

Combined CRS Users Group/Elected Officials Seminar

Regional Flood Planning Effort Update

Glenn Clingenpeel, Chair

Stephanie Griffin, Project Manager



TRINITY

Agenda

- Regional flood planning overview
- Summary of Draft Plan
- Upcoming opportunities



Notorious Holiday Floods

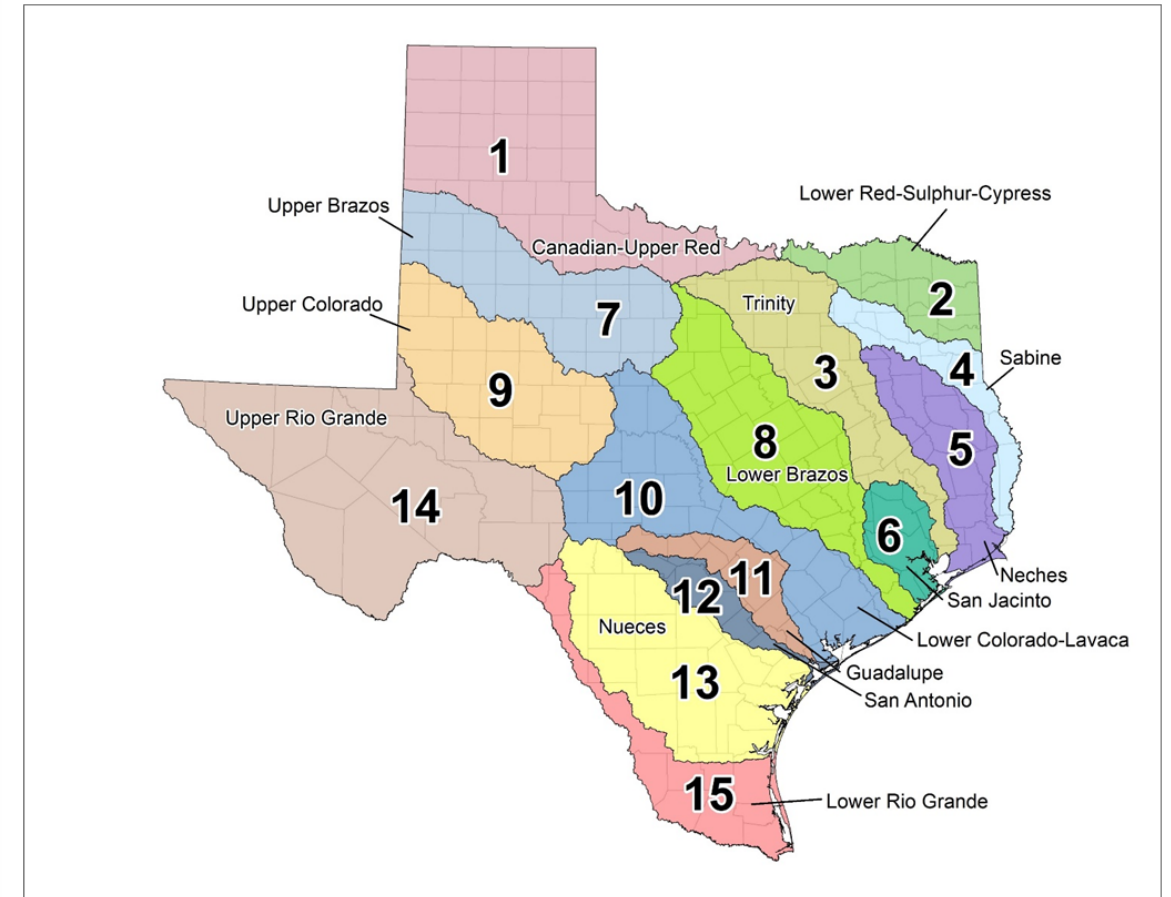
- 2015 – Memorial Day
- 2015 – Halloween
- 2015 – Christmas
- 2016 – Tax Day
- 2016 – Memorial Day
- 2017 – Hurricane Harvey
- 2018 – Independence Day
- 2018 – Labor Day
- 2019 – Halloween

Since 2015, Texas has experienced 14 flood-related events that have resulted in a Federal Emergency or Major Disaster Declaration, which totals to more than \$5 billion in FEMA obligations.



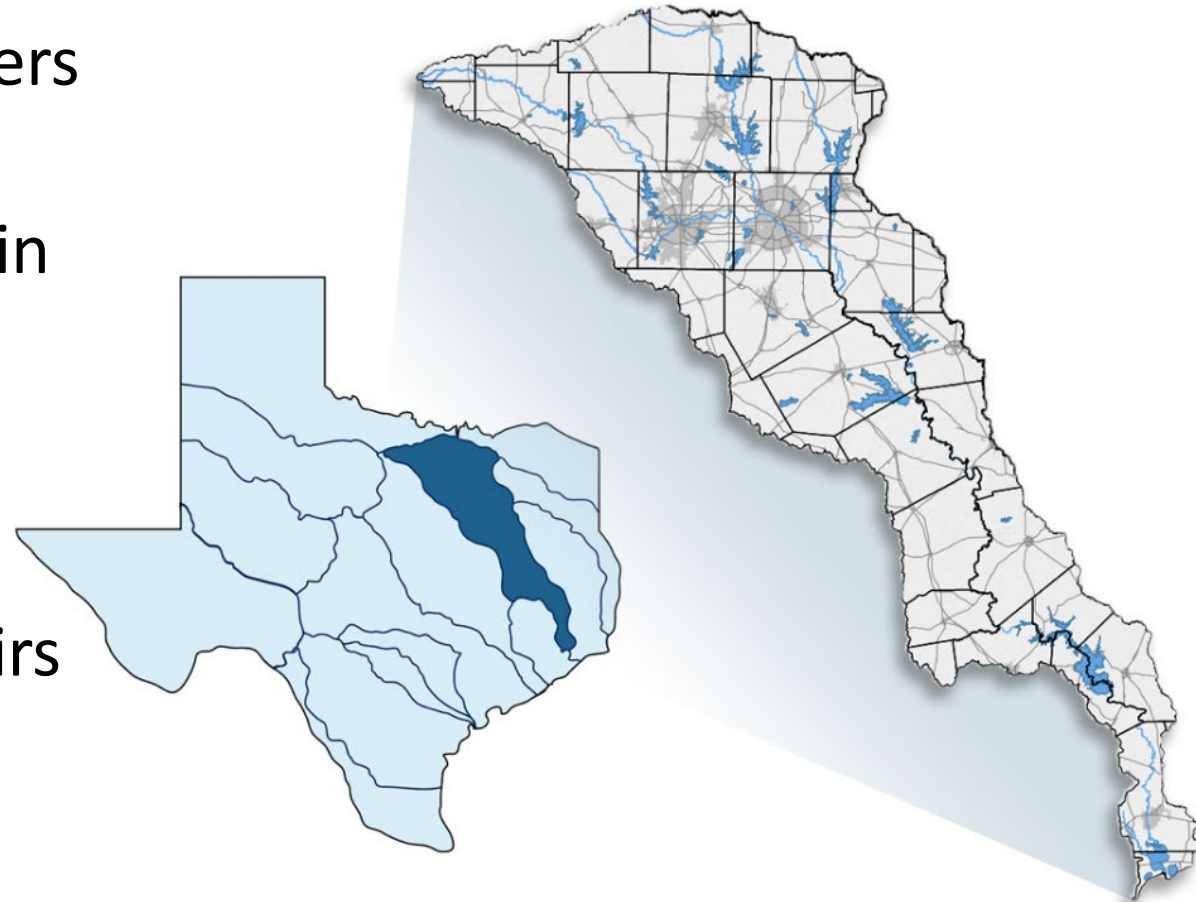
RFPG Basics

- 2019: 86th Texas Legislature passed Senate Bill 8, providing process for statewide flood planning
- Texas Water Development Board (TWDB) responsible agency
 - 15 regions
 - 12 interest categories
- Fall 2020: TWDB established RFPGs
- Spring 2021: RFPGs selected technical consultants



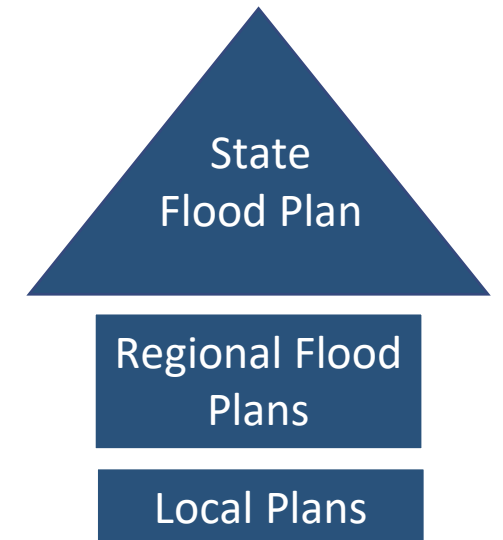
Region 3 Trinity River Basin

- Spans from Cooke County to Chambers County
- 38 counties entirely or partially within the region
- 17,920 square miles
- 15,855 stream miles
- More than 30 major lakes & reservoirs



Regional Flood Planning Process

- Approach modeled after regional water planning
- Grassroots (“Bottom up”) approach
- Same scope of work for each RFPG
- Regional flood plans will roll up to become State Flood Plan
- Public process



The Trinity Regional Flood Planning Group

Voting members:

- Chad Ballard
- Sano Blocker
- Melissa Bookhout
- Glenn Clingenpeel
- Scott Harris
- Rachel Ickert
- Andrew Isbell
- Jordan Macha
- Galen Roberts
- Matt Robinson
- Lissa Shepard
- Sarah Standifer

Interest group represented:

Small business
Electric generating utilities
Agricultural interests
River authorities
Water utilities
Flood districts
Public
Environmental interests
Water districts
Industries
Counties
Municipalities



The Trinity Regional Flood Planning Group



Non-voting members:

- Richard Bagans
- Rob Barthen
- Steve Bednarz
- Bert Galvan
- Kris Robles
- Andrea Sanders
- Adam Whisenant
- Ellen Buchanan
- Todd Burrer
- Jerry Cotter
- Lisa McCracken
- Justin Bower
- Diane Howe
- Lonnie Hunt
- Edith Marvin
- Greg Waller

Organization represented:

- Texas Water Development Board
- Texas Department of Agriculture
- Texas State Soil and Water Conservation Board
- Texas Commission on Environmental Quality
- General Land Office
- Texas Division of Emergency Management
- Texas Parks and Wildlife Department
- Neches Flood Planning Group (liaison)
- Region 6 San Jacinto Flood Planning Group (liaison)
- USACE, Fort Worth
- USACE, Galveston
- Houston-Galveston Area Council
- Federal Emergency Management Agency
- Deep East Texas Council of Governments
- North Central Texas Council of Governments
- Natl Weather Service / West Gulf River Forecast Center

Expectations of First Flood Plan

What to Expect

- Significant increase in knowledge about flooding in the Trinity basin
- Consolidation of information and resources
- Make funding sources available to local and regional entities
- Understand what we don't know
 - Where are our data gaps?
 - What studies and evaluations are needed?

What NOT to Expect

- An end to flooding
- A list of “silver bullet” projects that will fix specific flooding issues
- Understand all facets of flooding the basin
- Flood control projects that will significantly benefit water supply

Regional Flood Plan Components

Existing & Future Conditions

Task 1

Introduce region

Task 2

Determine current and future flood risk

Task 3

Establish planning goals

Task 4

Identify potential solutions

Recommended Solutions

Task 5

Select recommended solutions

Task 6

Identify potential impacts

Task 7

Summarize flood response info

Task 8

Recommend improvements

Task 9

Identify funding sources

Task 10

Encourage public participation

Amended to Include

Task 11

Perform additional outreach

Task 12

Advance FMEs to FMPs

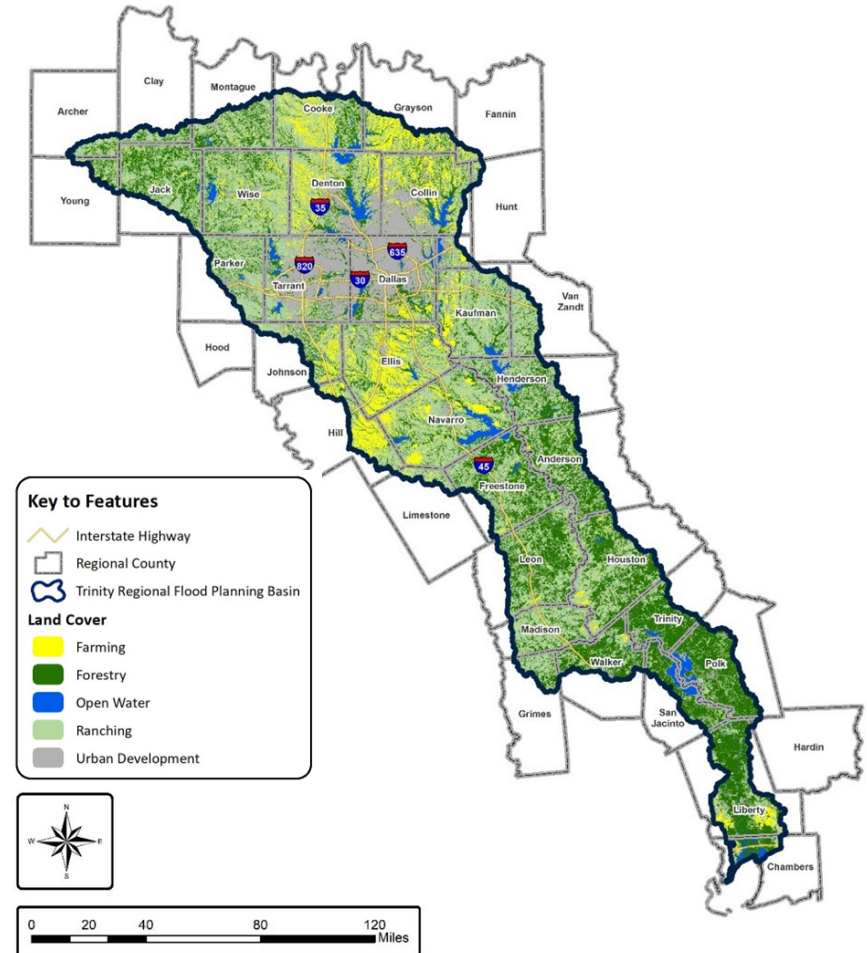
Task 13

Adopt amended plan



Chapter 1: Overview of Region

- Working lands
 - Farming/Crop Production
 - Predominant in Upper and Mid Basin areas
 - Concentrations of farming in Liberty County
 - Forestry
 - Predominant working land type in Lower Basin
 - Relationship to national forests and preserves
 - Ranching
 - Prominent land use throughout region
 - Largest concentrations located NW of Metroplex and in Mid Basin area



Chapter 2: Current and Future Flood Risk

- Data collection website and outreach

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 background.
- 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.

[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

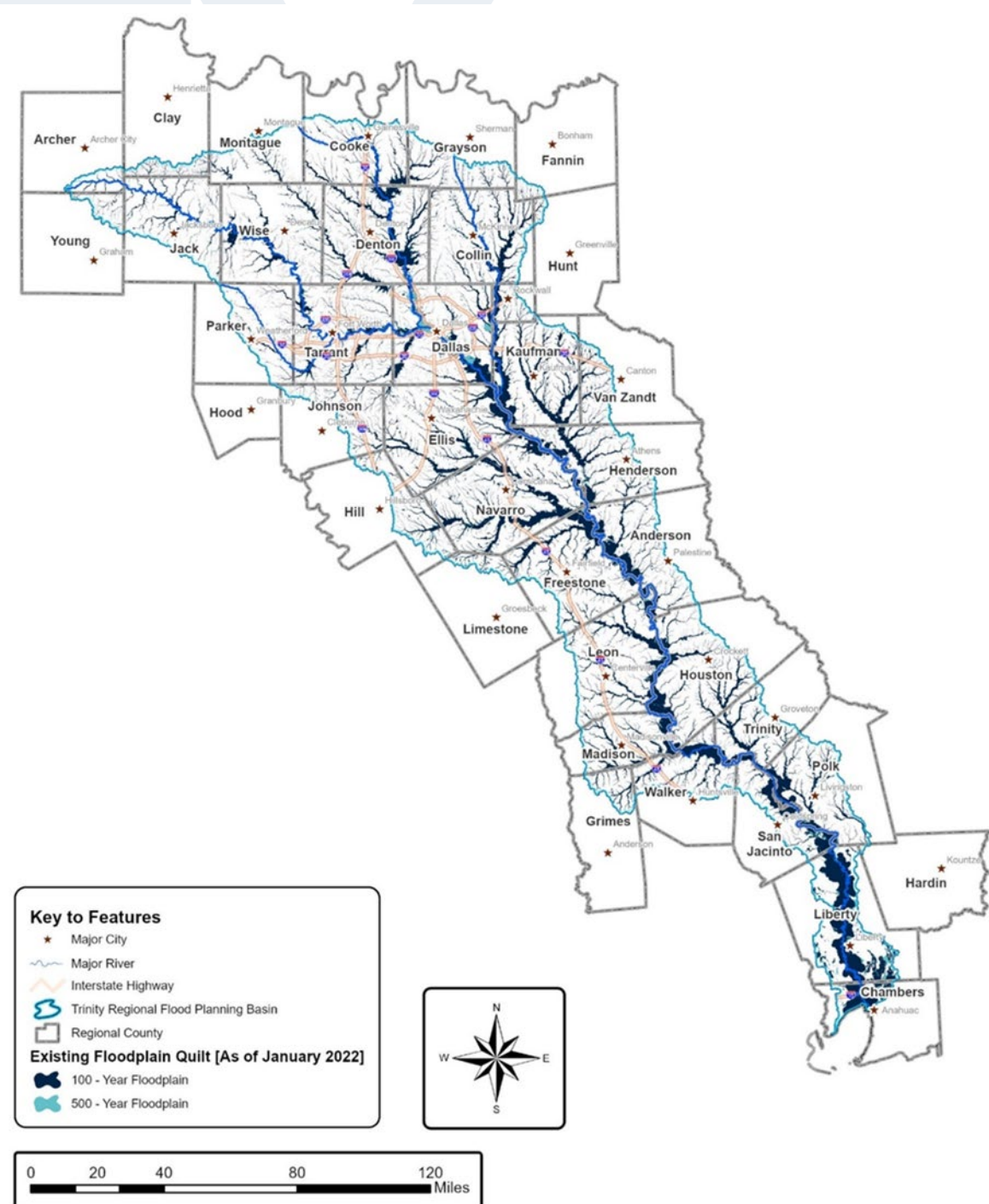
Address

Email

[Take me to the map](#)

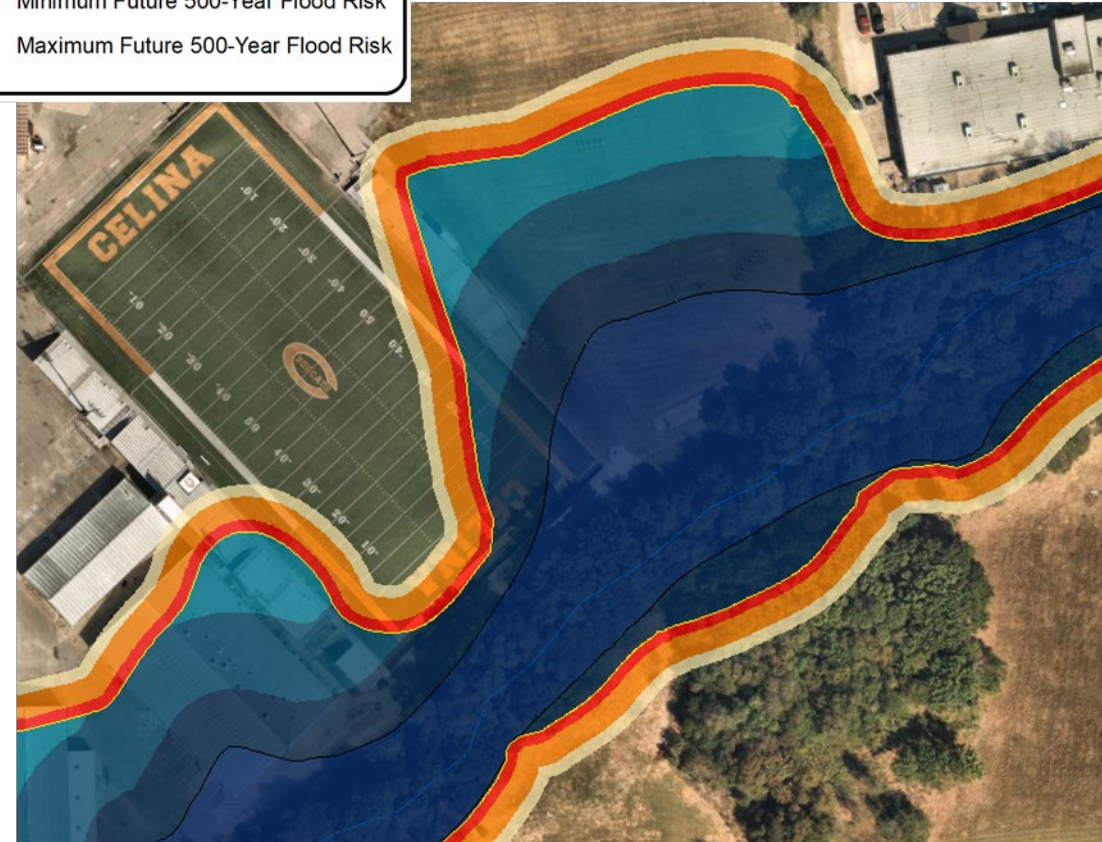
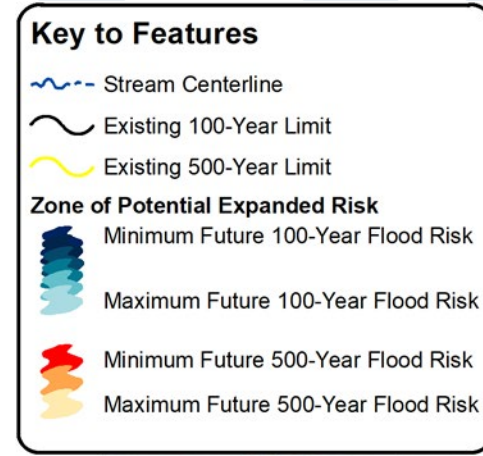
Chapter 2: Current and Future Flood Risk

- Key findings: Existing conditions
 - Region-wide 1.32 million people displaced by 1% Annual Chance Event (ACE)
 - Total value of exposed buildings > \$636 billion
 - More significant impact for 0.2% ACE
 - Assessed impacts of flooding on socially vulnerable populations and community's ability to recover



Chapter 2: Current and Future Flood Risk

- Key findings: Future conditions
 - Difficult to assess because few communities map or model
 - RFPG recommended future
 - 1% ACE floodplains as a range between current 1% and 0.2% ACE
 - 40-foot max buffer for future 0.2% ACE
 - Result: 29% more structures and 25% more people would be potentially impacted by future flood risk conditions



Chapter 3: Planning Goals

- (1) Improve flood warning and public safety
- (2) Improve flood analyses
- (3) Reduce property damage and loss
- (4) Preserve the floodplain
- (5) Improve flood infrastructure
- (6) Expand flood education and outreach
- (7) Expand funding



Chapter 4: Potentially Feasible Actions

Chapter 5: Recommended Actions

Flood Management Evaluations = FME = studies

Flood Mitigation Projects = FMP = projects

Flood Management Strategies = FMS = other actions

The Draft Plan includes a variety of recommendations for each category, totaling over \$1 billion in recommended solutions.



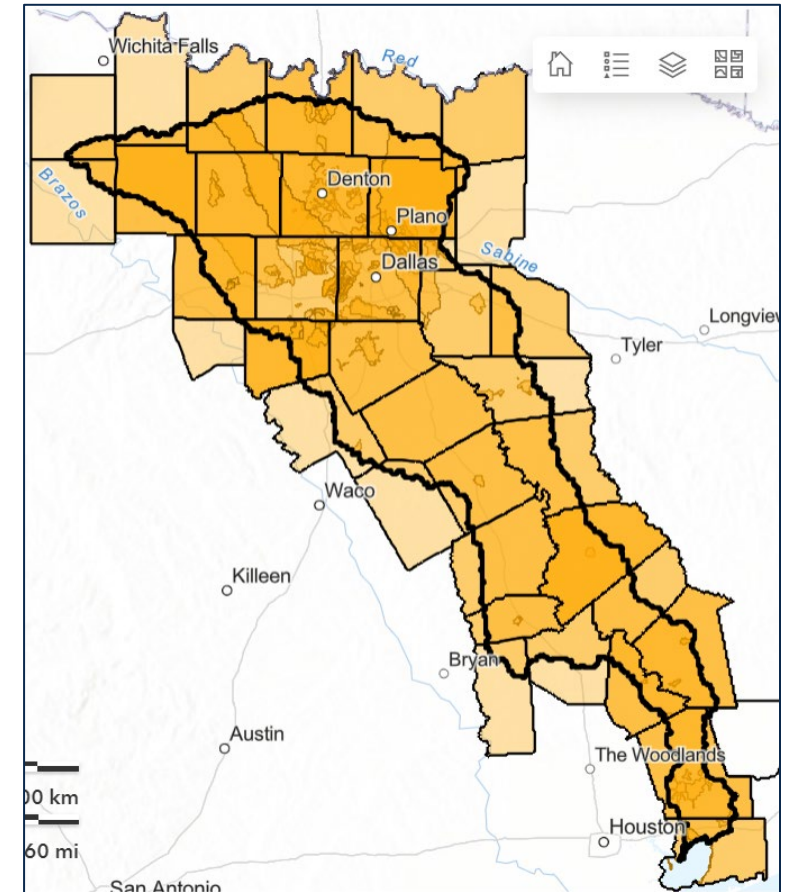
FME: Region-wide

- 342 out of 356 recommended and included in Draft Plan

Regional Flood Planning Goals

- (1) Improve flood warning and public safety
- (2) Improve flood analyses**
- (3) Reduce property damage and loss
- (4) Preserve the floodplain
- (5) Improve flood infrastructure
- (6) Expand flood education and outreach
- (7) Expand funding

FME Type	FME Description	# of FMEs Recommended	Total Cost
Preparedness	Studies on Flood Preparedness	5	\$3,150,000
Project Planning	Previously Identified Drainage Projects and Flood Studies	228	\$60,937,000
Watershed Planning	Flood Mapping Updates, Drainage Master Plans, H&H Modeling, Dam and Levee Failure	108	\$79,879,000
Other	Dam Studies	1	\$2,000,000
Total		342	\$145,966,000



FME: Upper Basin

- 293 out of 306 recommended and included in Draft Plan

FME Type	FME Description	# of FMEs Recommended	Total Cost
Preparedness	Studies on Flood Preparedness	4	\$2,150,000
Project Planning	Previously Identified Drainage Projects and Flood Studies	208	\$55,357,000
Watershed Planning	Flood Mapping Updates, Drainage Master Plans, H&H Modeling, Dam and Levee Failure	80	\$57,068,000
Other	Dam Studies	1	\$2,000,000
Local Area Total		293	\$116,575,000

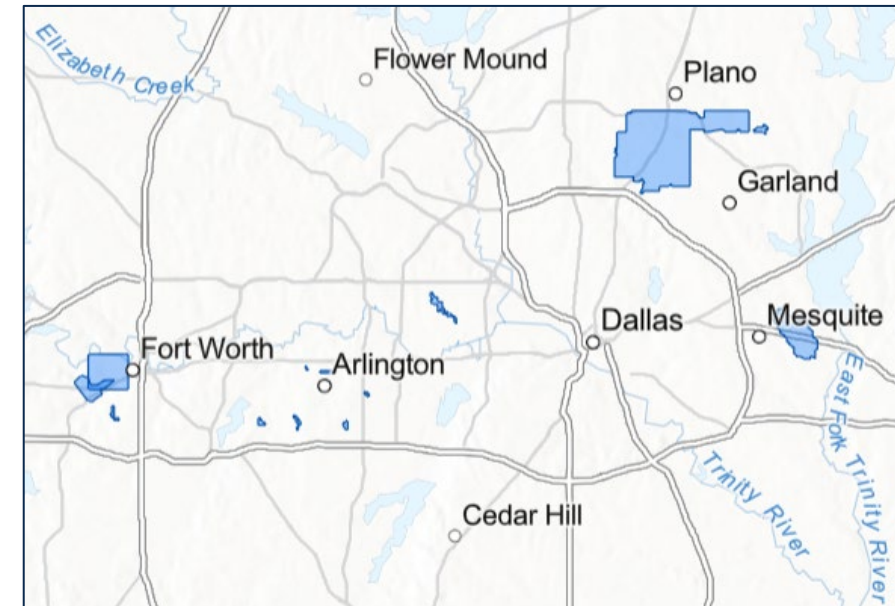
FMP: Region-wide

- 7 FMP fully evaluated
- All recommended and included in Draft Plan

FMP Name	Sponsor	Total Cost
Spring Meadows Estates Detention Pond Design	Sachse	\$1,868,000
West Irving Creek Phases 2, 3, and 4	Irving	\$98,746,000
Arlington VC(A)-1 Drainage and Erosion Improvements	Arlington	\$2,601,000
Lancaster/Foch Area Mitigation	Fort Worth	\$11,771,000
Linwood Park Flood Mitigation (Western Arlington Heights)	Fort Worth	\$50,523,000
Sunnyvale Urban Flooding Reduction Improvements - Area 1	Sunnyvale	\$4,560,000
Sunnyvale Urban Flooding Reduction Improvements - Area 2	Sunnyvale	\$5,701,000
		\$175,770,000

Regional Flood Planning Goals

- (1) Improve flood warning and public safety
- (2) Improve flood analyses
- (3) Reduce property damage and loss**
- (4) Preserve the floodplain**
- (5) Improve flood infrastructure**
- (6) Expand flood education and outreach
- (7) Expand funding**



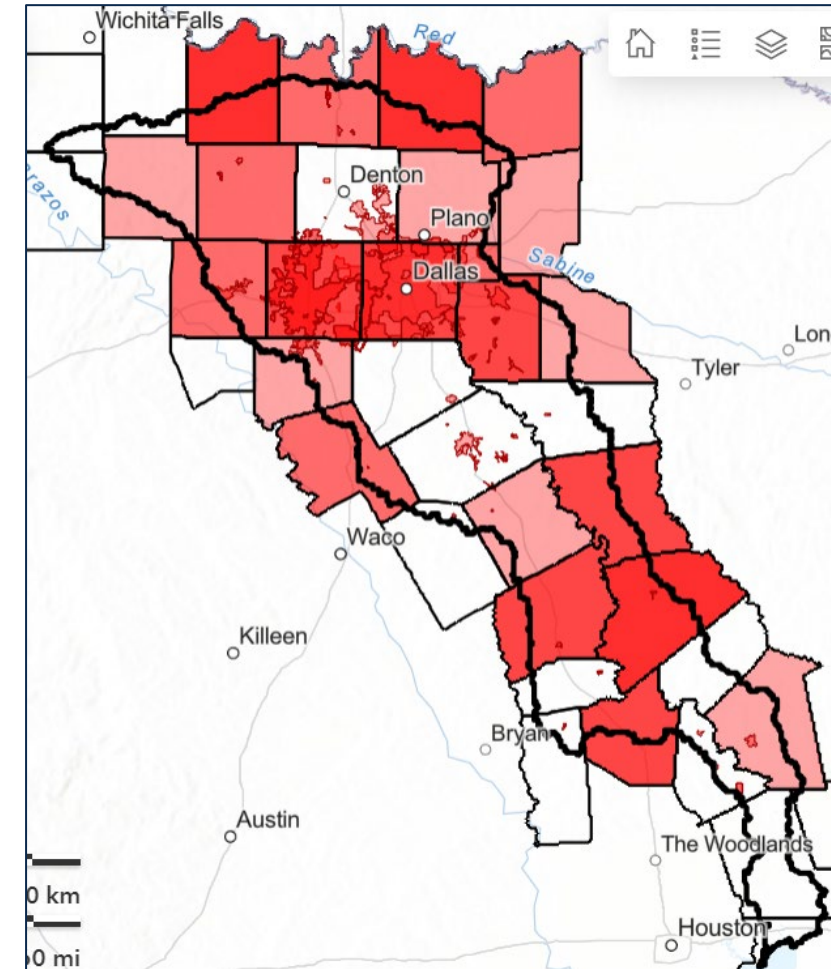
FMS: Region-wide

- 136 out of 143 recommended and included in Draft Plan

Regional Flood Planning Goals

- (1) **Improve flood warning and public safety**
- (2) Improve flood analyses
- (3) Reduce property damage and loss
- (4) **Preserve the floodplain**
- (5) Improve flood infrastructure
- (6) **Expand flood education and outreach**
- (7) **Expand funding**

FMS Type	FMS Description	# of FMSs Recommended	Total Cost
Education and Outreach	Turn Around, Don't Drown Campaigns; NFIP Education; Flood Education; Dam Safety Education	19	\$975,000
Flood Warning	Flood Warning Systems; Rain/Stream Gauges and Weather Stations; Low Water Crossings (LWCs)	20	\$5,300,000
Infrastructure Projects	Hazardous Roadway Overtopping Mitigation Program; Citywide Drainage Improvements; Flood-Proofing	5	\$430,000,00
Other	Debris Clearing/Channel Maintenance; Erosion Control; Dam & Levee Inspections; Green Infrastructure; Open Space Programs	12	\$8,525,000
Property Acquisition and Flood-proofing	Acquire Repetitive Loss Properties; Acquire and Preserve Open Spaces; Flood-Proofing	28	\$295,500,000
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regs; Land Use Programs; Open Space Regs	52	\$6,600,000
Total		136	\$746,900,000



FMS: Upper Basin

- 110 out of 116 recommended and included in Draft Plan

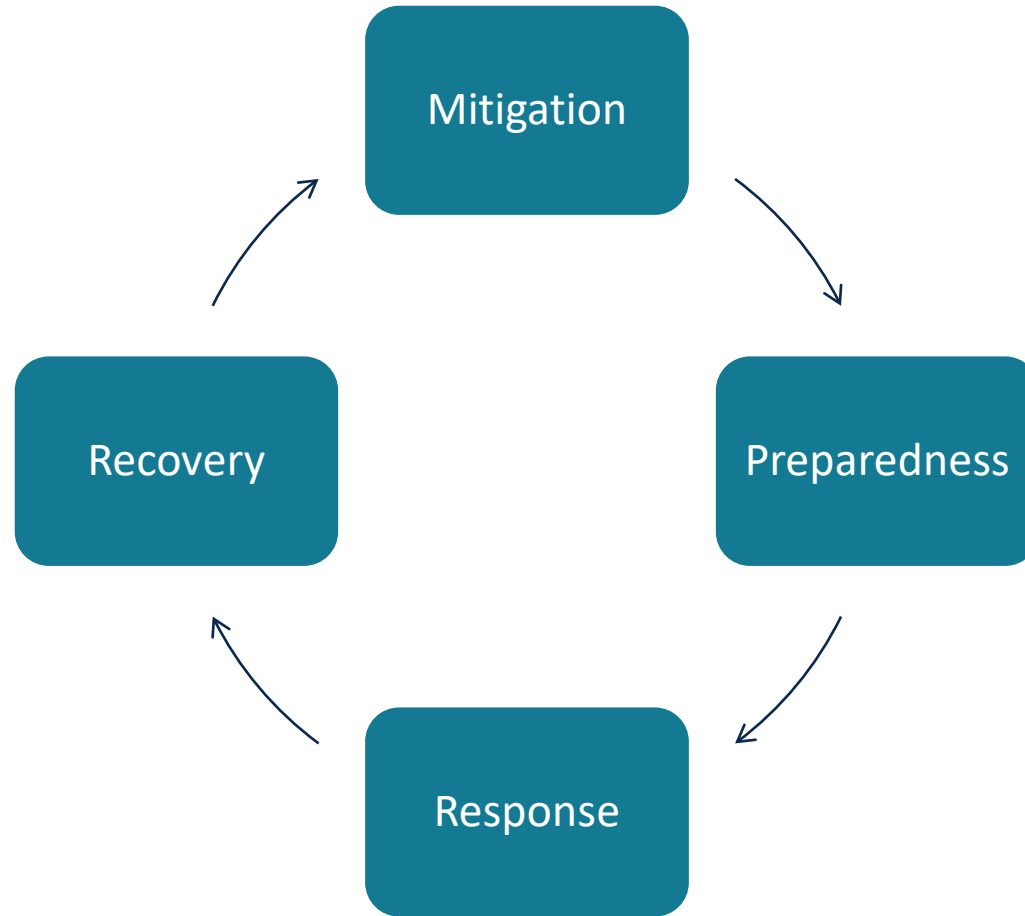
FMS Type	FMS Description	# of FMSs Recommended	Total Cost
Education and Outreach	Turn Around, Don't Drown Campaigns; NFIP Education; Flood Education; Dam Safety Education; Floodplain Regulatory Awareness	15	\$765,000
Flood Measurement and Warning	Flood Warning Systems; Rain/Stream Gauges and Weather Stations; Low Water Crossings (LWCs)	18	\$4,800,000
Infrastructure Projects	Hazardous Roadway Overtopping Mitigation Program; Citywide Drainage Improvements; Flood-Proofing facilities	5	\$430,000,000
Other	Debris Clearing Maintenance; Channel Maintenance and Erosion Control; Dam Inspections; Levee Inspections; City Parks; Green Infrastructure; Open Space Programs	11	\$8,425,000
Property Acquisition and Structural Elevation	Acquire High Risk and Repetitive Loss Properties; Acquire and Preserve Open Spaces; Flood-Proofing Facilities	21	\$235,500,000
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regulations; Land Use Programs; Open Space Regulations	40	\$5,400,000
Local Area Total		110	\$684,890,000

Chapter 6: Potential Impacts of Actions

- Upstream and downstream neighbors
- Adjacent regions
- State Water Plan

Flood Exposure	Existing Conditions	After FMP Implementation	Exposure Reduction from FMPs
	1% ACE	1% ACE	1% ACE
Exposed Structures	1,500	1,108	392
Exposed Population	37,593	33,421	4,172
Exposed Low Water Crossings	9	2	7
Number of Road Closure Occurrences	253	192	61
Road Length (Mi.)	31	23	8

Chapter 7: Flood Response Summary





Chapter 8: Recommended Planning Process Improvements

- Legislative
- Regulatory or administrative
- Flood planning process
- Funding recommendations

Chapter 9: Potential Funding

- Financing analysis – Who will pay?



Funding surveys sent to Sponsors on 6/7/2022 and 6/14/2022



14% Sponsor response rate (22 of 158) (as of 7/5/2022)



Overall, total cost of **\$1,076,686,000** needed to implement recommended FMEs, FMSs, and FMPs



From total cost, projected **\$961,274,000** of state and federal funding is needed

Chapter 10: Public Participation

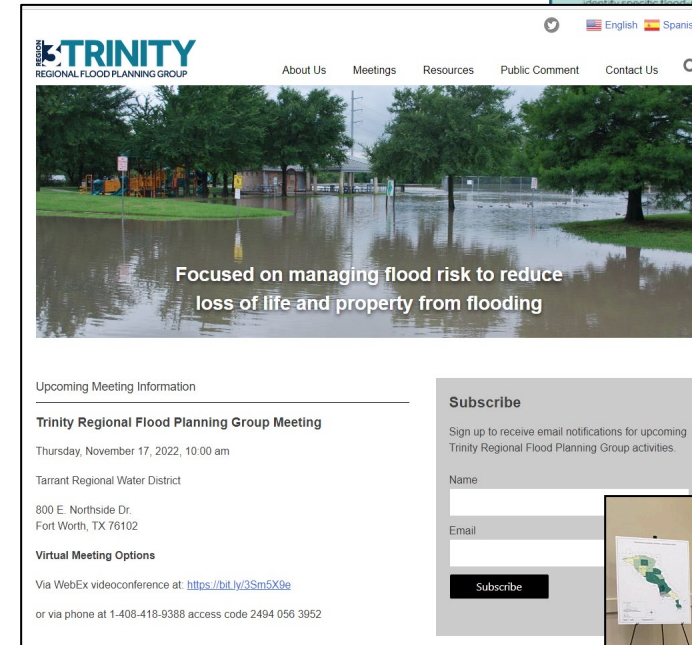
Numerous public meetings and open houses (many included a hybrid option)

Meeting notices and materials posted to website and Texas Secretary of State. Notification emails sent to interested parties

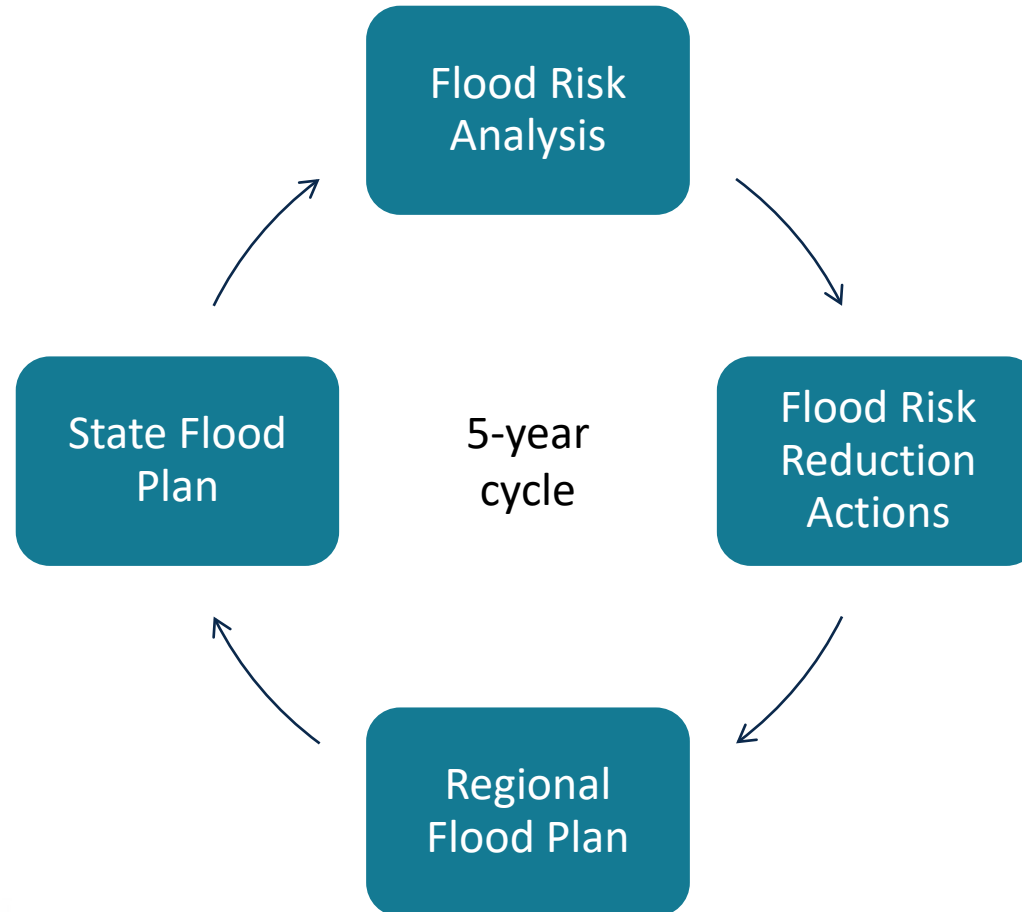
Maintenance of stakeholders / interested parties database with nearly 850 unique email addresses and nearly 1,100 individual contacts

- City and county officials
- State, federal and other entities with flood planning responsibilities
- Public / interested party sign-ups from website

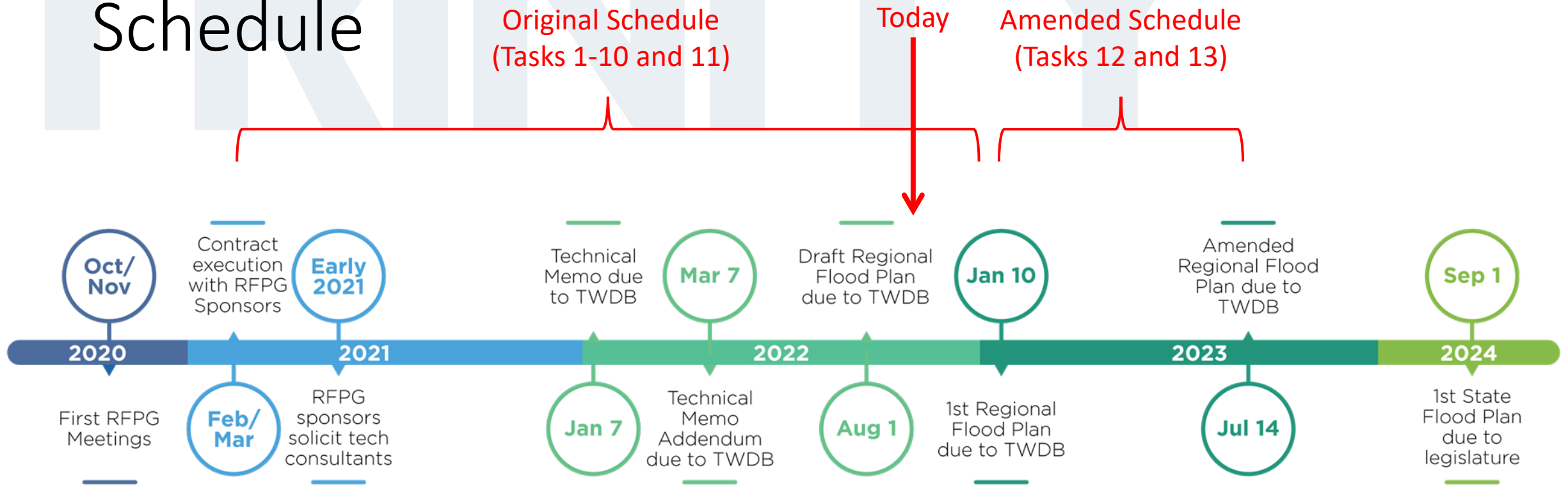
Development and use of award-winning website



Regional Flood Plan Cycle



Schedule



Trinity RFBPG Activities - 2022

- January 7: Submitted Tech Memo to TWDB
- March 7: Submitted Tech Memo Addendum to TWDB
- August 1: Submitted Draft Regional Flood Plan to TWDB
- August 29, 30 & 31: Open Houses in Dayton, Crockett & Arlington
- September 8: Public Meeting to Receive Public Input on Draft Plan
- October 10: Close of public comment period on Draft Plan
- October 18: Received TWDB comments on Draft Plan



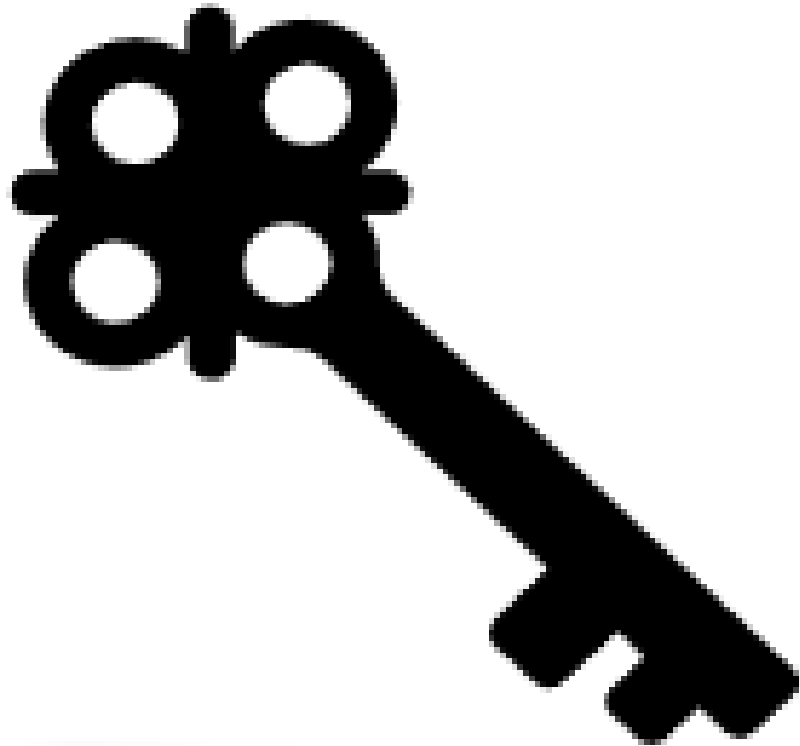
Upcoming Trinity RFPG Activities

- By January 10, 2023
 - Develop responses to all comments received
 - Revise plan, as appropriate
 - Approve Final Regional Flood Plan for submittal to TWDB

- By July 14, 2023
 - Advance FMEs to FMPs
 - Prepare and submit Amended Regional Flood Plan to TWDB



Public Input



- Target audiences
 - Cities/towns
 - Counties
 - Entities with flood-related responsibilities
 - General public



Input Opportunities

- Attend Trinity RFPG Meetings (next meeting is Nov 17)
- Submit new or updated flood mitigation actions for consideration in the Amended Plan
- Sign up for email alerts at <https://trinityrfpg.org>
- Follow us on Twitter: @TrinityTRFPG
- Email questions to info@trinityrfpg.org



Questions?

Stephanie Griffin

Project Manager

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