Region 2 Lower Red-Sulphur-Cypress Regional Flood Planning Group

July 8, 2021

2:00 pm

Northeast Texas Community College

The Community Room – (HUM 101),

2886 FM 1735, Chapel Hill Road,

Mt. Pleasant, TX 75455.

or

Via teleconference/webinar

Use the following information to register for the meeting:

https://zoom.us/meeting/register/tJIoce-qpjkuHNLlzkOlq0vOLPEoDNpahv9A

After registering, you will receive a confirmation email containing information about joining the meeting.

If you experience issues while registering or do not have access to a computer, please contact Paul Prange no less than two (2) workdays prior to the meeting at 903.255.3519 or pprange@atcog.org.

Agenda:

1. Call to Order
2. Welcome
3. Confirmation of attendees / determination of quorum
4. Public comments – limit 3 minutes per person

Action Items

5. Consider approval of minutes for the meeting held Thursday, May 6, 2021. (p 6)
6. Discuss and Consider Action to appointing Mary Beth Rudel (ATCOG Deputy Director) as the Public Information Coordinator to fulfill requirements per Texas Government Code §551.005 (p 13)
7. Discuss and Consider action to add additional non-voting positions that may be needed to ensure adequate representation from the interest in the region (p 14)

Presentations

8. Texas Water Development Board Update
9. US Army Corps of Engineers Presentation: Dam Operations (p 15)
10. Region 1 Canadian-Upper Red Regional Flood Planning Group Updates
11. Pre-Planning Public Input – Texas Water Development Board: (p 38)
    a. TWDB Updates
    b. The RFPG is soliciting public input regarding suggestions and recommendations as to issues, provisions, projects, and strategies that should be considered during the

flood planning cycle and/or input on the development of the regional flood plan (as required per Texas Water Code §16.062(d) and 31 Texas Administrative Code §361.12(a)(4))

Workshop

12. Halff Associates led workshop: (p 46)
13. Discussion of Scope and Schedule overview for the Region 2 Flood Plan
    a. Task 1 – Planning Area Description
        i. Overview
        ii. Methodology
    b. Task 2A - Existing Condition Flood Risk Analyses
        i. Objectives
        ii. Approach
    c. Task 2B - Future Condition Flood Risk Analyses
        i. Objectives
        ii. Approach
    d. Task 3A and 3B – Recommended Floodplain Management Practices and Goals
        i. Objectives
        ii. Process and Schedule
        iii. RFPG Decisions Needed
        iv. Approach
    e. Outreach Approach
        i. Recap on data needed
        ii. Outreach Methods Planned
        iii. Stakeholders list
    f. Schedule
        i. Overview
        ii. Future Meeting Plan

Other Business

14. Update from Planning Group Sponsor
15. Consider date and agenda items for next meeting
16. Adjourn

If you wish to provide written comments prior to or after the meeting, please email your comments to pprange@atcog.org and include "Region 2 RFPG Meeting" in the subject line of the email – OR – you may mail your comments to Region 2 RFPG, c/o ATCOG – Paul Prange, 4808 Elizabeth St, Texarkana, TX 75503.

If you wish to provide oral public comments at the meeting, please submit a request via email to pprange@atcog.org , include "Region 2 RFPG Meeting Public Comment Request" at least 2 hours prior to the meeting, and follow the registration instructions at top of page 1 of the Agenda.

Additional information may be obtained from: www.texasfloodregion2.org, or by contacting Paul Prange at pprange@atcog.org, 903-832-8636, -or- Region 2 RFPG, c/o ATCOG, 4808 Elizabeth St, Texarkana, TX 75503

All meeting agendas and notices will be posted on our website at www.texsfloodregion2.org. If you wish to be notified electronically of RFPG activities, please submit a request to pprange@atcog.org, include “Request for notification of Region 2 RFPG activities”. This request will be honored via email only unless reasonable accommodations are needed.

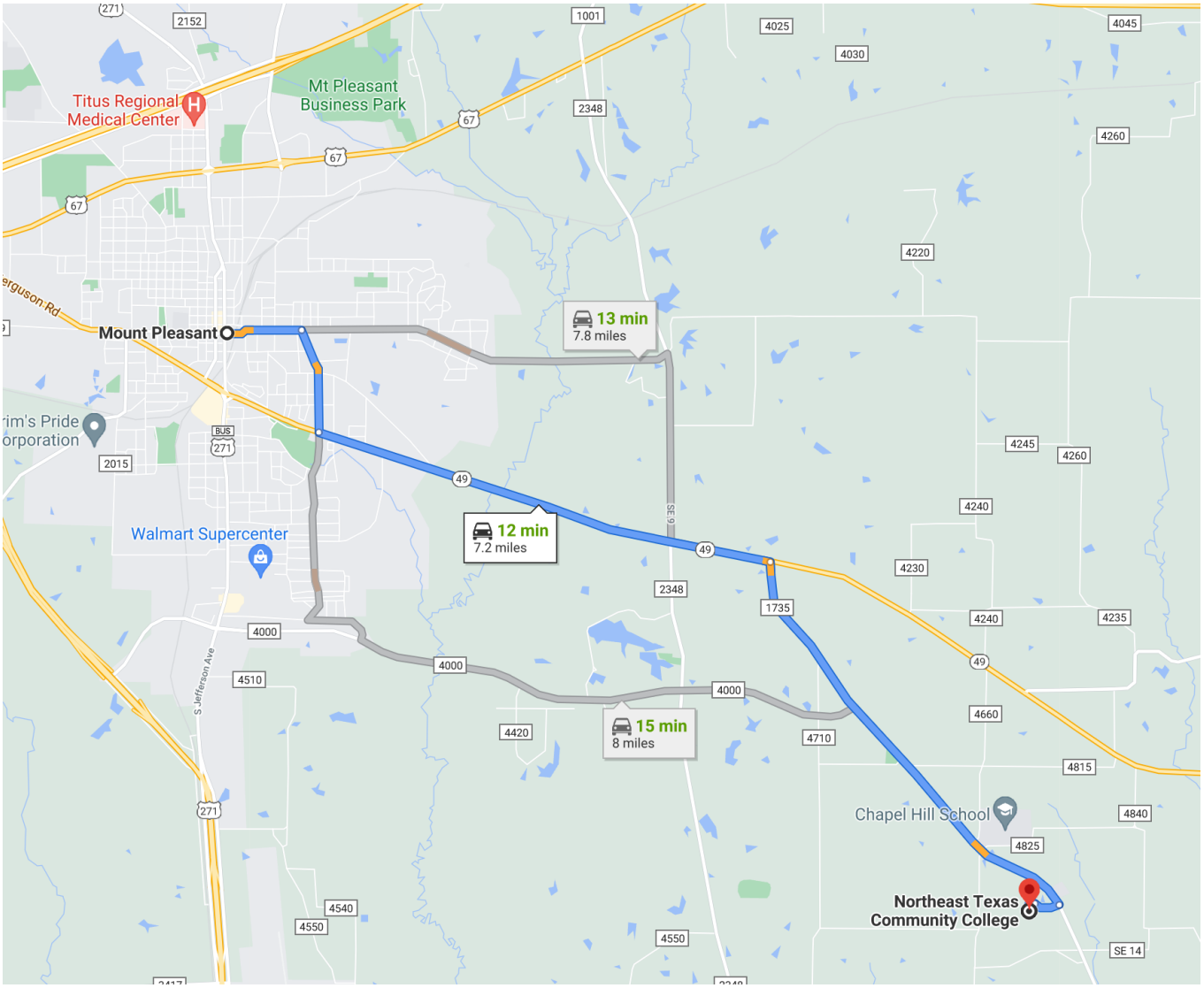
Directions to Northeast Texas Community College:

From Mt. Pleasant, take Hwy 49 to FM 1735. From the intersection of Hwy 49 and FM 1735, travel south approx 2.5 miles to the north entrance of the campus on the right.

From the north entrance, the Humanities Building (HUM) is the first building you will see. Parking will be to your right and the entrance will be on the east side (left and towards the back as you walk toward the building after parking-see blue line on campus map)

You may also enter from the main entrance (College Rd.) and park in the visitor parking circle.

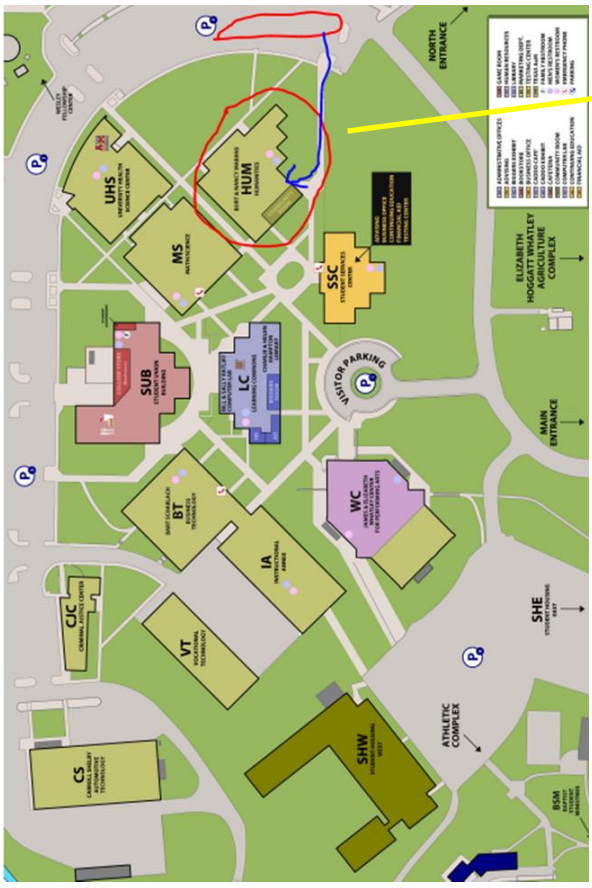
If you need additional help with directions, please contact Paul or Chris.



North Entrance

Humanities Bldg (HUM) 101

College Rd. (Main) Entrance



Sidewalk from North Parking Lot to meeting room

Meeting Minutes
Region 2 Lower Red-Sulphur-Cypress Flood Planning Group Meeting
May 6, 2021
2:00 p.m.
Via Zoom Webinar/Teleconference

Roll Call:

Voting Member	Interest Category	Present (x) /Absent ( ) / Alternate Present (*)
Preston Ingram (William)	Agricultural interests	X
Andy Endsley	Counties	X
W. Greg Carter	Electric generating utilities	X
Laura-Ashley Overdyke	Environmental interests	X
Clark Crandall	Industries	X
Dustin Henslee	Municipalities	X
Kirby Hollingsworth	Public	X
R. Reeves Hayter	River authorities	X
Kelly Mitchell	Small business	X
Joseph W. Weir III	Water districts	X
Susan Whitfield	Water utilities	X

Non-voting Member	Agency	Present(x)/Absent( )/ Alternate Present (*)
James (Clay) Shipes	Texas Parks and Wildlife Department	
Brian Hurtuk	Texas Division of Emergency Management	X
Darrell Dean	Texas Department of Agriculture	X
Tony Resendez	Texas State Soil and Water Conservation Board	X
Trey Bahm	General Land Office	X
Anita Machiavello	Texas Water Development Board (TWDB)	X
Michelle Havelka	Texas Commission on Environmental Quality	X
Darlene Prochaska	USACE, Fort Worth District	X
Travis Wilsey	USACE, Tulsa District	X
Randy Whiteman	RFPG 1 Liaison	

Quorum:
Quorum: **Yes**
Number of voting members or alternates representing voting members present: **11**
Number required for quorum per current voting membership of **11**: **6**

Other Meeting Attendees: **

Chris Brown - ATCOG
Paul Prange - ATCOG
Mary Beth Rudel - ATCOG
Joshua McClure – Halff Associates Team
David Rivera – Halff Associates Team
Jim Keith – Halff Associates Team
Stephanie Griffin – Halff Associates Team
Ben Pylant – Halff Associates Team
Parker Moore – Halff Associates Team
Matt Stahl – Halff Associates Team
Ryke Moore - TWDB

**Meeting attendee names were gathered from those who entered information for joining the Zoom meeting.

All meeting materials are available for the public at:
http://www.twdb.texas.gov/flood/planning/regions/schedule.asp.

AGENDA ITEM NO. 1: Call to Order
Reeves Hayter called the meeting to order at 2:06p.m. A roll call of the planning group members was taken to record attendance and a quorum was established prior to calling the meeting to order.

AGENDA ITEM NO. 2: Welcome
Reeves Hayter welcomed members to the meeting and asked ATCOG staff member, Paul Prange to conduct a roll call of attendees.

AGENDA ITEM NO. 3: Confirmation of Attendees / determination of a quorum
Each present voting and non-voting member of the Region 2 Lower Red-Sulphur-Cypress RFPG introduced themselves, establishing that a quorum had been met. All voting members were present and only two non-voting members were absent.

AGENDA ITEM NO. 4: Public Comments – limit 3 minutes per person
Reeves Hayter opened the floor to public comments. No public comments were given.

ACTION ITEMS

AGENDA ITEM NO. 5: Consider approval of minutes for the meeting held Thursday, April 1, 2021:
Reeves Hayter opened the floor for discussion and approval of the minutes from the previous meeting. No discussion took place among the board members. A motion was made by Greg Carter and was seconded by Clark Crandall to approve the minutes as presented. The motion carried unanimously.

AGENDA ITEM NO. 6: Discuss and Consider action on Professional Services Contract between Halff Associates and the Ark-Tex Council of Governments to perform Technical Consulting Services necessary to develop the 2003 Regional Flood Plan.
Reeves Hayter announced that the Region 2 Lower Red-Sulphur-Cypress Flood Planning Group selected Halff Associates as the technical consultant at the meeting held on April 1, 2021 and authorized the Ark-Tex Council of Governments (ATCOG) to initiate a contract between ATCOG and Halff Associates. Mr. Hayter then asked Chris Brown to elaborate on the contract being developed. Mr. Brown provided a screenshot of the draft contract for the RFPG 2 board members to review. Mr. Brown stated that much of the technical language will be reflected in the Exhibits to the contract, which are currently under review. Mr. Brown announced that the contract will require approval from the ATCOG Board of Directors, in addition to the Texas Water Development Board (TWDB) before being officially executed. Mr. Brown then asked the RFPG 2 board members for a recommendation to submit the contract to the ATCOG Board of Directors for approval. Mr. Brown then asked Joshua McClure with Halff Associates if he would like to provide additional comments regarding the contract. Mr. McClure stated that portions of the public outreach budget would be utilized by ATCOG and that the TWDB allows up to 35% deviation in each budget category, if needed. Mr. McClure also stated that the overall scope of work provided by the TWDB would be followed.

Chris Brown opened the floor for questions and comments from the board members. Reeves Hayter asked Chris Brown about Article XIX regarding a possible typographical error. Joshua McClure stated that the number listed as $1,00,000 should actually be $1,000,000. Mr. Hayter then asked Mr. McClure

and Mr. Brown about Article XIII which referenced Travis County, and whether or not this was a TWDB requirement. Mr. McClure stated that it did not necessarily need to be Travis County. Mr. Brown stated that the language could be amended in the contract between ATCOG and Halff Associates in accordance with TWDB guidelines.

Chris Brown asked Reeves Hayter for a recommendation from the RFPG 2 Board of Directors to the ATCOG Board of Directors for approval of the contract between ATCOG and Halff Associates, recognizing the two changes requested in Articles XIX and XIII. Mr. Hayter asked for a motion and a second in favor of this request. A motion was made by Andy Endsley and seconded by Greg Carter. The motion carried.

PRESENTATIONS

AGENDA ITEM NO. 7: Pre-Planning Public Input – Texas Water Development Board:

a. **The RFPG is soliciting public input regarding suggestions and recommendations as to issues, provisions, projects and strategies that should be considered during the flood planning cycle and/or input on the development of the regional flood plan (as required per Texas Water Code 16.062(d) and 31 Texas Administrative Code 361.12(a)(4))**

Reeves Hayter turned the floor over to Chris Brown who introduced Ryke Moore with the TWDB. Anita Machiavello asked if Mr. Moore could provide an update to the RFPG 2 board members and Mr. Brown agreed. Mr. Moore stated that the TWDB has the final guidelines posted on their website for the regional flood planning process. Mr. Moore also stated that the TWDB needs to review and approve an executed contract between ATCOG and Halff Associates.

Ryke Moore conducted a slide presentation focusing on the pre-planning meeting background, regional flood planning and the flood planning timeline. Mr. Moore also discussed the key tasks of the Regional Flood Planning Groups and presented information relating to flood mitigation practices, including examples of both structural and non-structural mitigation strategies. Finally, Mr. Moore stressed the importance of public input in the flood planning process and stated that there will be multiple opportunities for public input throughout the development of the regional flood plan. Reeves Hayter asked Chris Brown to allow public comment on this agenda item. Laura-Ashley Overdyke commented that she was glad to hear that structural and non-structural flood mitigation strategies would be considered during the development of the regional flood plan.

WORKSHOP

AGENDA ITEM NO. 8: Halff Associates led workshop:

a. **Flood Planning Overview**
   i. **Review and discuss the flood planning process**
   ii. **Draft Schedule overview**
   iii. **Importance of public and community involvement**
   iv. **Roles of the RFPG and Halff Associates**

b. **Stakeholder engagement**
   i. **Present current engagement plan**

ii. Identify key stakeholders

iii. Discuss ways to generate public interest and receive input

c. Data collection

i. Present the upcoming online community and public surveys

ii. Discuss known data sources

d. Establish Region 2 schedule

Reeves Hayter turned the floor over to Joshua McClure, Project Manager with Halff Associates. Mr. McClure introduced his team members and allowed them to provide statements to the RFPG 2 board members regarding their individual responsibilities in developing the Region 2 Flood Plan. Mr. McClure then identified the objectives and agenda required for the development of the flood plan.

Joshua McClure presented the flood planning overview by outlining the state flood plan process consisting of data collection (Phase I), floodplain management practices and goals (Phase II), floodplain mitigation and management (Phase III), regional flood plan development (Phase IV) and communications and plan adoption (Phase V). These tasks were broken down along a timeline beginning in May, 2021 and ending in January, 2023. Mr. McClure then presented information about what to expect from the State Flood Plan, explaining that it will not solve current flooding but will likely reduce future flooding through the compilation of available data and creating pathways to future state and federal funding.

Joshua McClure then presented information comparing flood planning to water planning and highlighted the key differences. Mr. McClure outlined the responsibilities of the RFPG and Halff Associates, stressing that this is our plan for our region and that Halff Associates is here to make sure the plan is successful. Mr. McClure presented the 2021 schedule containing the meeting content and the requirements of the RFPG and Halff Associates on a monthly basis from June, 2021 through July 2022 and stated that the TWDB requires each task to be a separate chapter in the flood plan. Laura-Ashley Overdyke thanked Mr. McClure for breaking down the information into chapters and providing them to the RFPG for review each month, prior to the next board meeting. Ben Pylant with Halff Associates stated that he would like to encourage the RFPG 2 board members to bring their own perspective and knowledge to the table during the development of this regional flood plan.

Reeves Hayter announced that in 2018 the TWDB received 285 applications to fund flood mitigation projects and only 3 of the applicants were located within region 2. Mr. Hayter emphasized the importance of community engagement with public stakeholders to increase the probability of receiving future funding for flood mitigation projects. Ben Pylant with Halff Associates stated that several flood projects have been conducted in the Texarkana area and Greg Carter asked if these projects can be shared with the RFPG 2 board members at the next meeting. Joshua McClure stated that he would provide this information, as there are a lack of shovel ready projects currently identified with region 2.

Joshua McClure moved on to the importance of public engagement in the flood planning process focusing on data gaps, adequate representation of small communities and preparing flood safe communities. Greg Carter stated that the smaller communities will be the most difficult to make contact with to obtain accurate data. Mr. McClure identified multiple stakeholders in the flood planning

process including floodplain administrators, emergency managers, community executives, regional organizations and community organizations. Mr. McClure then asked the RFPG 2 board members if any other groups should be included for public engagement. Laura-Ashley Overdyke stated that the Caddo Lake Institute has utilized the services of Trungale Engineering and the USACE, Fort Worth District to produce data specifically for the Caddo Lake area. Reeves Hayter mentioned that the Public Works Administrators in smaller communities would be a good source of information and Mr. McClure asked Chris Brown if ATCOG had access to a regional contact list. Mr. Brown stated that ATCOG has a list of all of the City Secretaries who would be able to gather the data for the regional flood plan, at a local level. Mr. Brown also announced that ATCOG prepares the Hazard Mitigation Plans for each of the nine counties located within the ATCOG region and the plans could contain useful information to include in the Region 2 Flood Plan.

Joshua McClure presented a public engagement plan outline which included the plan framework, goals and objectives; the collection of flood risk data; and plan preparation, review and approval to the RFPG 2 board members. Mr. McClure stated that it was very important for the communities to approve of and adopt the regional flood plan and that open communication and participation was a critical factor in accomplishing this goal. Mr. McClure then presented an overview of the data collection process which included general planning area information, existing and future flood risks, flood plan goals and known or desired FMEs, FMPs, and FMSs. Mr. McClure also presented a screenshot of the floodplain quilt which indicted areas of various flood mapping projects conducted by FEMA, TWDB and Region 2 Team Projects. Travis Wilsey with USACE, Tulsa District mentioned that the USACE has data available for the Lower Red basin. Mr. McClure stated that the USACE, Fort Worth District should have data available for the Sulphur and Cypress basins. Anita Machiavello with the TWDB stated that additional mapping data may become available in Region 2 from third parties, later this year.

Joshua McClure presented information regarding available data, contrasting what we have; existing flood risk areas, properties and buildings, base maps and topographic maps versus what's missing; portions of the floodplain quilt, urban flooding, future flood risks and known FMEs and FMPs. Matt Stahl, with Halff Associates, presented information relating to a new data collection website which will be the primary tool for data collection from communities. Mr. Stahl provided a brief tutorial of how to utilize and navigate the website, which is currently under development. Mr. McClure stated that a brochure is also being developed for marketing purposes to obtain community input throughout the regional flood planning process. Reeves Hayter asked if Halff Associates plans to physically assist some communities and personally demonstrating how to utilize this website. Mr. McClure stated that Halff Associates does plan to travel to several communities and provide the necessary assistance, as required. Discussion took place among the RFPG 2 board members and the Halff Associates team regarding the website.

Joshua McClure wrapped up the workshop by focusing on conclusions and the path forward, mentioning that there is much work to do in a short period of time and close cooperation will be needed between Halff Associates and the RFPG 2. Mr. McClure asked about the meeting format moving forward, specifically in person or virtual meetings, or both, and the frequency of the meetings. Reeves Hayter asked if the public should be invited to attend the June meeting to provide input and Mr. McClure stated that it would be better to invite the public to the July meeting, based upon the current timeline of

deliverables. Mr. Hayter then stated that the RFPG 2 June meeting should be conducted via webinar/teleconference if the public will not specifically be invited to provide input. Chris Brown asked who were actually considered to be the "public" and Mr. McClure stated that for the purposes of the data collection, the "public" referred to city and county officials and not the average person. Mr. McClure announced that a second website would be made available for the general public to participate in the flood planning process. Mr. McClure then moved on to topics for the June meeting which included Tasks 1 through 3 in the flood planning timeline of deliverables. Mr. McClure also asked the RFPG 2 board members to gather a list of key stakeholders and review a list of acronyms in order to be familiar with them at the June meeting. Chris Brown announced that ATCOG could provide a partial list of key stakeholders for region 2 and Greg Carter asked Halff Associates to provide any contact information that they already have, in order to prevent duplication of efforts

OTHER BUSINESS

A**GENDA ITEM NO. 9: Update from Planning Group Sponsor**

Reeves Hayter turned the floor over to Chris Brown for updates. Mr. Brown announced that Ryke Moore with the TWDB provided the latest information and guidelines, including exhibits which provide more detailed information relating to the individual tasks required by the TWDB. Mr. Brown forwarded the email to all RFPG 2 board members for their convenience. Mr. Brown also stated that the second required pre-planning meeting will be conducted during the June meeting in order to remain on schedule. Mr. Brown stated that public comment will be heard at all of the scheduled meetings.

AGENDA ITEM NO. 10: Consider date and agenda items for next meeting

Reeves Hayter opened the floor for discussion. The Region 2 RFPG board members agreed to conduct the next meeting on Thursday, June 3, 2021 at 2:00p.m. via webinar/teleconference. Chris Brown requested that the USACE conduct a presentation at the June meeting and Greg Carter asked if both Darlene Prochaska and Travis Wilsey could conduct presentations from their respective districts. Darlene Prochaska with USACE, Fort Worth District stated that the regional flood planning group could select a specific presentation from a list that she will provide to the board members. Mr. Brown asked Mr. McClure if Halff Associates has developed a press release and Mr. McClure stated that it was currently being developed. Mr. Carter also asked about the possibility of contacting TXDOT staff to be included in the regional flood planning process. Mr. Hayter stated that a TXDOT representative could be appointed to the non-voting member list if the board agrees.

AGENDA ITEM NO. 11: Adjourn

Reeves Hayter opened the floor to adjourn the meeting.
The board members unanimously agreed.
The vote to adjourn was passed by unanimous consent.
The meeting was adjourned at 4:12p.m. by Reeves Hayter
Approved by the Region 2 Lower Red-Sulphur-Cypress RFPG at a meeting held on 3/4/2021.

_____

Reeves Hayter, CHAIR

ATTACHMENT 2

BRIEFING PAPER - ACTION ITEM

ITEM 6:

Discuss and Consider Action to appointing Mary Beth Rudel (ATCOG Deputy Director) as the Public Information Coordinator to fulfill requirements per Texas Government Code §551.005

BACKGROUND:

Texas Government Code §552.012 allows for the designation of a public information coordinator (PIC) to satisfy the training requirements necessary for elected or appointed public officials so long as the designee is the person primarily responsible for administering the responsibilities of the governmental body.

DISCUSSION:

Organizations that are subject to the Public Information Act should have a clearly designed contact for those who wish to request information. Mary Beth Rudel, ATCOG Deputy Director, is the PIC for ATCOG. If approved, she would officially serve as the main point of contact for any public information (open records) requests for the R2-RFPG as she does for ATCOG.

It is also recommended that any requests for information request to any group member be forwarded to the official PIC for the group.

RECOMMENDATION:

Staff recommends the appointment of Mary Beth Rudel, ATCOG Deputy Director, as the public information coordinator for the Region 2 RFPG.

ATTACHMENT 3

BRIEFING PAPER - ACTION ITEM

ITEM 7:

Discuss and Consider action to add additional non-voting positions that may be needed to ensure adequate representation from the interest in the region

BACKGROUND:

In our previous meeting, it was discussed that representatives from TxDOT had been appointed to other RFPGs and they might be valuable members for Region 2.

DISCUSSION:

Consider inviting representatives from one or all of the TxDOT Districts

RECOMMENDATION:

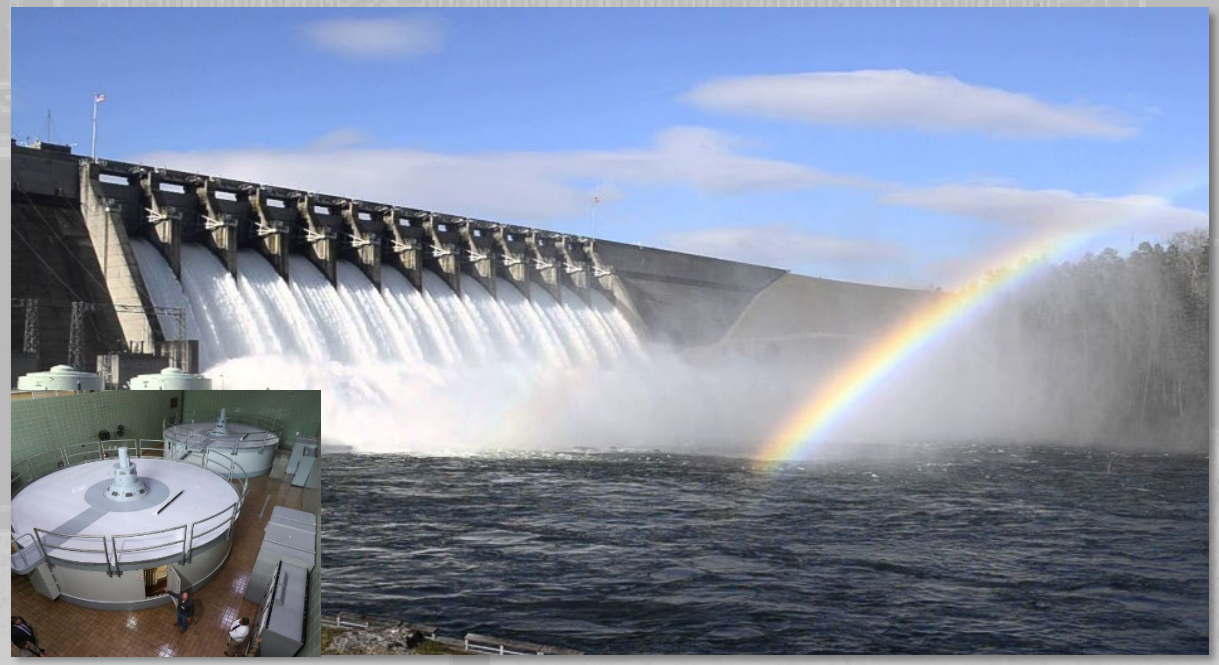
USACE LOWER RED RIVER WATER MANAGEMENT BRIEFING

By: Darlene Prochaska, P.E.
Chief, Water Management
Fort Worth District

Travis Wilsey, E.I., C.F.M.
Flood Plain Project Services
Tulsa District

Date: June 3, 2021

Audience: Lower Red River Regional Flood Planning Group # 2



US Army Corps of Engineers®

MISSION, VISION AND ORGANIZATION

USACE Mission

Deliver vital public and military engineering services; partnering in peace and war to strengthen our Nation's security, energize the economy and reduce risks from disasters

USACE Vision

Engineering solutions for our Nation's toughest challenges

- Divisions commanded by a General
- Districts commanded by a Colonel
- Generals and Colonels spend 3 years at each post
- Decentralized because of varying missions

Headquarters

9 Divisions

43 Districts

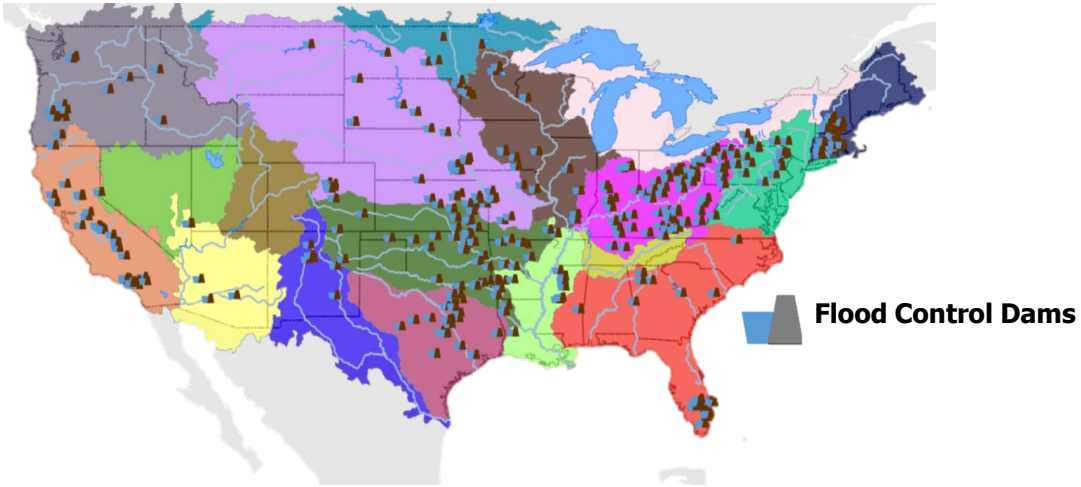
38 Water management offices

9 Centers and Labs

Countries: 130 of 196

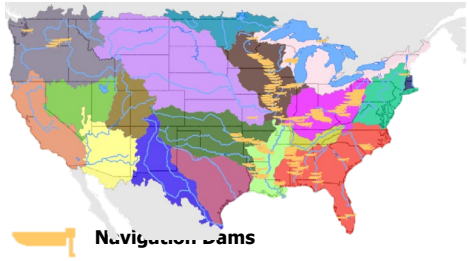
~35k DA Civilians; ~700 Military; ~$40 Billion Budget, ~$5 Billion Civil Works

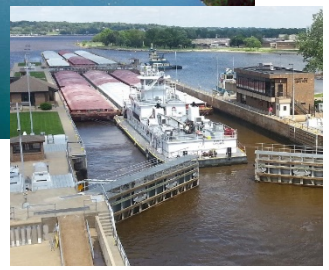
FLOOD DAMAGE REDUCTION OPERATIONS



- Did you know?
  - USACE operates 410 reservoirs with flood storage
  - $1.1 trillion damages prevented to date
  - $150 billion expenditure
  - 8:1 B/C ratio nationally
  - $18 billion in one state (TX) in a single year (2015)

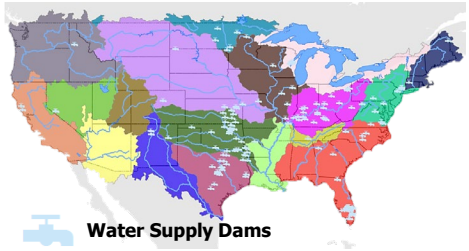
Navigation Mission

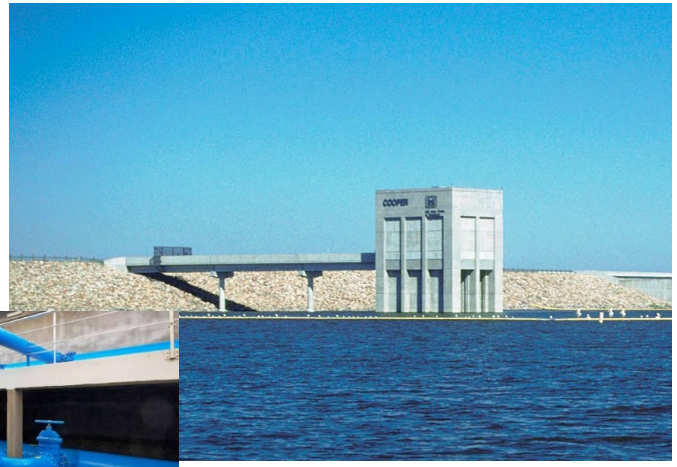




- Did you know?
  - USACE navigation operations support commerce in 41 waterways totaling ≈ 25,000 miles
  - USACE operate 236 lock chambers at 191 sites
  - Dredging for rivers and harbors
  - Navigation in USACE provides $16 billion benefits annually

Water Supply Mission





- Did you know?
  - USACE maintains 10 million acre-feet of water supply storage
  - USACE provides water supply for 85 million people in 115 cities
  - Water stored in USACE reservoirs irrigate over 2.5 million acres
  - Water supply business line provides $9 billion in annual benefits
  - Provides $60 million in revenue annually

Hydroelectric Power Generation

- Did you know?
  - USACE operates 375 hydropower generating units at 75 projects
  - USACE hydropower units produce 100 billion kilowatt-hours annually
  - USACE provides 24% of U.S. hydropower generating capacity
  - Provides annual benefits of $2.15 billion

Environmental, Threatened and Endangered Species

- Did you know?
  - Environmental operations are legal requirements at USACE dams
  - Biological Opinions (BiOp) and other threatened and endangered species operations are legal requirements
  - USACE must comply with NEPA in project development and when considering operational changes (IMPACTS!)

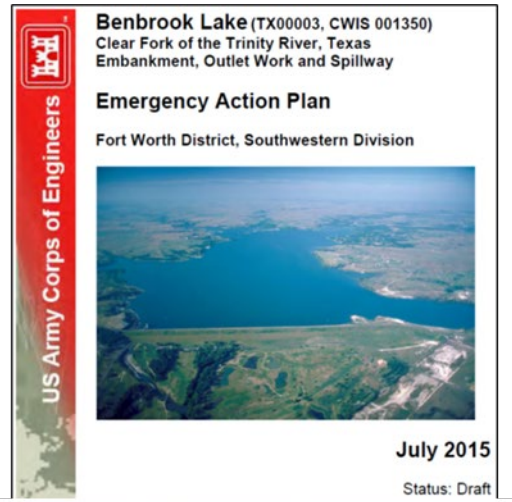
DAM SAFETY PROGRAM IN USACE

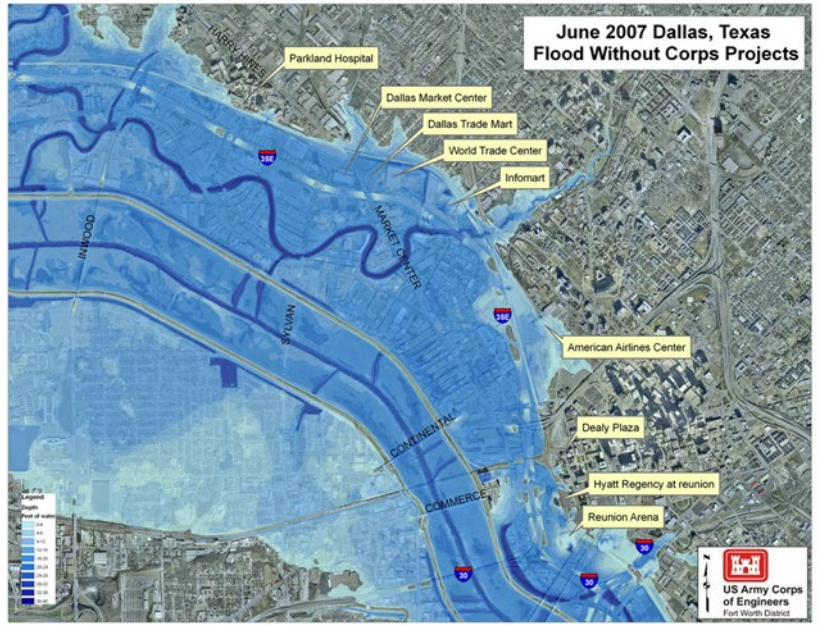
Routine

- Managed locally with national guidelines
- Inspections
  - Annual, periodic
  - Periodic assessments
- Emergency action plans
  - Table top exercises
- WM activities
  - Scalable real-time to 24/7/365
  - State of the art forecasting, inundation mapping (CWMS)
- Surveillance during floods
  - Scalable to 24/7

Non-Routine

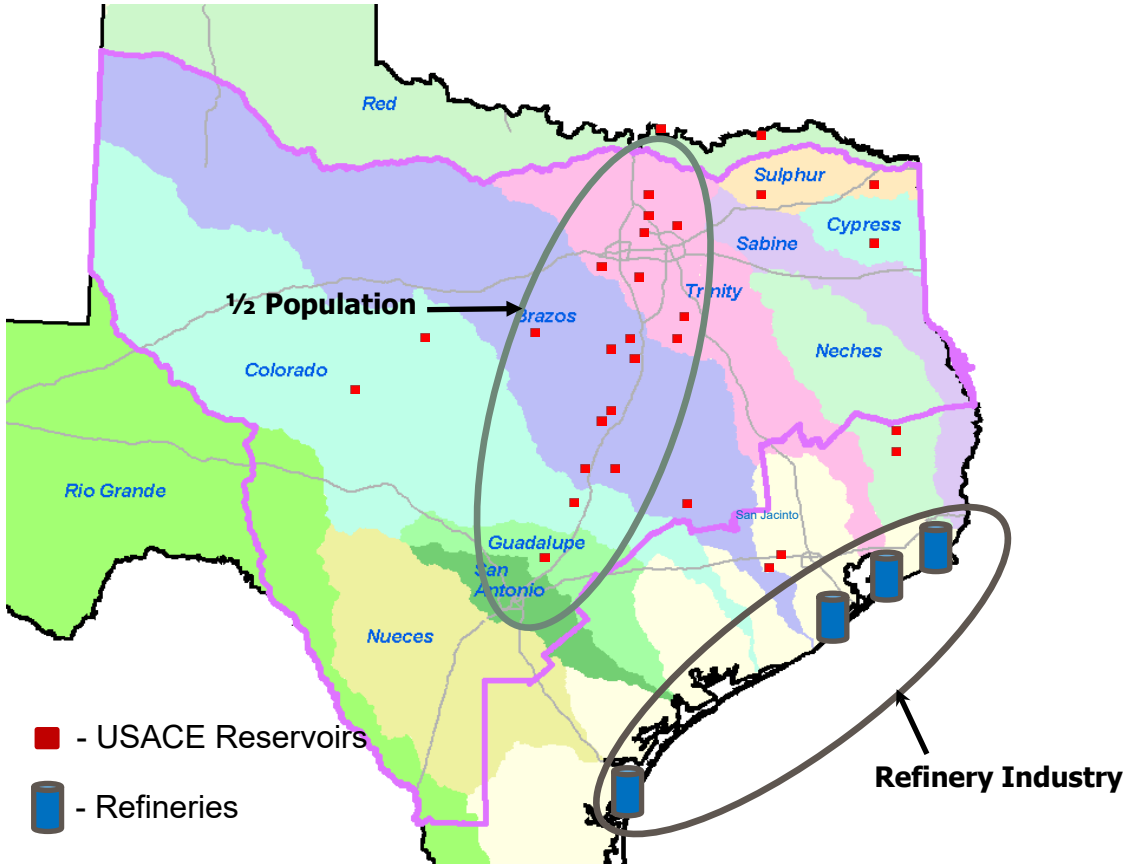
- National program (700 + dams)
- $100's M annual expenditures
- Risk based approach
  - Failure processes
  - Consequences
  - DFW – elevated consequences
- DSAC
- Processes
  - Portfolio risk assessments screening
  - IRRM
  - IES
  - DSMS





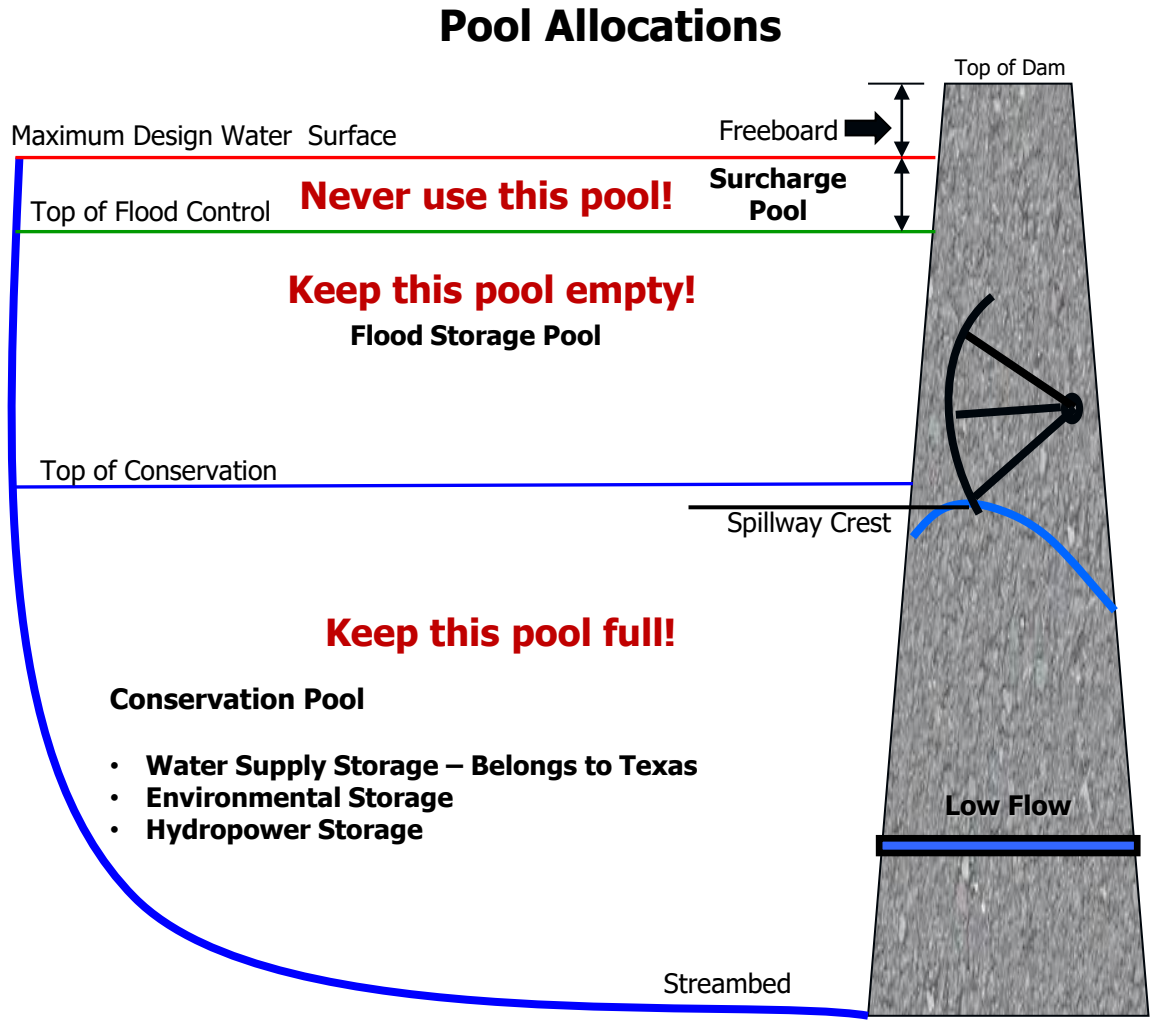
INCREASING RESILIENCY - STATEWIDE RESERVOIR DEVELOPMENT

- Multi-purpose
  - FDR, WS, hydro, env., rec, ~~navigation~~
- 7 Texas watersheds
- Critical to the early development of Texas
- 9 M ac-ft conservation storage
  - 20% - 25% surface water storage
  - State and local control
- 16 M ac-ft flood storage in federal dams
  - USACE control
- Costs (2013)
  - Construction - $8.2 billion
  - Benefits - ~~$76~~ $134+ billion (flood only)
  - B/C ratio > ~~10+:1~~ 16:1
- Annual recreation visits – 22 M
- ***Wealth of knowledge and experience from 70 years of operations***
- ***Relationships with state and local governments***



RESERVOIR OPERATIONS

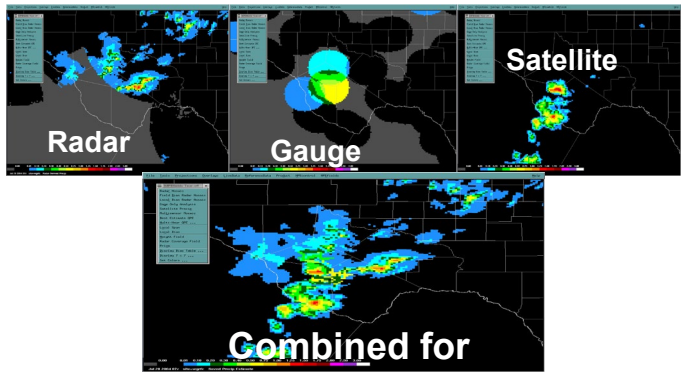
- Reservoir Operations
  - Keep conservation pools full
  - Keep flood pools empty
  - Follow "Plan of Operation" for reservoir system
  - Store water in flood pool during flooding events
  - Monitor downstream conditions
  - Requires approx. 2 weeks for water to exit system
  - Prepare forecasts
  - Prepare inundation maps
  - Work with NWS forecasters to determine safe release rates
  - Safely release water into DS river reaches
  - Coordinate and communicate with partners and stakeholders

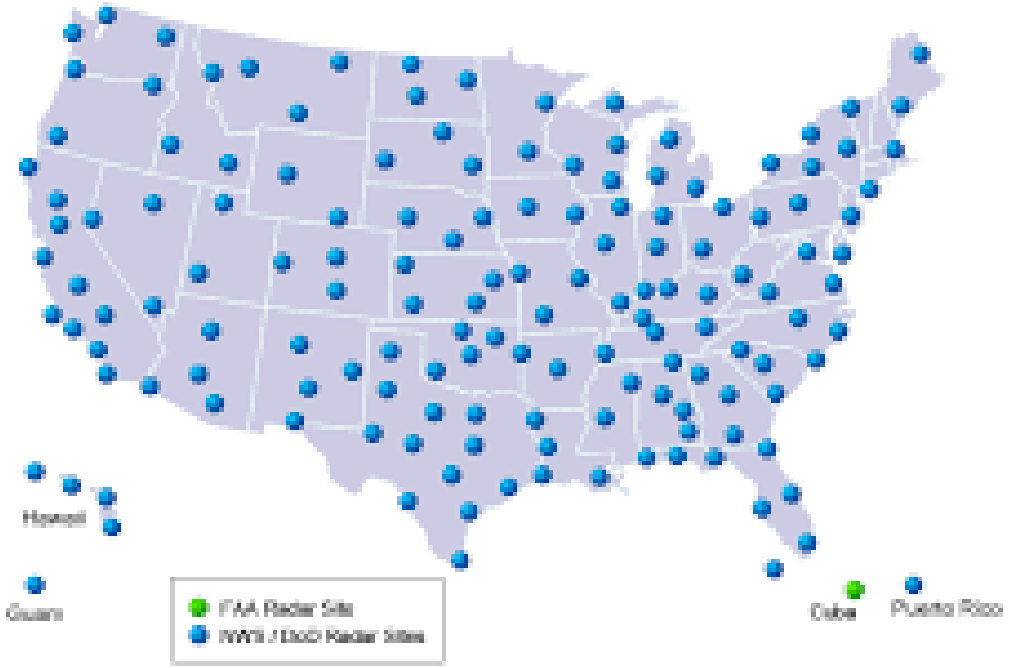


INCREASING RESILIENCY - USACE/NWS DOPPLER RADAR NETWORK

Did you know?

- NWS operating partner
  - Shared across federal, state and local governments
  - USACE initial cost share partner
  - Leverages Cooperative Stream Gage Program
- Provides
  - Real-time precipitation estimates
  - Real-time multi-parameter weather analysis
- Severe weather events
  - Critical for USACE dam operations
  - Critical for NWS flood warnings
  - Critical for NWS weather alerts and warnings
  - Relies on Cooperative Stream Gage Network (calibration)

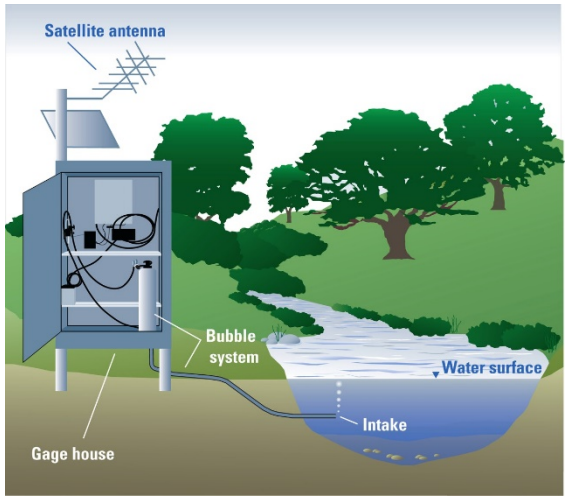


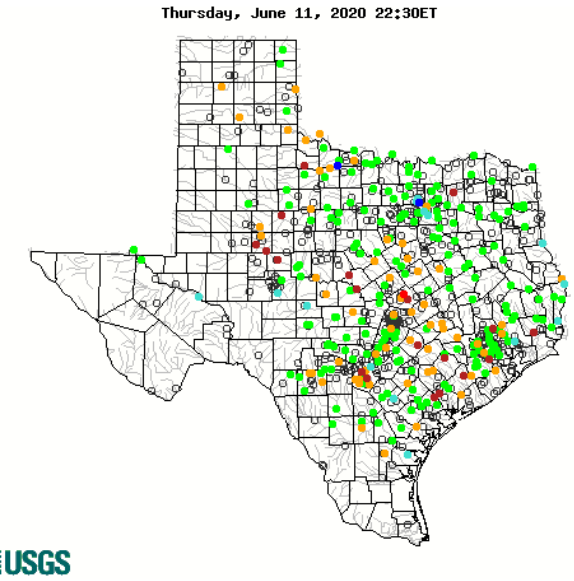


INCREASING RESILIENCY - USACE/USGS SURFACE WATER GAGE NETWORK

Did you know?

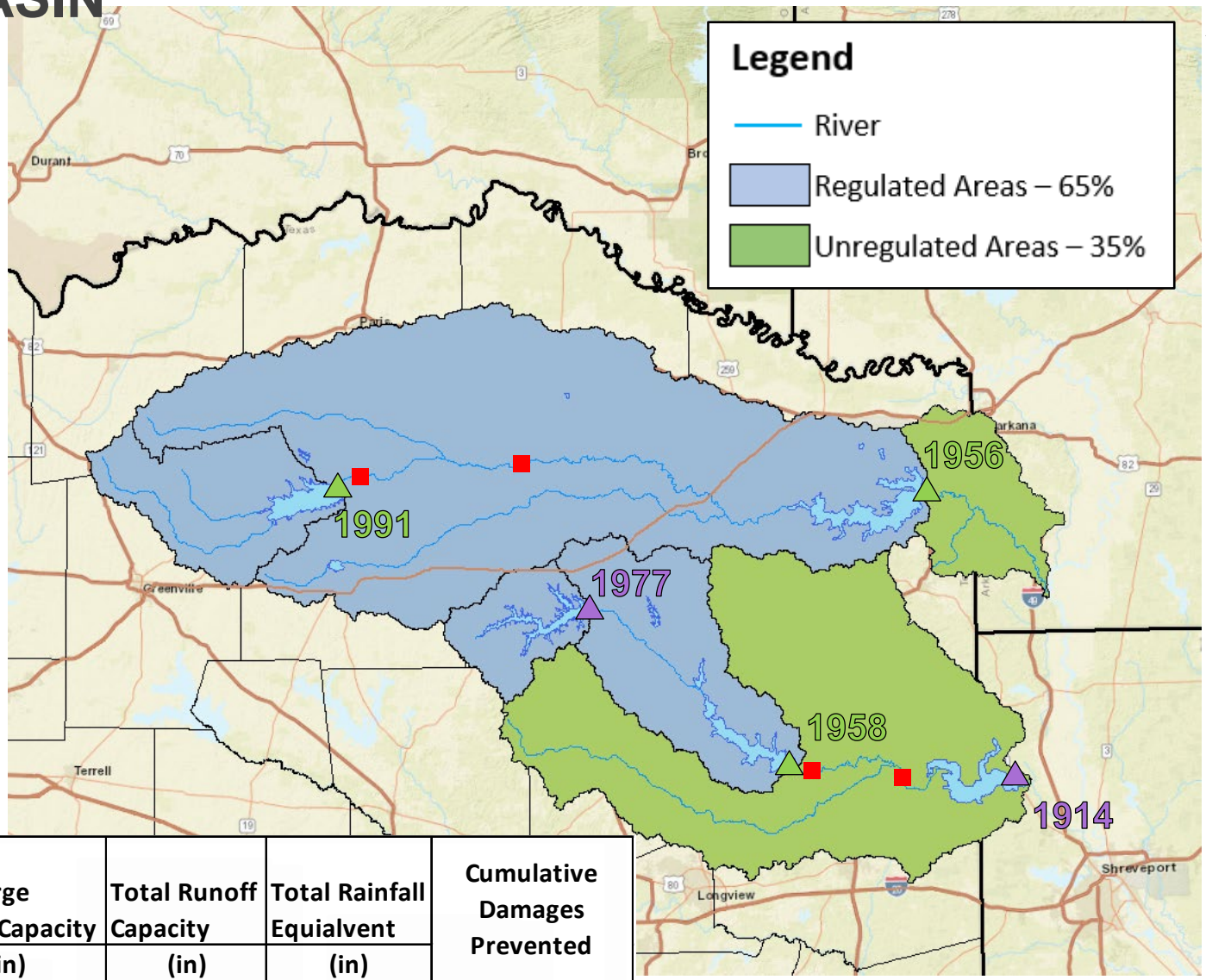
- USGS operating partner
  - Automated system
  - Shared across federal, state and local governments
  - $170 M national surface water network
  - USACE funds about $19.2 M
- Provides
  - Real-time streamflow and precipitation observations
- Highly important for water resources
  - Critical for USACE dam operations
  - Forms the basis of any water resources study
  - Important component of climate studies
  - Critical to water supply community
  - Critical for food warnings





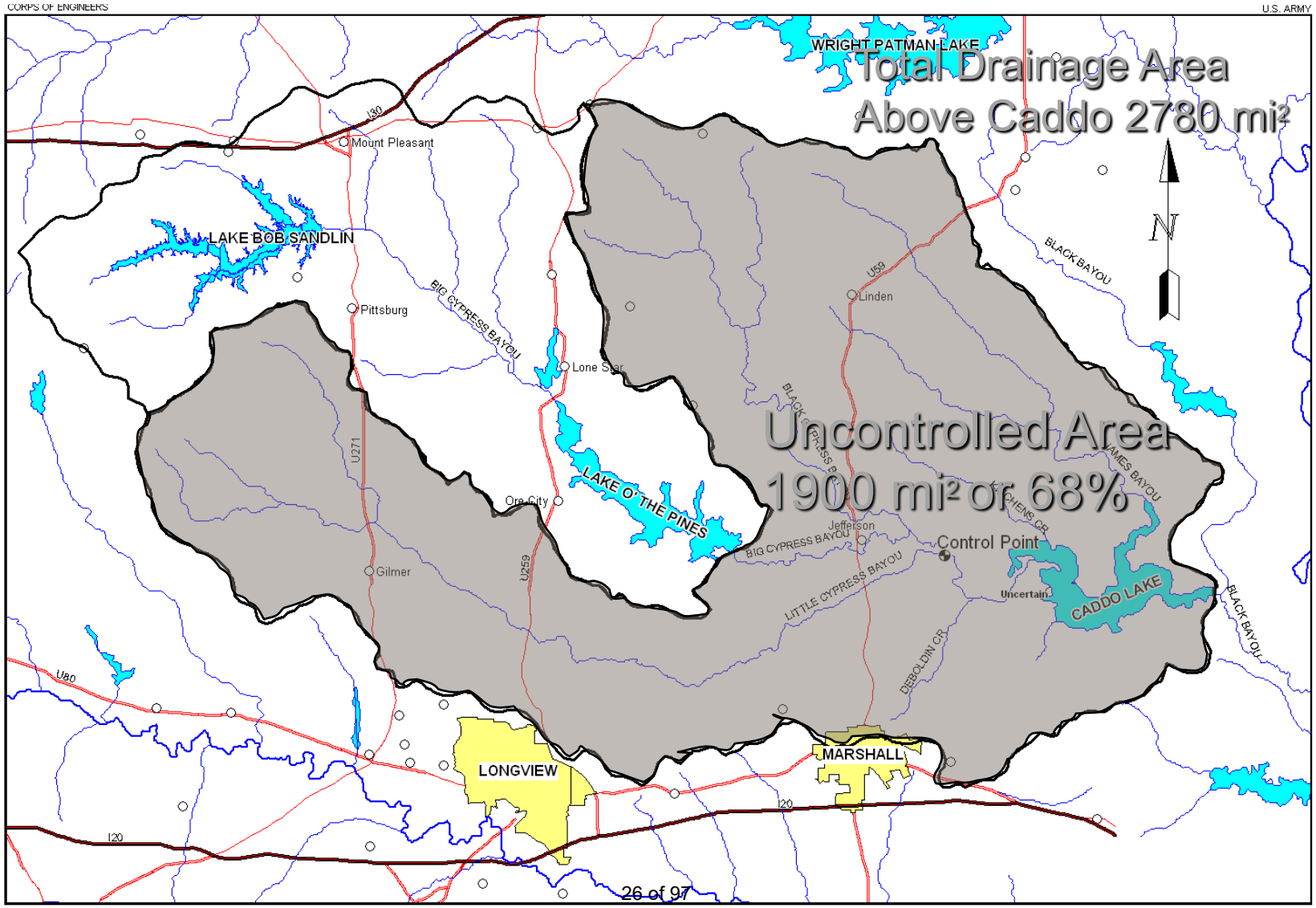
LOWER RED RIVER BASIN

- Fort Worth District
- Sulphur River Basin
- Cypress River Basin

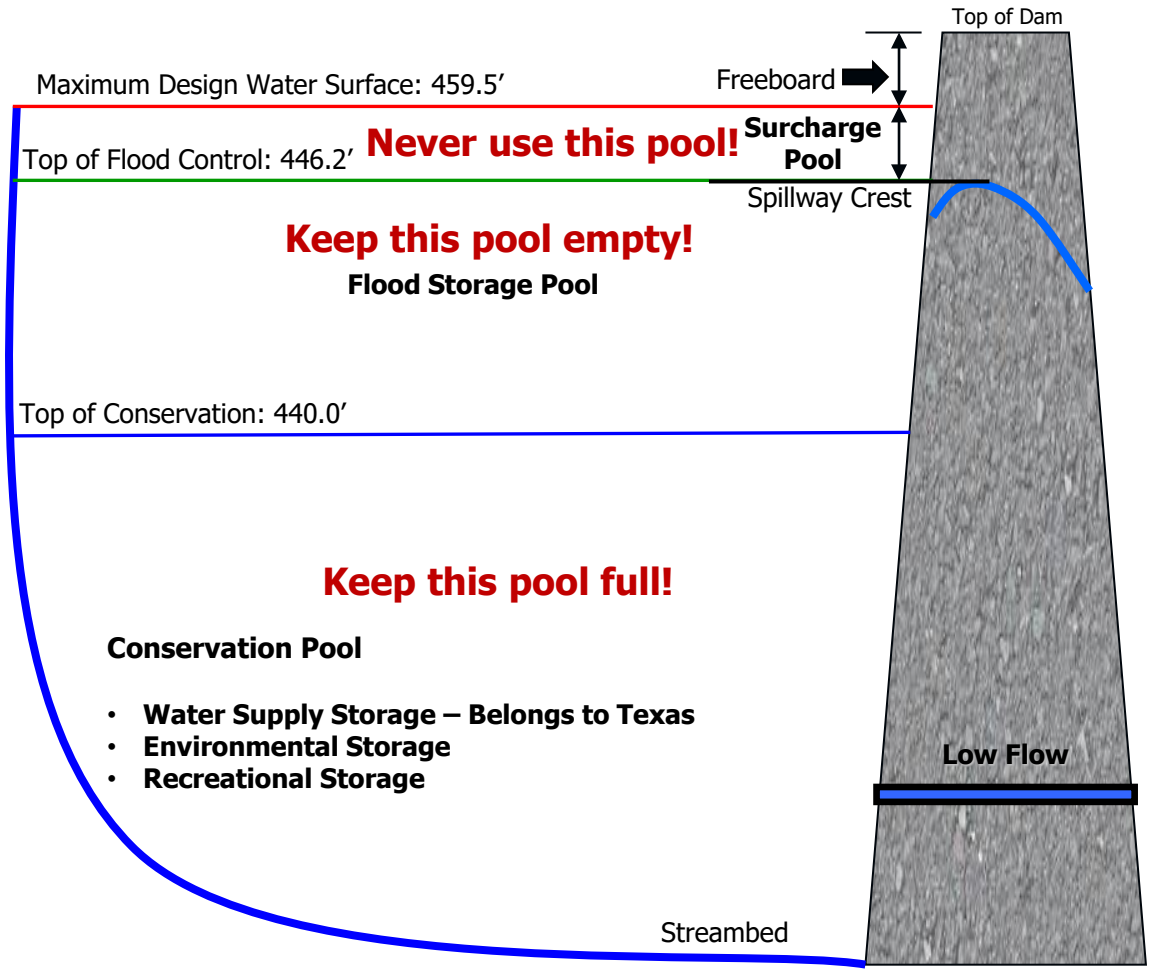


Reservoir	Flood Pool Runoff Capacity (in)	Surcharge Runoff Capacity (in)	Total Runoff Capacity (in)	Total Rainfall Equialvent (in)	Cumulative Damages Prevented
Jim Chapman	17.36	13.94	31.3	52.2	$ 31,225,267
Wright Patman	14.45	16.76	31.21	52.0	$ 81,535,386
Lake O' the Pines	18.58	22.36	40.94	68.2	$ 57,452,451

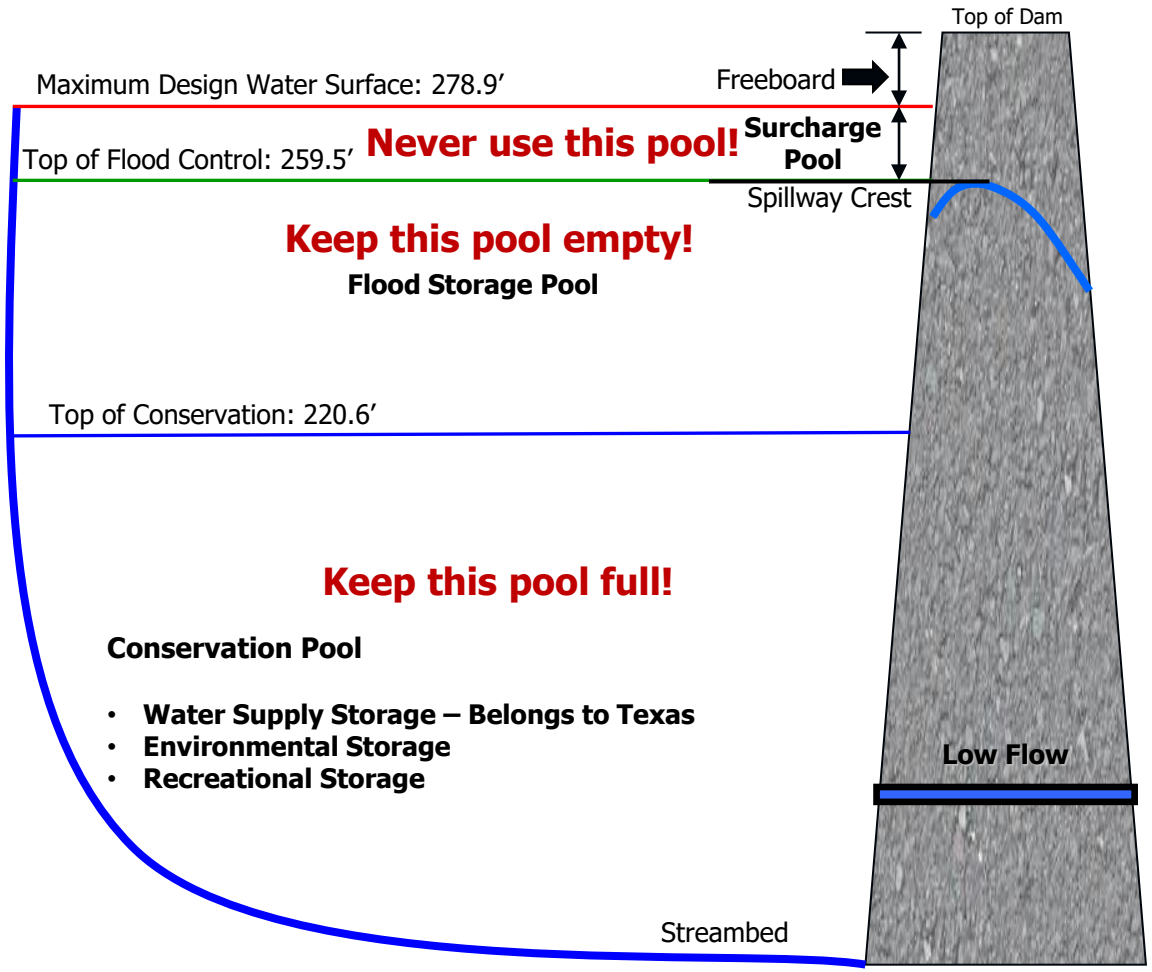
CYPRESS RIVER BASIN



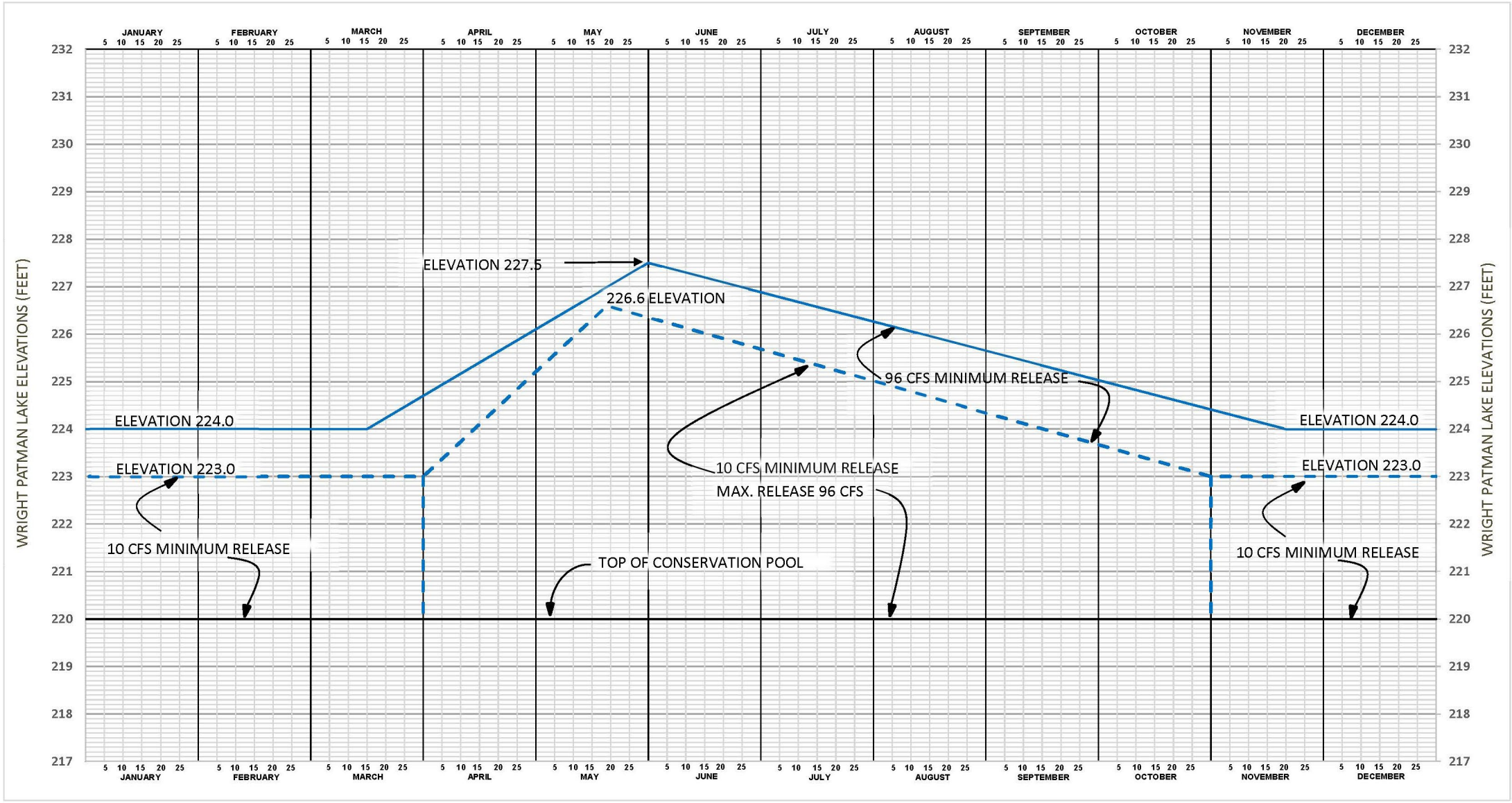
JIM CHAPMAN (COOPER LAKE) POOL ALLOCATIONS



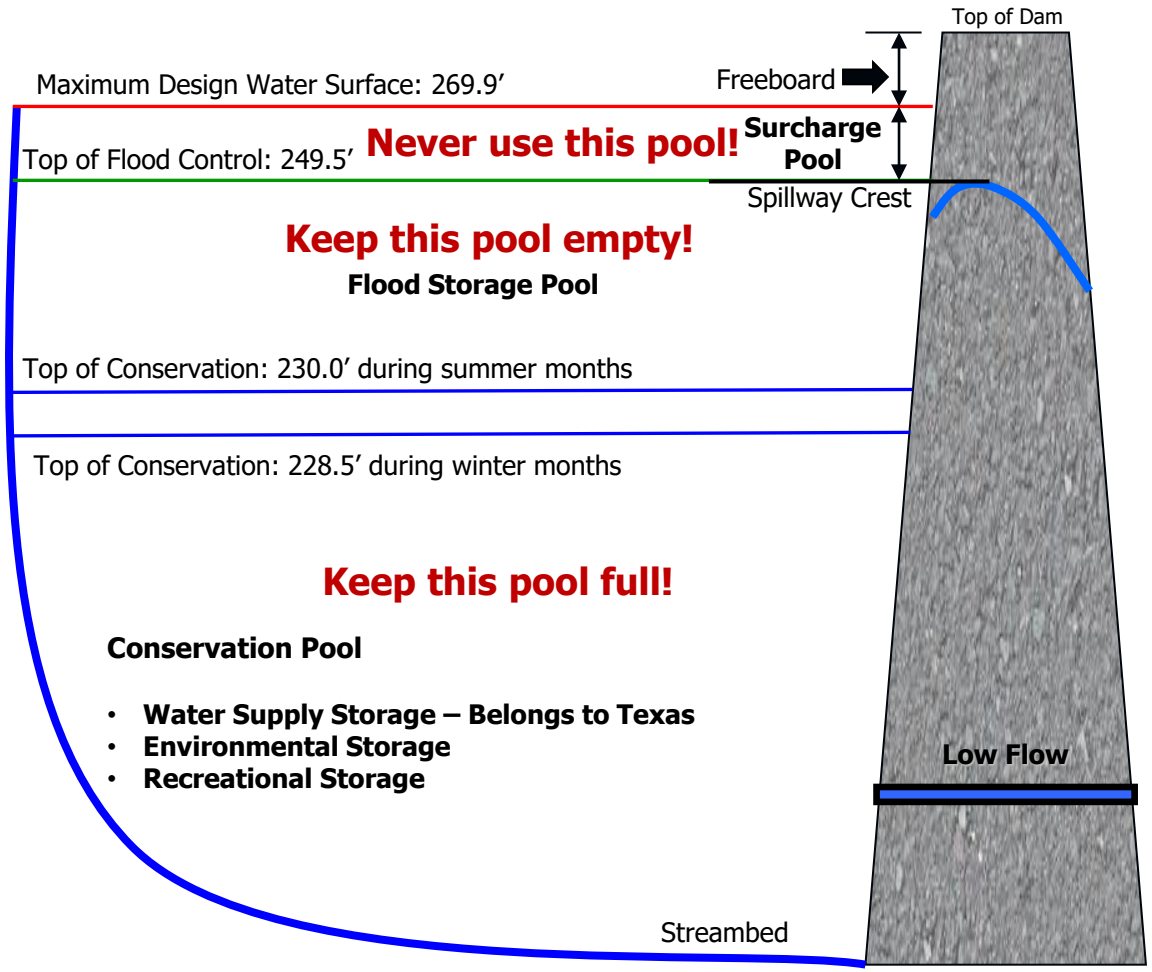
WRIGHT PATMAN POOL ALLOCATIONS



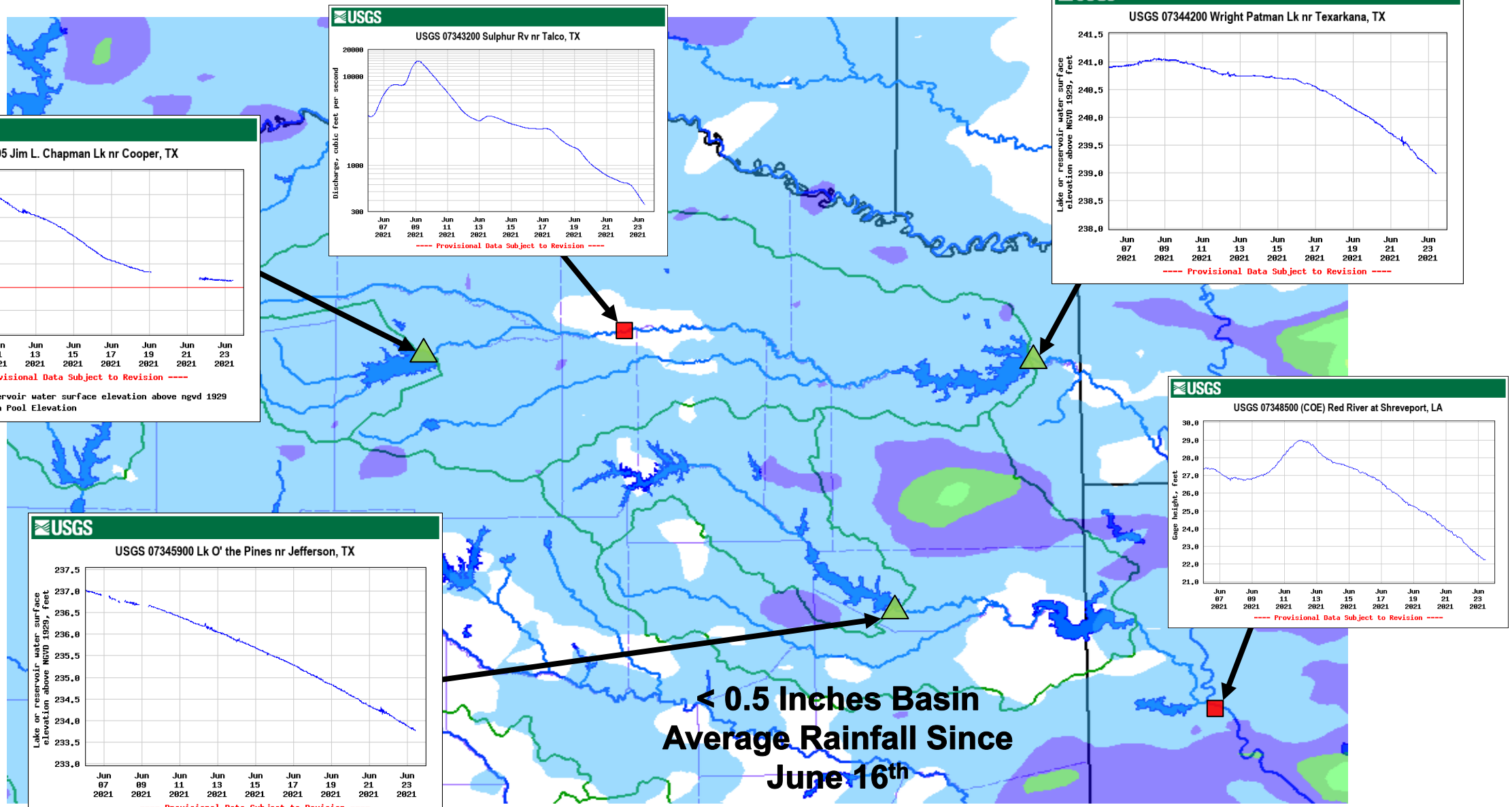
WRIGHT PATMAN SEASONAL POOL RULE CURVE



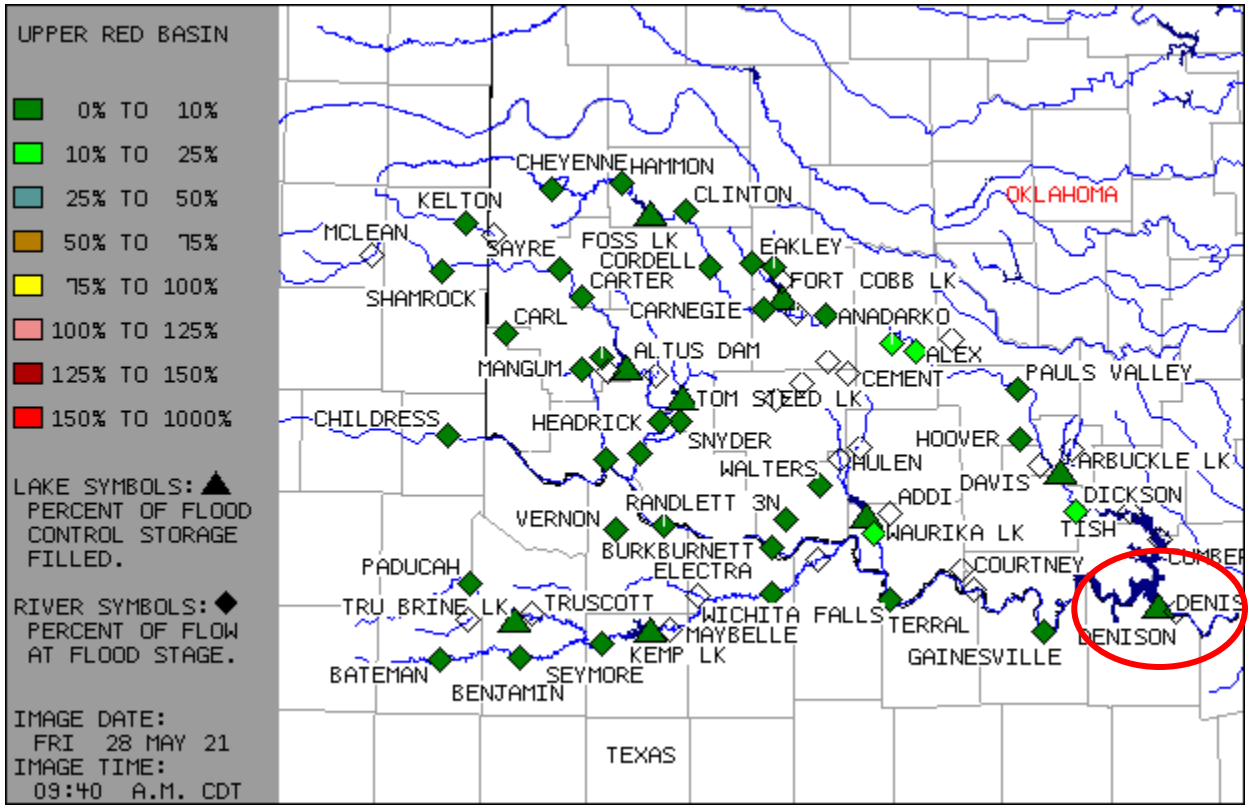
LAKE O' THE PINES POOL ALLOCATIONS

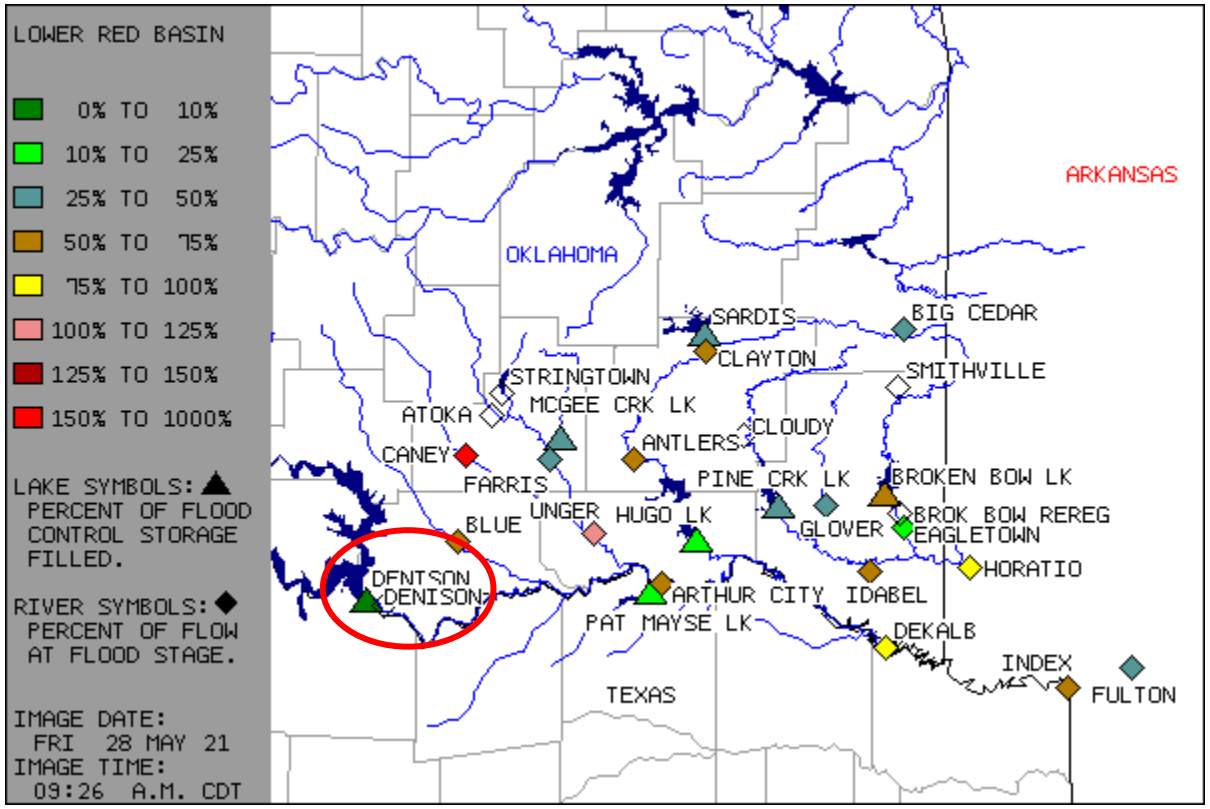


CURRENT SULPHUR & CYPRESS CONDITIONS



LAKE TEXOMA (DENISON DAM)





- Construction began in August 1939 and completed February 1944.
- Separates the Upper and Lower Red Basins with a Contributing Drainage area of 33,783 mi^2.
- FY20 Flood-Damage Reduction Benefits in the Red River Basin were $84.9M.
- To-Date, Cumulative benefits in the basin have been $1.9B.
- Used for Flood Control, Water Supply, Hydroelectric power, regulation of the Red River Flows, Improvement of navigation, and recreation.

LAKE TEXOMA (DENISON DAM)

Uncontrolled Spillway:

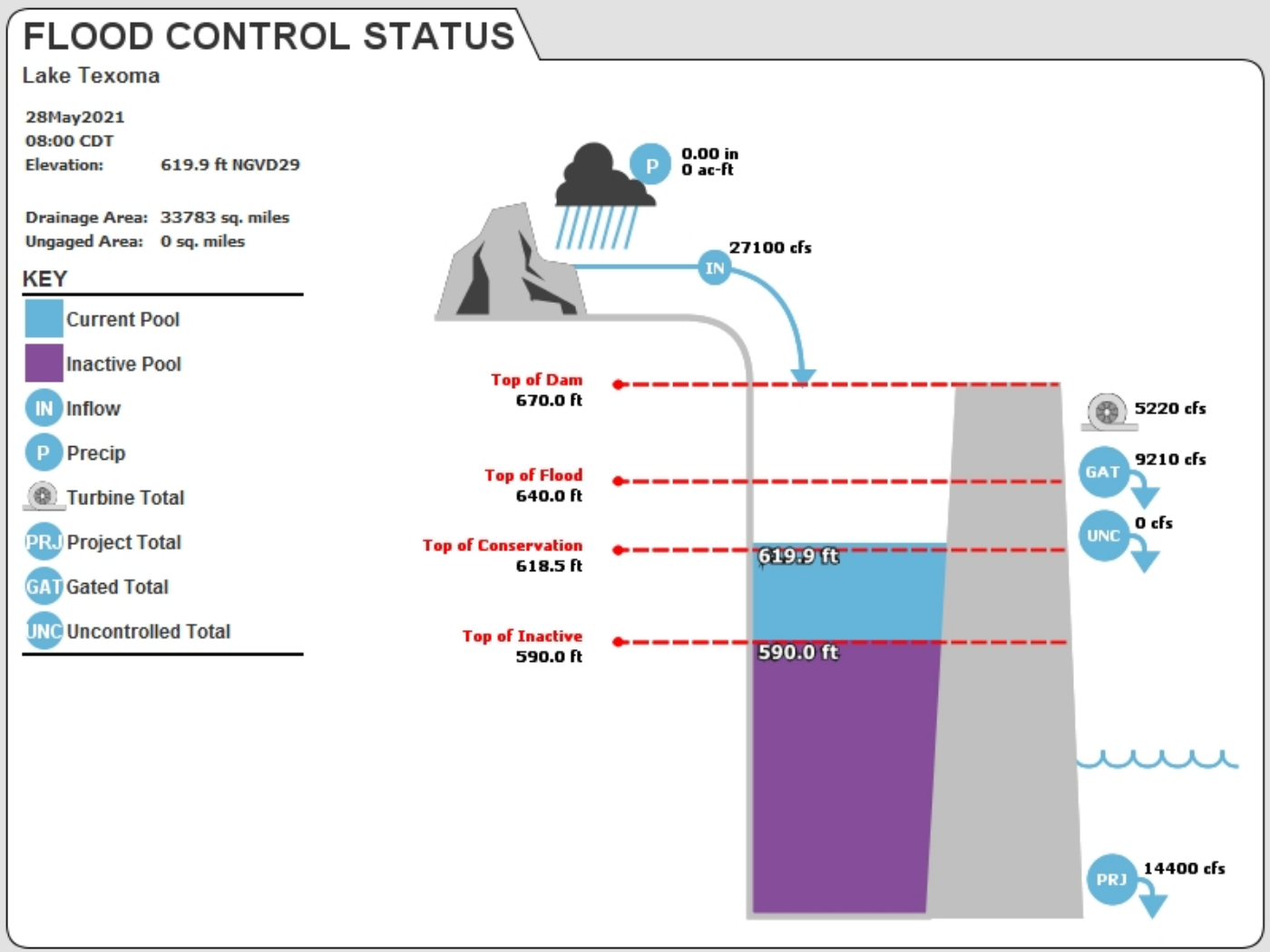
- Concrete, Gravity, chute-type structure
- 2,000 ft Long, located in a saddle on right bank
- Capacity at max pool (election 666.4 ft) is 1,050,000 cfs.

Outlet Works:

- Three 20 ft diameter, concrete conduits though the embankment controlled by six 9 by 19 ft vertical lift gates and one emergency gate.
- Capacity at flood control is 67,500 cfs.
- Limiting channel capacity is about 45,000 cfs.

2015 Vortex by Conduits

LAKE TEXOMA (DENISON DAM)



Reservoir Data:

	Elevation	Incremental Storage		Cumulative Storage	
	(feet)	(inches)	(acre-feet)	(inches)	(acre-feet)
Surcharge Pool:	643.00	0.27	494227	3.0	5427299
Flood Control Pool:	640.00	1.29	2333071	2.73	4933072
Conservation Pool:	* 618.53	0.86	1551100	1.44	2600000
Inactive Pool:	590.00	0.58	1048899	0.58	1048899

Streambed Elevation: 505.00 feet.
Top of Dam Elevation: 670.00 feet.
* Project has seasonal conservation pool.
All storages based on a contributing drainage area of 33783.0 square miles or 1801760 ac-ft.
Longitude: -96° 34' 20" Latitude: 33° 49' 5"

Required Flow for Firm Energy, average cfs	1,800
Average Net Power Heads, feet	
Power Pool, full	103.2
Power Pool, empty	75.0
Critical Hydroperiod	92.2
Dependable Capacity, kW	54,000
Installed Capacity, kW	70,000
Potential Capacity, kW	199,000
Average Annual Firm Energy, kWh	126,470,000

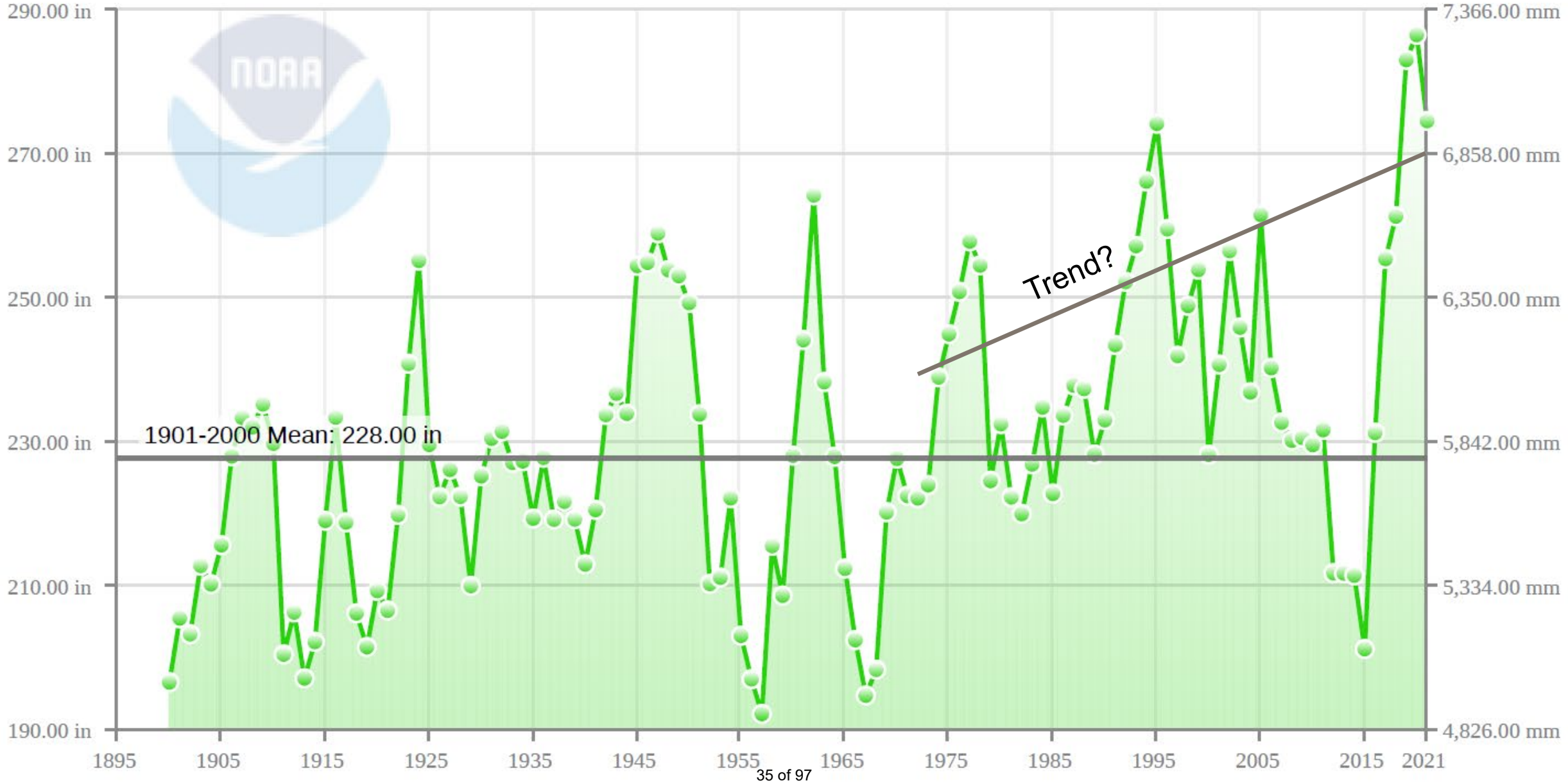
Power Data:

- Two 35,000-kilowatt generators, with provisions for three additional 43,000-kilowatt units.
- One 20 ft diameter still lined conduit provides water for each power unit.
- Each of the five power conduits is equipped with two 9 by 19 ft vertical lift gates located in the intake structure.

Texas, Climate Division 4 Precipitation

60-Month Period Ending in January

RAINFALL TRENDS IN TEXAS



QUESTIONS?

www.swf-wc.usace.army.mil

US Army Corps of Engineers

Darlene G. Prochaska, PE

Chief, Water Management Section

U.S. Army Corps of Engineers
Fort Worth District (SWF)
819 Taylor Street
Fort Worth, TX 76102

(817) 886-1682 TEL
(Darlene.G.Prochaska@usace.army.mil

QUESTIONS?

www.swt-wc.usace.army.mil

US Army Corps of Engineers

Travis S. Wilsey, EI, CFM
Flood Plain Project Services

U.S. Army Corps of Engineers
Tulsa District (SWT)
2488 E 81st St.
Tulsa, OK 74137

(918) 669-4360 TEL
(Travis.S.Wilsey@usace.army.mil

Regional Flood Planning
Pre-Planning Public Meeting Requirements

Pre-Planning Meeting Background

- Provide background on formation of RFPGs and the Regional Flood Planning process.
- Gather suggestions and recommendations as to issues, provisions, projects, and strategies that should be considered in development of regional flood plan.

TWDB flood outreach meeting in Bastrop, TX. Image: TWDB

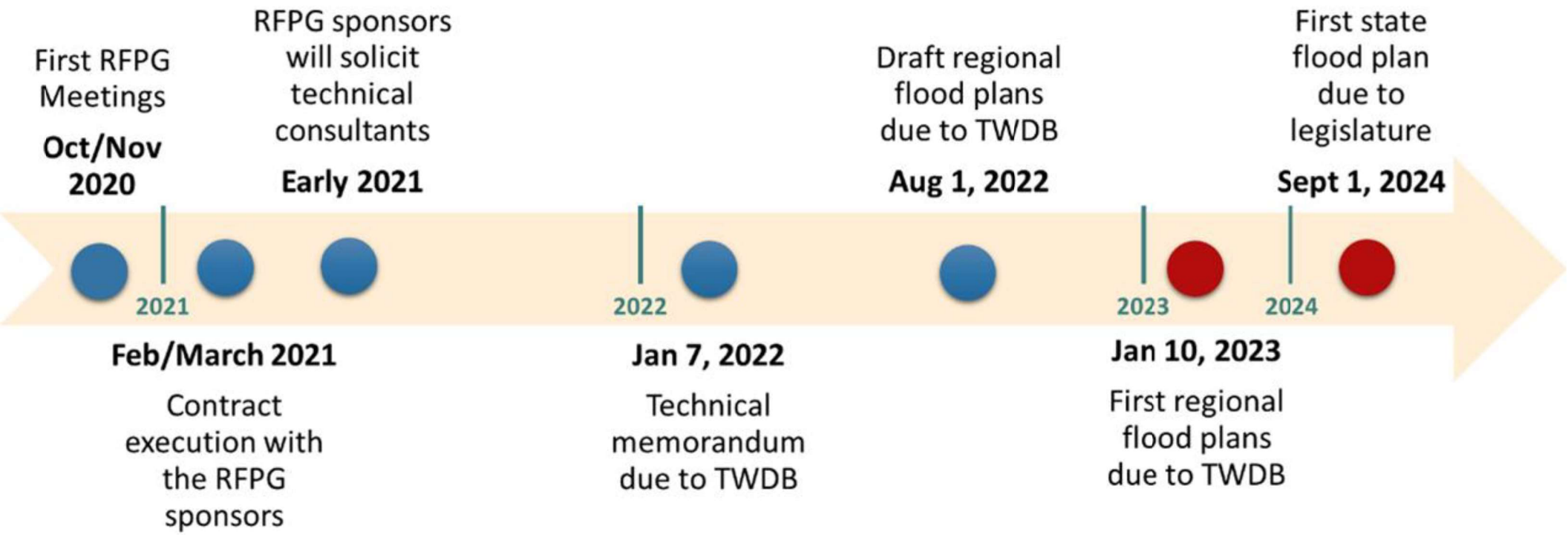
About Regional Flood Planning

- First-of-its-kind statewide flood plan
- Watershed-based planning regions
- Bottom-up approach to flood planning
- Transparent process with public input
- Volunteer members representing interest categories

Find your RFPG Information, Meeting Schedules & Important Documents here:
https://www.twdb.texas.gov/flood/planning/index.asp

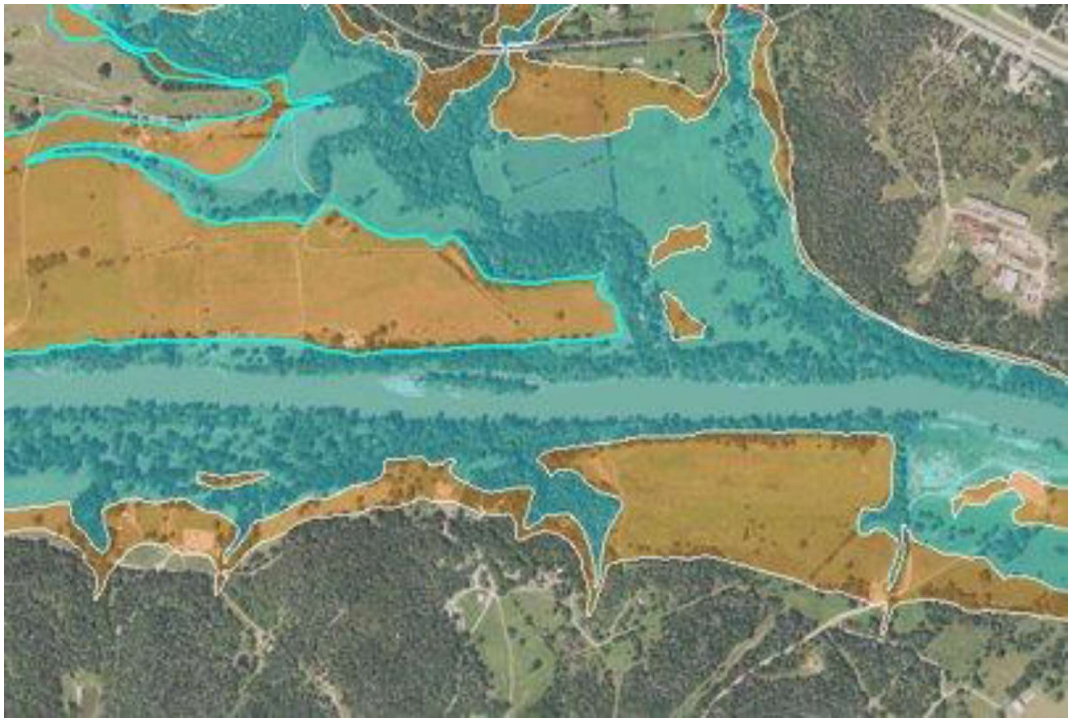
Flood Planning Timeline

SB 8 passed in 2019 requiring a statewide flood plan based on regional flood plans



Key Tasks of the RFPGs

- Gather & analyze data
- Identify existing and future flood risks
- Evaluate floodplain management practices
- Recommend evaluations, strategies, and projects to reduce flood risks
- Develop a regional flood plan



The 1% annual chance floodplain is shown in blue.
The 0.2% annual chance floodplain is shown in orange.
Image by FEMA

Flood Mitigation

The implementation of actions, including both **structural** and **non-structural solutions**, to reduce flood risk to protect against the loss of life and property.

Mangroves on the Texas Coast stabilize shorelines and help absorb storm surge; an example of a non-structural flood mitigation solution.

Photo by Univ. Of Texas Marine Science Institute

Galveston Seawall, a structural flood mitigation solution. Image by Yinan Chen CC-PD

Additional Opportunities for Public Input

There will be many opportunities public involvement:

- public comments are received at every RFPG meeting
- there will be at least one meeting for the public to comment on a flood risk summary map to identify any flood risk not captured
- there will be at least two public pre-planning meetings to receive feedback and gather general suggestions
- the public will get to comment on the draft regional flood plan, once developed

TWDB flood outreach meeting in Bastrop, TX. Image: TWDB

Find your RFPG Information, Meeting Schedules & Important Documents here:
https://www.twdb.texas.gov/flood/planning/index.asp

Image: Brent Hanson, U.S. Geological Survey. Public domain.

Questions? Comments?

Lower Red-Sulphur-Cypress Flood Planning Region

Regional Flood Plan – Task 3B

Flood Mitigation and Floodplain Management Goals

Introduction

The objective of Task 3B is to define and select a series of floodplain management goals that will serve as the drivers of the regional flood planning effort. Selecting these goals is the **first critical decision** that the RFPG will need to make as they will guide the overall approach and recommendations in the plan. The Technical Consultants (TC) will introduce this topic on the July 8, 2021 RFPG Meeting and will collaborate with the RFPG in the decision-making process. A preliminary set of goals will be presented and discussed during the August 2021 RFPG meeting, and final goal adoption is expected on the September 2021 meeting. The TC will be available to answer individual questions that may arise prior to the July 8th meeting and throughout the process.

What is required of the RFPG?

Regional Flood Planning Goals

The RFPG will be responsible for developing and adopting the goals for the regional flood plan. It is expected that the RFPG will promptly engage in a consensus building process that will lead to a selection of goals that are relevant for the Lower Red-Sulphur-Cypress region. The RFPG is required to consider public input when developing and defining these goals.

The overarching goal of all regional flood plans must be "to protect against the loss of life and property" as set forth in the Guidance Principles (31 TAC §362.3). The RFPG must identify goals that are specific and achievable, and that when implemented, will demonstrate progress towards the overarching goal. Both short-term (10-yr) and long-term (30-yrs) goals shall be defined.

Recommend and/or Adopt Minimum Floodplain Management Standards

In addition to developing and adopting goals, the RFPG should also deliberate on their position regarding the issue of recommending or adopting minimum floodplain management standards for the Region. The TWDB encourages the RFPG to recommend or adopt region—specific minimum floodplain management standards, but this is at the discretion of the RFPG. Floodplain management recommendations will simply be included in the plan as suggested options for local entities to consider. The RFPG may also choose to adopt certain standards. The main implication of adopting standards is that they will become a prerequisite for each entity within the planning region prior to including any Floodplain Management Evaluation,

Strategy or Project (FME, FMS, FMP) in the regional plan sponsored by or that will otherwise be implemented by that entity.

It is important to note that the RFPG themselves do not have the authority to enact or enforce floodplain management, land use, or other infrastructure design standards. Any standards considered, recommended, and adopted by the RFPG in this task would be aimed at encouraging implementation by local entities in the region with flood-related authority.

Key Milestones

The Regional Flood Plans schedule established by the TWDB is aggressive and requires a steady progression in completing tasks. The first contract milestone is to complete a **Technical Memorandum** by **January 7, 2022**. This memorandum will include the first four chapters of the Regional Flood Plan, covering Tasks 1 through 4B.

Prompt RFPG decisions regarding goals and whether to recommend and/or adopt standards is of particular importance as they will inform and be the foundation for Task 4B. In this task, the RFPG will identify and evaluate potential Floodplain Management Evaluations, Strategies and Projects (FMEs, FMSs, FMPs) to be included in the plan. Therefore, in order to meet the January 7th deadline for the Technical Memorandum, the TC strongly recommends adopting goals and identifying any recommended and/or adopted standards **during the September 2021 RFPG meeting**.

How will Technical Consultants (TC) support the RFPG?

The TC will collaborate and support the RFPG throughout the entire regional flood planning process. In general, the TC will inform the RFPG on TWDB guidance and ensure that the plan meets all applicable requirements.

During the July 8, 2021 RFPG meeting, the TC will initiate the discussion on floodplain management standards and Regional Flood Plan goals and will collect your initial input. Prior to the August 2021 RFPG meeting, the TC will prepare a draft set of recommended standards and goals. It is envisioned that the TC will work in close collaboration with the RFPG in preparing this initial draft. The TC will present the draft set of standards and goals during the August RFPG meeting and will facilitate the discussion while the RFPG deliberates on the issue and considers public input. The TC will also relay stakeholder and general public input during this meeting.

Prior to the September 2021 RFPG meeting, the TC will refine recommended standards and goals to final form and have them ready for adoption at the September RFPG meeting. The TC will document the entire process as part of Chapter 3 of the Regional Flood Plan.

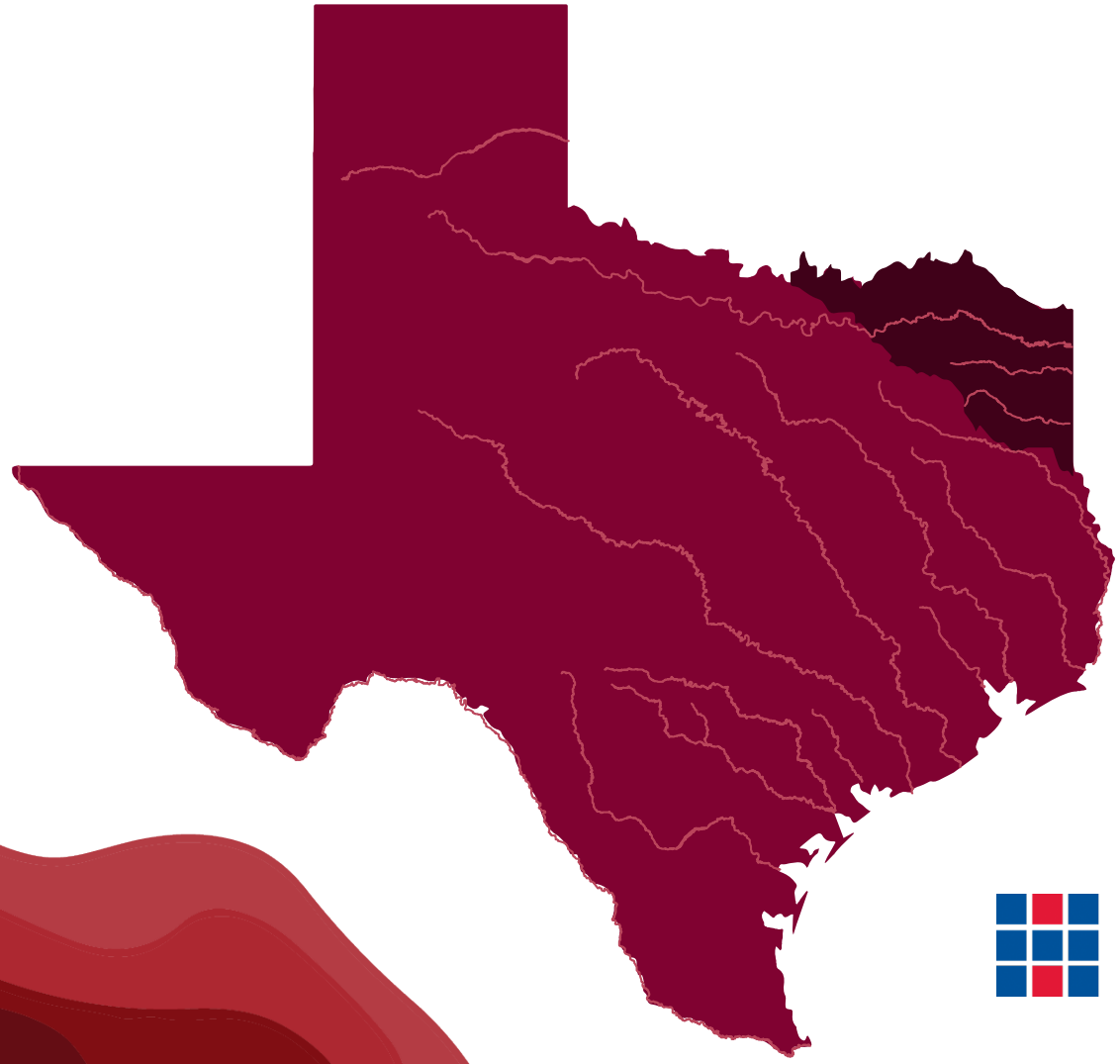
Examples of Potential Regional Flood Plan Goals

The following table has been extracted from the TWDB Technical Guidelines for Regional Flood Planning (Exhibit C). The intent here is to show the type of goals that the TWDB is expecting, how to formulate them, and prompt some initial thoughts on what type of goals would be relevant for the Lower Red-Sulphur-Cypress Region based on your experience.

Table 10: Examples of potential regional flood plan goals and means of presenting them

Short term (10 year)	Long term (30 year)
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.
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.
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.
Remove 50% of the existing structures from 1% annual chance floodplain in the region by 2033.	Remove 95% of the existing structures from 1% annual chance floodplain in the region by 2053.
Remove 50% of the low water crossings from 10% annual chance flood risk in the region by 2033.	Remove 90% of the low water crossings from 10% annual chance flood risk in the region by 2053.
By 2033, increase the coverage of flood hazard data across the region by completing studies in 50% of the areas identified as having current gaps in flood mapping.	By 2053, have complete coverage of flood hazard data across the region by completing studies in 100% of the areas identified as having current gaps in flood mapping and have an ongoing, funded maintenance plan for updates.
By 2033, enroll all current non-participating communities into the National Flood Insurance Program.	Maintain 100% community enrollment with no suspensions or sanctions.
By 2033, 25% of all communities have adopted higher than NFIP-minimum standards.	By 2053, 50% of all communities have adopted higher than NFIP-minimum standards.
By 2033, RFPGs will consider and incorporate nature-based practices in their flood risk reduction projects.	
By 2033, RFPG adopts minimum stormwater infrastructure design standards applicable across the region.	
By 2033, 50% of the region's population is part of a municipality that has a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism.	By 2033, 90% of the region's population is part of a municipality that has a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism.
By 2033, 50% of the communities have a documented, operational, and fully funded stormwater asset management plan and system.	By 2033, 75% of the communities have a documented, operational, and fully funded stormwater asset management plan and system.
Reduce flood-related loss of natural and cultural resources within the FPR by 2033.	Maximize safe economic development within flood prone areas.
Reduce any increases in future flood risk to life and property from development by regulating development in future conditions floodplains.	Eliminate any increases in future flood risk to life and property from development by regulating development in future conditions floodplains.

This table contains examples of regional flood mitigation and floodplain management goals for consideration only and does not reflect any TWDB-recommended goals. The RFPGs are expected to deliberate and gather data necessary to establish their own goals for their region.



Regional Flood Planning Group 2 Meeting Lower Red-Sulphur-Cypress

July 8, 2021

HALFF

FREESE AND NICHOLS

MTG engineers & surveyors

H2O PARTNERS

Outline/Agenda

- Chapter 1- Planning Area Description
- Chapter 2- Data Collection
- Chapter 3- Flood Mitigation and Floodplain Management Goals
- Open Discussion
- Conclusion and Next Steps

Ch. 1 Introduction & Overview

Planning Area Description

Preparing the Technical Memo

May–July

Kick Off

Data Collection

Public Engagement

Begin Ch. 1, 2 & 3

Discuss Goal Setting

Sept.–Oct.

Adopt Goals

Finalize and Approve Ch. 1, 2 & 3

Prepare Ch. 4 & Tech Memo

July–Aug.

Complete Data Collection

Consider Task 3 Practices and Goals

Present Regional Flood Map

Prepare Ch. 1, 2 & 3

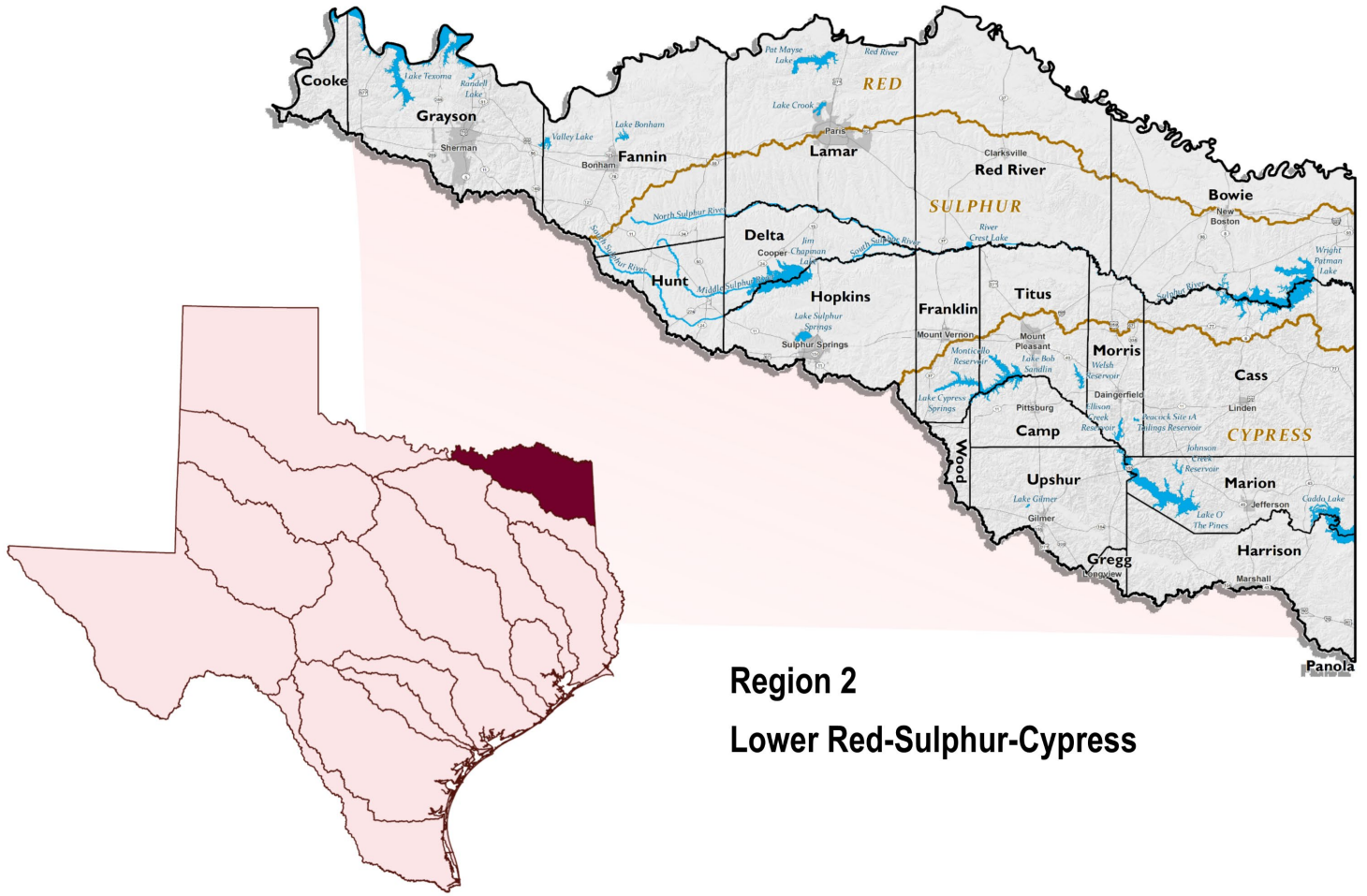
Begin Ch. 4

Nov. 2021–Jan. 2022

Finalize Ch. 4 & Tech Memo

Submit Tech Memo to TWDB

- 20 COUNTIES
- 9,188 SQUARE MILES
- ~22% within the 1% annual chance flood event

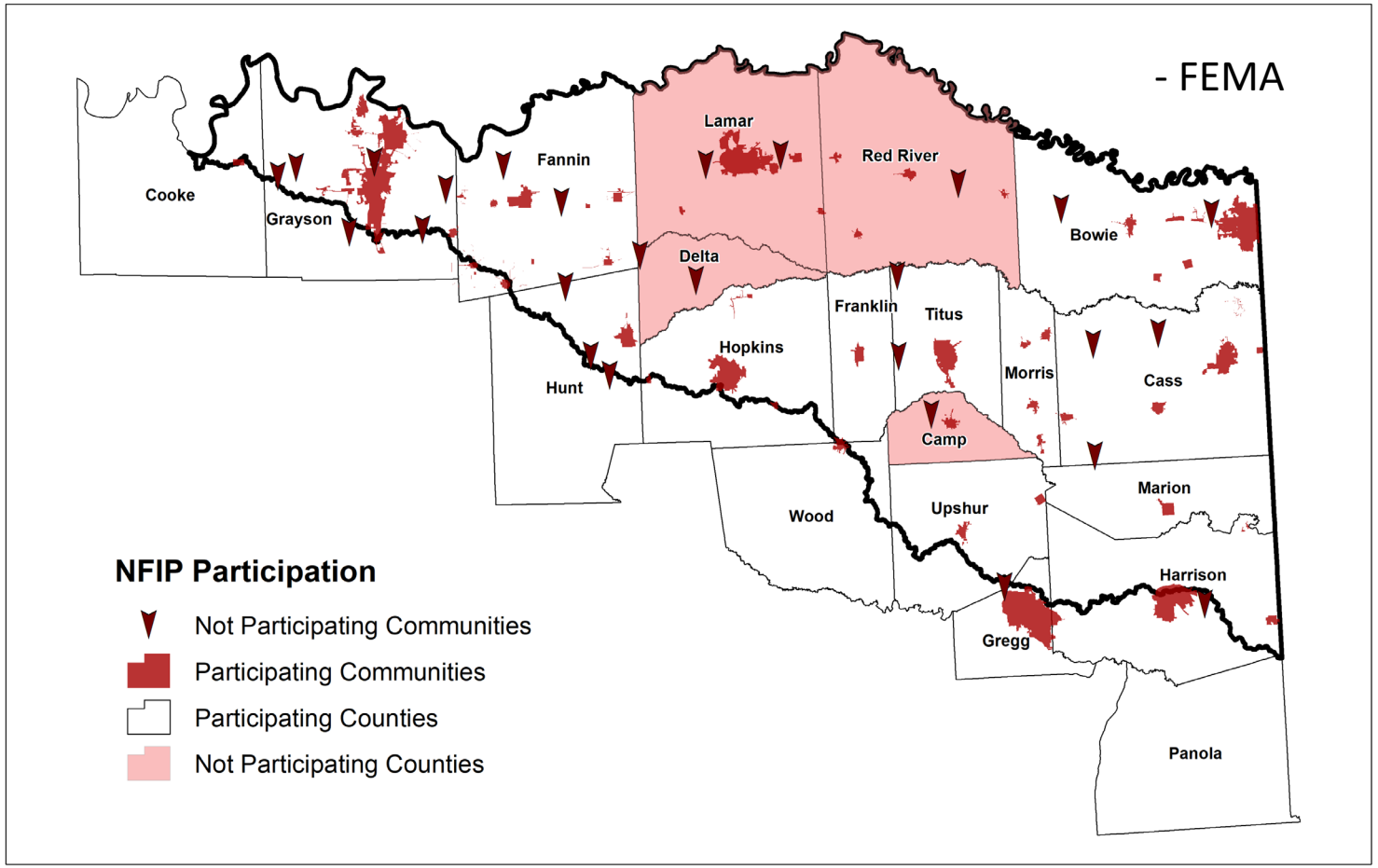


NFIP Participation

The **National Flood Insurance Program (NFIP)** provides insurance to help reduce the socio-economic impact of floods.

80%

# of Counties Participating in NFIP



Public Outreach Update

Public Outreach: Completed/Underway

- Key stakeholders list
- “Coming soon” survey preview e-postcard
- “What to prepare” 2nd survey preview e-postcard
- Handouts for RFPG members’ use in stakeholder outreach
- Postcard to survey participants
- Web domain name (LowerRedSulphurCypress.halff.com)
- Approved website sitemap and wireframe
- First phase of web programming; site launch prep

Public Outreach: Next Steps

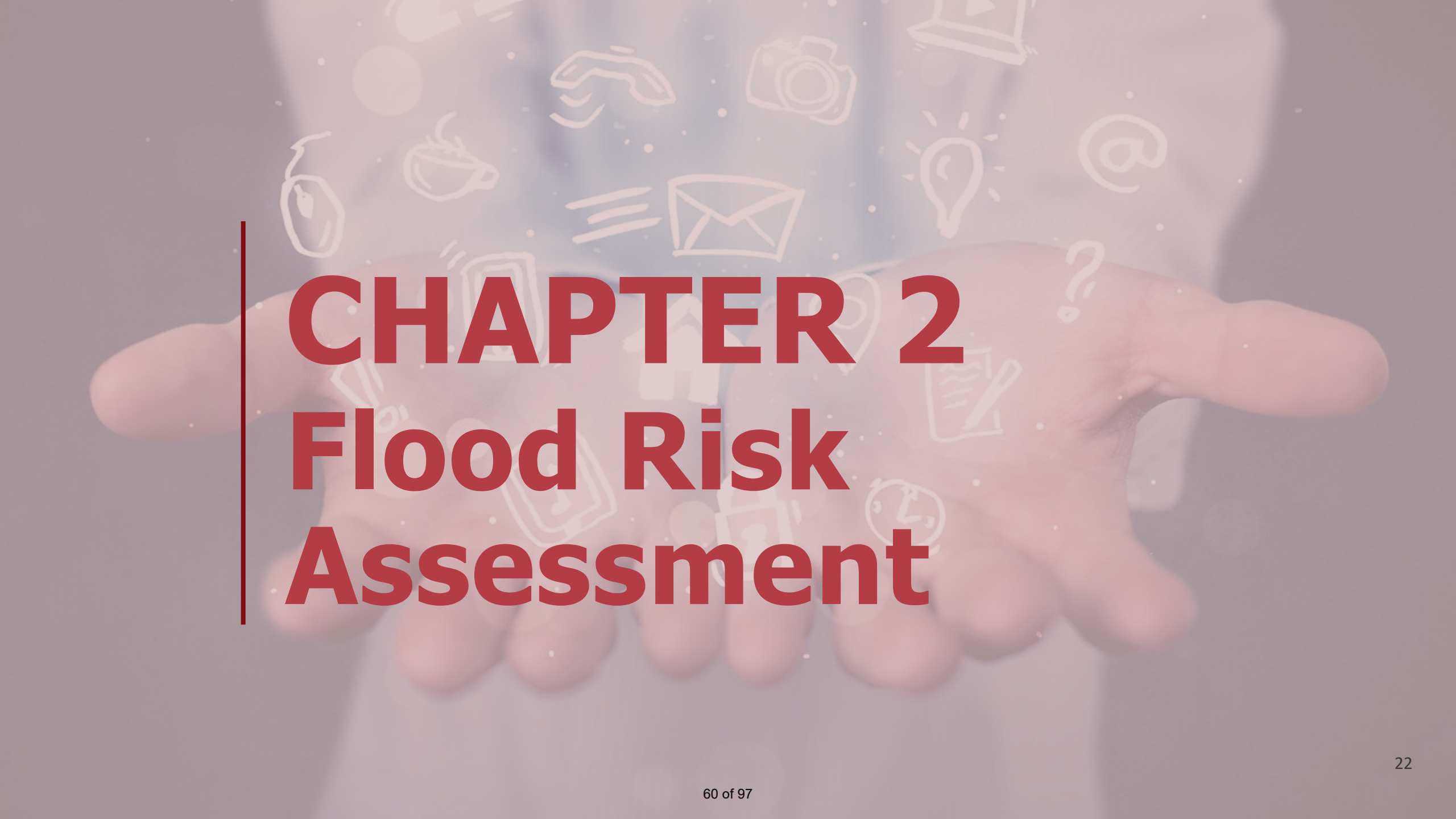
- Website launch – initial phase, then full rollout (late June)
- Collection of “interested parties” through website “Subscribe” form (late June and beyond)
- Social media presence, focus on Twitter (July and beyond)
- PowerPoint slide deck for RFPG members’ use (July)
- Periodic e-newsletter to inform and engage (Aug./Sept. launch, continuing throughout planning period)
- Editorial meetings with key media regionwide (Summer/Fall)

Public Outreach: Ongoing Efforts

- Branded e-alerts to stakeholders, media, interested parties
- Timely replies to inquiries submitted through website, email, mail
- Documentation of inbound queries, comments and responses
- Other printed/digital collateral materials as needed for public outreach (one-pagers, etc.)
- Updates to website FAQs, glossary, document library, resource links
- Public meetings: advance postings, e-alerts, logistics facilitation and public comment intake

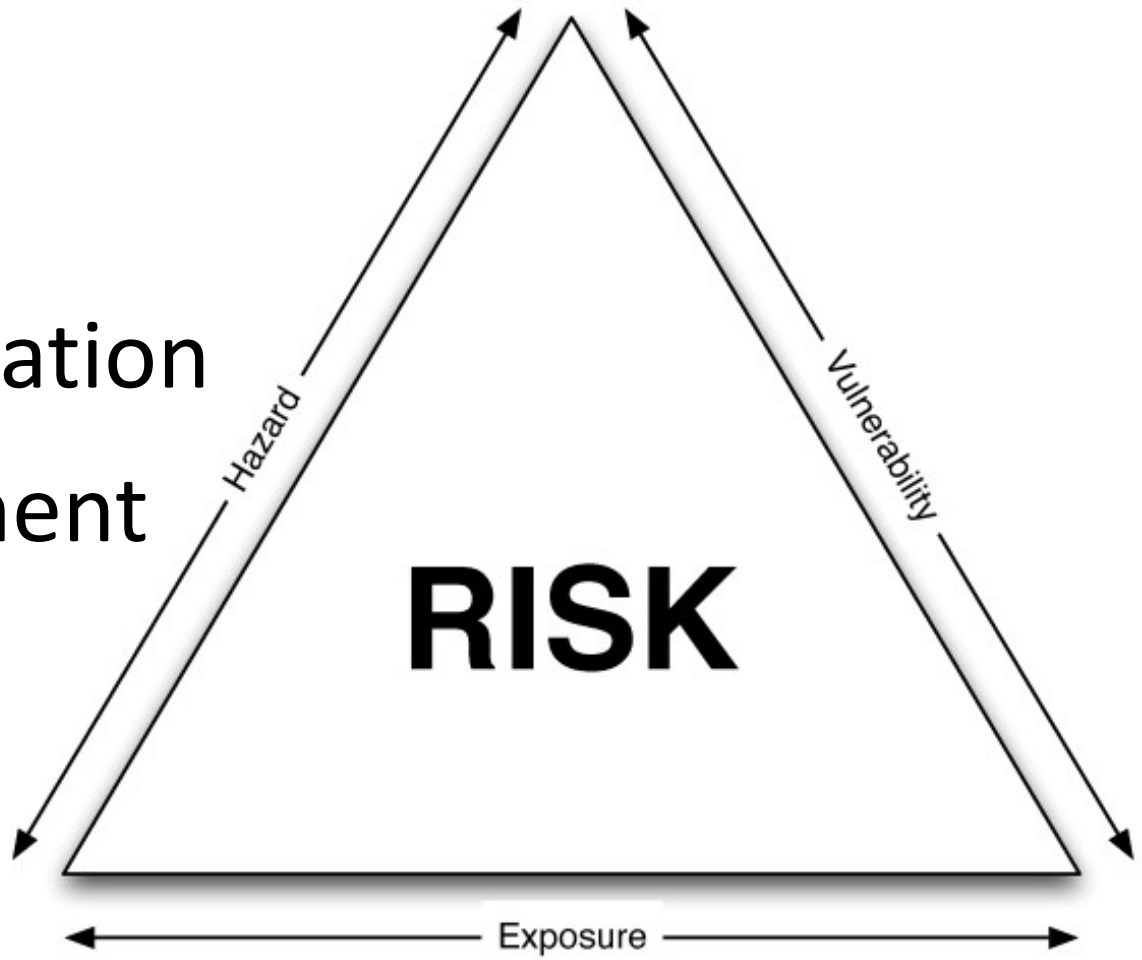
Ch. 2 Introduction & Overview

Flood Risk Analysis



CHAPTER 2
Flood Risk Assessment

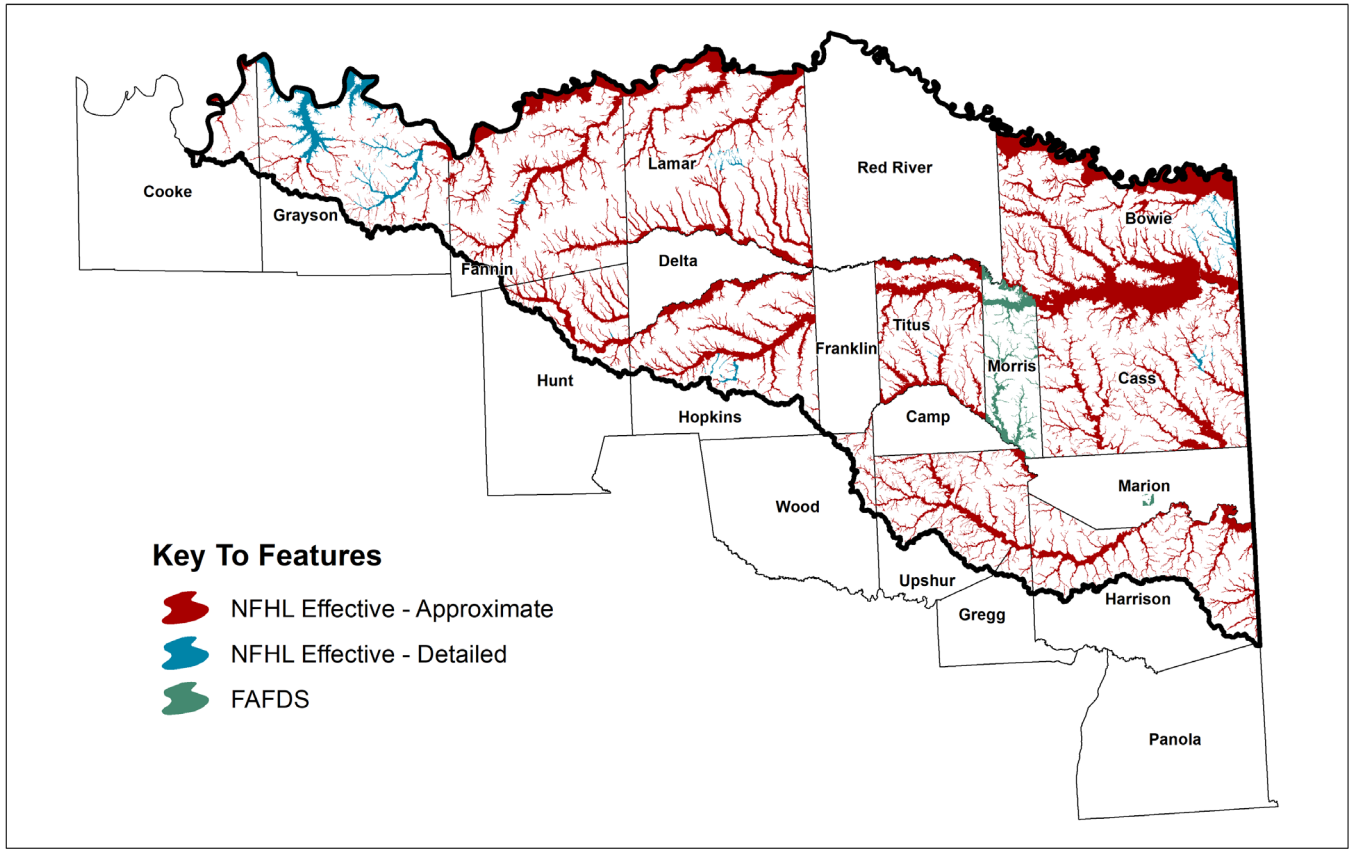
- Flood Risk Mapping
- Flood Exposure Estimation
- Vulnerability Assessment



DATA COLLECTION

Task 2A – Existing Conditions Flood Risk Assessment

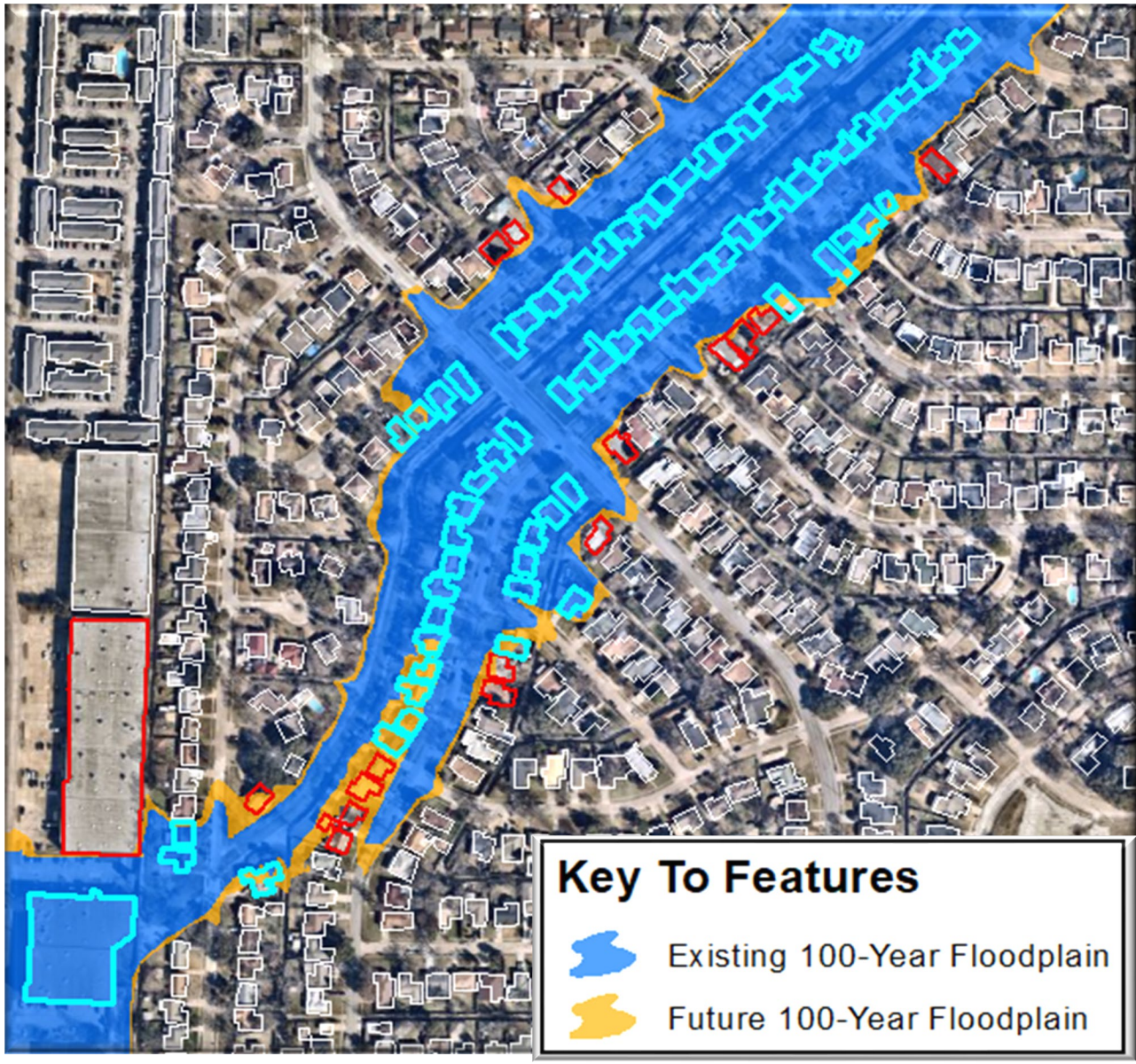
EXISTING FLOOD HAZARD



FUTURE FLOOD HAZARD

Future Mapping

- FEMA
- Community Data
- Machine Learning
- Regional Deltas
- TWDB Estimates



LANDING PAGE

LowerRedSulphurCypress.halff.com

Regional Flood Plan Development

Lower Red-Sulphur-Cypress

In 2019, the Texas Legislation passed Senate Bill 8 that directed the creation of the first-ever State Flood Plan for Texas. The State Flood Plan, which will be prepared by the Texas Water Development Board (TWDB), will follow a similar planning approach that has been used for water supply planning for 20+ years. The TWDB has designated 15 regional flood planning areas throughout the state. The Regional Flood Planning Groups (RFPGs) are responsible for developing regional flood plans in accordance with TWDB requirements and guidelines by January 2023. The TWDB will combine the regional plans into the first state flood plan by September 2024. The overall goal of the RFPGs is to determine the nature of flood risk in the regions, evaluate flood mitigation and management practices, and identify projects that reduce flood risk without negatively affecting neighboring areas.

Who can help? The RFPG is seeking participation from everyone affected by flooding. Using the boxes below, please select which type of stakeholder you represent. If you have any trouble, technical issues or wish to coordinate directly with us, please email us.

When is it due? The RFPG will close data collection on July 30, 2021, to allow sufficient time for compilation and assessment in the development of the regional plan.

Seeking additional information?

- A region synopsis providing additional information regarding this region is located here
- A listing of commonly used flood related acronyms is located here
- A link to TWDB's Flood Planning information is located here
- A link to the Region's Flood Planning website is located here

Community Representative?

Community Stakeholders in the RFPG process include individuals with flood-related responsibilities, such as County and Community Officials and Staff as well as Federal, State, regional, and local authorities, utilities, and districts.

By logging on with your email address and the password provided, you can help provide the RFPGs with localized knowledge of flood planning resources and validate a wide array of flood risk data. Through this data collection effort, the RFPG is requesting community stakeholders:

- Provide information about your contact information and flood-related responsibilities
- Verify collected flood information through an entity-specific backgrounder
- Respond to questions to support the development of the regional flood plan
- Verify and provide geospatial data through data uploads and web maps

The RFPG appreciates any information you are able to verify and provide with the understanding that it may not be possible to provide response to all items.

Take me to the entity login

Member of the Public?

Public Stakeholders in the RFPG process include general public individuals, groups, and organizations including non-profit and non-governmental organizations with an interest in providing information to support flood planning efforts.

By providing your name, address and email address, you can help provide the RFPG with localized knowledge of flood prone areas and areas where flood mitigation is needed. Your contact information is used to document who is providing information in case we have any follow-up questions.

Name

Address

Email

Once you enter your information, an interactive web map of the region will open. A search feature in the lower right corner of the map enables you to zoom to a particular address. Using the add feature tool, you can leave one or more location pin including a comment or description about flood issues/concerns.

Take me to the map

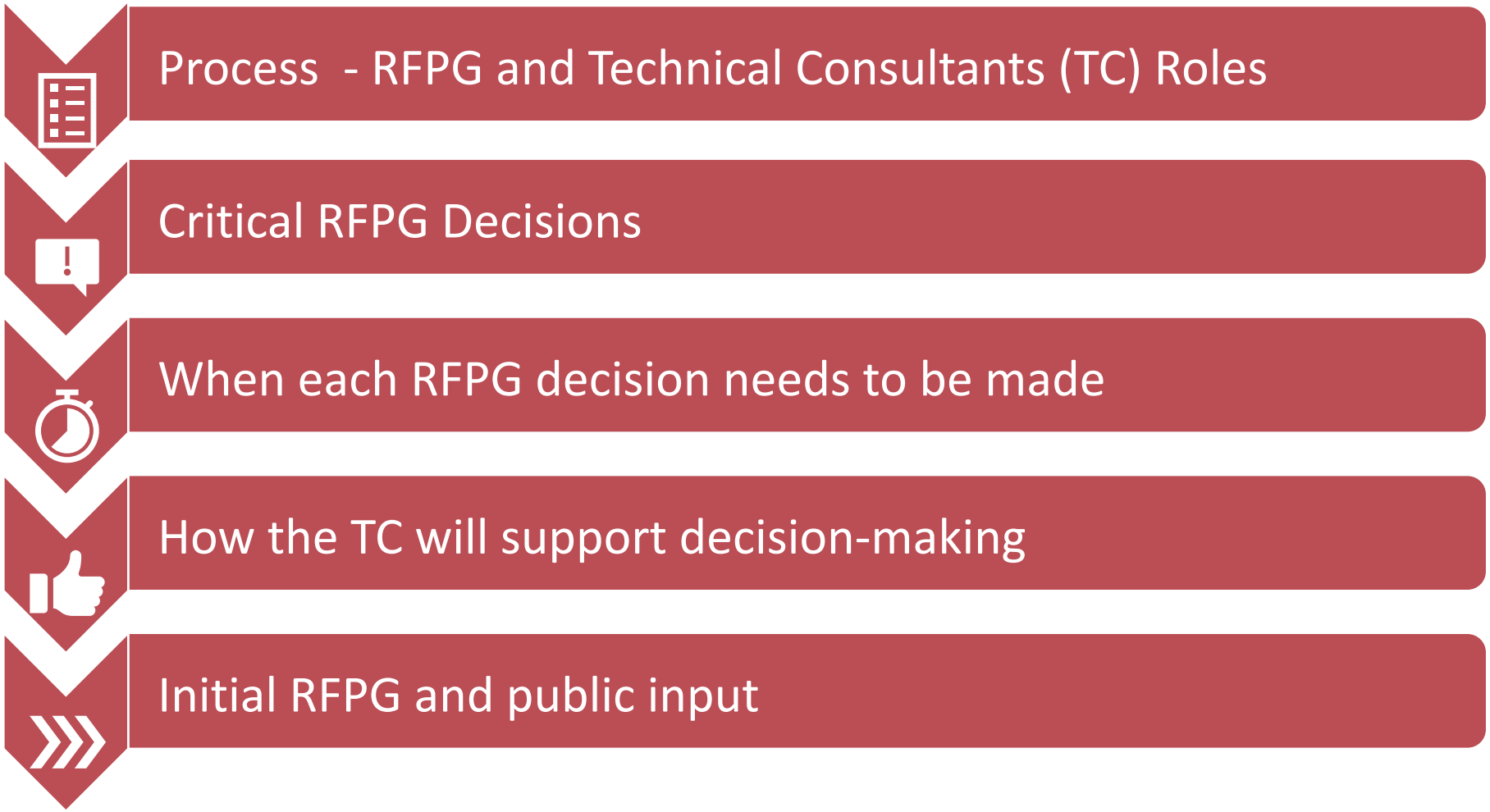
Note: Closing date is subject to change

Ch. 3 Introduction & Overview

Floodplain Management Practices & Flood Protection Goals


Collect Data
Set Goals
Analyze
Recommend

Task 3 Topics



TASK 3 – Process and Timeline

August September

TC provides Task 3 overview and initiates Floodplain Management Standards and Goals discussion.

RFPG starts considering whether to Recommend or Adopt certain Floodplain Management Standards.

RFPG provides initial input of top priority goals. (Short- and Long-Term)

RFPG considers public input regarding Standards and Goals.

TASK 3 – Process and Timeline

August September

TC develops Floodplain Management Standards and Goals based on July meeting deliberation, additional data, and public input.

TC prepares recommended set of Standards and Goals.

TC and **RFPG** maintain close collaboration to prepare draft Goals and minimum Standards strategy.

July **August** **September**

TC provides update on data collection and public input.

TC presents recommended set of Standards and Goals.

RFPG deliberates on Standards and Goals and considers public input.

TASK 3 – Process and Timeline

August **September**

TC refines selected Standards and Goals based on **RFPG** input.

TC prepares Chapter 3 draft for Technical Memo.

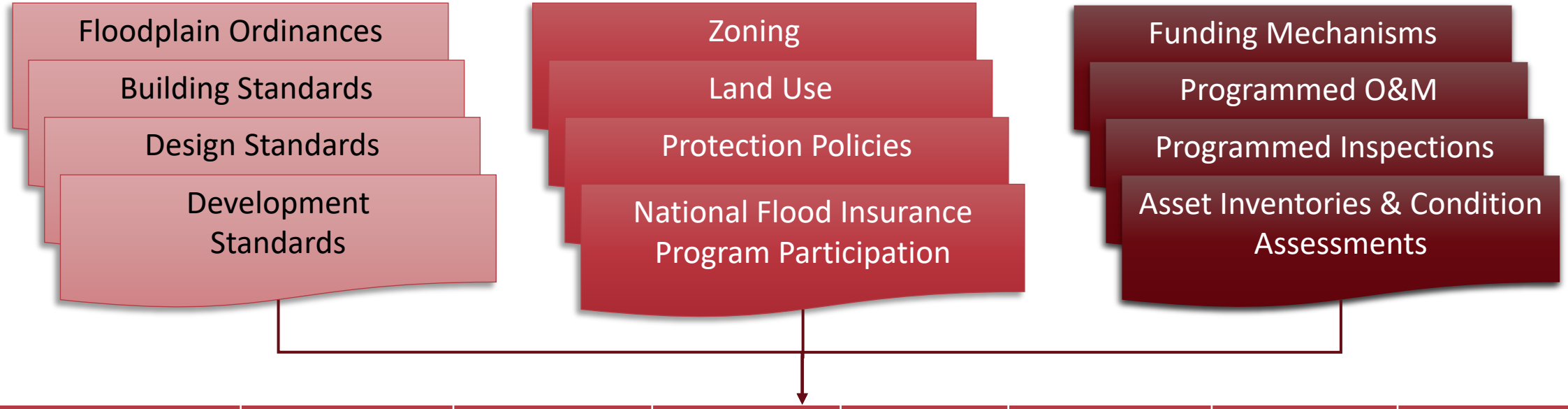
RFPG reviews Chapter 3 draft.

July **August** **September**

✓	**RFPG** 1st decision: Recommend or Adopt minimum standards?	**No)** No further action **Yes)** Need to set preference
✓	**RFPG** 2nd decision: Preference	**A)** Recommend **B)** Adopt
✓	**RFPG** 3rd decision: Select specific minimum Standards to Recommend or Adopt (Region-wide and/or Sub-Region)	
✓	**RFPG** 4th decision: Adopt Short/Long-Term Goals	

Task 3 – Technical Consultants Support

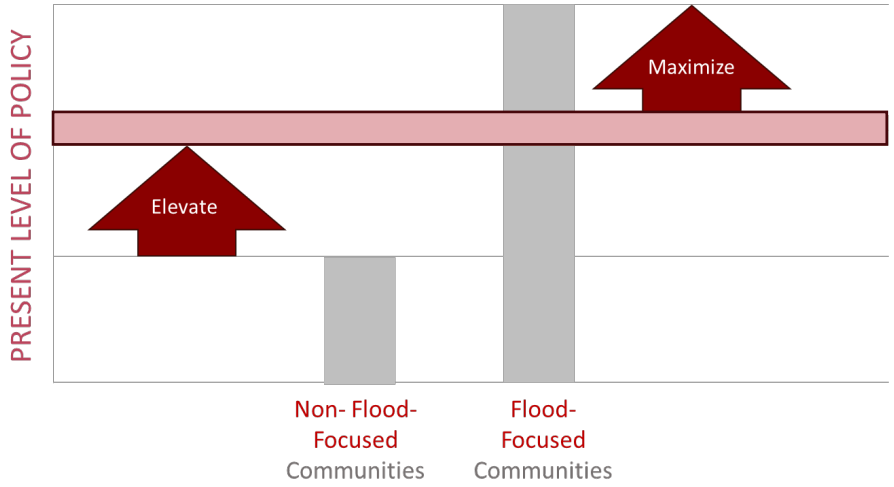
COLLECT DATA



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

ANALYSIS

FEMA Minimum Standards

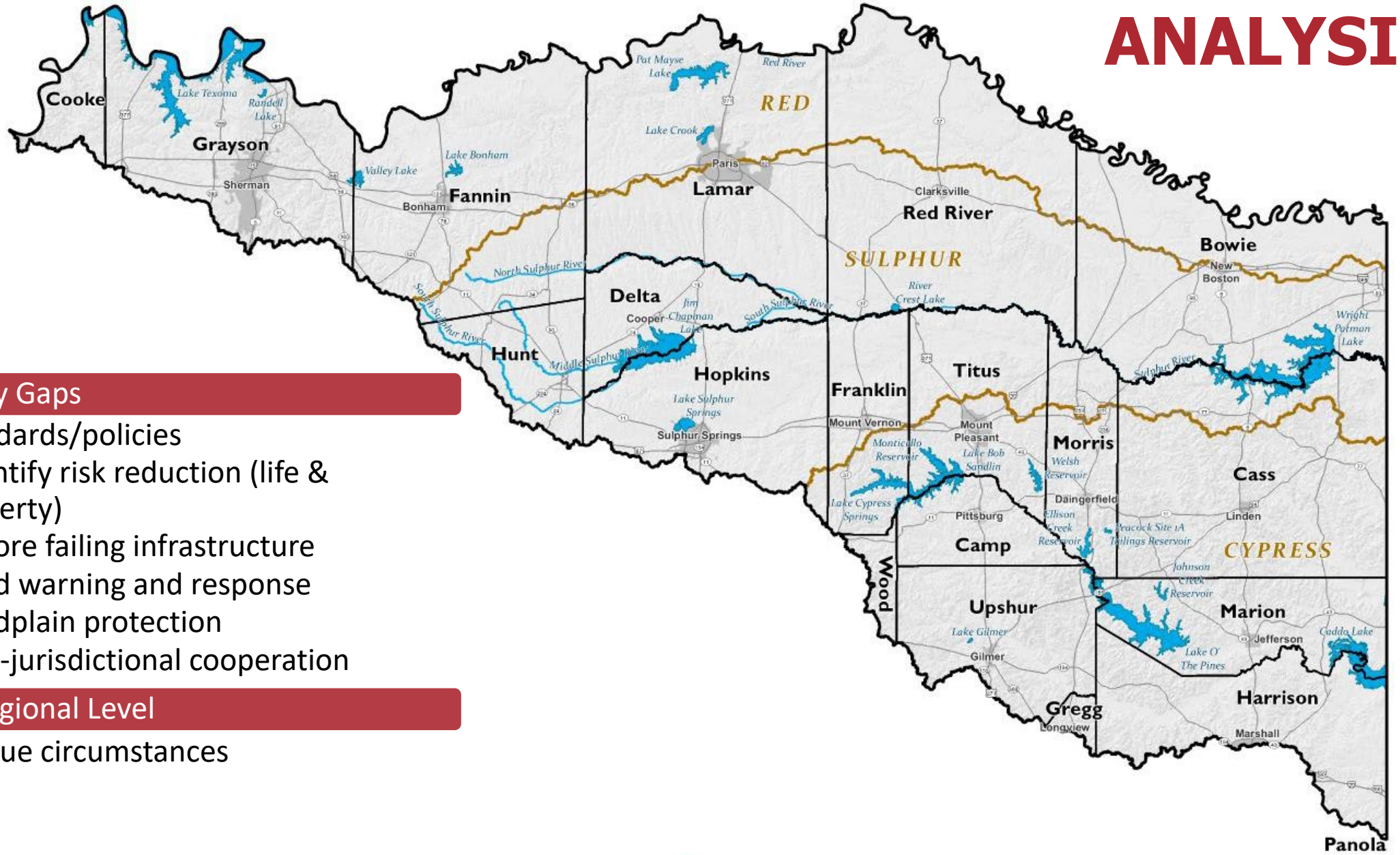


County boundaries
Major river basin boundaries
Major roadways
Major reservoirs
Major rivers
County seats

0 20 Miles

Texas Water Development Board
1700 North Congress Avenue, Austin, TX 78701
www.twdb.texas.gov - @twdb - facebook.com/twdboard

ANALYSIS



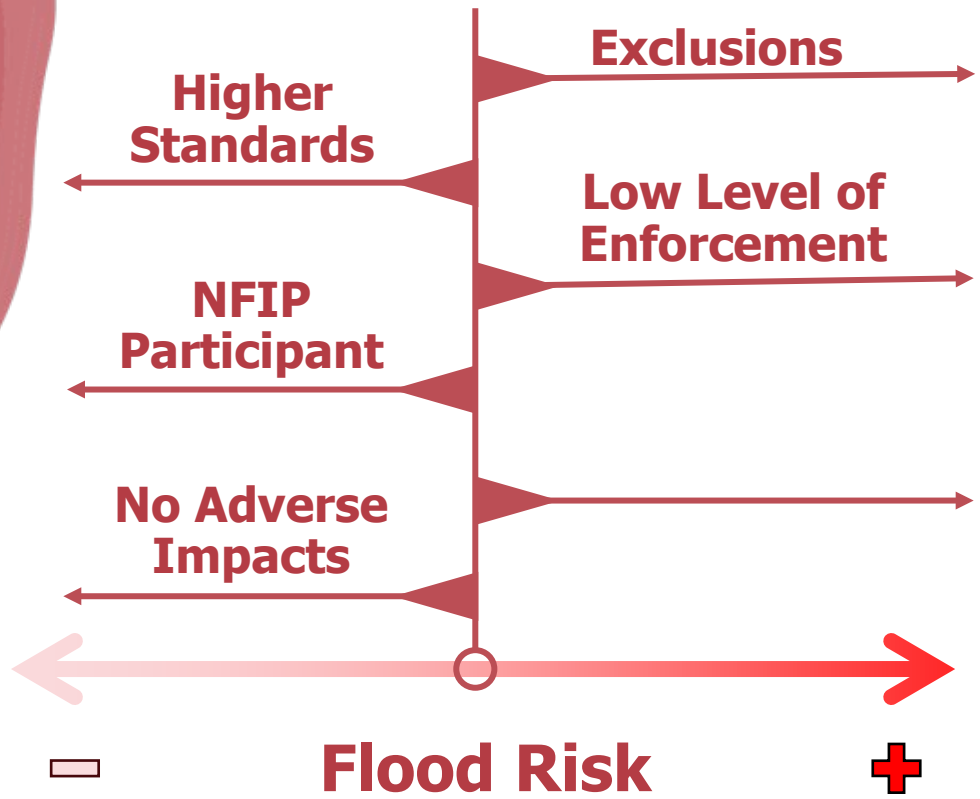
Identify Gaps

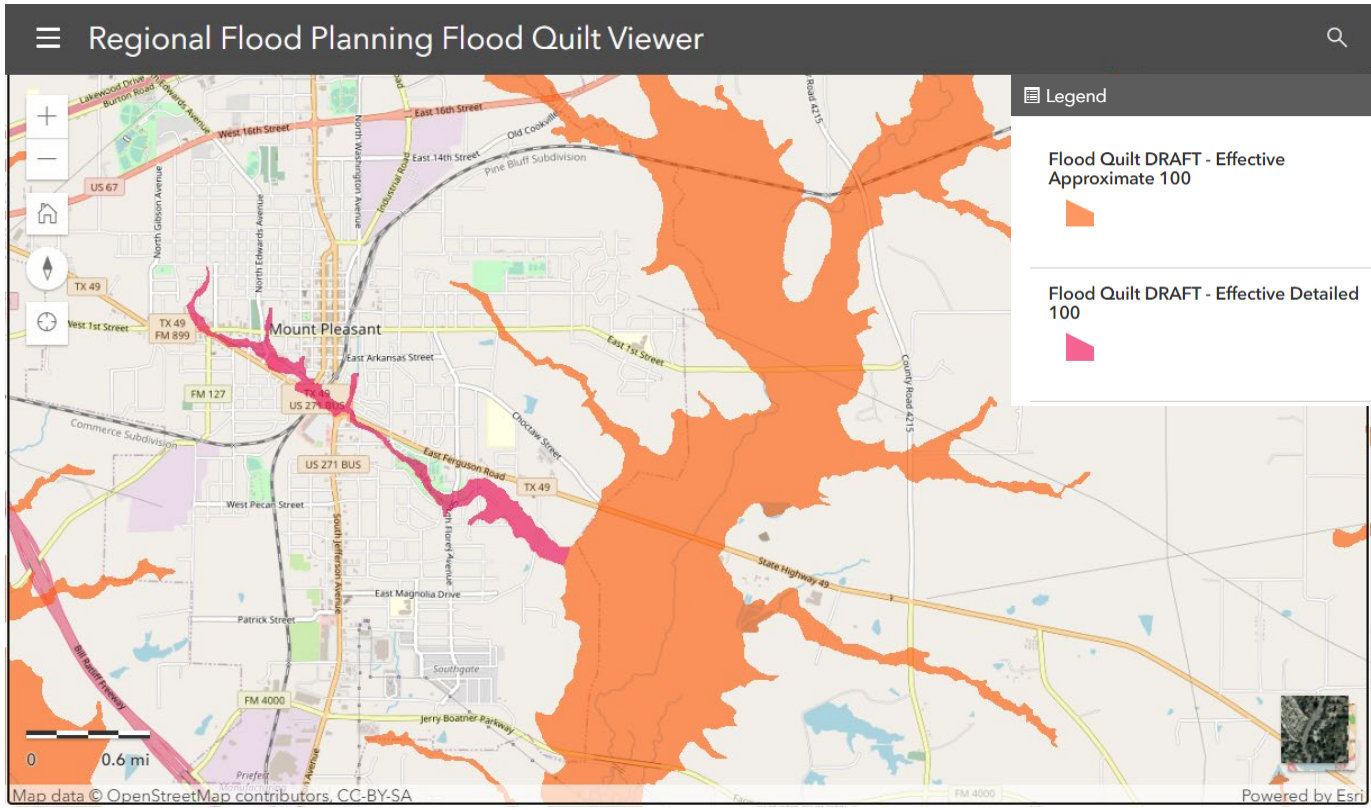
- Standards/policies
- Quantify risk reduction (life & property)
- Restore failing infrastructure
- Flood warning and response
- Floodplain protection
- Inter-jurisdictional cooperation

Sub-Regional Level

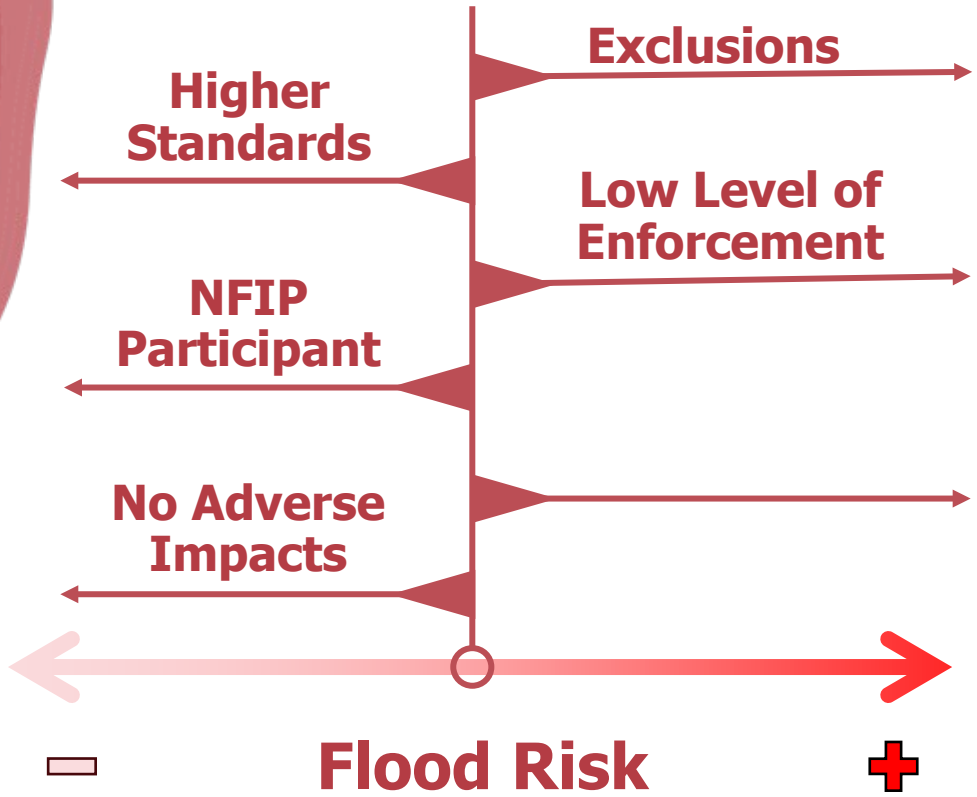
- Unique circumstances

ANALYSIS
Existing Conditions





ANALYSIS
Future Conditions



RECOMMEND
Preliminary Standards – if applicable

RFPG

Technical Consultant

Data Collection

- Floodplain Management
- Land Use Standards
- Economic Development
- Infrastructure Protection Standards

Standards: Recommend or Adopt?

Recommend

No pre-requisite. All FME, FMS and FMP can be considered in the Regional Flood Plan

Adopt

Jurisdictions must meet adopted standards BEFORE FME, FMS or FMP can be considered for inclusion in the Regional Flood Plan

RECOMMEND
Preliminary Goals

- Lower Risk to Life & Property
- Infrastructure Protection
- Land Preservation
- Funding Mechanisms
- Adopt Minimum Standards
- Increase NFIP Participation

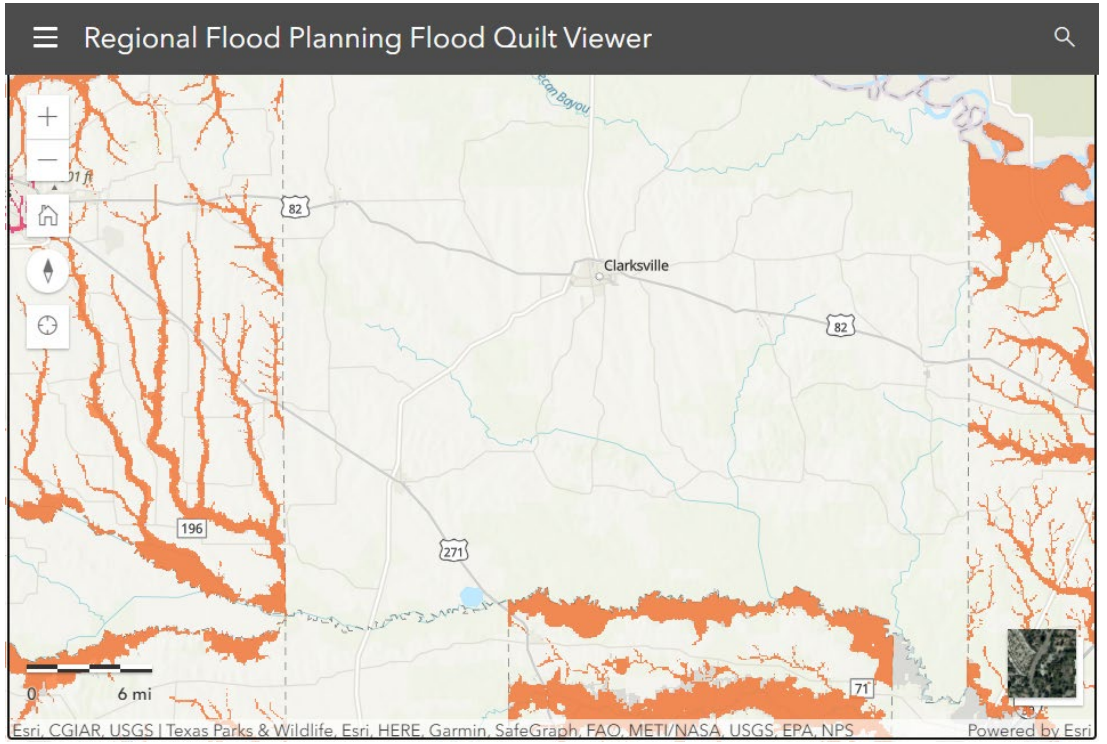
→ Short-term (10-yr)
→ Long-term (30-yr)

Data Collection

Public Input

→ Preliminary Standards

RECOMMEND
Preliminary Goals - Examples



Goal	Term of Goal	Target Year	Applicable to	Overarching Goal
Increase coverage of flood hazard data by completing studies in 50% of the areas identified as having current gaps in flood mapping.	Short Term	2033	HUC-8 Watershed	Protect against the loss of life and property

RECOMMEND
Preliminary Goals - Examples

Non-Structural Goals

Goal	Term of Goal	Target Year	Applicable to	Overarching Goal
50% of the region's population is part of a municipality that has a **dedicated funding mechanism** for drainage projects.	Short Term	2033	Entire Region	Protect against the loss of life and property
Consider and incorporate **nature-based practices** in flood risk reduction projects.	Short Term	2033	Entire Region	Protect against the loss of life and property
Enroll 50% of non-participating communities into the **National Flood Insurance Program**.	Short Term	2033	Entire Region	Protect against the loss of life and property

RECOMMEND
Preliminary Goals - Examples

Goal	Term of Goal	Target Year	Applicable to	Overarching Goal
Remove 20% of the existing **structures** from 1% annual chance **floodplain**	Short Term	2033	Entire Region	Protect against the loss of life and property
Remove 50% of the existing **structures** from 1% annual chance **floodplain**	Long Term	2053	Entire Region	Protect against the loss of life and property

Summary

Standards

Recommend or Adopt minimum standards?

Preference

A) Recommend
B) Adopt

Specific minimum standards to Recommend or Adopt

(Region-wide and/or Sub-Region)

Goals/TWDB Requirements

Select Short/Long-Term Goals
Protect life and property
Specific
Actionable
Measurable

Approaches

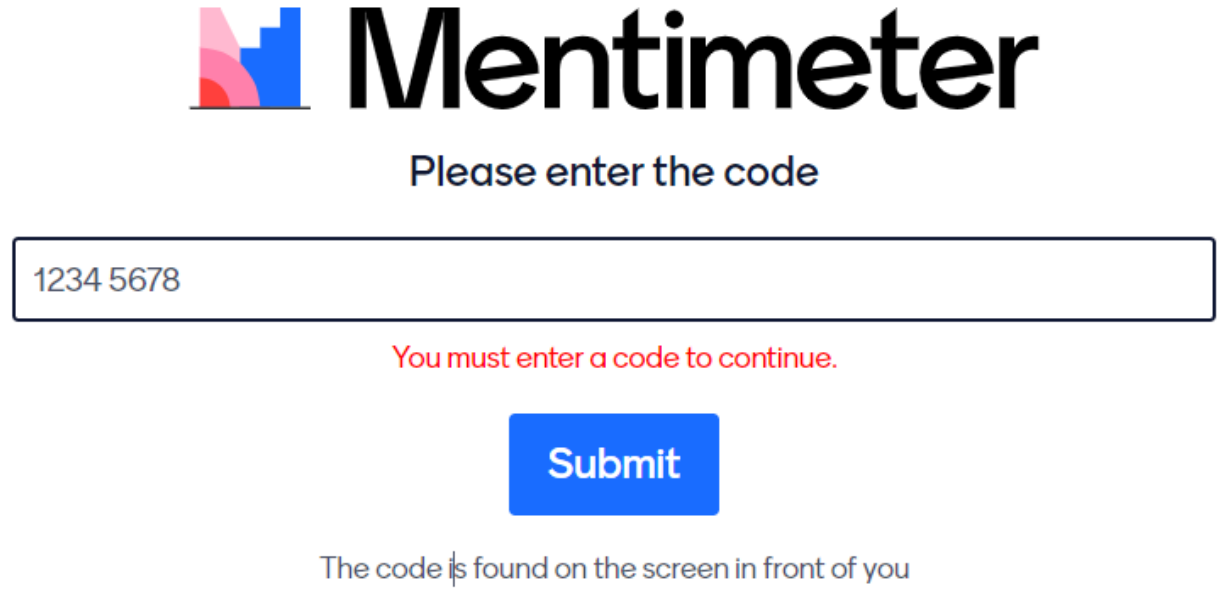
Structural
Non-Structural
Policy
Funding

Interactive Session

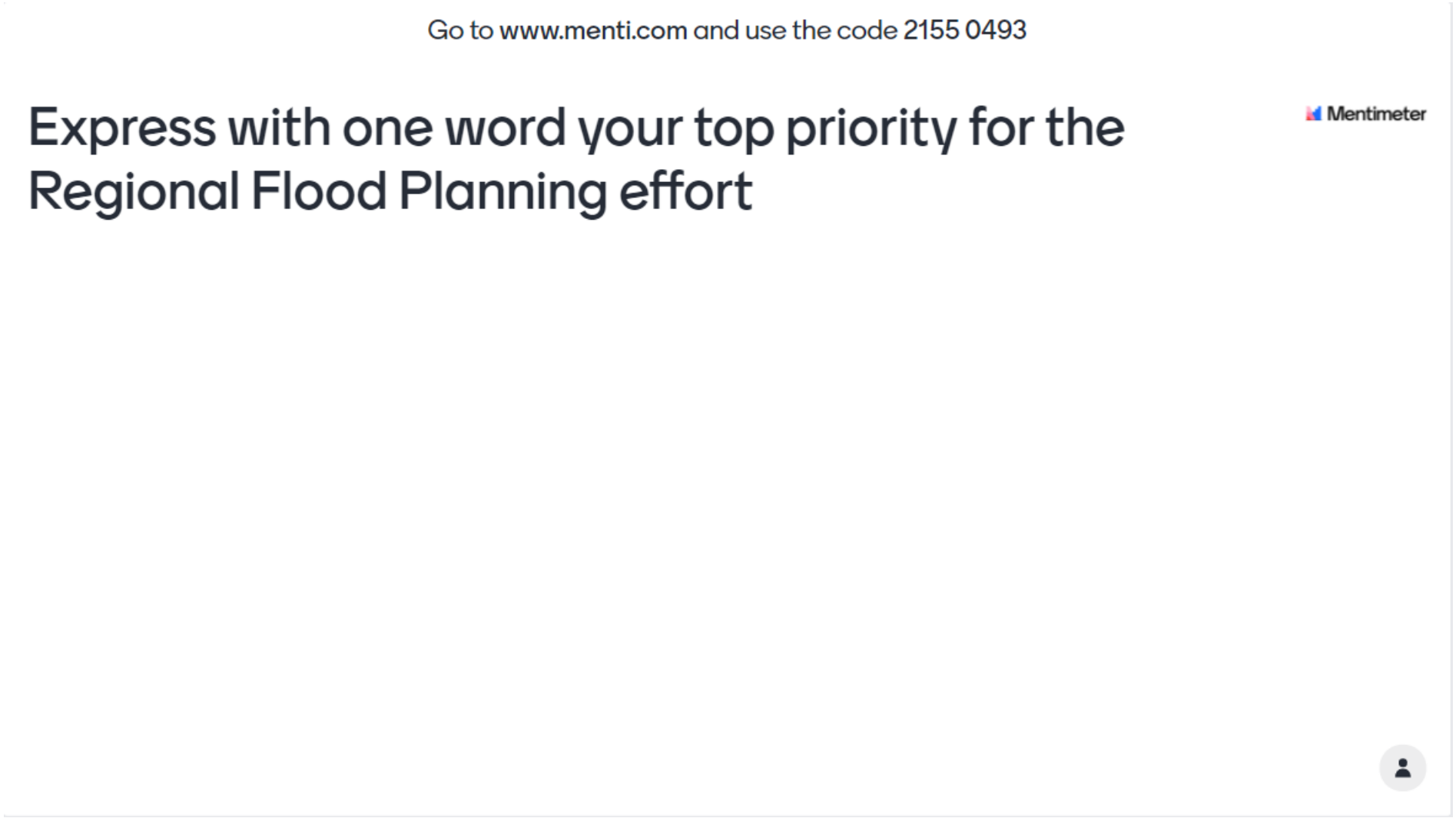
On your phone or computer, go to:

www.menti.com

Use code: 2155 0493



Interactive Session

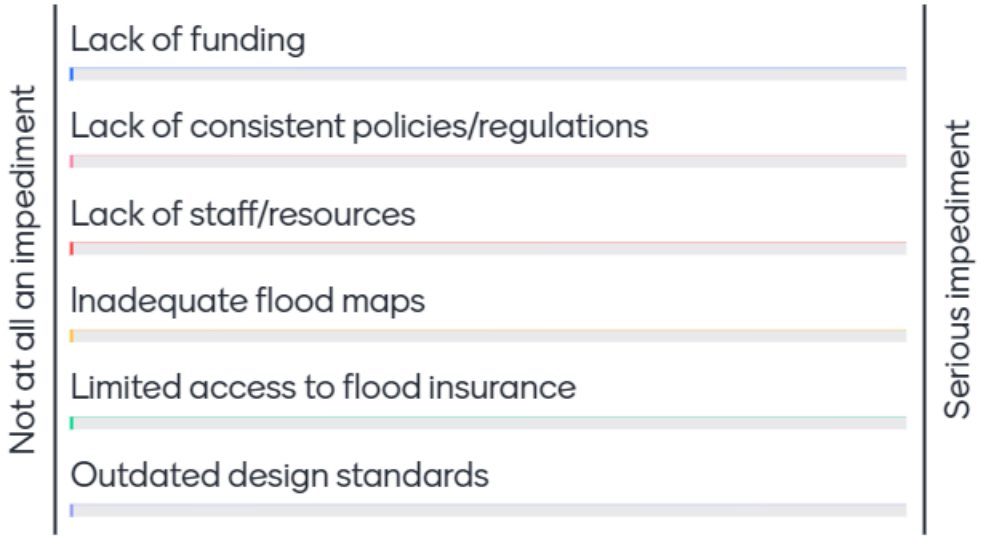


Interactive Session

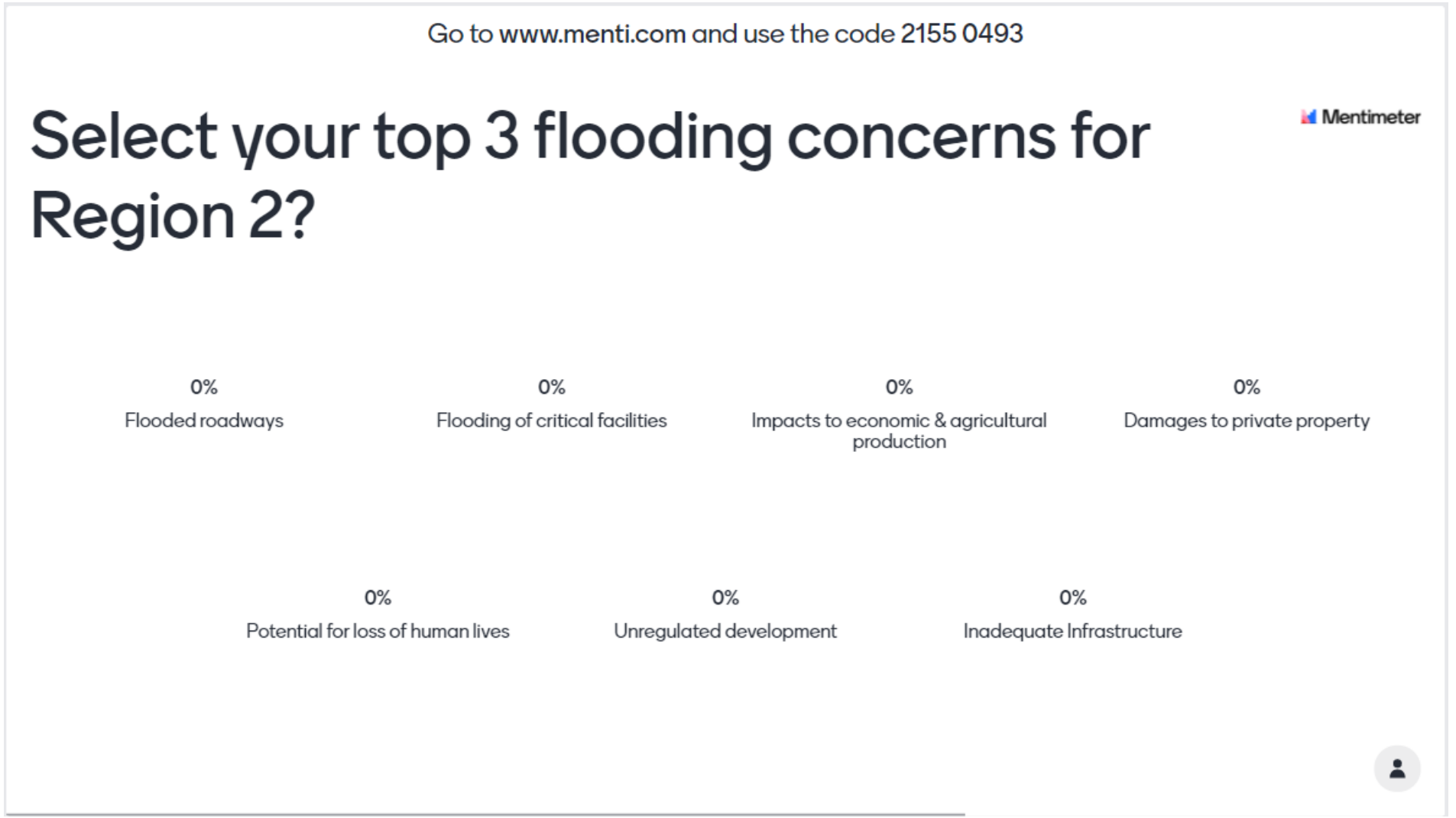
Go to www.menti.com and use the code 2155 0493

Mentimeter

Do you consider these issues an impediment to effective floodplain management?



Interactive Session

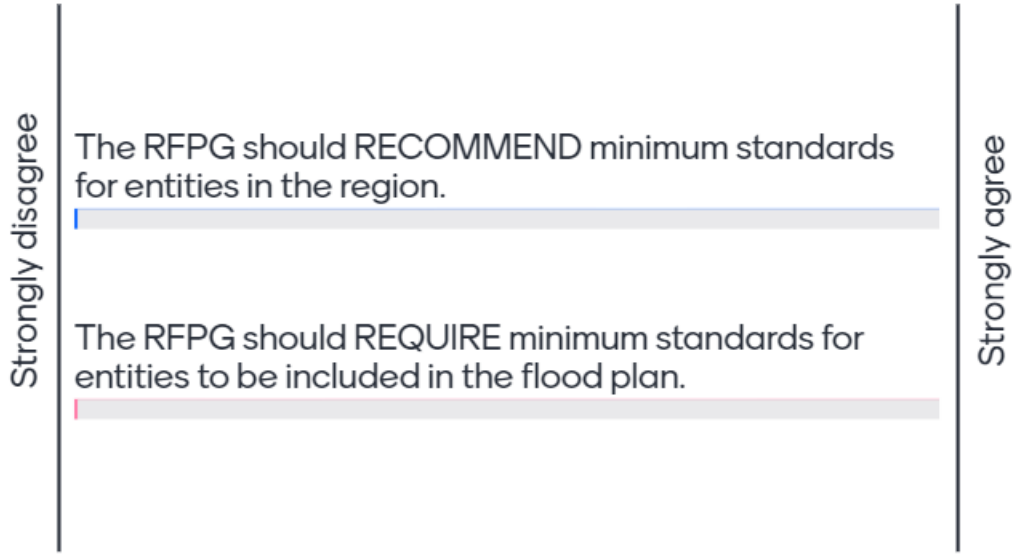


Interactive Session

Go to www.menti.com and use the code 2155 0493

Indicate your initial preference with regard to regional floodplain management standards

Mentimeter



Interactive Session

Go to www.menti.com and use the code 2155 0493

Which minimum standards and programs, if any, should be considered by the RFPG?

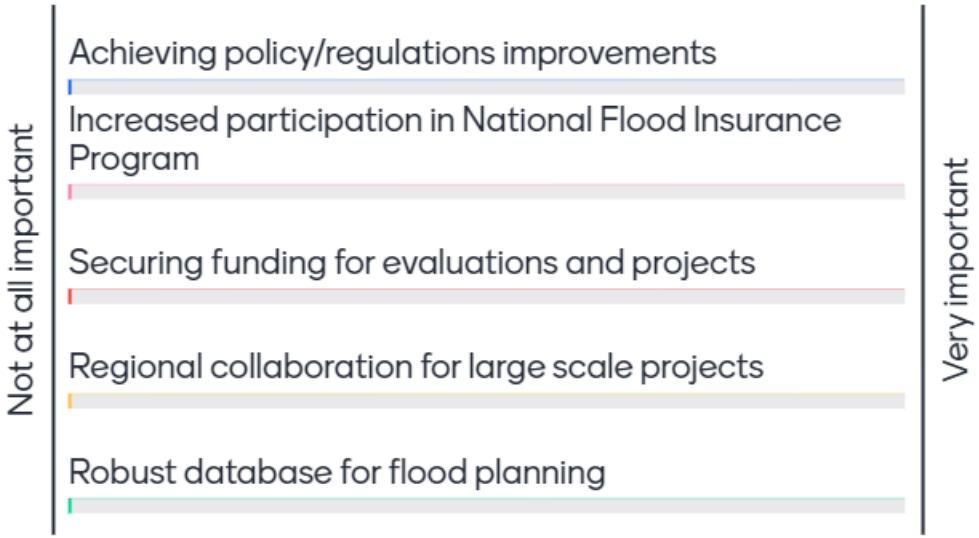
Mentimeter

Interactive Session

Go to www.menti.com and use the code 2155 0493

How important are the following outcomes for a successful Regional Flood Plan?

Mentimeter



WHAT NEXT?

LOOK-AHEAD

August
- Preliminary survey & web map results
- Determine floodplain management and mitigation goals

September
- Map & Chapters 1, 2 & 3 approvals
- Process to identify FMEs, FMSs & FMPs (Chapter 4)

October
- No meeting

November
- Chapter 4 & Tech Memo approvals

December
- No meeting (unless needed to approve Tech Memo)

Other Updates

- The legislature has authorized additional funding ($10 M statewide) for the State Flood Planning effort.
  - TWDB has asked for input from the flood planning groups on how to spend money
  - Impact is uncertain
  - Working with Mr. Hayter and ATCOG to respond to respond

OPEN DISCUSSION

Floodplain Management Practices & Flood Protection Goals