Region 2 Lower Red-Sulphur-Cypress Regional Flood Planning Group
September 2, 2021
2:00 pm
at
Paris City Hall - City Council Chambers
107 E. Kaufman Street, Paris, TX 75460
(See map included)

or

Via teleconference/webinar

Use the following information to register for the meeting:

https://us06web.zoom.us/meeting/register/tZYtcOmrqjorHdbHHE4EMHRUWH0lqkO47dfN

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

   Thank you to Mayor Paula Portugal and City Manager Grayson Path of the City of Paris
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, August 5, 2021.

Presentations

6. Texas Water Development Board Update
7. Region 1 Canadian-Upper Red Regional Flood Planning Group Updates

Workshop

8. Halff Associates led workshop:
   a. Task 1 – Planning Area Description
      i. Outreach update
      ii. Survey results
   b. Task 2A - Existing Condition Flood Risk Analyses
      i. Fathom Update
   c. Task 2B - Future Condition Flood Risk Analyses
      i. Update
   d. Task 3A and 3B – Recommended Floodplain Management Practices and Goals
      i. Deliberation of potential flood mitigation and flood management Standards and Goals in preparation of adopting (voting) in October meeting.
   e. Task 4A and 4B – Assessment and Identification of Mitigation Needs
      i. Draft Process for identifying evaluations, strategies, and projects
   f. Schedule

Other Business

9. Update from Planning Group Sponsor
10. Consider date and agenda items for next meeting
11. Adjourn

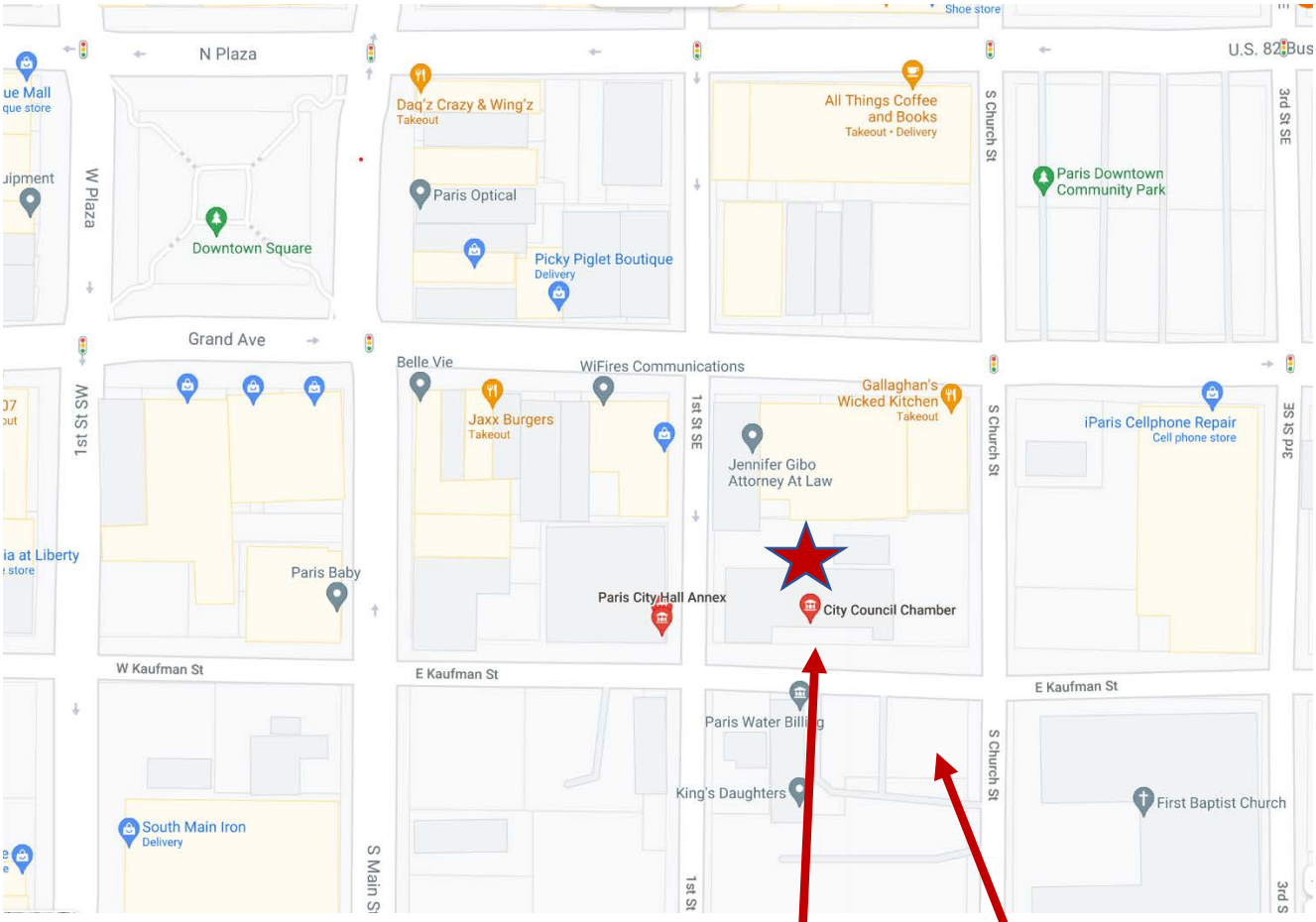
If you wish to provide written comments prior to or after the meeting, please email your comments to pprange@atcog.org and include "Region 2 RFPG Meeting" in the subject line of the email – OR – you may mail your comments to Region 2 RFPG, c/o ATCOG – Paul Prange, 4808 Elizabeth St, Texarkana, TX 75503.

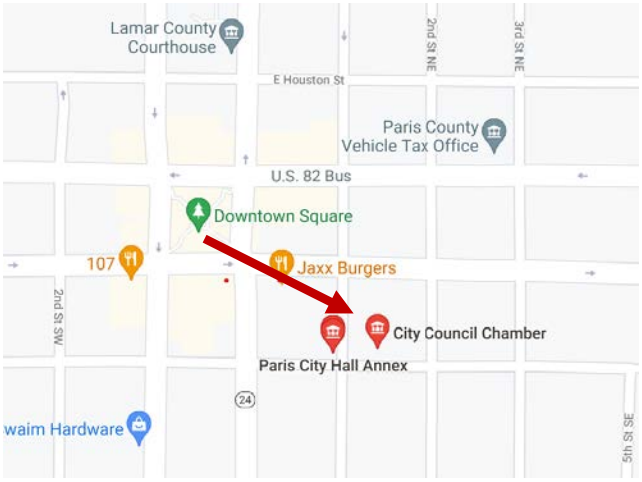
If you wish to provide oral public comments at the meeting, please submit a request via email to pprange@atcog.org , include "Region 2 RFPG Meeting Public Comment Request" at least 2 hours prior to the meeting, and follow the registration instructions at top of page 1 of the Agenda.

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.texasfloodregion2.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.

Paris City Hall - City Council Chambers
107 E. Kaufman Street, Paris, TX 75460





The City Hall and Council Chambers sit just southeast of the Downtown Square.

Meeting Minutes
Region 2 Lower Red-Sulphur-Cypress Flood Planning Group Meeting
August 5, 2021
2:00 p.m.
Titus Regional Medical Center and 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	
Dustin Henslee (Jonathan Wade-Alternate)	Municipalities	X
Kirby Hollingsworth	Public	
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	X
Brian Hurtuk	Texas Division of Emergency Management	
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 (Richard Bagans - Alternate)	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	
Randy Whiteman	RFPG 1 Liaison	X
Richard Brontoli	Red River Valley Association	X
Jason Dupree	TxDOT – Atlanta District	X
Dan Perry	TxDOT – Paris District	X

Quorum:
Quorum: **Yes**

Number of voting members or alternates representing voting members present: **9**
Number required for quorum per current voting membership of **11**: **6**

Other Meeting Attendees: **

Chris Brown - ATCOG
Paul Prange – ATCOG
Matt Nelson – TWDB
James Bronikowski – TWDB
Richard Bagans – TWDB
Ben Pylant – Halff Associates Team
Walt Sears - NETMWD
Joshua McClure – Halff Associates Team
Jim Keith – Halff Associates Team
Kimberly Miller- Halff Associates Team
Parker Moore – Halff Associates Team
Tyler Ogle – Halff Associates Team
Jim Keith – Halff Associates Team
Vance Liles – Halff Associates Team
Jim Roberts – City of Wake Village
Vance Liles – Halff Associates Team
Chris Hartung
Lisa Mairs - USACE
Bobby Howell – Bowie County Judge
Lisa Benson – Harrison County
Dustin Meyer - PRPC

**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 2:03p.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. Nine voting members were present and two non-voting members were absent.

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

ACTION ITEMS

AGENDA ITEM NO. 5: Consider approval of minutes for the meeting held Thursday, July 8, 2021:
Reeves Hayter opened the floor for discussion and approval of the minutes from the previous meeting and requested two revisions. The first revision was a typographical error in the RFPG 2 website link and the second revision was to add a statement in Agenda Item 11 indicating that the chairman requested public comment and no comment was received. A motion was made by Greg Carter and was seconded by Susan Whitfield to approve the minutes as amended. The motion carried unanimously.

PRESENTATIONS

AGENDA ITEM NO. 6: Texas Water Development Board Update:
Reeves Hayter handed the item over to Richard Bagans from the TWDB, attending the meeting for Anita Machiavello. Mr. Bagans stated that the legislature appropriated an additional 10 million dollars in funding that may become available after September 1, 2021 for the regional flood planning groups. The TWDB provided a survey to all flood planning regions asking how the additional funds could be utilized. The survey responses have been submitted to TWDB and will be reviewed by the Board of Directors in the next few months. Once the funding becomes available, the TWDB will initiate a contract amendment with the RFPG 2 sponsor, ATCOG. Mr. Bagans stated that one possible use for the additional funding could be to increase the number of FMEs located within region 2. Discussion took place between Joshua McClure and Richard Bagans regarding the timeframe in which the funds would actually become available. Mr. Bagans also announced that the COVID-19 emergency declaration will expire in September and that all public meetings will be required to adhere to the Open Meetings Act policies. Brief discussion took place among the board members and Chris Brown stated that ATCOG would make sure to stay in compliance with the rules at all future meetings.

AGENDA ITEM NO. 7: Region 1 Canadian – Upper Red Regional Flood Planning Group Updates:
Reeves Hayter turned the floor over to Randy Whiteman, Region 1 liaison, for an update. Chris Brown stated that Mr. Whiteman was attending the meeting remotely and was experiencing technical difficulties with his computer audio. Mr. Hayter suggested that the planning group table this item until the technical issues were resolved. The issues persisted, so no updates from Region 1 were provided.

WORKSHOP

AGENDA ITEM NO. 8: Halff Associates led workshop:
Reeves Hayter turned the floor over to Joshua McClure from Halff Associates to conduct the workshop. Chris Brown quickly stated that three additional non-voting members have been appointed to the RFPG 2 Board and wanted to recognize these individuals. Mr. Brown introduced Richard Brontoli, the Executive Director of the Red River Valley Association; Jason Dupree, representing the TxDOT Atlanta District; and Dan Perry, representing the TxDOT Paris District. Mr. McClure announced that today's presentation will be focusing on Chapter's 1- 4 and the associated Tasks.

AGENDA ITEM NO. 9: 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. **Stakeholder's List**

f. **Schedule**
    i. **Overview**
    ii. **Future Meeting Plan**

Joshua McClure, Project Manager with Halff Associates began the workshop by stating that he sent out a web survey on July 19th and plans to close it on August 16th. The survey was provided to 409 stakeholders representing approximately 150 entities, all of which have been directly contacted by the Halff Associates Team to make sure the survey was received and to encourage participation. Mr. McClure stated that so far, only 20 surveys have been completed, but that percentage is quite common in this process. Email reminders will be sent out during the next two weeks to further encourage participation in the data collection process. Mr. McClure also provided a map of the entities who are participating in the survey, along with a table containing the data submitted and stated that public outreach efforts are ongoing to gather as many surveys as possible.

Joseph Weir asked about the outreach activities identifying environmental impacts to fish and mussels, and asked who the stakeholders are with environmental experience. Joshua McClure stated that Laura-Ashley Overdyke is the environmental representative for Region 2 and that other board members may have knowledge and experience relating to environmental impacts to aquatic wildlife. Mr. Weir also asked about environmental impacts to crops due to channelization of the Sulphur River and who has been contacted in the agricultural community for their input. Mr. McClure stated that Preston Ingram is the agricultural representative for Region 2 and that he may be aware of additional stakeholders who could provide beneficial information relating to environmental impacts to agriculture.

Reeves Hayter asked Joshua McClure if the surveys were targeting governmental entities or environmental/agricultural entities and Mr. McClure stated that the surveys were being provided to governmental entities such as cities, counties and utility districts per TWDB guidelines and that representatives of the RFPG 2 Board will eventually need to identify additional stakeholders to provide input from the public. Preston Ingram suggested that board members reach out County Agriculture Extension Agents for additional data and Mr. McClure stated that the Halff Associates Team plans to contact each county agent. General discussion took place among the board members regarding data collection from the general public and various entities. Mr. McClure stated that a separate survey will be developed and provided to the public requesting their input.

Joshua McClure then presented information about the flood risk assessment and data collection efforts, focusing on flood risk mapping, flood exposure estimation and vulnerability assessments to determine what the impact of a flood would be. Mr. McClure presented information relating to the various types of flooding, including flood event types, as well as data sources such as community data, which is a critical component of this flood planning process. Mr. McClure stated that the Floodplain Quilt is missing data in five counties and that the Fathom Data is currently being updated for the TWDB due to outdated USGS mapping information, which may cause potential problems with deliverable deadlines being met. The Halff Associates Team is working with TWDB to develop a plan to address this concern. Mr. McClure then discussed Future Mapping strategies relating to the 100 and 500 Year Floodplain. Discussion took place between Greg Carter, Laura-Ashley Overdyke and Reeves Hayter regarding differences between the 100 and 500 Year Floodplain impacts and Future Conditions in rural vs. urban areas.

Joshua McClure turned the floor over to Jim Keith, filling in for David Rivera, to discuss Chapter 3 goals and tasks. Mr. Keith conducted a presentation focused on floodplain management practices and flood

protection goals and provided a brief overview of the processes involved for recommending or adopting standards for the region and receiving RFPG 2 Board and public feedback. This included an overview of the activities scheduled from July to September 2021. Mr. Keith explained that the RFPG 2 Board of Directors must decide on whether to "recommend" or "adopt" certain standards, along with short term and log term goals, to be included within the regional flood plan. Mr. Keith then spoke in detail about Data Collection and the associated goals and standards. Mr. Keith then discussed short term and long term flood protection goals including; lowering the risk to life and property, infrastructure protection, floodplain protection, flood warning and response, and inter-jurisdictional cooperation within the region. The RPFG 2 board members then participated in an interactive, online exercise by answering various survey questions related to flooding. Seven Draft Goals were presented by Mr. Keith to the RFPG 2 Board including; Draft Goal 1 – Education and Outreach; Draft Goal 2 – Flood Warning and Readiness; Draft Goal 3 – Flood Studies and Analysis; Draft Goal 4 – Flood Prevention; Draft Goal 5 – Flood Property Acquisition; Draft Goal 6 – Flood Elevation and Proofing; and Draft Goal 7 – Flood Infrastructure Projects. General discussion took place among the RFPG 2 Board members.

Joshua McClure took the floor and conducted a presentation on Chapter 4 (Task 4) focusing on Needs (Gap Analysis); Identifying and Evaluating FMEs, FMSs, and FMPs; and the Technical Memorandum due to TWDB. Mr. McClure stated that the RFPG 2 Board members need to provide feedback to the Halff Associates Team about the specific goals selected by the planning group. Mr. McClure presented three alternatives for the RFPG 2 Board to choose from. 1st; Halff Associates Team selects the goals based upon information gathered at previous meetings. 2nd; The RFPG 2 Board forms a sub-committee/task force to determine the goals. 3rd; The Halff Associates Team conducts a more detailed polling of RPFG 2 Board members to gather additional data in order to determine the goals. Discussion took place among the board members and Reeves Hayter stated that the 3rd alternative would be his personal choice. Laura-Ashley Overdyke then asked Mr. McClure if he could provide detailed polling questions to the RFPG 2 Board members and he stated that he would. Mr. Hayter asked the RFPG 2 Board members if the 3rd alternative was acceptable and the response was unanimously, yes. Mr. McClure stated that he would provide the poll to the board members by the end of next week. Brief discussion took place regarding the time needed for the board members to complete the polling questions in order for the Halff Associates Team to compile the data to present at the September meeting.

OTHER BUSINESS

A**GENDA ITEM NO. 14: Update from Planning Group Sponsor**

Reeves Hayter turned the floor over to Chris Brown for updates. Mr. Brown announced that Governor Abbott has rescinded the restrictions placed on the Open Meetings Act requirements which were in place during the COVID-19 pandemic, beginning on September 1, 2021. Future RFPG 2 meetings must be conducted in a physical location open to the public, however board members may still attend remotely to constitute a quorum since our region covers more than three counties. Mr. Brown then stated that future meetings will be held in various locations throughout the region and that ATCOG will provide RFPG 2 Board members with mileage reimbursement forms soon.

AGENDA ITEM NO. 15: Consider date and agenda items for next meeting

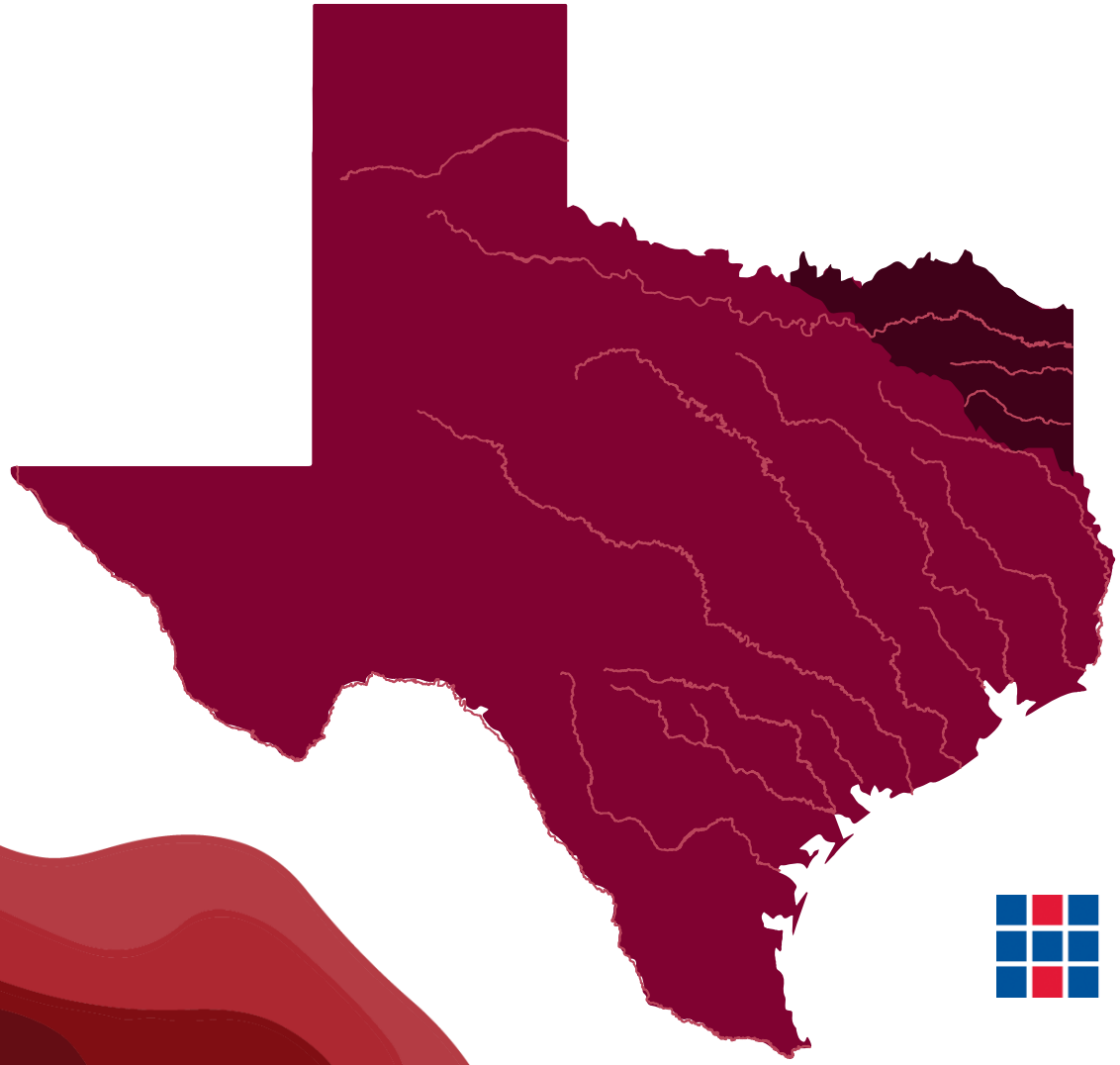
Reeves Hayter opened the floor for discussion. The Region 2 RFPG board members agreed to conduct the next meeting on Thursday, September 2, 2021 at 2:00p.m. at a location to be determined, possibly in Paris, Texas and via webinar/teleconference.

AGENDA ITEM NO. 16: Adjourn

Reeves Hayter opened the floor to adjourn the meeting.
A motion was made by Laura-Ashley Overdyke and Seconded by Greg Carter.
The vote to adjourn was passed by unanimous consent.
The meeting was adjourned at 4:53p.m. by Reeves Hayter.
Approved by the Region 2 Lower Red-Sulphur-Cypress RFPG at a meeting held on 9/2/2021.

_____

Reeves Hayter, CHAIR



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

September 2, 2021

HALFF

FREESE AND NICHOLS

MTG engineers & surveyors

H2O PARTNERS

Outline/Agenda

- Task/Chapter 1- Planning Area Description
- Task/Chapter 2A- Existing Condition Flood Risk Analyses
- Task/Chapter 2B - Future Condition Flood Risk Analyses
- Task/Chapter 3- Flood Mitigation and Floodplain Management Goals
- Task/Chapter 4 – Flood Mitigation Needs Analysis
- Schedule

Ch. 1 Introduction & Overview

Planning Area Description

Public Outreach Update

Public Outreach: Completed

- Survey sent out on 7/19/2021
- Survey extended to 8/27/2021
- Web domain name (LowerRedSulphurCypress.halff.com)
- Sent to 409 Stakeholders
- All stakeholders were contacted to make sure they received the survey and encourage participation
- As of August 23, 2021:
  - 31 entities have responded
  - FMEs, FMSs, and FMPs = Total of five (5) from two (2) entities

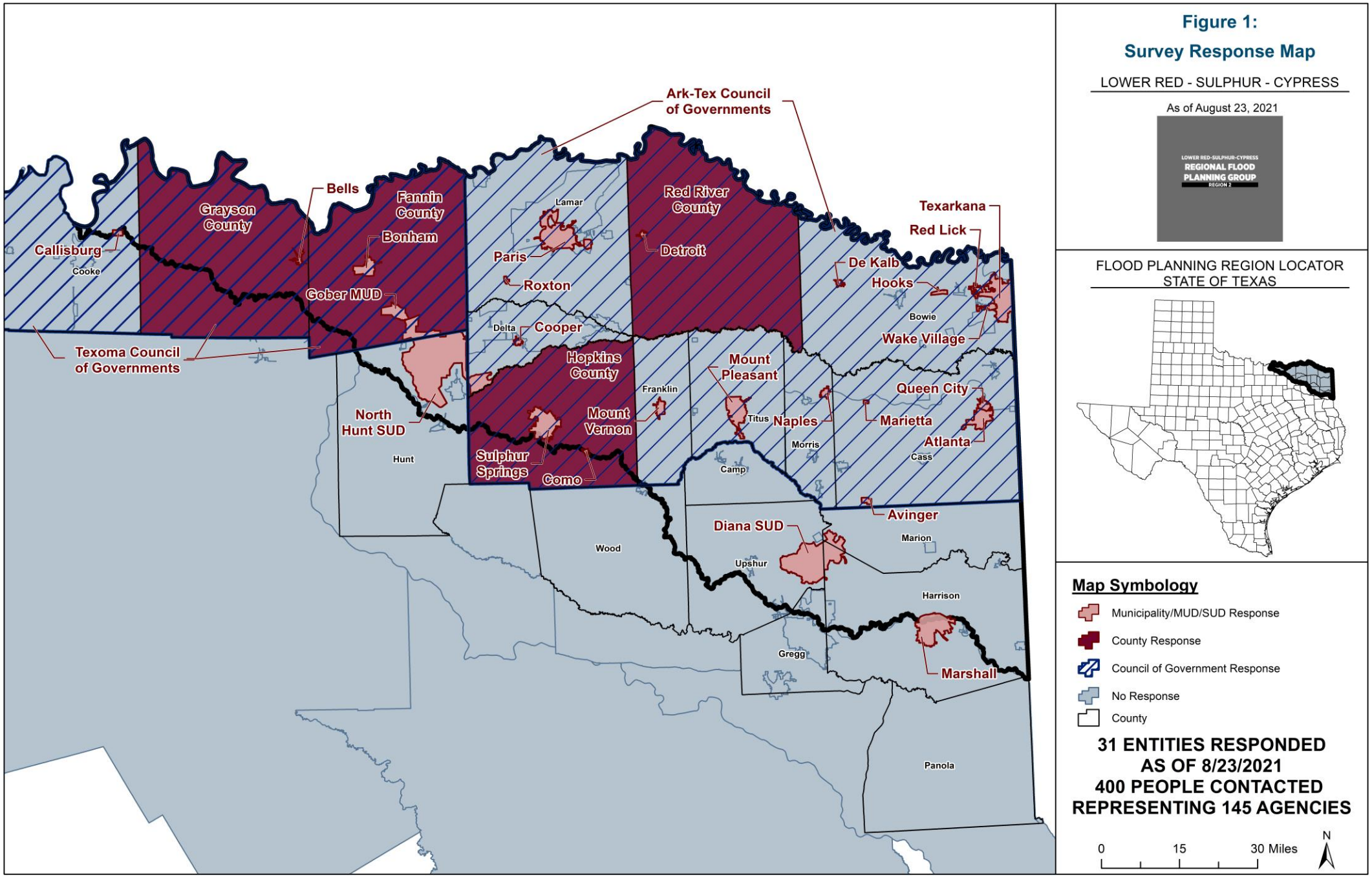


Figure 1:

Survey Response Map

LOWER RED - SULPHUR - CYPRESS

As of August 23, 2021

LOWER RED-SULPHUR-CYPRESS
REGIONAL FLOOD PLANNING GROUP
REGION 2

FLOOD PLANNING REGION LOCATOR
STATE OF TEXAS

Map Symbology

- Municipality/MUD/SUD Response
- County Response
- Council of Government Response
- No Response
- County

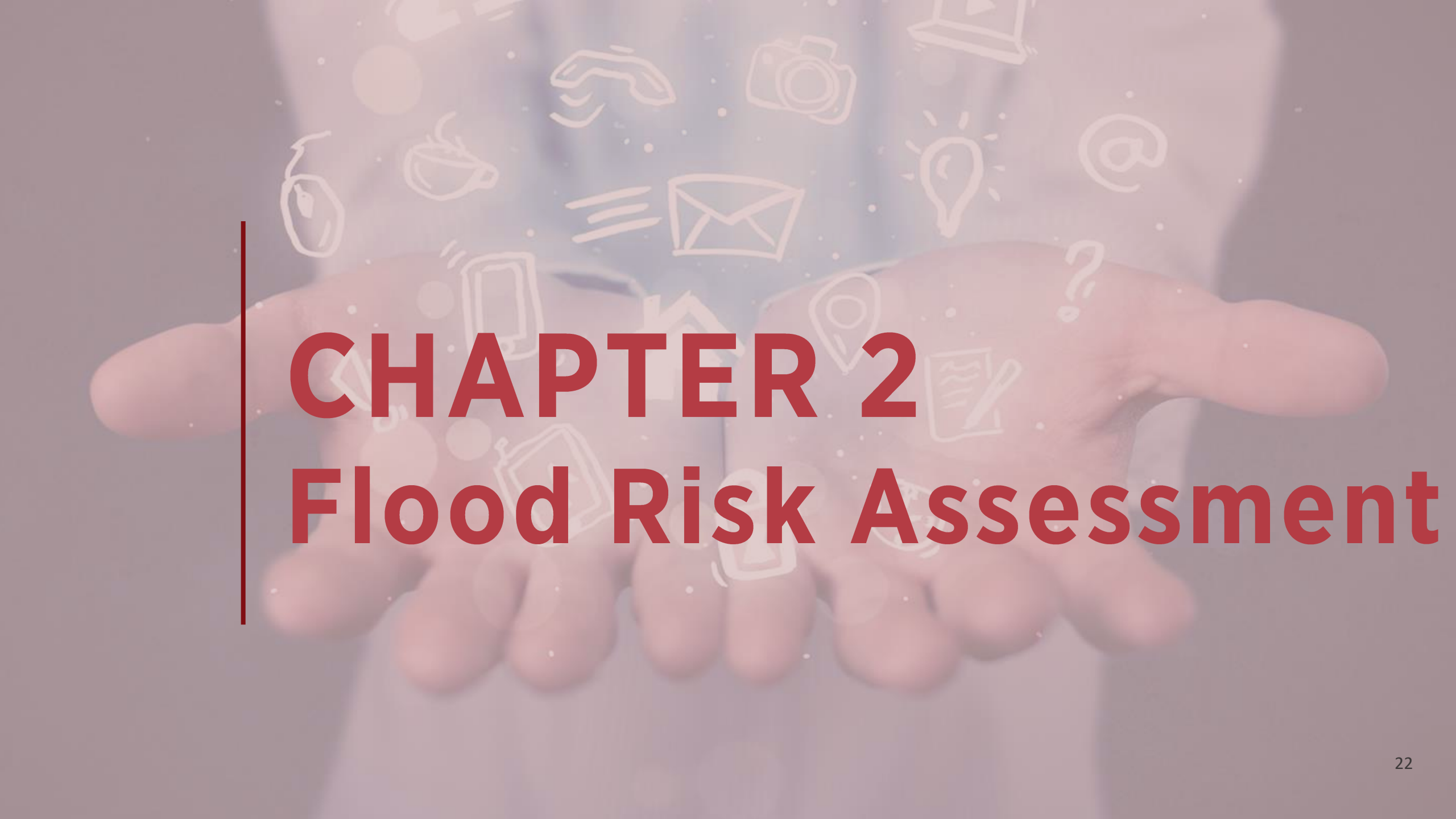
31 ENTITIES RESPONDED AS OF 8/23/2021
400 PEOPLE CONTACTED REPRESENTING 145 AGENCIES

0 15 30 Miles

N

Ch. 2 Flood Risk Analysis

Part A & B



CHAPTER 2
Flood Risk Assessment

Task 2A – Existing Conditions Flood Risk Assessment

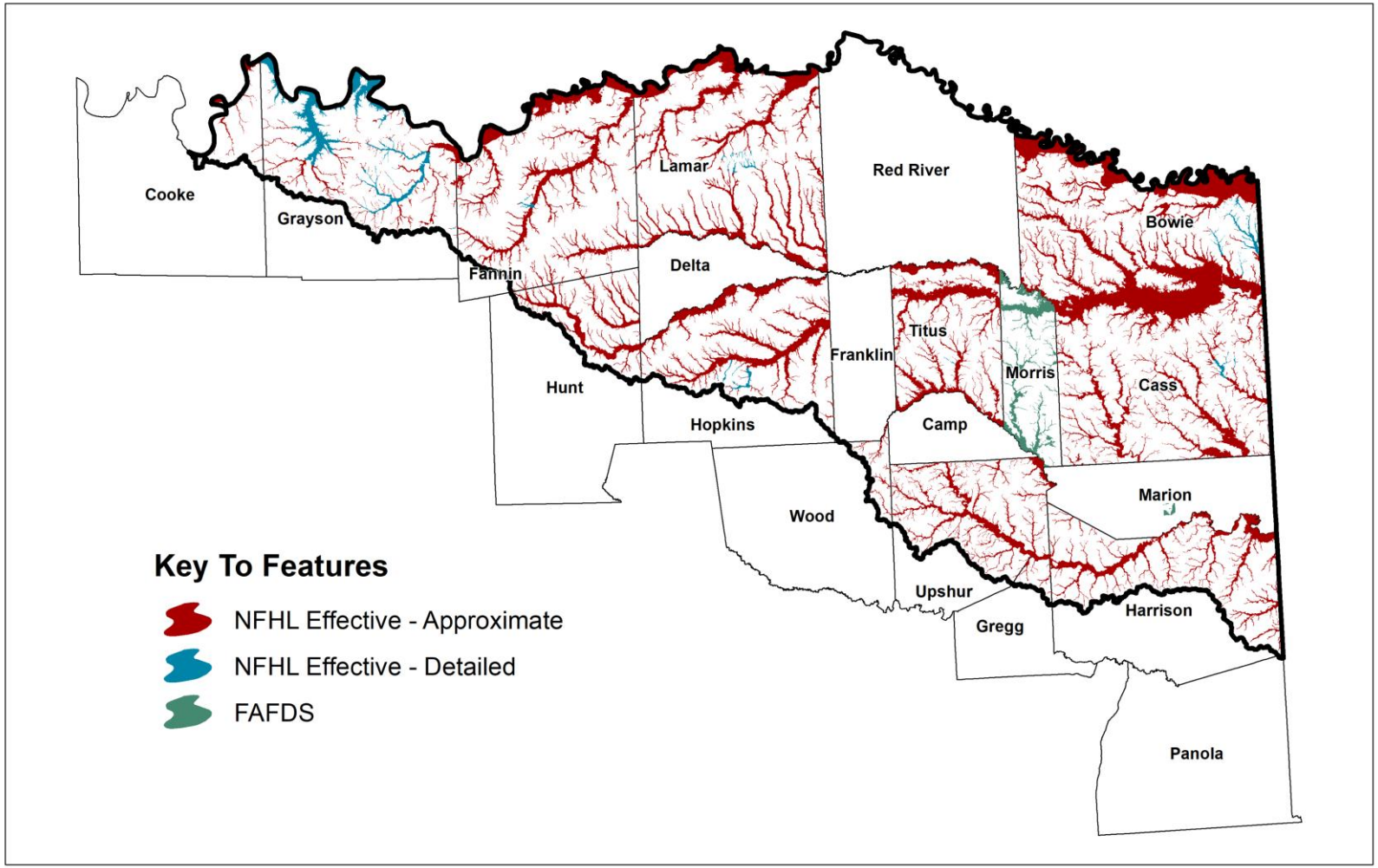
EXISTING FLOOD HAZARD

FLOOD EVENT TYPES

- 100-Year
- 500-Year
- Future
- Other

DATA SOURCES

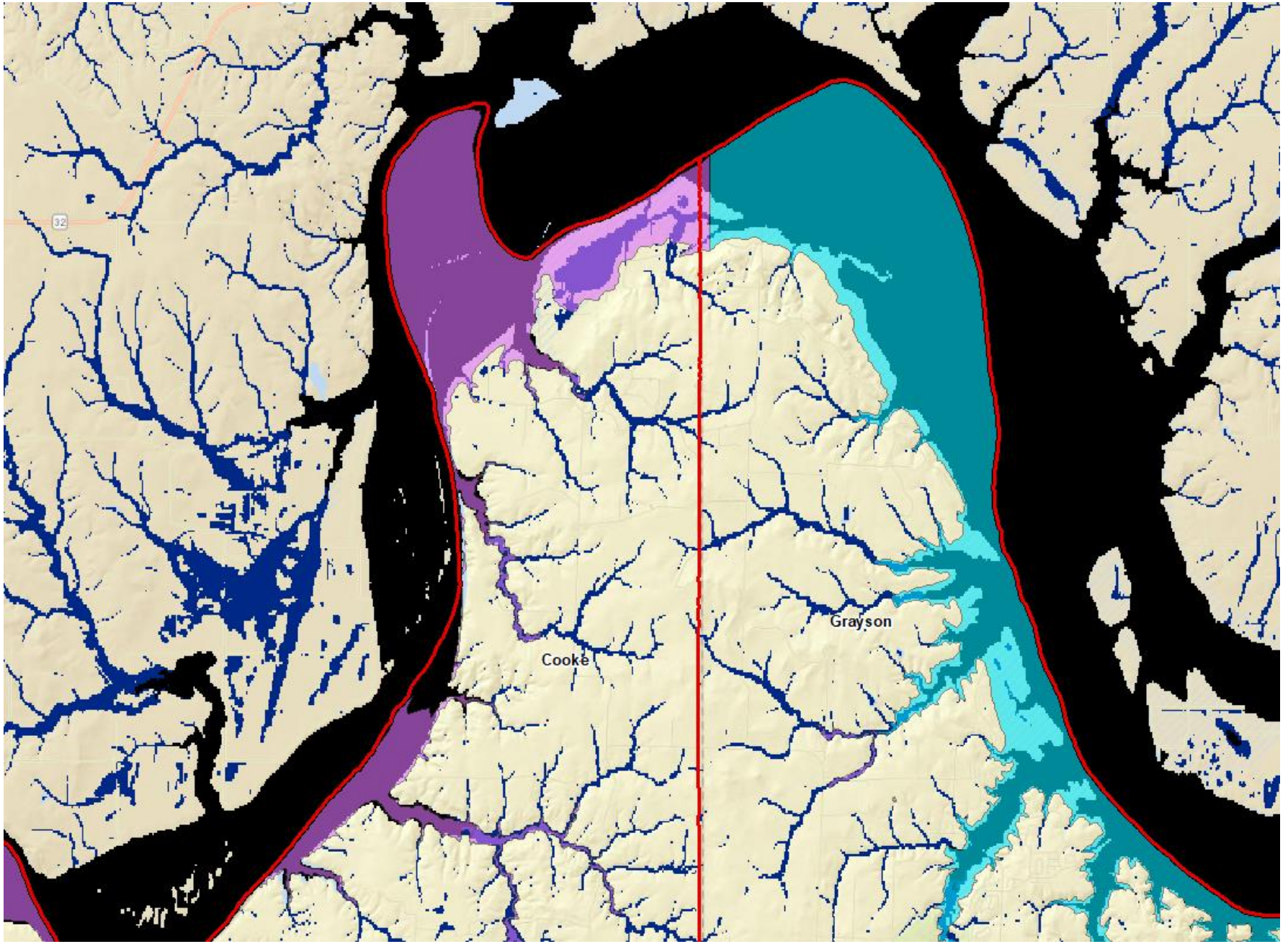
- TWDB Flood Quilt
- Community Data
- FATHOM
- FAFDS (First American Flood Data Services)



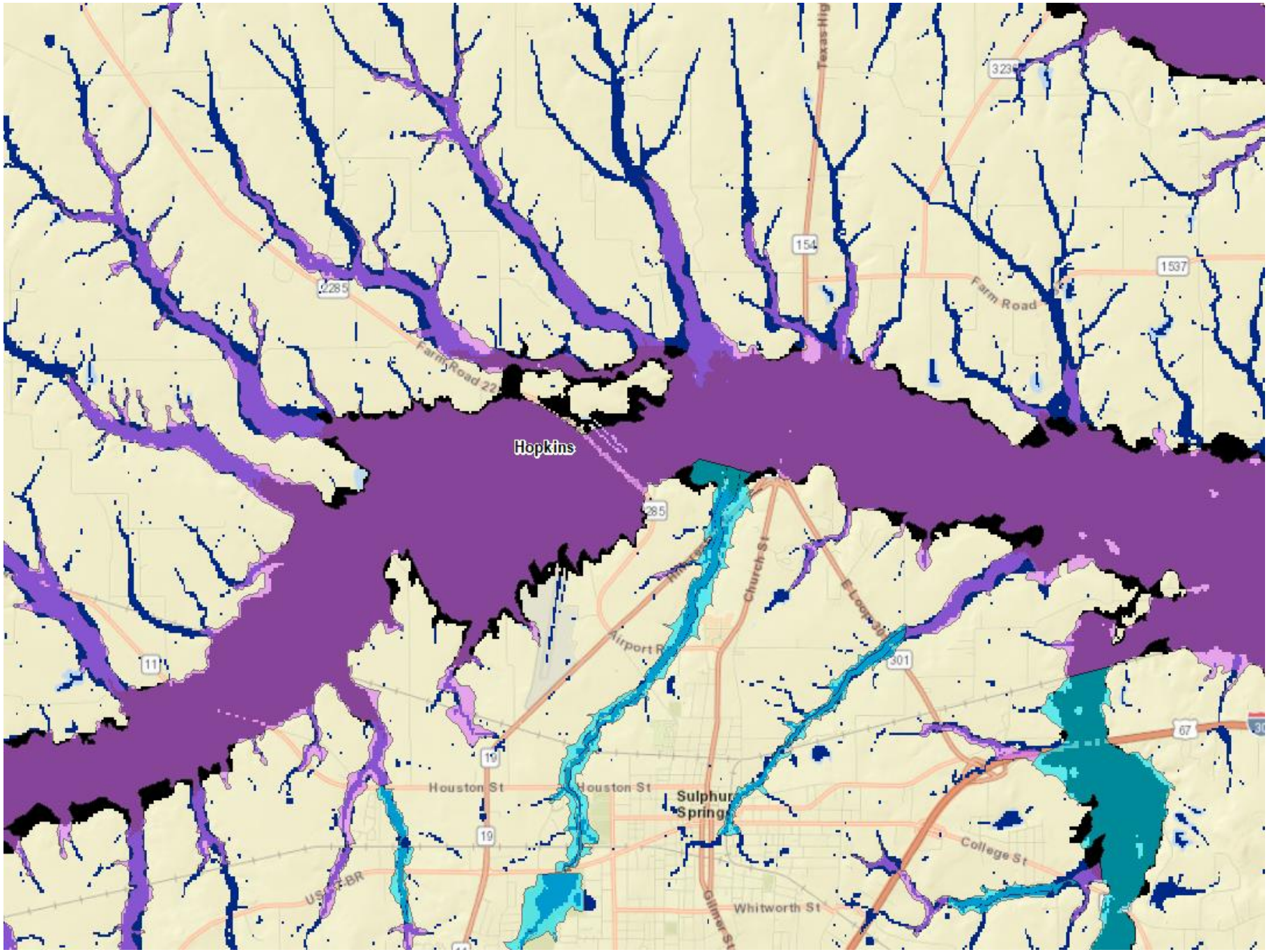
Fathom Data – Schedule Impacts

- Approximate floodplain data
  - Statewide
  - Includes riverine (fluvial) flooding sources
  - Includes upland (pluvial) flooding sources
- TWDB is having them make significant corrections
  - Will use better topographic data
  - **Not be available until October**
  - **Partial Memo still due Jan 7, 2022**
    - Will not include portions that require overlay with final floodplain quilt
  - **Remaining Memo Portions due March 7, 2022**

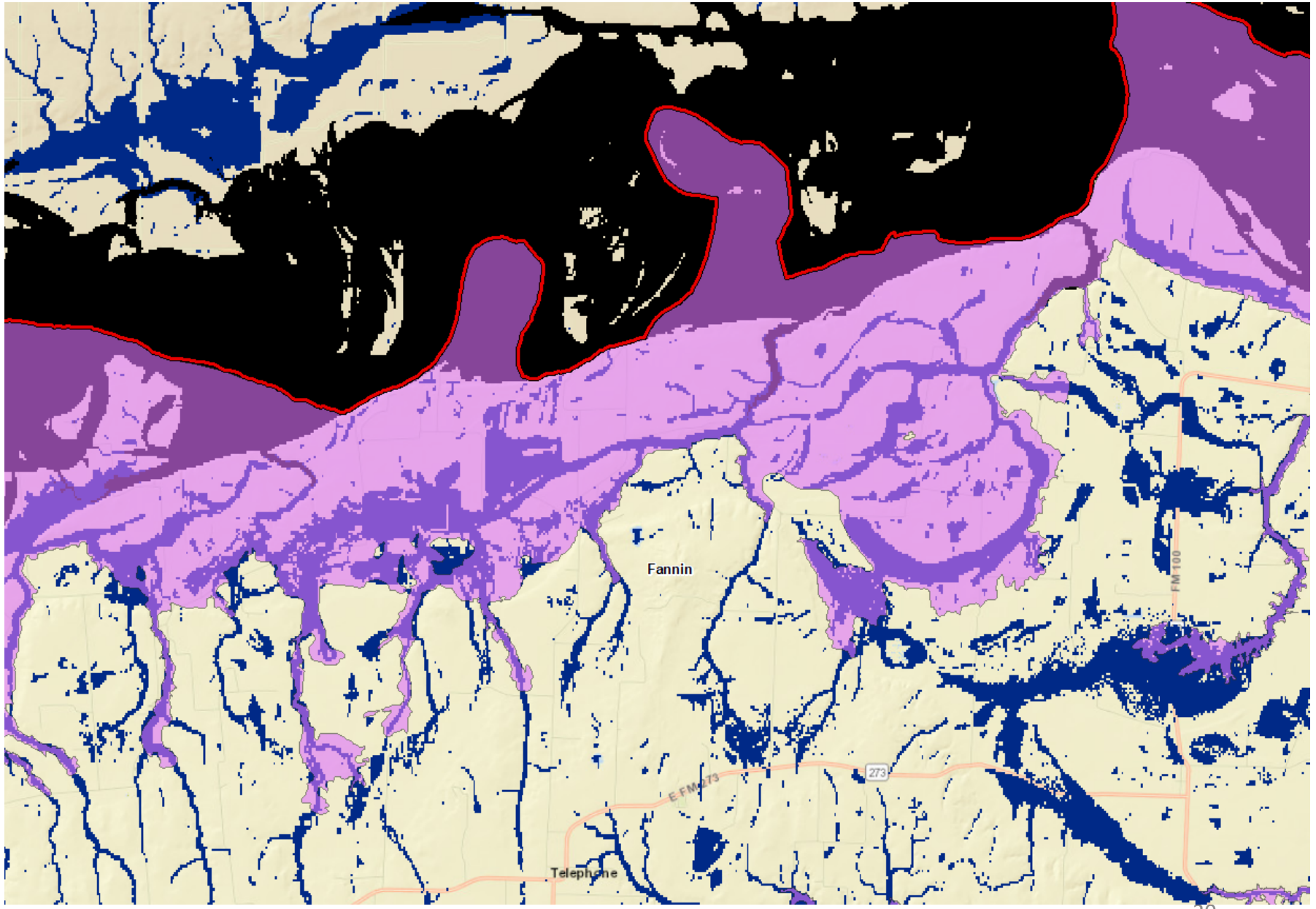
Fathom vs FEMA



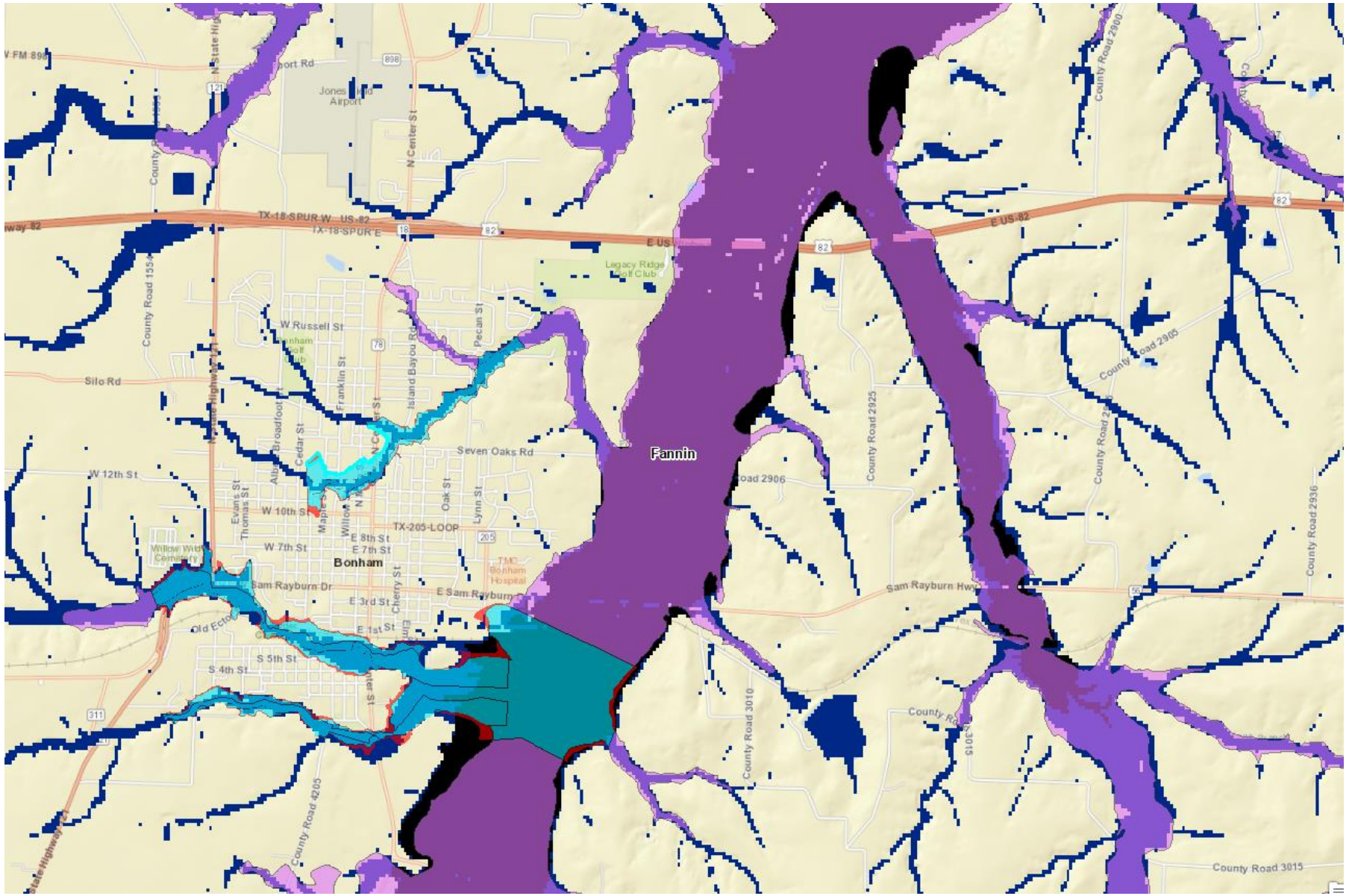
Fathom vs FEMA



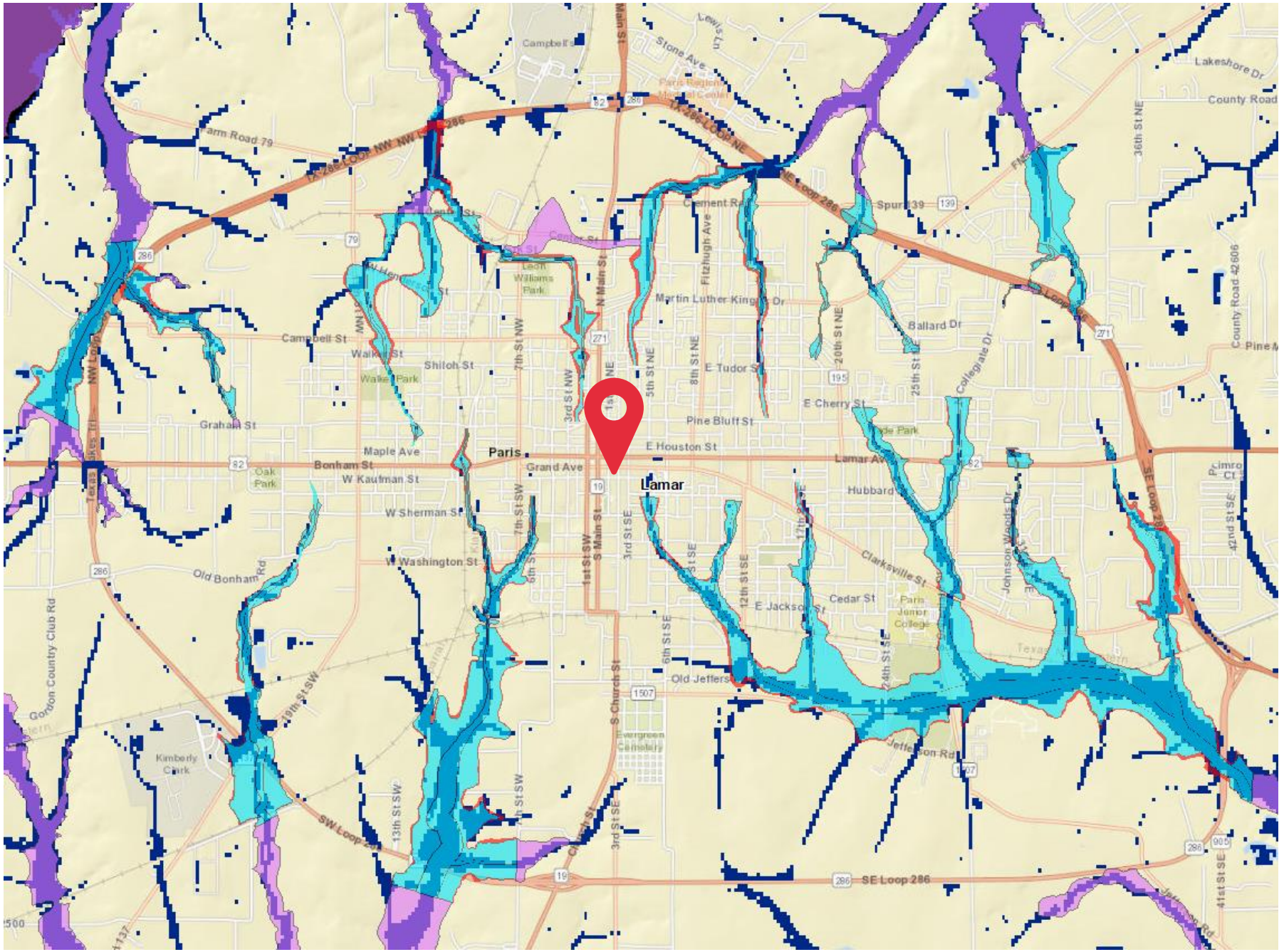
Fathom vs FEMA



Fathom vs FEMA



Fathom vs FEMA



Task 2 A – Floodplain Quilt Prioritization

1. Local Detailed Study
2. FEMA Zone AE
3. FEMA Zone A
4. Fathom Fluvial

Fathom pluvial data will be added to all floodplain types

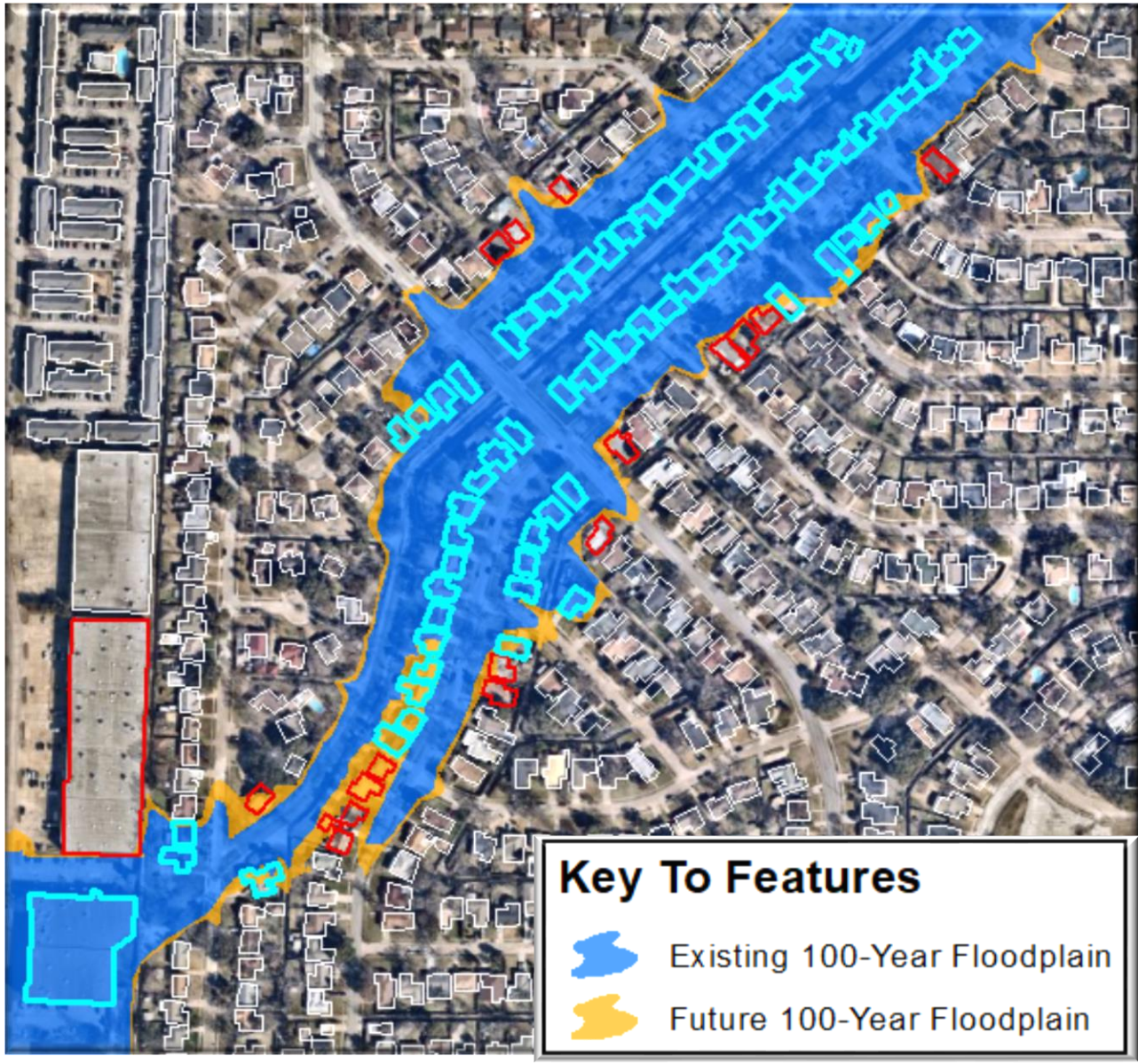
Task 2B – Future Conditions Flood Risk Assessment

FUTURE FLOOD HAZARD

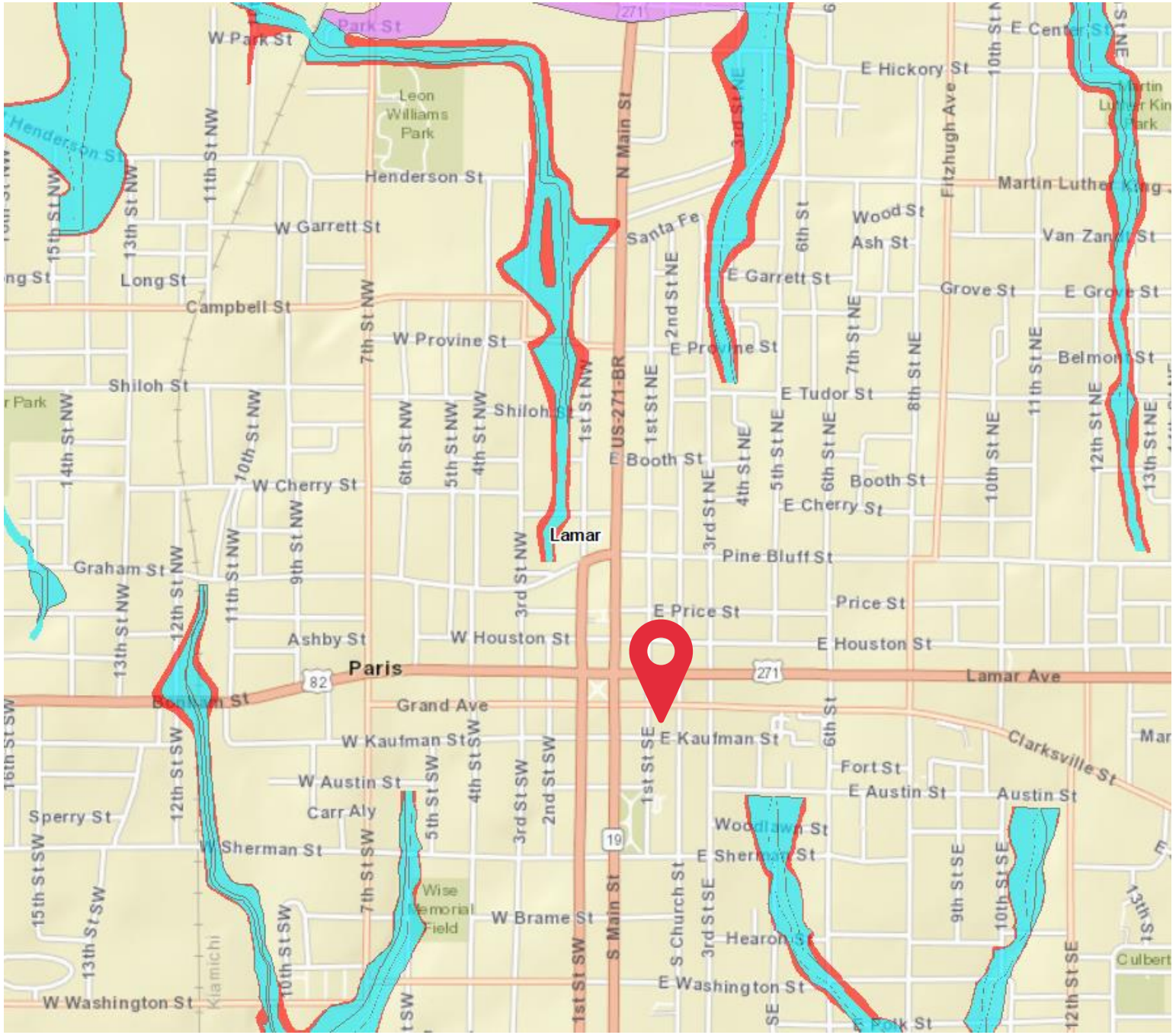
Future Mapping

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

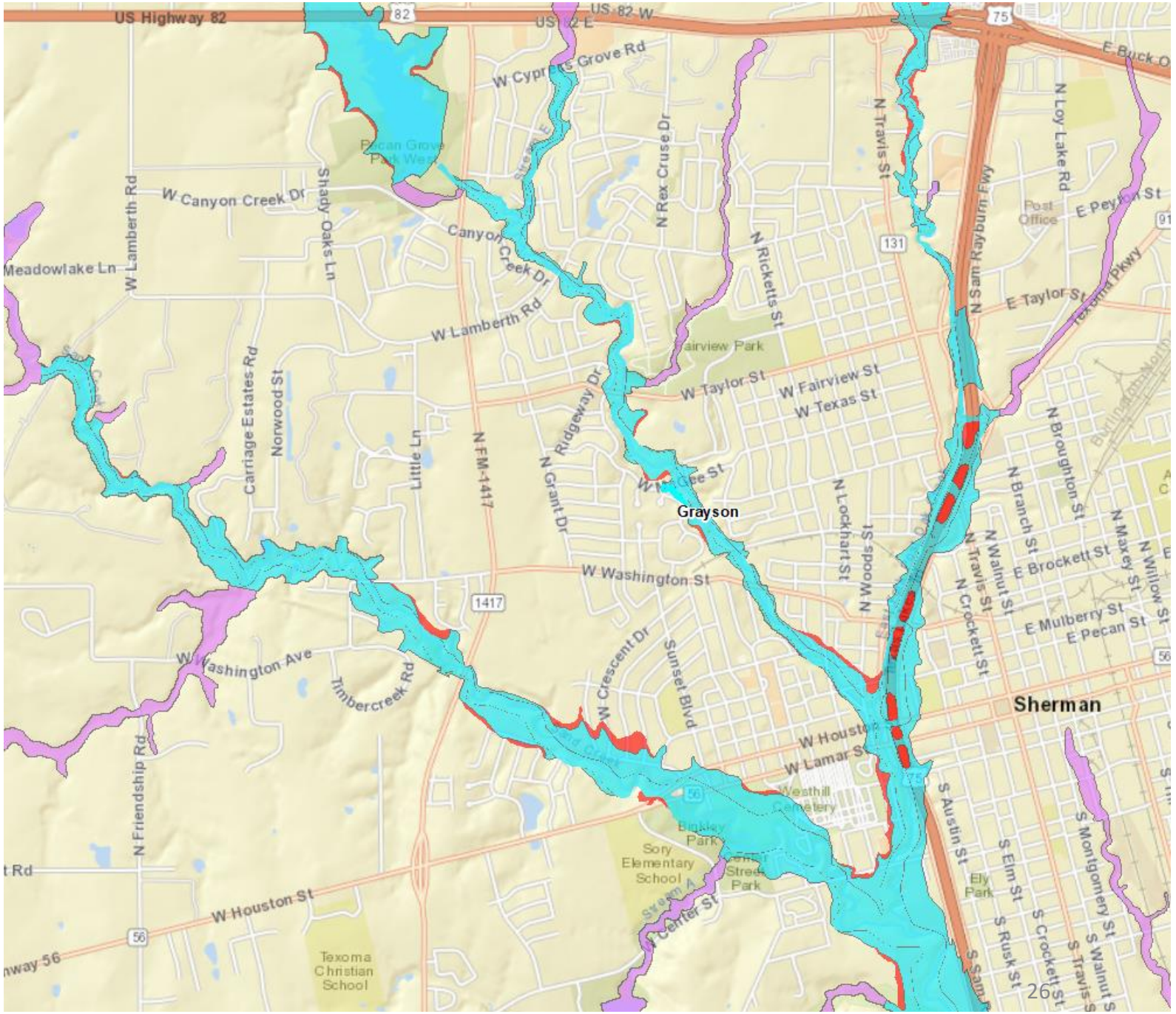
- Working with TWDB to develop method



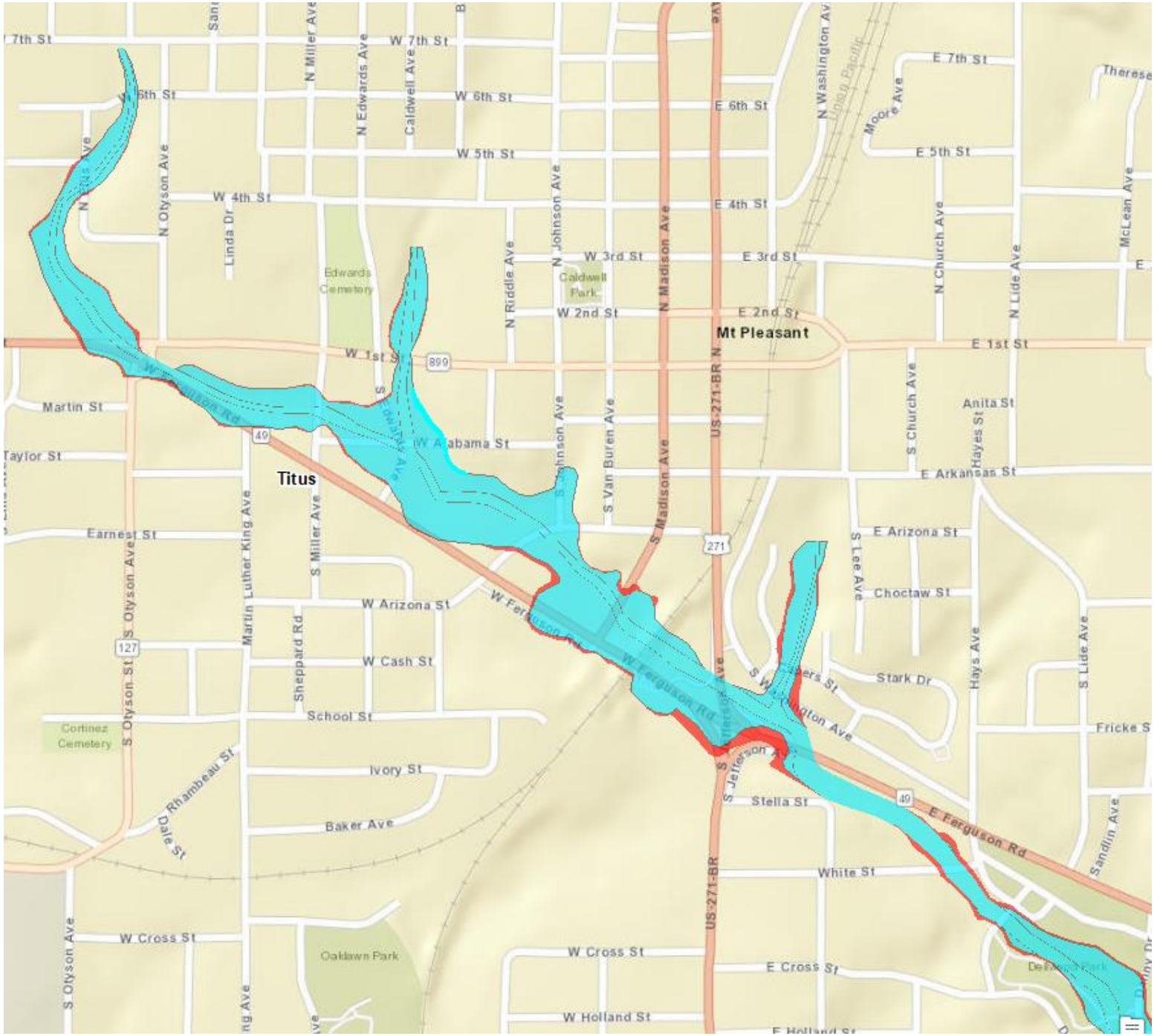
Existing 100-yr vs 500-yr



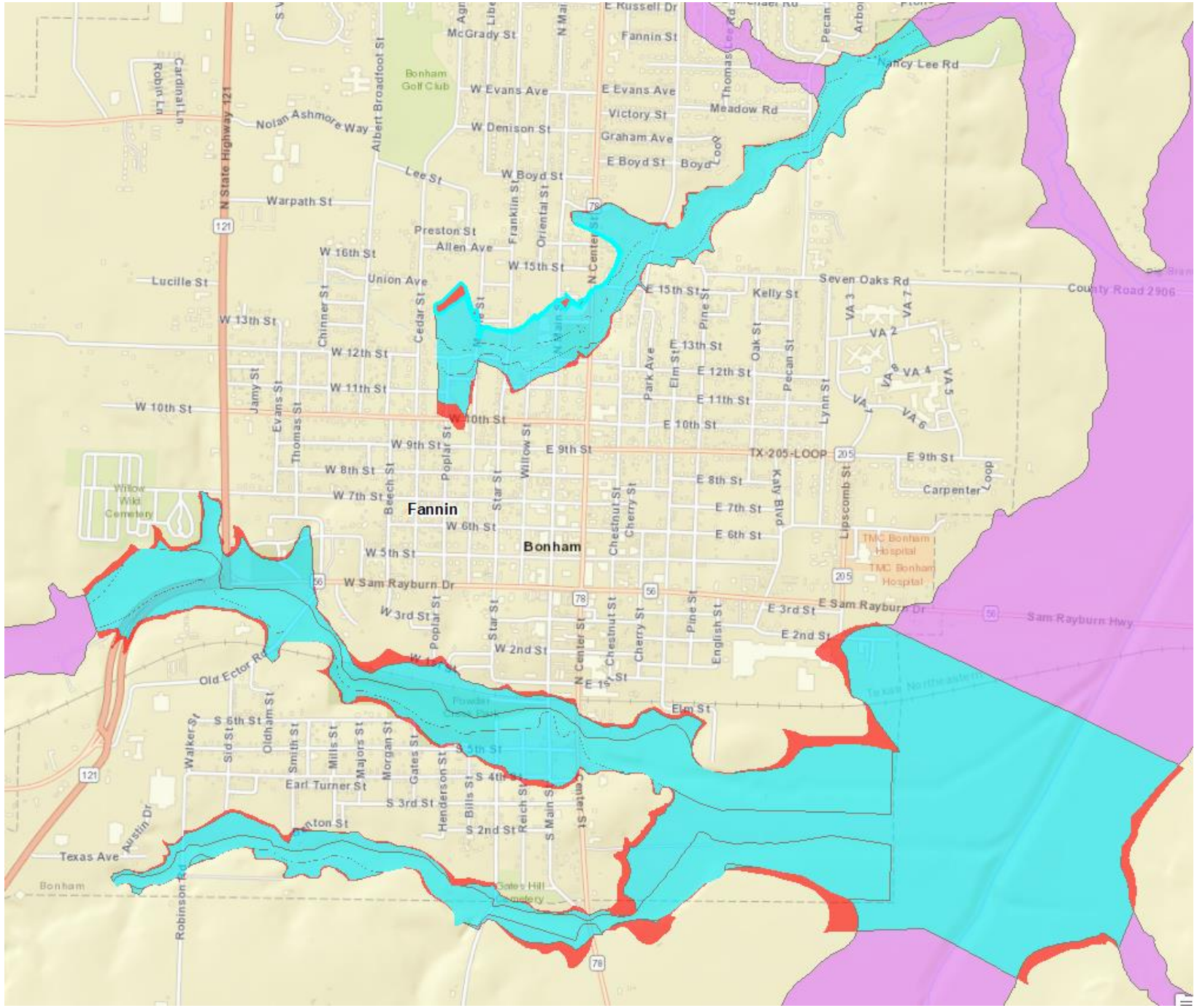
Existing 100-yr vs 500-yr



Existing 100-yr vs 500-yr



Existing 100-yr vs 500-yr



Task 2 B – Future Floodplain Quilt Prioritization

Assume Future floodplain is equivalent to the Existing 500-year

1. Local Detailed Study with Future Conditions
2. FEMA 500-year (where detailed studies are available)
3. Fathom 500-year Fluvial Data (where no detailed studies are available)

Fathom 500-year pluvial data will be added to all floodplain types to represent future conditions in uplands

Ch. 3 Introduction & Overview

Floodplain Management Practices & Flood Protection Goals

Task 3 – Floodplain Management Standards & Flood Protection Goals

RECOMMEND
Standards

RFPG

Technical Consultant

Data Collection

Public Input

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

RECOMMEND
Standards

RFPG

Technical Consultant

Data Collection

Public Input

Standards

Intent

Prevent the creation of additional flood risk in the future

Standards: Recommend or Adopt?

Recommend

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

Adopt

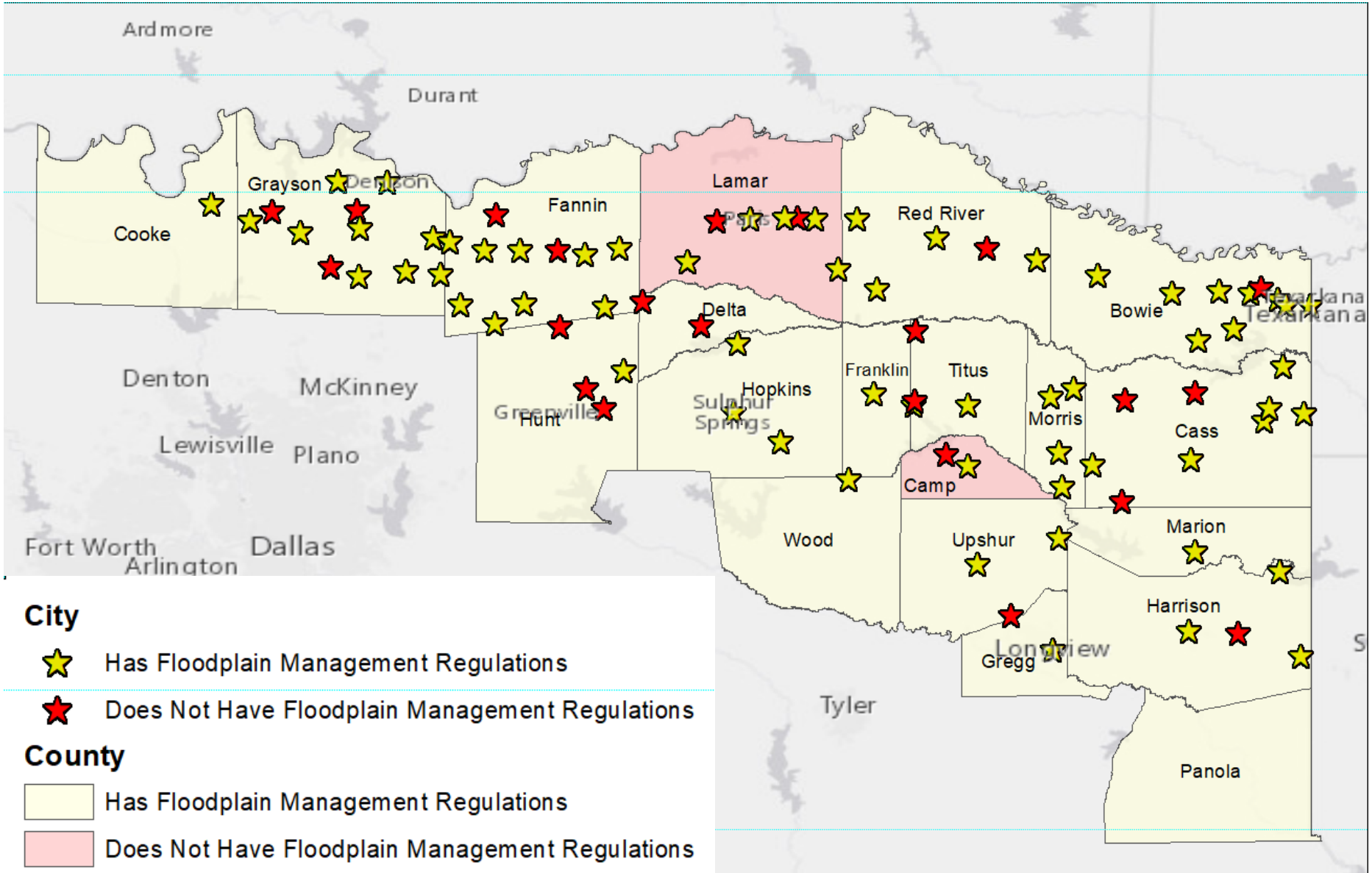
Jurisdictions must meet adopted standards BEFORE FME, FMS or FMP can be considered for inclusion in the Regional Flood Plan

FME – Floodplain Management Evaluation

FMS – Floodplain Management Strategy

FMP – Floodplain Mitigation Project

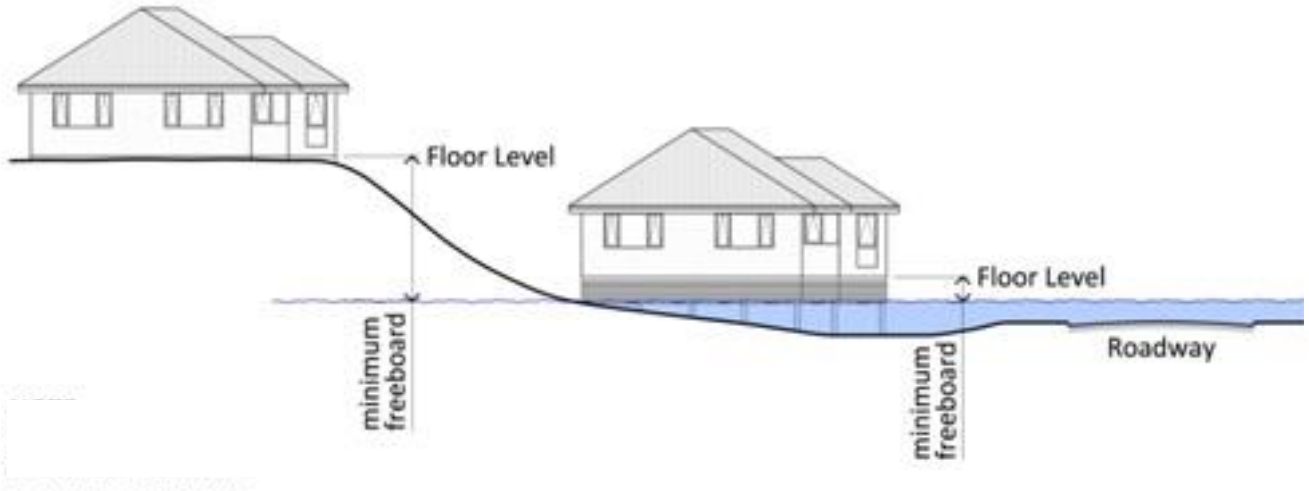
Existing Floodplain Management Regulations



Recommended Floodplain Management Standards

Type/Condition	Infrastructure	Recommended Standard		Minimum Recommended Standard
New Construction Pre-Existing (Retrofit)	Residential Properties	Finished floor elevation (FFE) 1-ft above BFE (BFE = Base Flood Elevation, 100-yr flood)		Finished floor elevation (FFE) at or above BFE
	Commercial Properties			
	Critical Facilities	FFE above 500-yr or 2-ft above 100-yr whichever comes first		FFE above 500-yr or 2-ft above 100-yr whichever comes first

** Critical Facilities: Hospitals, Fire Stations, Police Stations, Storage Facilities*



100-yr water surface elevation

Recommended Floodplain Management Standards

Type/Condition	Infrastructure	Recommended Standard		Minimum Recommended Standard
New Construction Pre-Existing (Retrofit)	Roadways	50-yr capture Depth not to exceed curb in 100-yr		25-yr capture Depth not to exceed curb in 100-yr
	Culverts/Bridges	Minor Roadways: Pass the 25-yr Major Roadways: Pass the 100-yr		Minor Roadways: Pass the 10-yr Major Roadways: Pass the 100-yr
	Storm Drainage Systems	25-yr flow underground 100-yr within right of way		10-yr flow underground 100-yr within right of way
	Detention Facilities	Multi-stage Detention - detain to existing conditions peak discharge for 2-, 25- and 100-year Storms		Detain to existing conditions peak discharge for 100-year Storm
	Mapping Coverage	Developers building in a Zone A or unmapped areas must provide a hydrologic and hydraulic study establishing BFE		Developers building in a Zone A must provide a hydrologic and hydraulic study establishing BFE

Goals

RFPG

Technical Consultant

Data Collection

Public Input

- 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)

Standards

Goals Survey Categories

Goals for Lower Red Sulphur Cypress

The purpose of this survey is to allow users to give feedback on goals pertinent to their community. Results will dictate what goals the Technical Consultants will focus on, or eliminate.

1. Education and Outreach

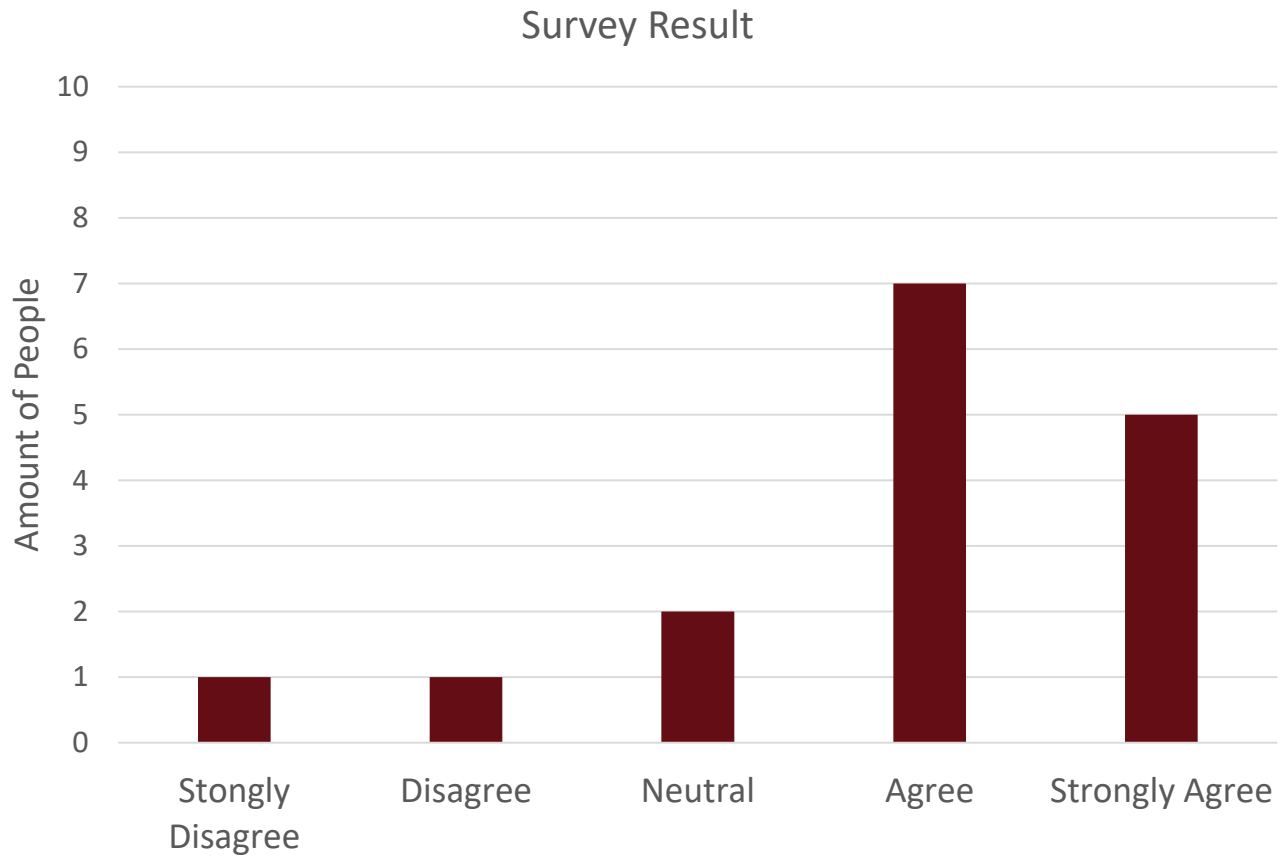
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Increase the number of public stakeholder participants in the regional flood planning data collection (survey) process by X percent per each cycle.	○	○	○	○	○
Increase the number of entities participating in the regional flood planning process by X percent per each cycle.	○	○	○	○	○
Increase the number of public outreach and education activities to improve awareness of flood hazards and benefits of flood planning in the FPR by X occurrences.	○	○	○	○	○

Comments

- Education and Outreach
- Flood Warning and Readiness
- Flood Studies and Analysis
- Flood Prevention
- Non-Structural Flood Infrastructure
- Structural Flood Infrastructure

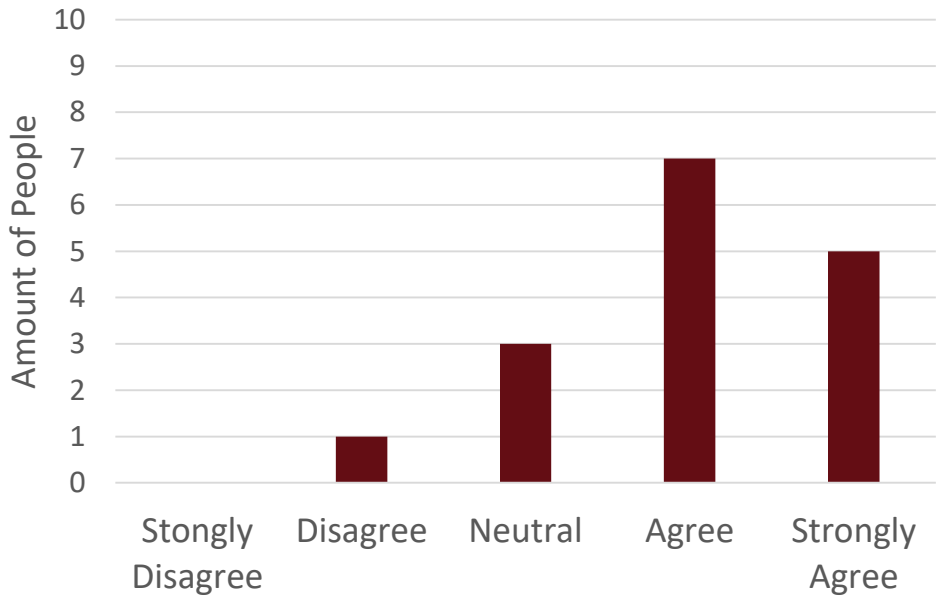
Education and Outreach

Increase the number of public outreach and education activities to improve awareness of flood hazards and benefits of flood planning in the FPR by X occurrences.

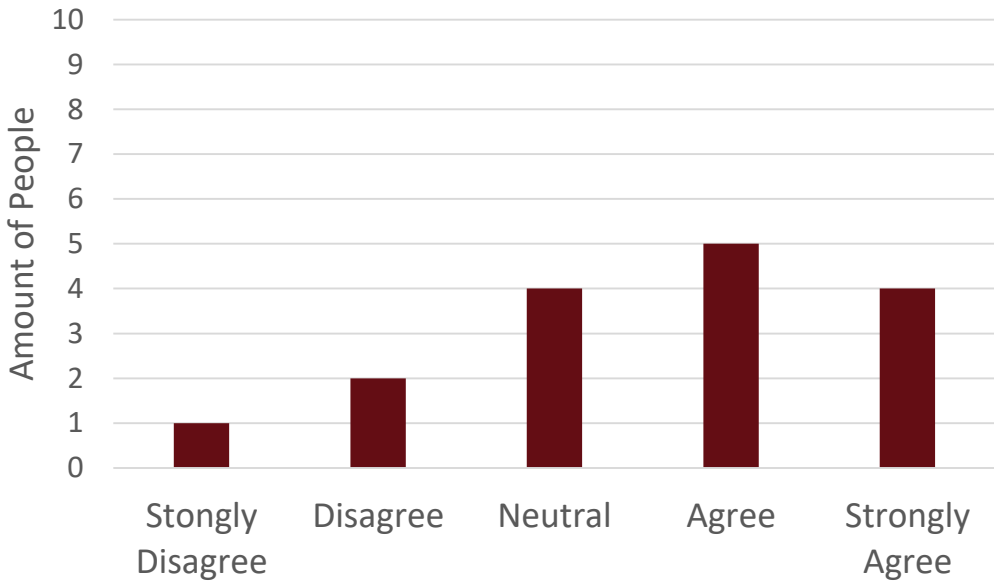


Flood Warning and Readiness

1) Support the development of a regionally coordinated warning and emergency response program that can detect the flood threat and provide timely warning of impending flood danger.

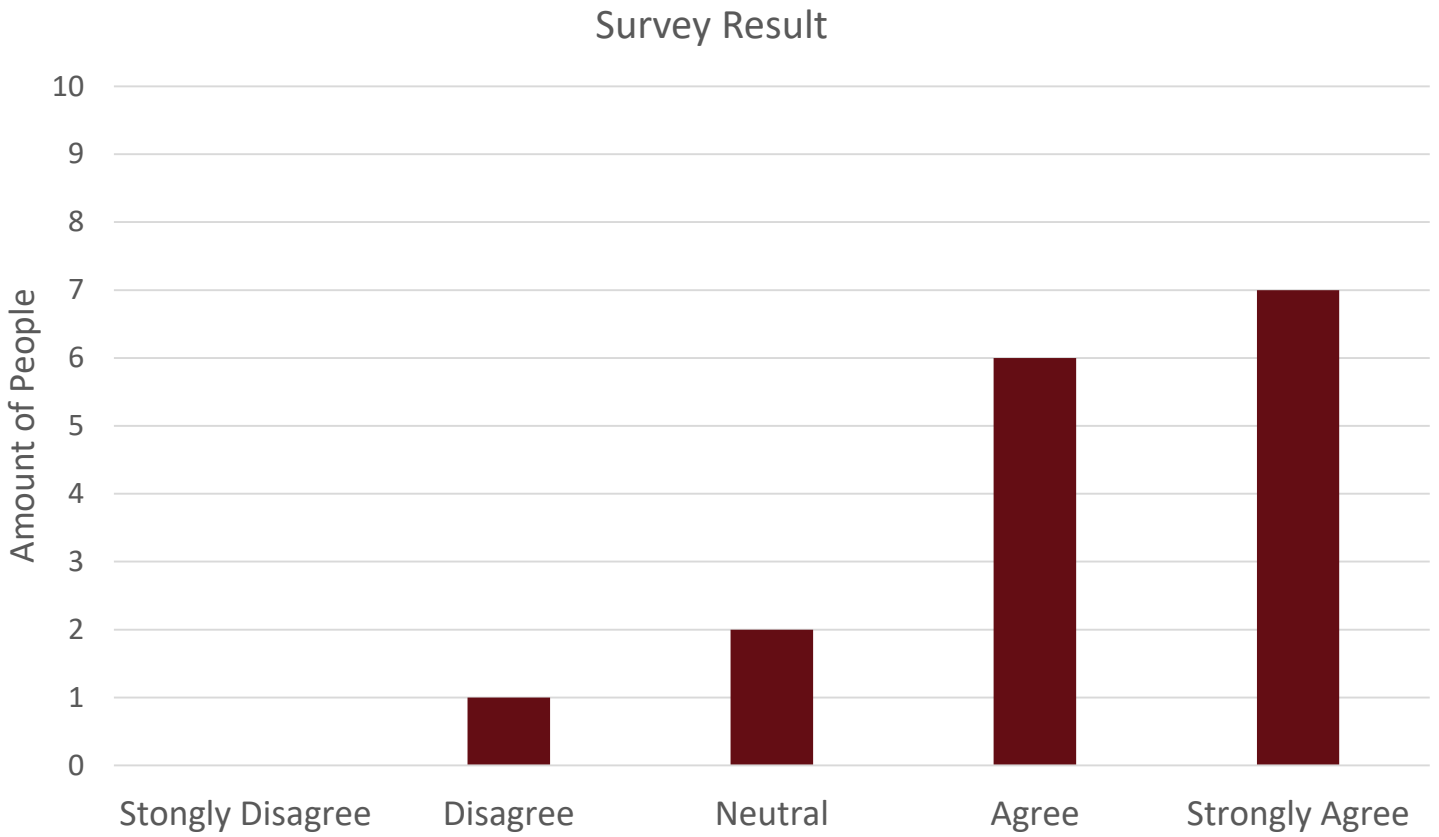


2) Increase the number of flood gauges (rainfall, stream, reservoir, etc.) in the region by X gauges.



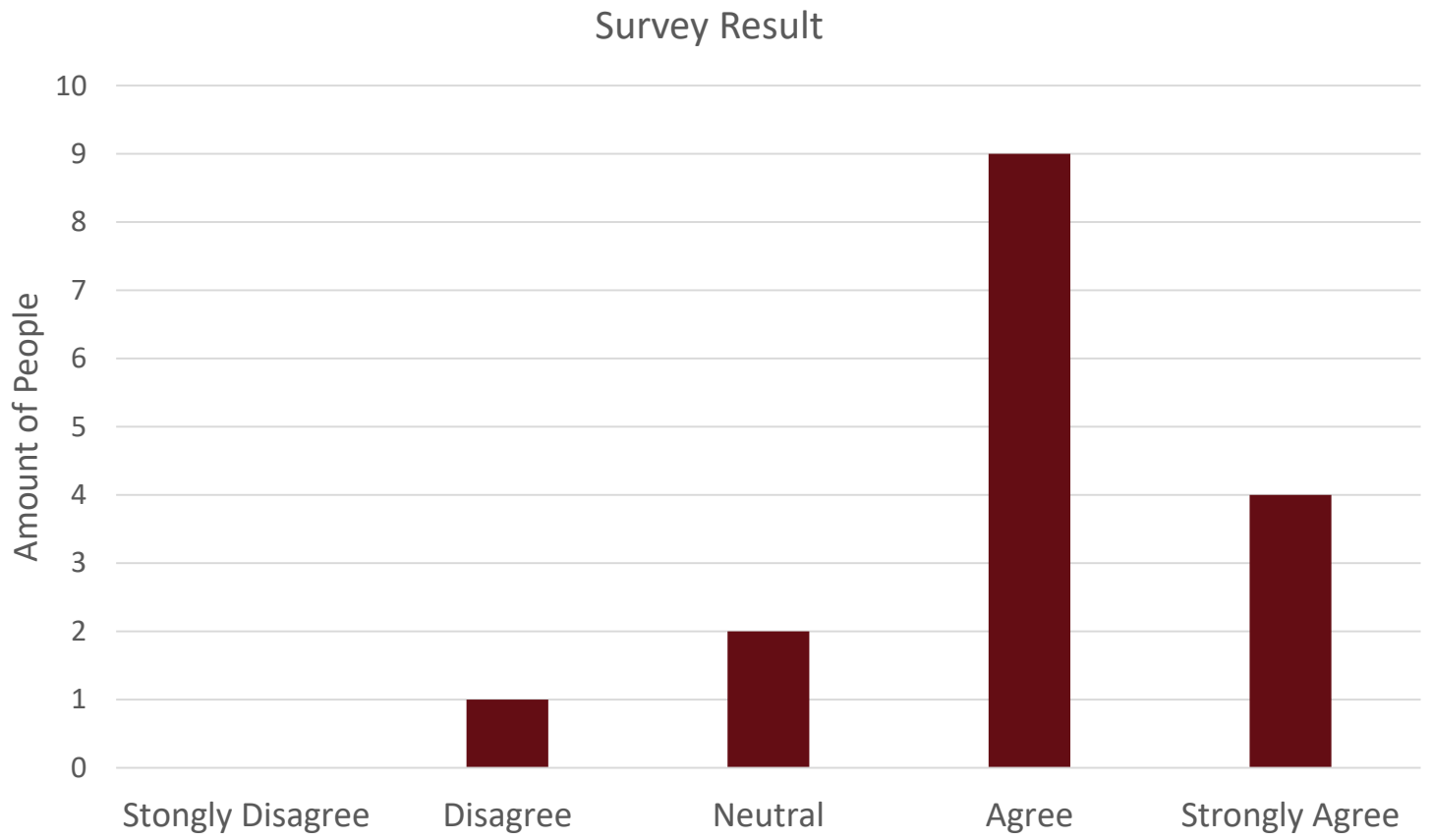
Flood Studies and Analysis

Increase the coverage of flood hazard data in the FPR by completing studies to reduce areas identified as having current gaps in flood mapping by X percent.



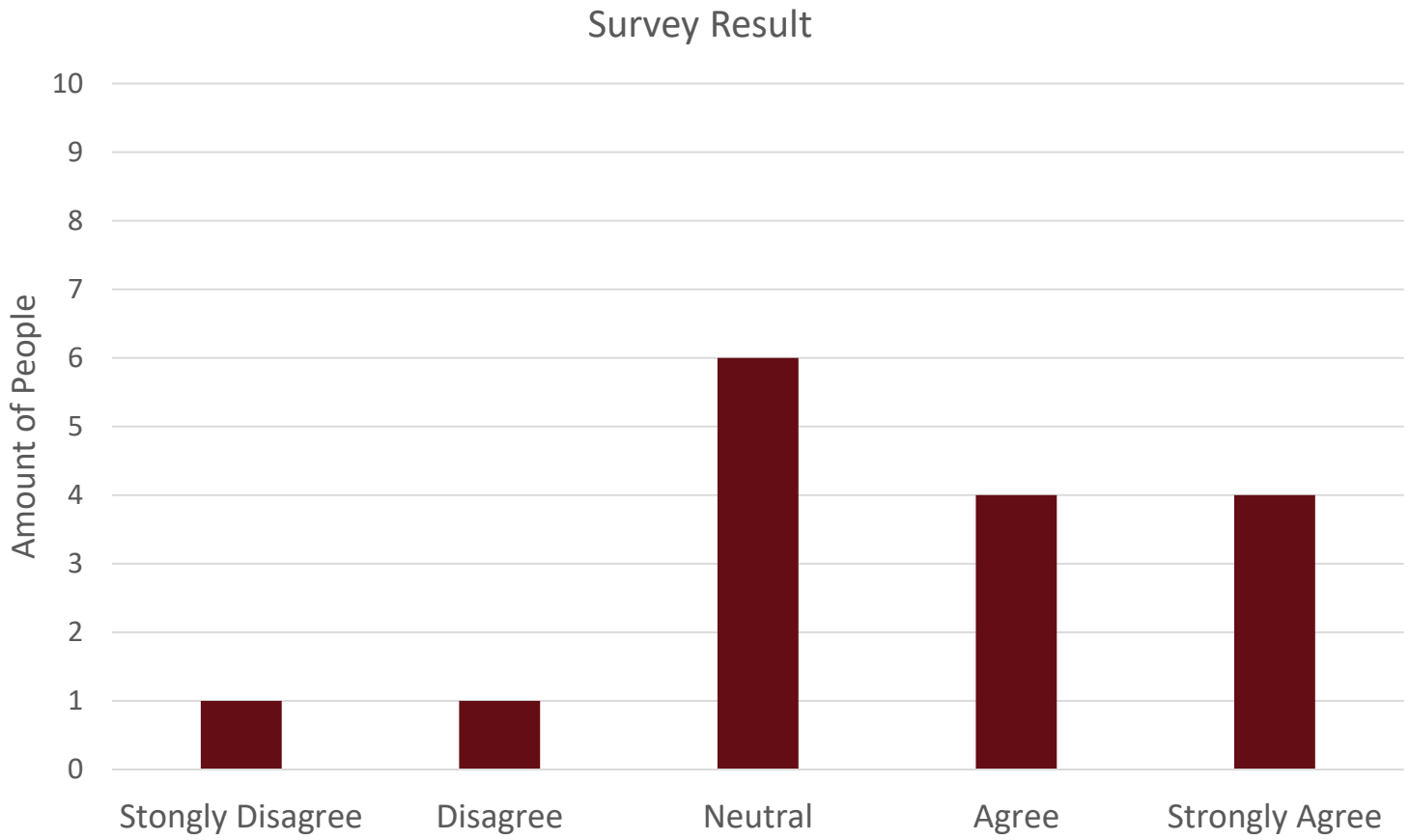
Flood Prevention

Reduce the number of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by X.



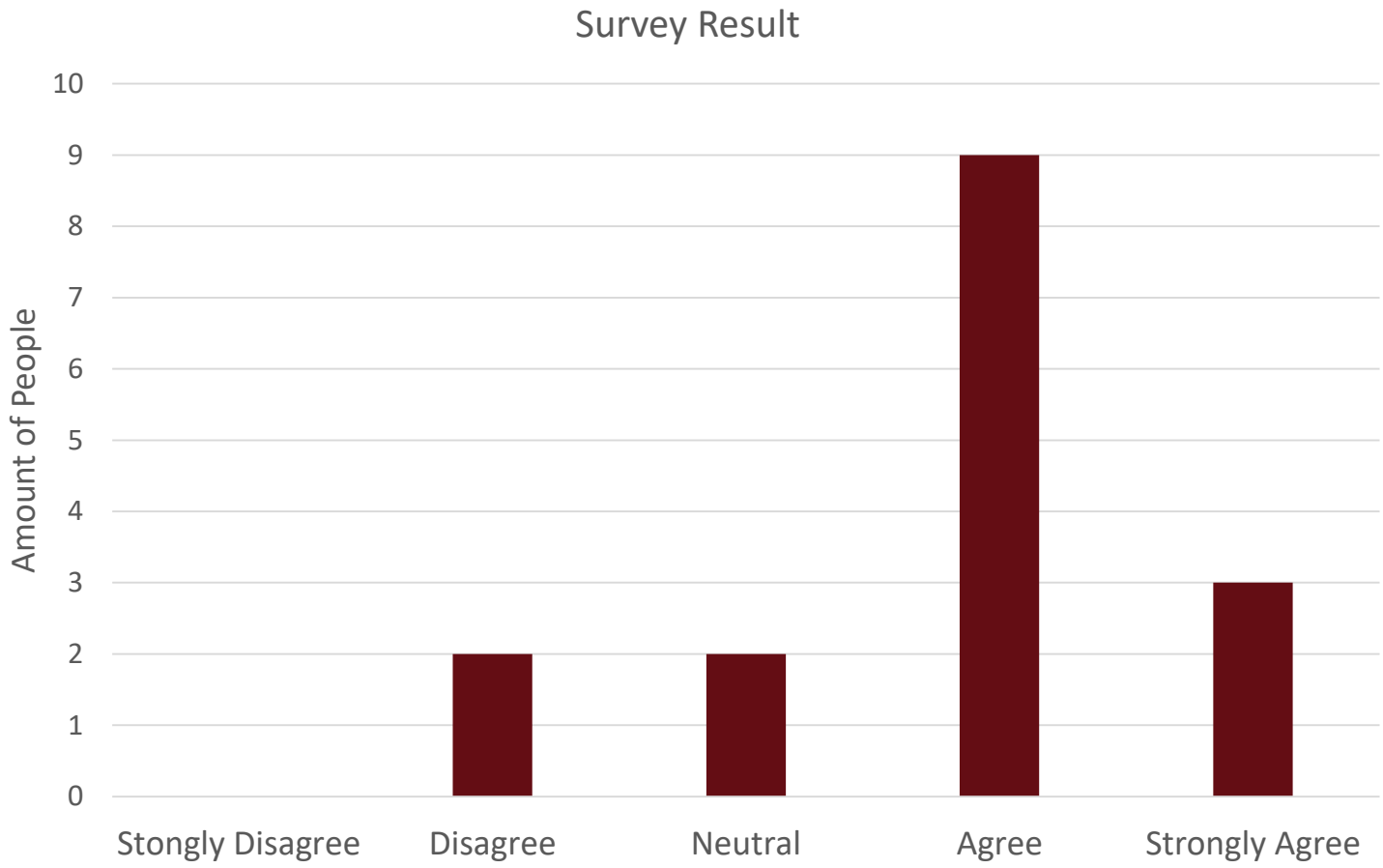
Non-Structural Flood Infrastructure Projects

Reduce the number of NFIP repetitive-loss properties in the FPR by X.



Structural Flood Infrastructure Projects

Reduce the number of vulnerable roadway segments located within the existing and future 1% annual chance (100-year) floodplain by X.



Goals Summary

Goal Category	Goal	Short Term Goal (2033)	Long Term Goal (2053)
Education and Outreach	For each planning cycle, hold public outreach and education activities (in multiple locations within the region) to improve awareness of flood hazards and benefits of flood planning.	3	3
Flood Warning and Readiness	Support the development of a community coordinated warning and emergency response program (including flood gauges) that can detect the flood threat and provide timely warning of impending flood danger.	Install 1 warning system	Install 3 warning systems
Flood Studies and Analysis	Increase the coverage of flood hazard data by completing studies to reduce areas identified as having current gaps in flood mapping by X percent.	25%	90%

Goals Summary

Goal Category	Goal	Short Term Goal (2033)	Long Term Goal (2053)
Flood Prevention	Reduce the percentage of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by X.	25%	100%
Non-Structural Flood Infrastructure	Reduce the number of NFIP repetitive-loss properties by X percent.	10%	50%
Structural Flood Infrastructure	Reduce the number of vulnerable roadway segments and low water crossing located within the existing and future 1% annual chance floodplain by X percent.	25%	90%

Ch. 4 Flood Mitigation Needs & Potentially Feasible Solutions

Overview & Approach

Task 4 – Assessment and Identification of Flood Mitigation Needs

- Refresher – FME, FMS, and FMP
- Task 4 Input and Outcomes
- Draft Process for Identification and Selection

FME - Flood Management Evaluations

Study of a specific, flood-prone area needed to assess risk and/or determine whether there are potentially feasible FMSs or FMPs

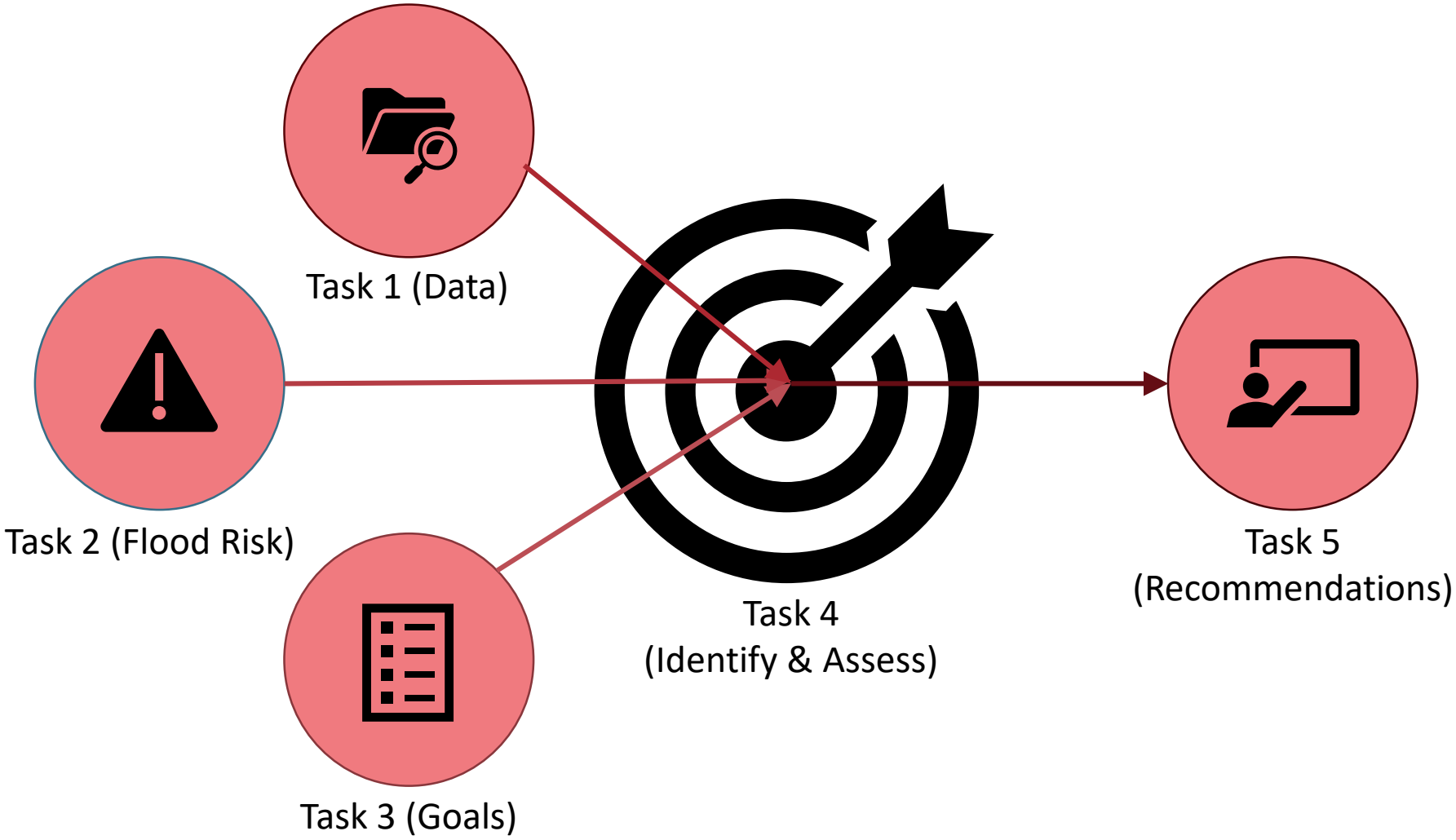
FMP - Flood Mitigation Projects

Project (structural or non-structural) that has non-zero capital costs or other non-recurring cost and will reduce flood risk, mitigate flood hazards to life or property

FMS - Flood Management Strategies

Plan to reduce flood risk or mitigate flood hazards to life or property; action group would like to identify, evaluate, and recommend that doesn’t qualify as an FME or FMP

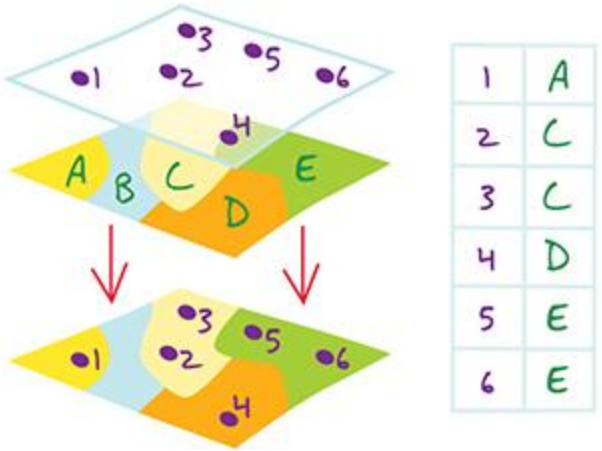
Task 4: Identify FME, FMS, & FMP



Anticipated FMS, FMP, & FME Distribution

Task 4A: Process for Identifying Areas of Greatest Need (Screening Analysis)

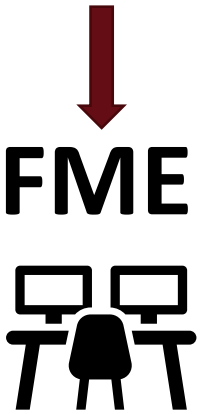
Most prone to flooding that threatens life & property	Locations, extent, & performance of policies & infrastructure	Prone to flooding with inadequate inundation maps	Prone to flooding with w/o H&H models
Emergency need	Existing models, analysis, & flood risk mitigation plans	Already identified flood mitigation projects	
Historic flooding events	Already implemented flood mitigation projects	Other relevant factors	



Task 4A: Process for Identifying Areas of Greatest Need (Screening Analysis)

Type 1

Greatest flood risk knowledge gaps



FME

Type 2

Greatest known flood risk & flood mitigation needs

FMS **FMP**

Task 4A: Id areas of greatest need

TWDB Guidance	Application
1. Most prone to flooding that threatens life & property	• Area overlapped by inundation mapping • Existing and Future conditions
	• Building Footprints
	• Roadways
2. Locations, extent, & performance of policies & infrastructure	• Communities not participating in NFIP
	• Lack of City/County Design Manuals
	• Lack of Floodplain Ordinances
3. Inadequate inundation mapping	• No Mapping
	• Fathom / BLE / FEMA Zone A
	• Detailed FEMA Models Older than 10 years

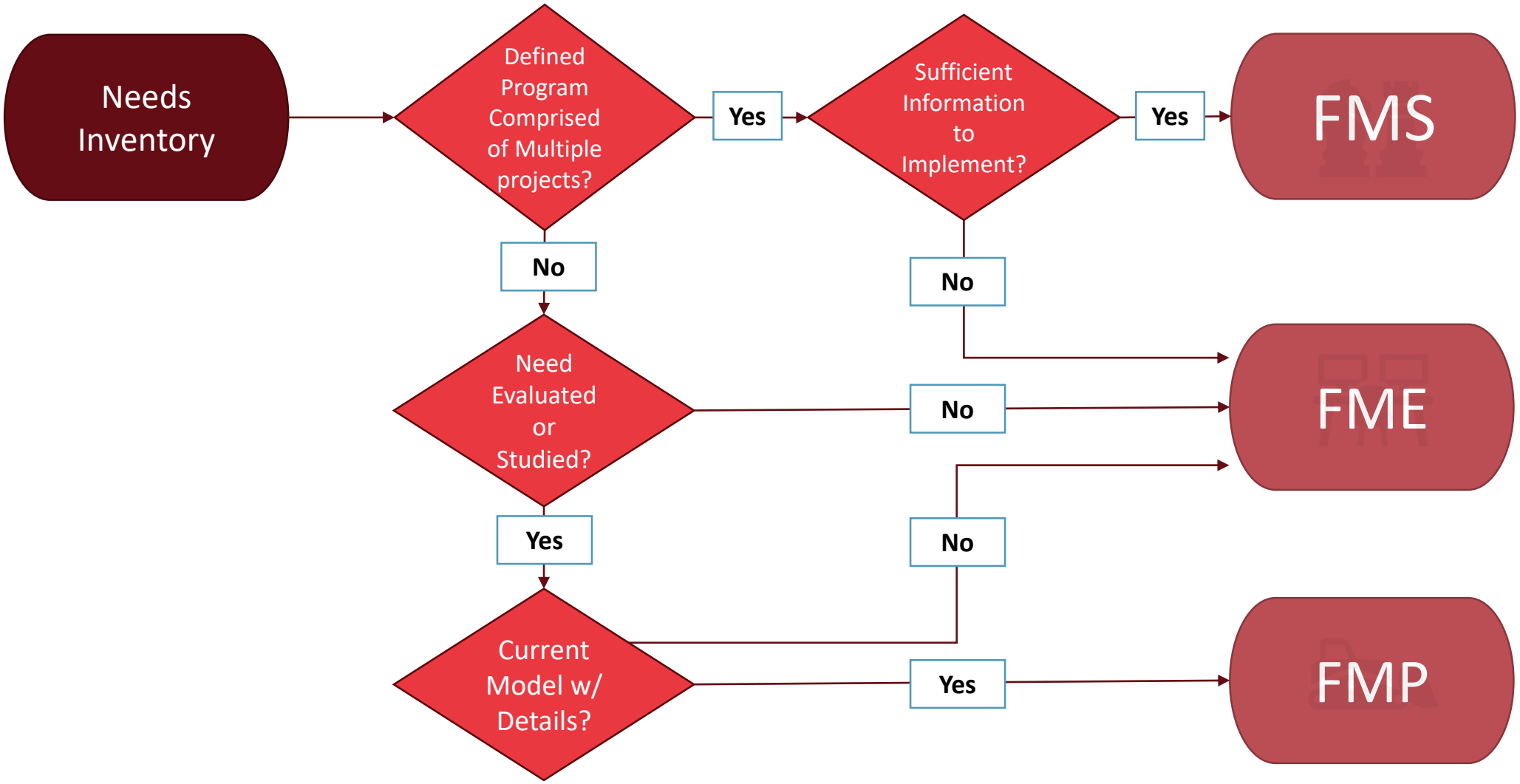
Task 4A: Id areas of greatest need

TWDB Guidance	Application
4. Hydrology and Hydraulics (H&H) Models	• Communities with ZERO models
	• Communities with Limited Models
5. Emergency need	• Emergency need areas
	• Damaged or Failing Infrastructure
6. Existing models, analysis, & flood risk mitigation plans	• Communities with none
	• Communities with some but not full coverage
7. Already identified flood mitigation projects	• Communities with none
	• Communities with some projects

Task 4A: Id areas of greatest need

TWDB Guidance	Application
8. Historic Flooding Events	• Hurricanes & Tropical Storms • Other significant local events
9. Already implemented flood mitigation projects	• Communities with ZERO mitigation projects underway
10. Additional other factors	• Incorporate RFPG / TWDB Goals

Task 4B - Process for Identifying FME, FMS, FMP



LOOK-AHEAD

October

- Vote on Chapter 3 Goals and Standards
- Refine process to select FMEs, FMSs & FMPs (Chapter 4)

November

- Tech memo presentation and discussion
- Chapter 4 approvals
- Tech memo review by RFPG Board

December

- Tech Memo formal approval

January

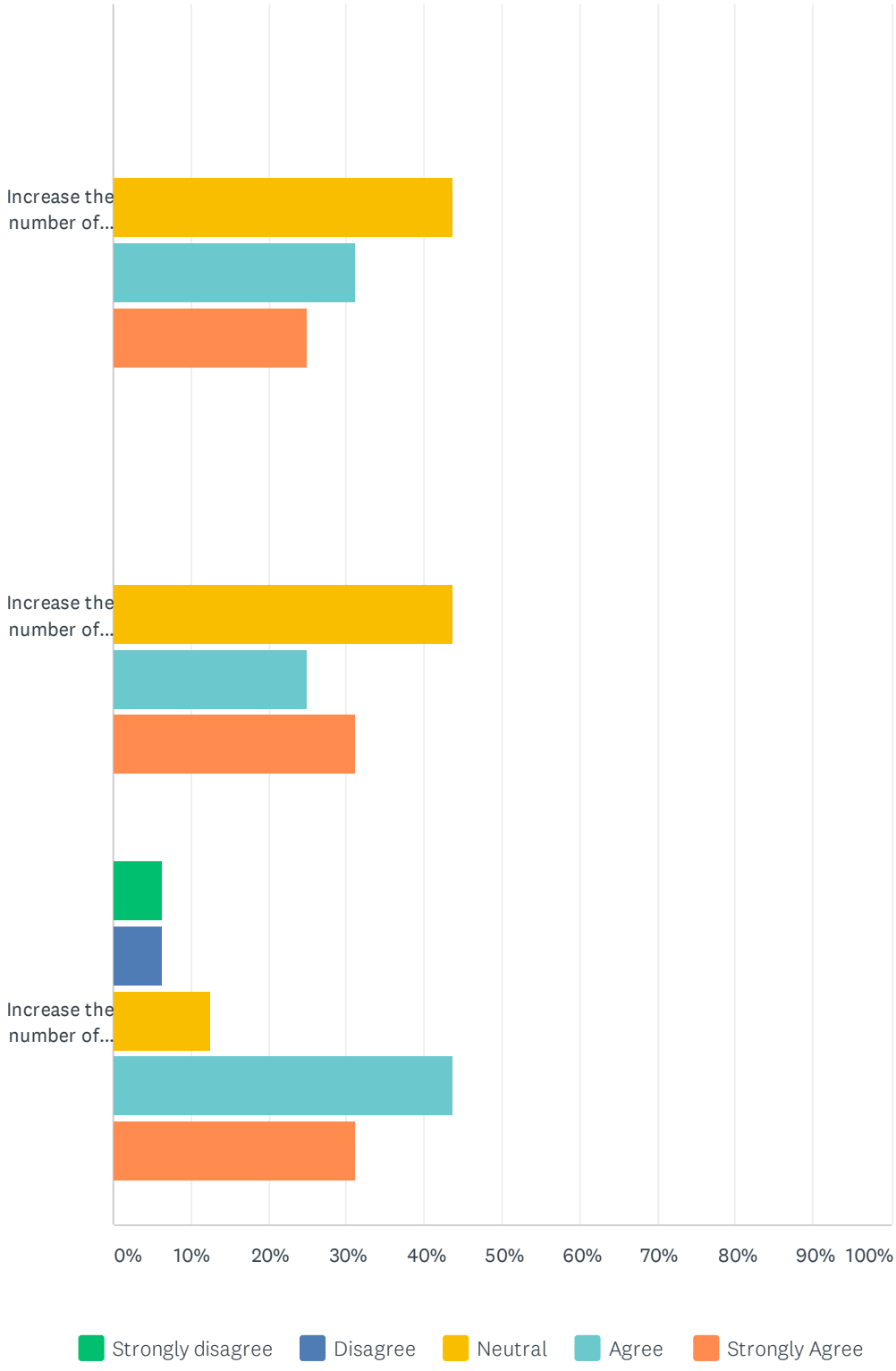
- Submit Tech Memo

OPEN DISCUSSION

Floodplain Management Practices & Flood Protection Goals

Q1 Education and Outreach

Answered: 16 Skipped: 0

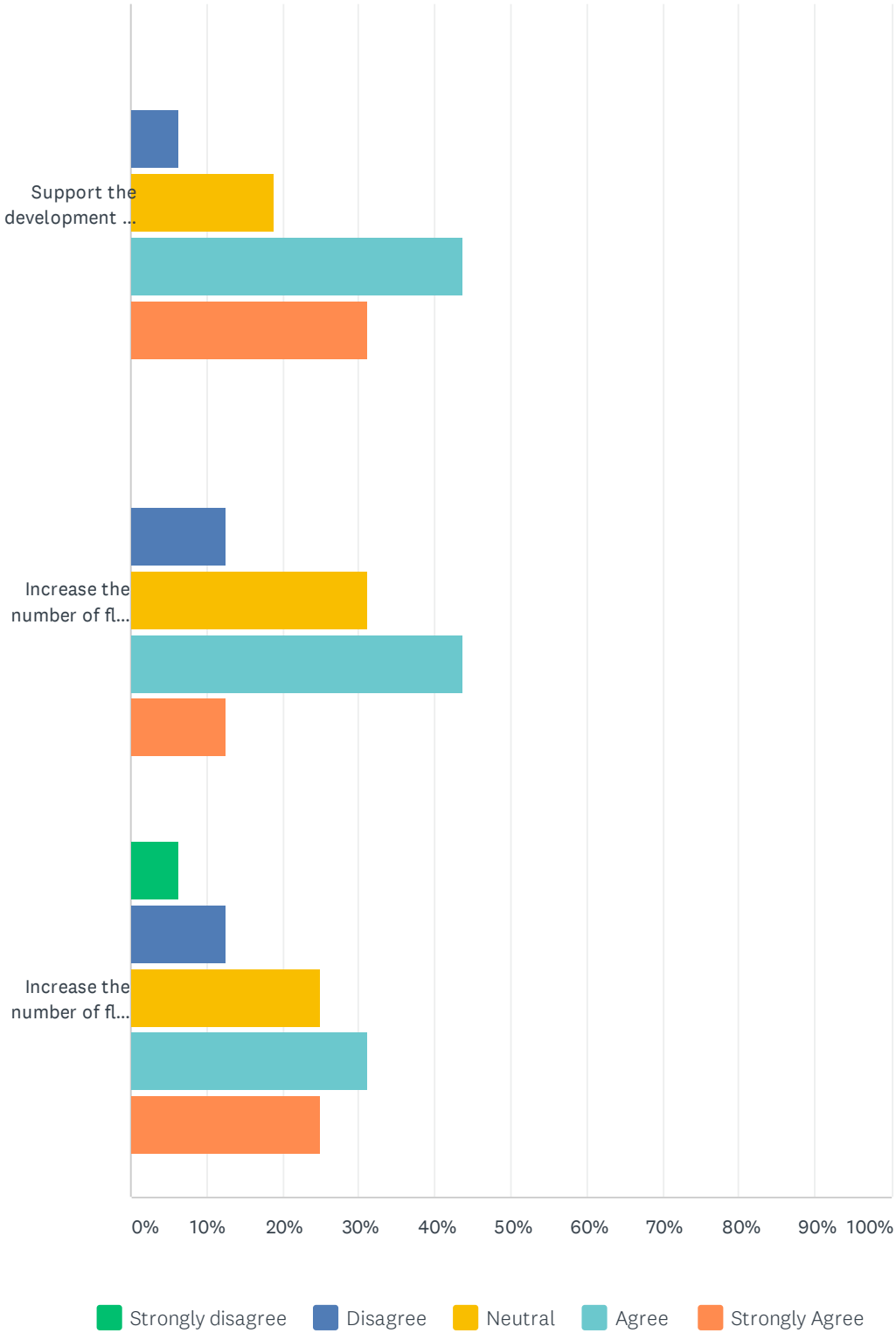


	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Increase the number of public stakeholder participants in the regional flood planning data collection (survey) process by X percent per each cycle.	0.00% 0	0.00% 0	43.75% 7	31.25% 5	25.00% 4	16	3.81
Increase the number of entities participating in the regional flood planning process by X percent per each cycle.	0.00% 0	0.00% 0	43.75% 7	25.00% 4	31.25% 5	16	3.88
Increase the number of public outreach and education activities to improve awareness of flood hazards and benefits of flood planning in the FPR by X occurrences.	6.25% 1	6.25% 1	12.50% 2	43.75% 7	31.25% 5	16	3.88

#	COMMENTS	DATE
1	Post offices and libraries are places engaged citizens often find information. Having a flyer there might help. Marshall News messenger is the newspaper I hear most about in my area.	8/23/2021 6:33 PM
2	I agree with the need to get the public involved but unless there is a major event, am skeptical that it will occur.	8/23/2021 9:07 AM
3	Be sure to have outreach sessions in multiple locations in the Region to ensure their is an opportunity for everyone to understand the process.	8/18/2021 8:52 AM

Q2 Flood Warning and Readiness

Answered: 16 Skipped: 0

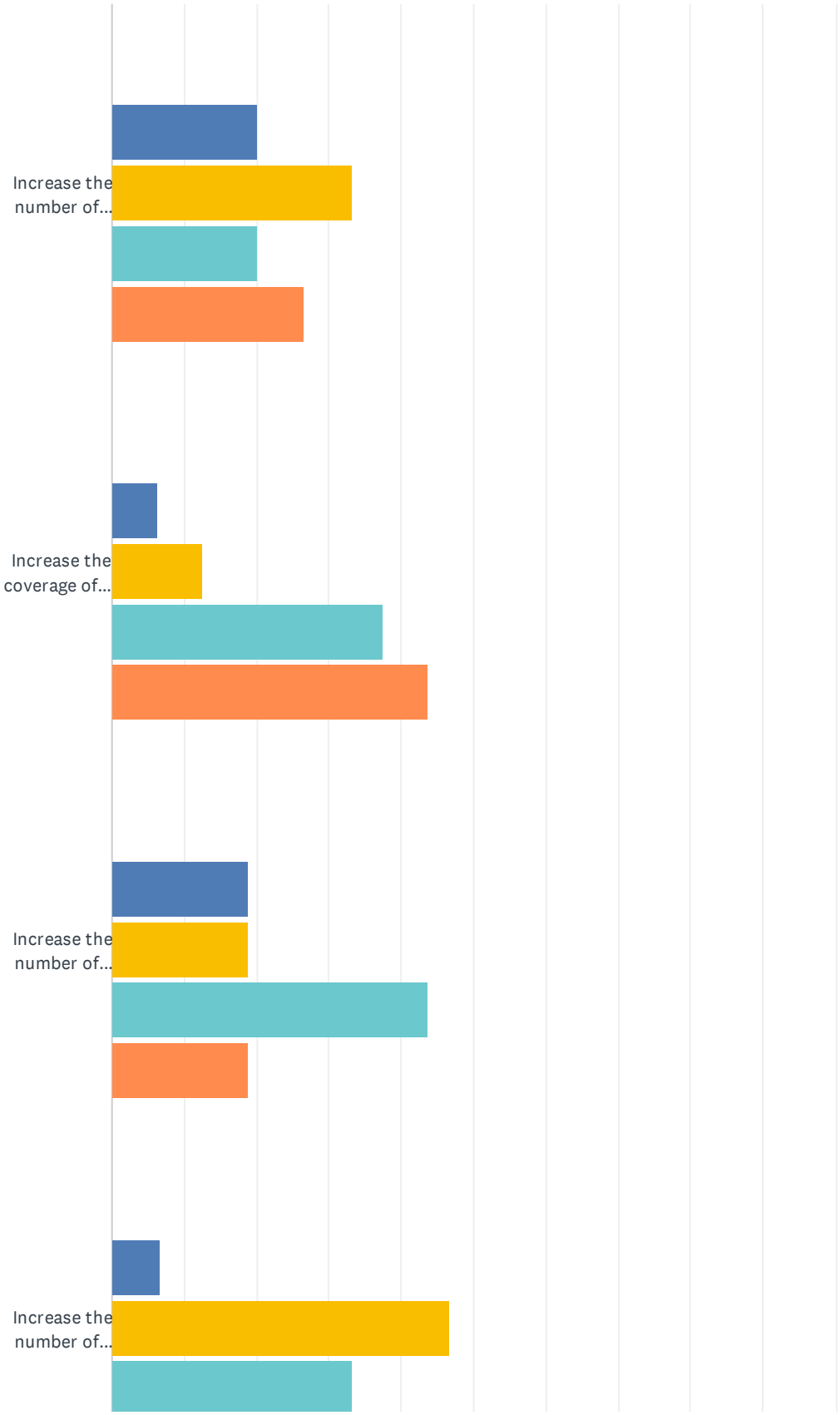


	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Support the development of a regionally coordinated warning and emergency response program that can detect the flood threat and provide timely warning of impending flood danger.	0.00% 0	6.25% 1	18.75% 3	43.75% 7	31.25% 5	16	4.00
Increase the number of flood response measures utilized by regional entities by X percent per each cycle.	0.00% 0	12.50% 2	31.25% 5	43.75% 7	12.50% 2	16	3.56
Increase the number of flood gauges (rainfall, stream, reservoir, etc.) in the region by X gauges.	6.25% 1	12.50% 2	25.00% 4	31.25% 5	25.00% 4	16	3.56

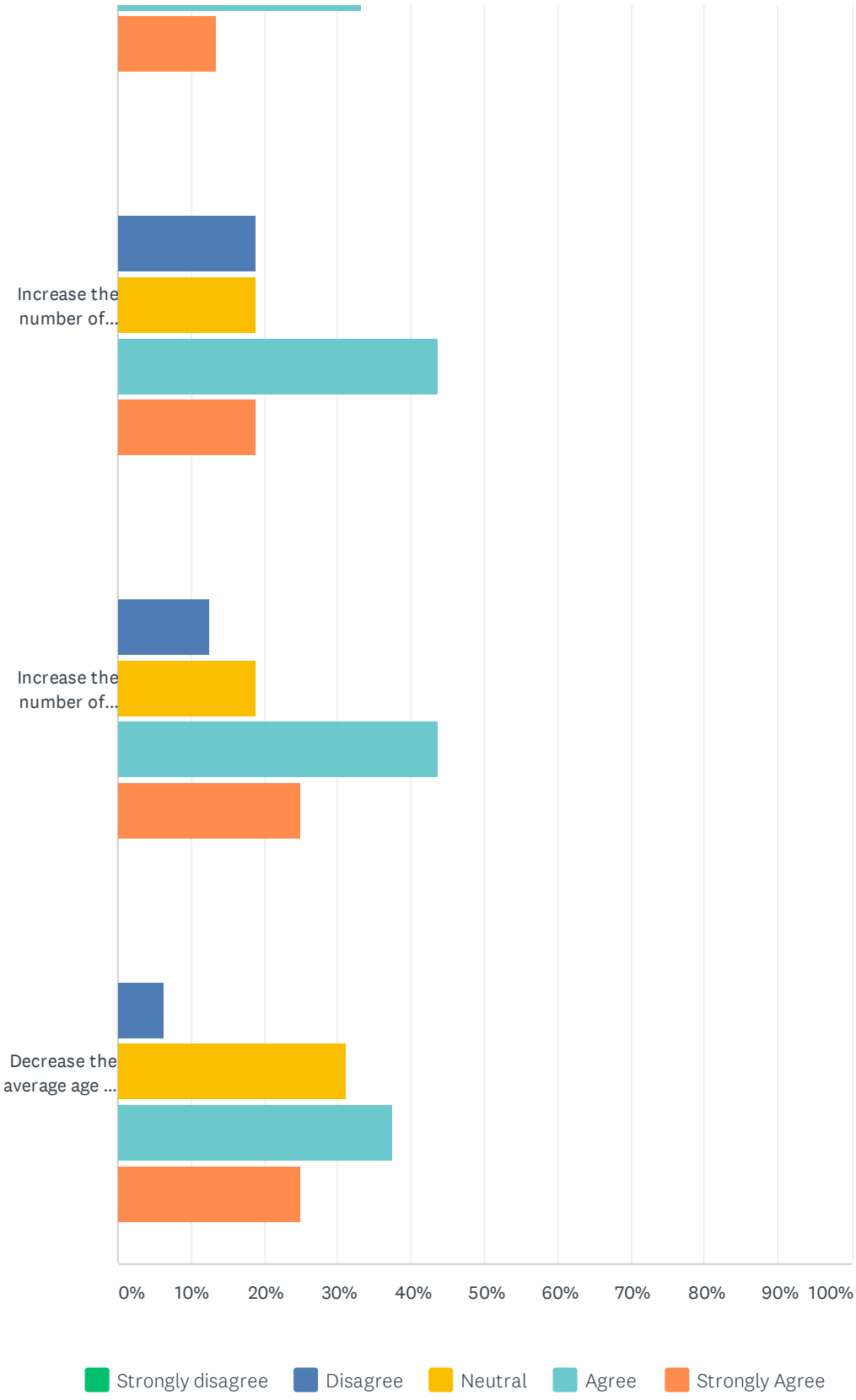
#	COMMENTS	DATE
1	I'm not sure if more gauges are needed. Regional coordination on flood danger messaging is important, but I don't want us to spend money to duplicate other services.	8/23/2021 6:33 PM
2	In the recent past USGS has had reduced funding and resorted to soliciting local sponsors to pay for stream gauges. So in reality unless we have an event and get a local sponsor, the third item will not occur.	8/23/2021 9:07 AM
3	Develop a map with the existing flood gages and coordinate with USGS and NWS on where additional locations make sense. Also, who will pay for them and what is the cost for each gage; install and annual O&M.	8/18/2021 8:52 AM

Q3 Flood Studies and Analysis

Answered: 16 Skipped: 0



Goals for Lower Red Sulphur Cypress

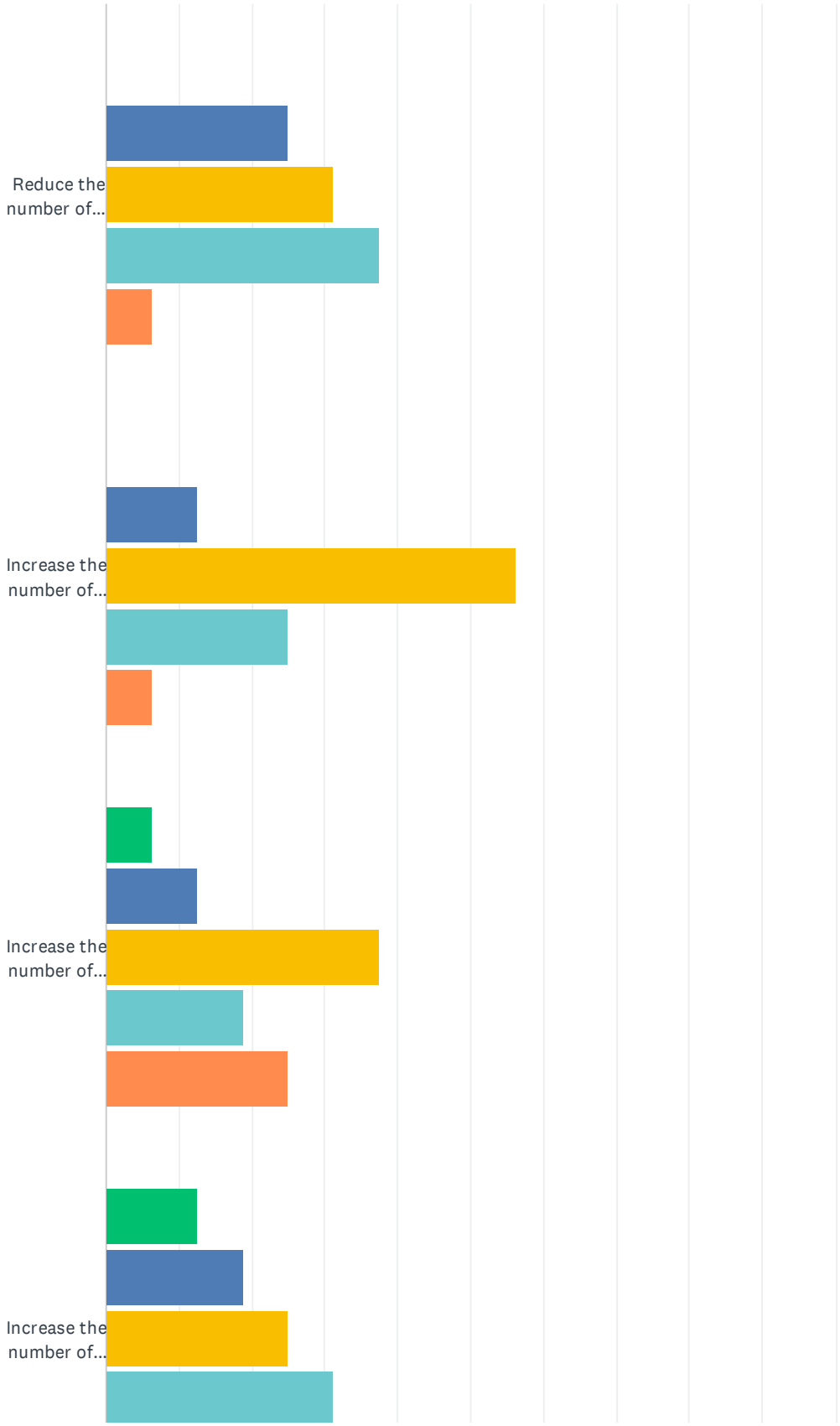


	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Increase the number of entities which utilize/adopt Atlas 14 (Volume 11) revised rainfall data as part of revisions to design criteria and flood prevention regulations by X percent. (region specific)	0.00% 0	20.00% 3	33.33% 5	20.00% 3	26.67% 4	15	3.53
Increase the coverage of flood hazard data in the FPR by completing studies to reduce areas identified as having current gaps in flood mapping by X percent.	0.00% 0	6.25% 1	12.50% 2	37.50% 6	43.75% 7	16	4.19
Increase the number of entities that conduct detailed studies to update their FEMA Flood Insurance Rate Maps (NFHL/FIRMs/FIS) by X.	0.00% 0	18.75% 3	18.75% 3	43.75% 7	18.75% 3	16	3.63
Increase the number of completed FMEs by X percent per each cycle.	0.00% 0	6.67% 1	46.67% 7	33.33% 5	13.33% 2	15	3.53
Increase the number of entities that study localized/urban flooding impacts by X.	0.00% 0	18.75% 3	18.75% 3	43.75% 7	18.75% 3	16	3.63
Increase the number of entities which have digital flood insurance rate maps (DFIRMs) by X.	0.00% 0	12.50% 2	18.75% 3	43.75% 7	25.00% 4	16	3.81
Decrease the average age of FEMA Flood Insurance Rate Maps (NFHL/FIRMs/FIS) by X years.	0.00% 0	6.25% 1	31.25% 5	37.50% 6	25.00% 4	16	3.81

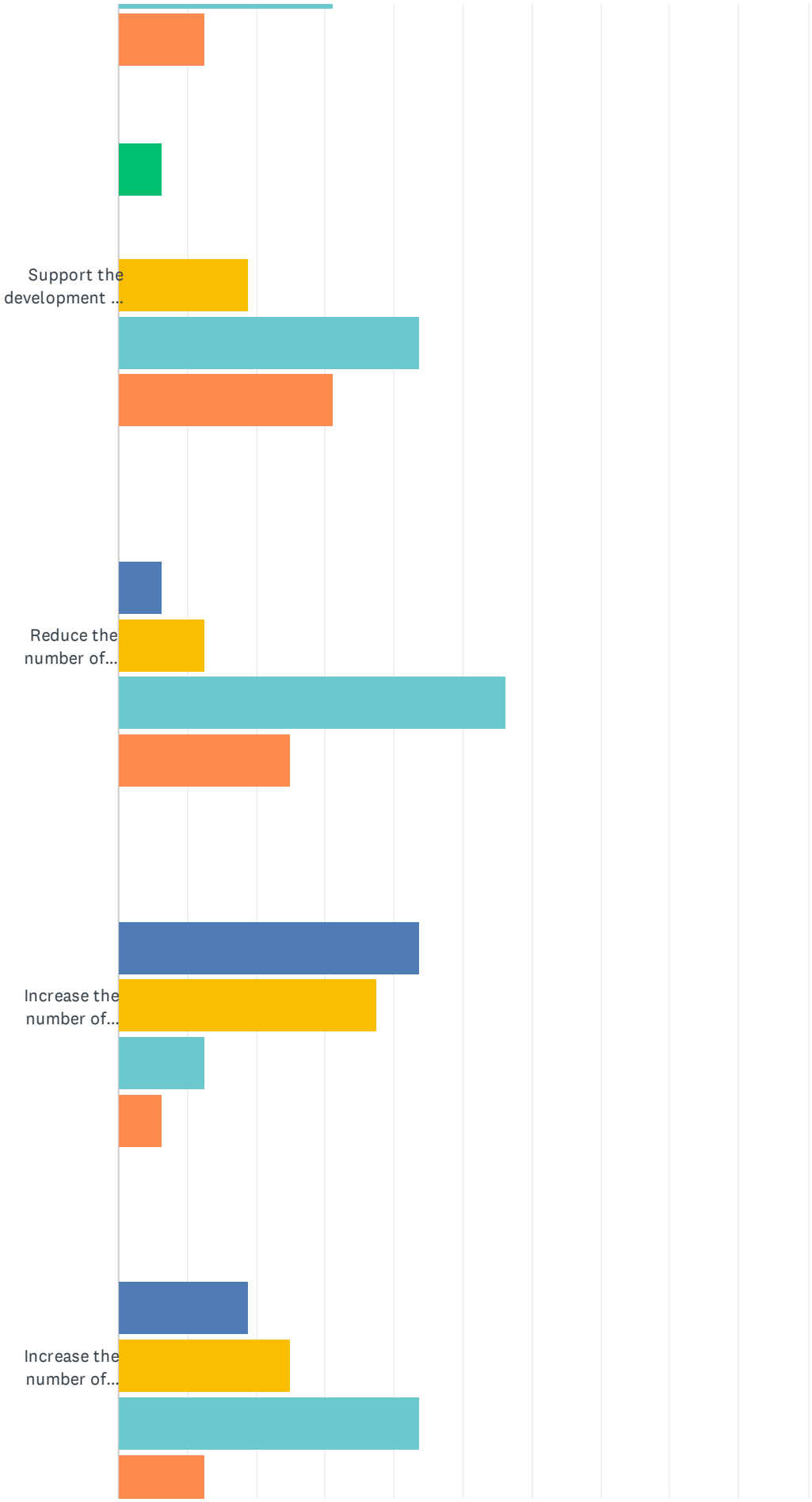
#	COMMENTS	DATE
1	Good data helps.	8/23/2021 6:33 PM
2	Local or regional entities will need to fund these unless the TWDB can provide money.	8/23/2021 9:07 AM

Q4 Flood Prevention

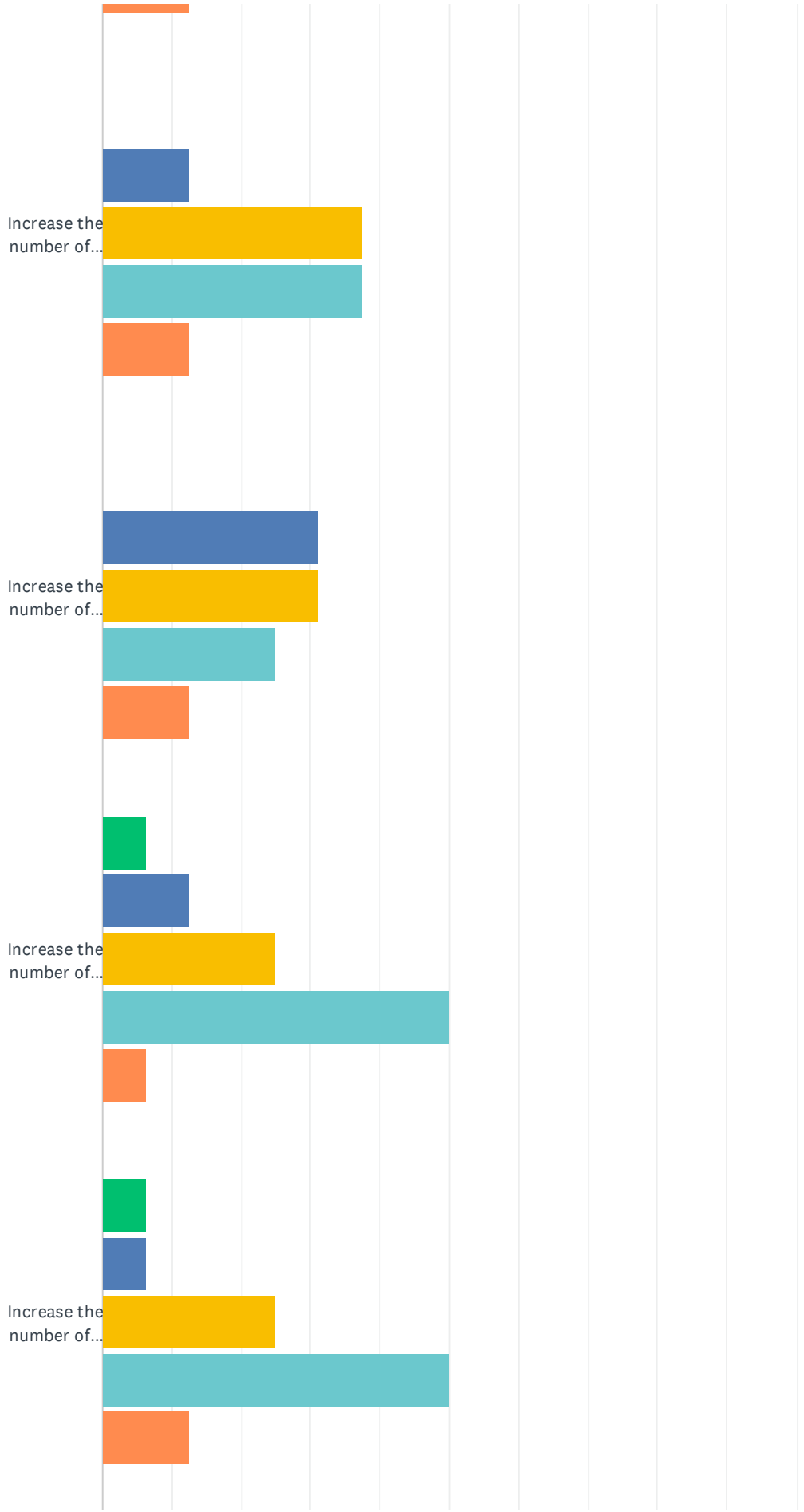
Answered: 16 Skipped: 0

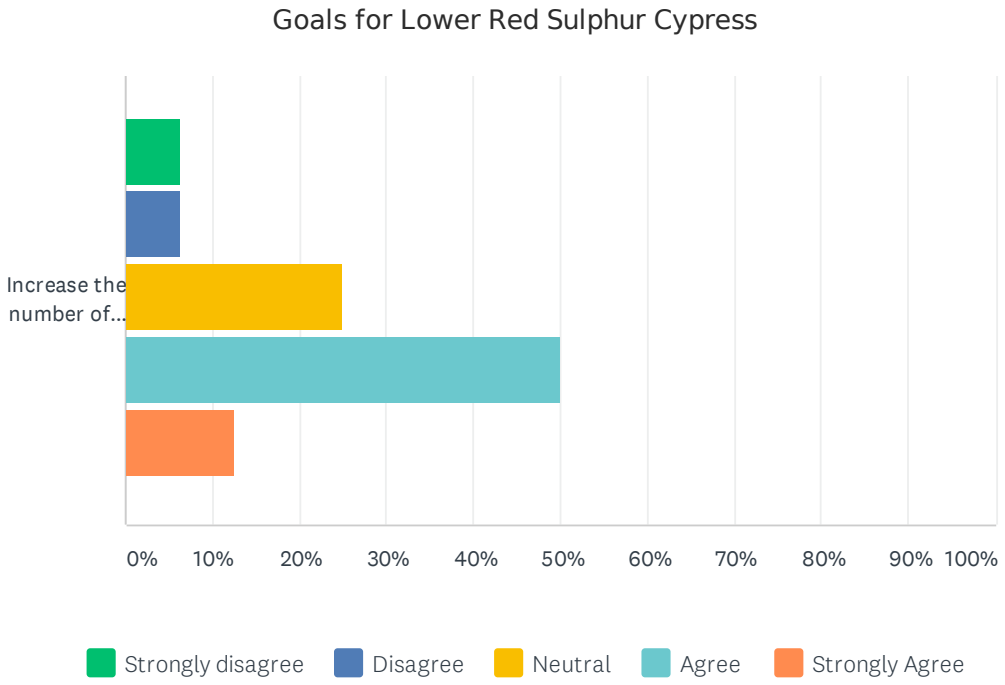


Goals for Lower Red Sulphur Cypress



Goals for Lower Red Sulphur Cypress




Goals for Lower Red Sulphur Cypress
Increase the number of...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree

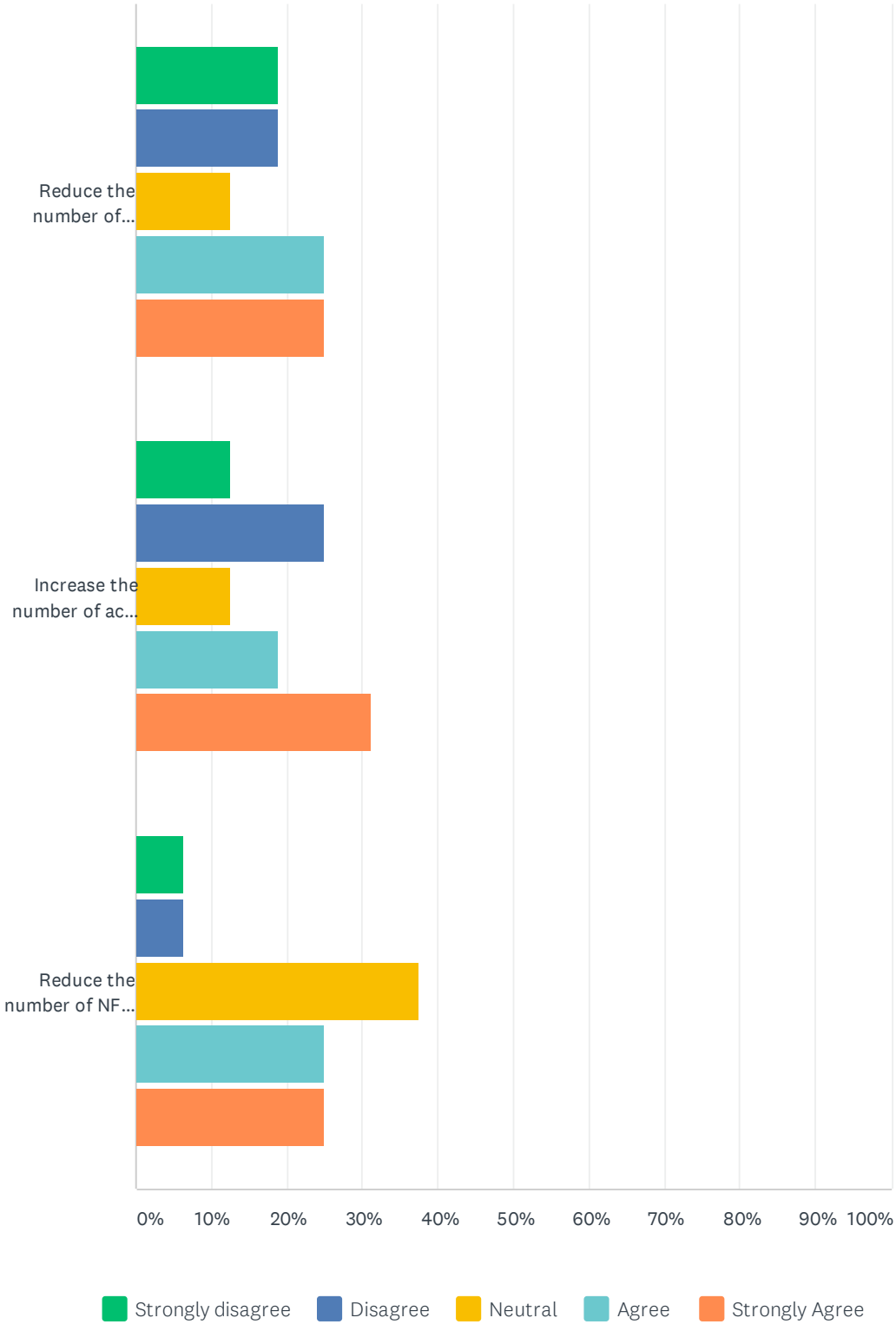
	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of non-participating entities in the National Flood Insurance Program (NFIP) in the FPR by X.	0.00% 0	25.00% 4	31.25% 5	37.50% 6	6.25% 1	16	3.25
Increase the number of participating Community Rating System (CRS) entities in the FPR by X.	0.00% 0	12.50% 2	56.25% 9	25.00% 4	6.25% 1	16	3.25
Increase the number of entities which regulate to the future conditions floodplains as part of new development and redevelopment by X.	6.25% 1	12.50% 2	37.50% 6	18.75% 3	25.00% 4	16	3.44
Increase the number of entities that have a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism by X, to implement future FMEs and FMPs	12.50% 2	18.75% 3	25.00% 4	31.25% 5	12.50% 2	16	3.13
Support the development of minimum stormwater infrastructure design standards applicable across the FPR.	6.25% 1	0.00% 0	18.75% 3	43.75% 7	31.25% 5	16	3.94
Reduce the number of communities that do not have floodplain standards that meet or exceed the NFIP minimum standards by X.	0.00% 0	6.25% 1	12.50% 2	56.25% 9	25.00% 4	16	4.00
Increase the number of entities that have adopted higher standards (more stringent than NFIP minimum standards) by X.	0.00% 0	43.75% 7	37.50% 6	12.50% 2	6.25% 1	16	2.81
Increase the number of entities that have adopted regulations to reduce the risk from localized flooding by X.	0.00% 0	18.75% 3	25.00% 4	43.75% 7	12.50% 2	16	3.50
Increase the number of entities which designate their floodplain management practices as “strong” in the regional flood planning process by X percent per each cycle.	0.00% 0	12.50% 2	37.50% 6	37.50% 6	12.50% 2	16	3.50
Increase the number of entities which designate their level of enforcement of floodplain management as “high activity” by X percent per each cycle.	0.00% 0	31.25% 5	31.25% 5	25.00% 4	12.50% 2	16	3.19
Increase the number of entities which regulate to one or more feet above the BFE for existing 1% annual chance event (100-year) conditions by X per each cycle.	6.25% 1	12.50% 2	25.00% 4	50.00% 8	6.25% 1	16	3.38
Increase the number of entities which provide alternate compliance options that allow or incentivize nature-based solutions to reduce future flood risk by X.	6.25% 1	6.25% 1	25.00% 4	50.00% 8	12.50% 2	16	3.56
Increase the number of entities in the FPR that designate the 1% annual	6.25% 1	6.25% 1	25.00% 4	50.00% 8	12.50% 2	16	3.56

chance (100-year) floodplain on the entity's future land use plan by X.

#	COMMENTS	DATE
1	Reducing flooding is the goal and unregulated development is a major cause of flooding so storm water plans are imperative. Natural solutions reduce flooding and provide other benefits while costing less than other built projects.	8/23/2021 6:33 PM
2	Obviously the funding must come first to provide for mapping.	8/23/2021 9:07 AM
3	I believe entities are counties, cities, towns - state governmental organizations.	8/18/2021 8:52 AM

Q5 Non-Structural Flood Infrastructure Projects

Answered: 16 Skipped: 0

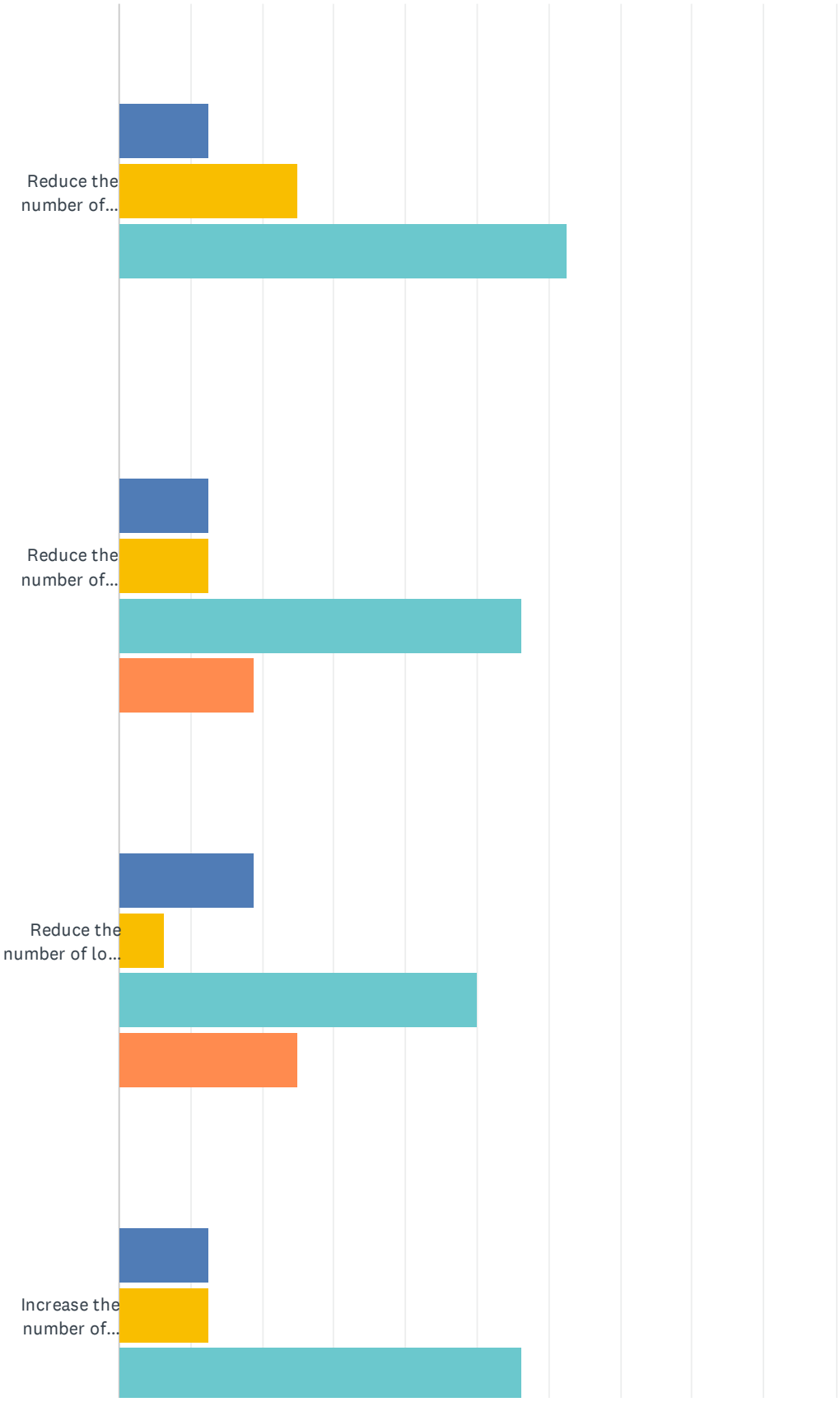


	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of vulnerable properties (i.e. through property/easement buyouts, acquisitions, relocations, and/or structural elevation), with a special emphasis on those that have been repeatedly damaged by floods, in the FPR by X percent.	18.75% 3	18.75% 3	12.50% 2	25.00% 4	25.00% 4	16	3.19
Increase the number of acres of publicly protected open space by X as part of property buyouts, land conservation, and acquisitions to reduce future impacts of flooding.	12.50% 2	25.00% 4	12.50% 2	18.75% 3	31.25% 5	16	3.31
Reduce the number of NFIP repetitive-loss properties in the FPR by X.	6.25% 1	6.25% 1	37.50% 6	25.00% 4	25.00% 4	16	3.56

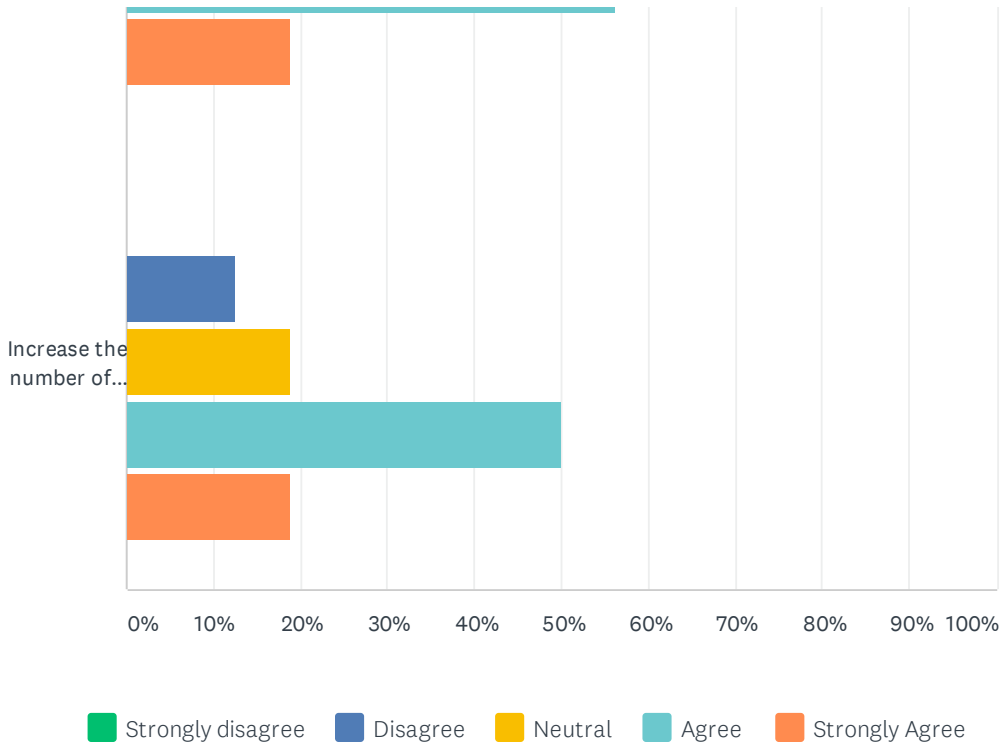
#	COMMENTS	DATE
1	This is a struggle between private property rights and government intervention.	8/23/2021 9:07 AM
2	Increasing flood plain storage, should open better use lands for development.	8/18/2021 8:52 AM
3	Natural resources (unless damaged) have significant water retention capabilities that mitigate against damaging floodwaters. Sadly, in the Sulphur River Basin, this capability has been seriously damaged by prior flood control projects described as "channelization". It is important to restore functionality to the riverine system. Easements and additional interests in land that enable restoration of rural areas to functionality are significant projects that should be pursued. Some of the restoration is need on land that causes downstream areas to flood or suffer harm due to channels that were constructed in the early part of the 20th Century.	8/16/2021 2:43 PM

Q6 Structural Flood Infrastructure Projects

Answered: 16 Skipped: 0



Goals for Lower Red Sulphur Cypress



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Reduce the number of vulnerable critical facilities located within the existing and future 1% annual chance (100-year) floodplain by X.	0.00% 0	12.50% 2	25.00% 4	62.50% 10	0.00% 0	16	3.50
Reduce the number of vulnerable roadway segments located within the existing and future 1% annual chance (100-year) floodplain by X.	0.00% 0	12.50% 2	12.50% 2	56.25% 9	18.75% 3	16	3.81
Reduce the number of low water crossings located within the existing and future 1% annual chance floodplain by X.	0.00% 0	18.75% 3	6.25% 1	50.00% 8	25.00% 4	16	3.81
Increase the number of nature-based practices as part of flood risk reduction projects by X.	0.00% 0	12.50% 2	12.50% 2	56.25% 9	18.75% 3	16	3.81
Increase the number of entities in the FPR that provide regional detention as part of an overall floodplain management program by X.	0.00% 0	12.50% 2	18.75% 3	50.00% 8	18.75% 3	16	3.75

#	COMMENTS	DATE
1	We should implement cost effective engineering solutions like elevated roads and bridges. I presume most of TxDOT structures would meet the 100 year flood, although I am sure there are exceptions due to cost.	8/23/2021 9:07 AM
2	Richard Brontoli Red River Valley Association	8/18/2021 8:52 AM
3	In the early 20th part of the 20th Century, large portions of the Sulphur River segments were replaced by man-made ditches (channels) that more quickly passed water. These ditches were constructed as an aid to crop production but cause significant long-term problems for downstream areas. The ditches cause excessive erosion and ongoing excessive maintenance	8/16/2021 2:43 PM

	costs for roads and bridges near or over the altered river segment. The largest amount of flooding damage to property in this planning zone is not attributable to floodwaters reaching residences or facilities. The largest damage is in the harm caused to previously functioning wetlands and agricultural lands downstream of the man-made ditches. For the region that includes the Sulphur River, every regional plan should describe these previous flood control actions and should encourage the implementation of strategies that lessen the damage.	