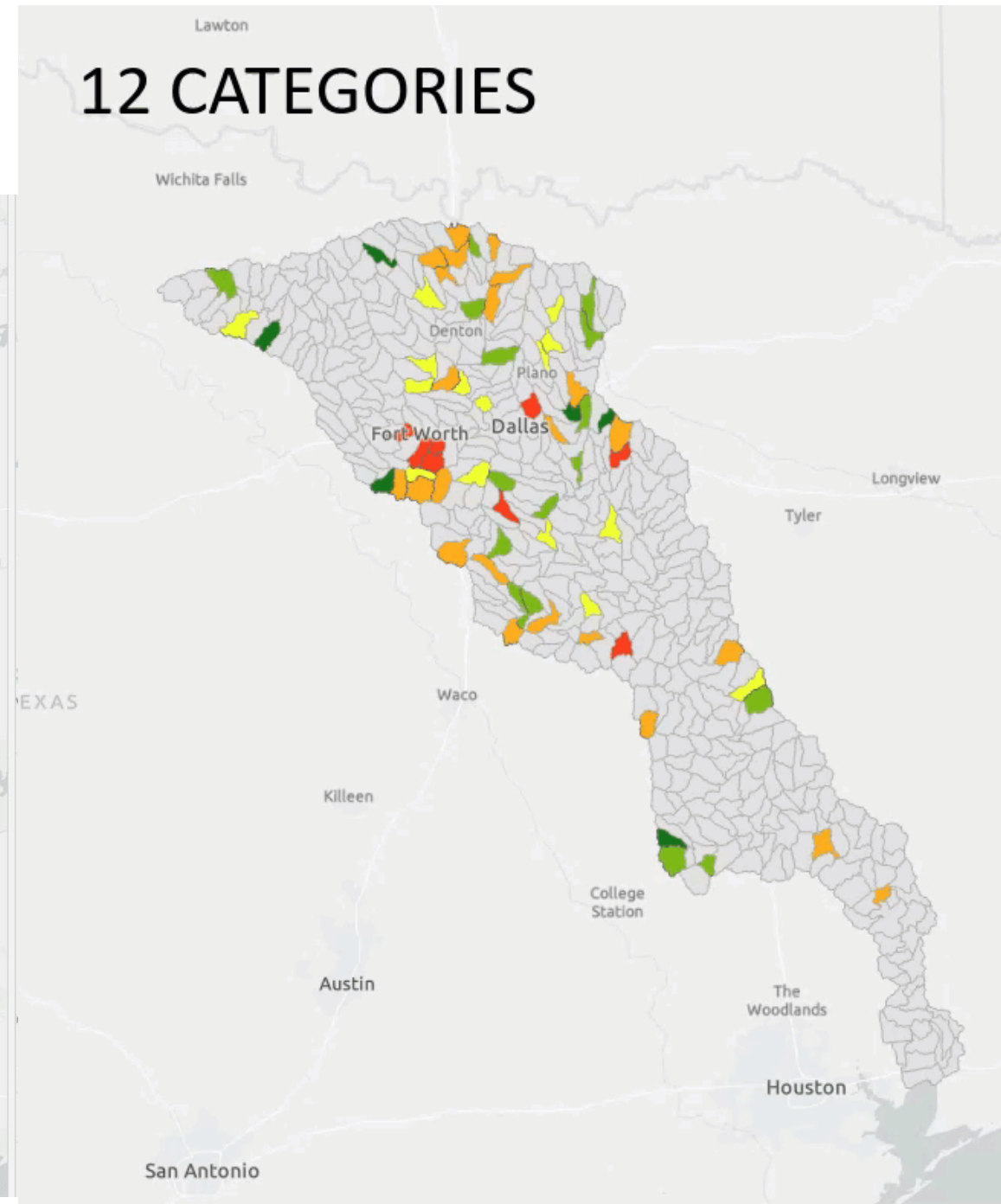
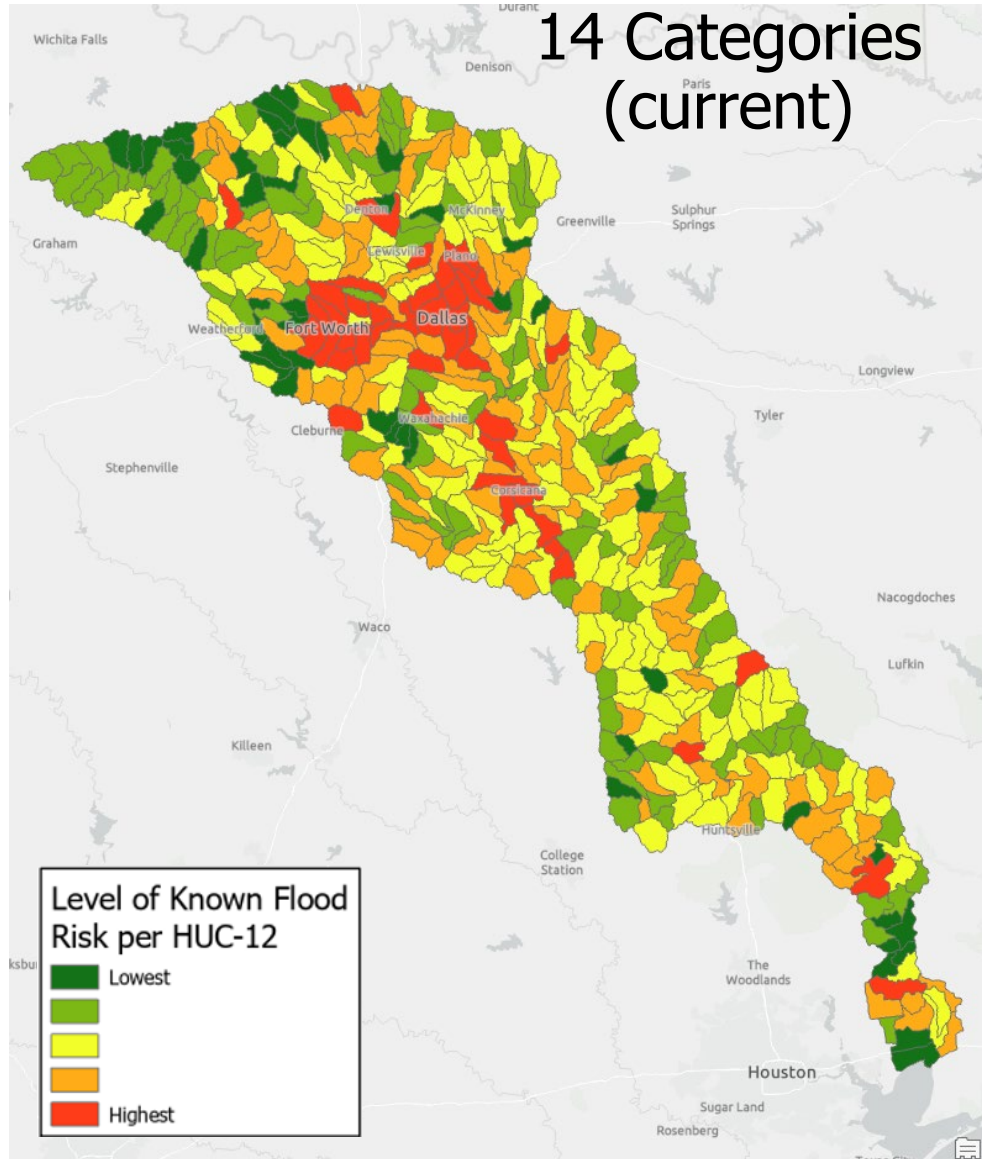
12 Categories  
(excludes Storm Events Database)

- Preliminary assessment:
  - 10% red
  - 30% red/orange
- Red/orange = highest known flood risk level
- Green = less known flood risk level
- Low score does **not** mean there is no flood risk.



# Task 4A Results

## Sensitivity Comparison





# LOOK-AHEAD

**January 7, 2022** (no meeting)

- Consultant submits Tech Memo to TWDB

**End of January 2022** 

- RFPG begins review of draft Tech Memo Addendum

**February 17, 2022**

- RFPG approves Tech Memo Addendum
- Consultant introduces Chapters 5, 6 & 7


**March 7, 2022** (no meeting)

- Consultant submits Tech Memo Addendum to TWDB




**April 21, 2022**

- RFPG reviews Chapter 2
- RFPG reviews Chapter 4
- Consultant provides updates on Chapters 5, 6 & 7
- Consultant introduces Chapters 8, 9 & 10

Notes:  indicates target date.


**Yellow highlight** indicates hard deadline.



8. Consider establishing  
Technical Subcommittee(s)




## 9. Updates from adjoining coastal regions



# 10. Updates from Planning Group Sponsor





11. Consider approval of  
reimbursement policy

Section: Region 3 Trinity Regional Flood Planning Group (RFPG) Bylaws ARTICLE XIII Compensation/Reimbursement

Subject: Planning Member Travel Expenses Policy

Originator: Region 3 Trinity RFPG Planning Group Sponsor

Date Issued: December 16, 2021

Revision Date: Original Issuance

Approval Level: Voting Members of Region 3 Trinity RFPG

## 1. Overview

Members of the Region 3 Trinity Regional Flood Planning Group (RFPG) are able to be reimbursed for eligible travel expenses, as authorized by the General Appropriations Act, and as limited by the Texas Water Development Board (TWDB) regional flood planning grant contract for attendance at a posted meeting of the RFPG. All travel expenses must be documented by the members and submitted to the Chair and the planning group sponsor. The Chair of the RFPG must certify, in a public meeting, that the travel expenses are eligible for reimbursement and are correct and necessary before the planning group sponsor can issue reimbursement to the petitioning member(s) and submit reimbursement request(s) to the TWDB.

## 2. Purpose

The purpose of this policy is to outline eligible travel expenses and the necessary information and steps that must be taken in order to process reimbursement requests. Eligible travel expenses are defined as eligible mileage expenses.

## 3. Scope

This policy applies to the planning members of the Region 3 Trinity RFPG.

## 4. General Policy

- 4.1. Mileage expenses are eligible for reimbursement only for attendance at a posted meeting of the RFPG unless the travel is specifically authorized by the RFPG and Executive Administrator (EA) of TWDB.
- 4.2. RFPG members must submit supporting documentation stating mileage expenses cannot be reimbursed by any other entity or planning group sponsor.
- 4.3. Certification of eligible mileage expenses must be made by the Chairperson during a public meeting pursuant to [Title 31 TAC §361.72\(b\)](#).
- 4.4. Mileage must be reasonable and appropriate from the point of departure to the location of the RFPG meeting and final destination at the conclusion of the meeting.
- 4.5. Supporting documentation includes:

- 4.5.1. Mileage from point of departure to destination(s) with a map showing the route taken (e.g. Google Maps) and odometer readings. An example mileage report can be found in Appendix A.
- 4.6. Reimbursement of eligible mileage is limited to the maximum amounts authorized at the current rate for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2019, Article IX, Part 5, as amended or superseded and can be found at <https://fmx.cpa.texas.gov/fmx/travel/texttravel/>.

# Appendix A





## 12. Administrative costs



# 13. General public comments

Limit 3 minutes per person



# 14. Announcements





15. Meeting date for next meeting



## 16. Agenda items for next meeting



17. Adjourn