

LOWER RIO GRANDE REGIONAL FLOOD PLANNING GROUP MEETING

Agenda Item 7 – Technical Consultant Update

July 21, 2022



AGENDA

Discussion and Update on:

- Task 3a – Floodplain Management Practices**
- Task 8 – Administrative, Regulatory, and Legislative Recommendations**
- Task 9 – Flood Infrastructure Financing Analysis**
- Task 7 – Flood Response Recommendation of FMEs, FMSs, and FMPs**
- Review of Draft Regional Flood Plan**



TASK 3A RECOMMENDATIONS ON FLOODPLAIN MANAGEMENT STANDARDS



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD



LOOKING BACK:

Technical Consultant

Collect Data and Assess Region 15 Participants

Determine Top Flooding Concerns in the Region 15

Present Recommended Standards

Voting Members

Individually, Agree, Deny, or Recommend Alternatives on Standards

Generally, Analyze and Discuss Recommended Standards

Take Action: Recommend or Adopt



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Defining base flood elevations

Recommended Standard:

Entities should base their Base Flood Elevations (BFEs) on FEMA Firm maps in the absence of detailed Hydrologic and Hydraulic (H&H) studies.

Action Taken:

Recommended *adoption*, regionwide.



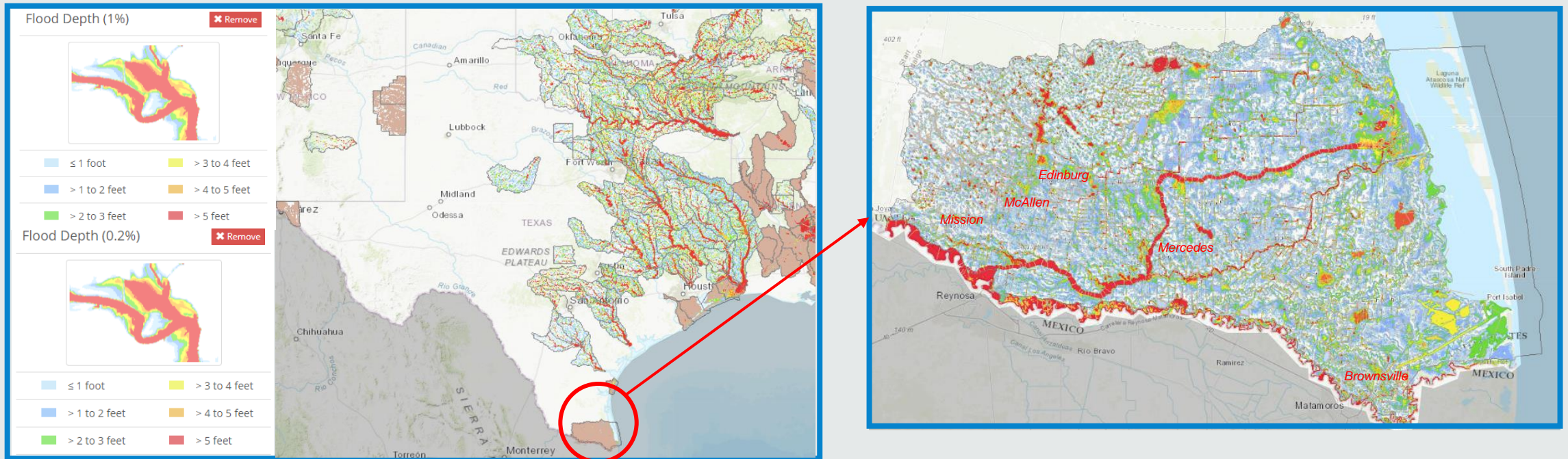
TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Defining base flood elevations

Consider Flood Risk Information Coverage and Availability in Texas:

❑ Base Level Engineering (BLE)

❑ It is expected for the TWDB to complete statewide BLE coverage by 2024.





TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Defining base flood elevations

Proposed Revision:

Entities should base their Base Flood Elevations (BFEs) on FEMA Firm maps in the absence of detailed Hydrologic and Hydraulic (H&H) studies or **Base Level Engineering (BLE) studies.**

Proposed Action?



Approve



No change



Recommend



Adopt



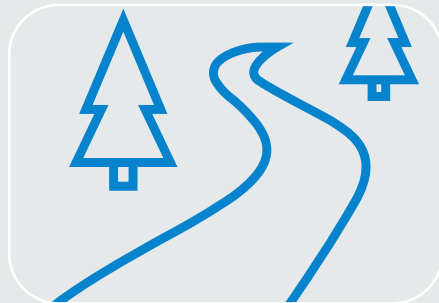
TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Selected Standards Addressing Top Flood-related Concerns for Region 15

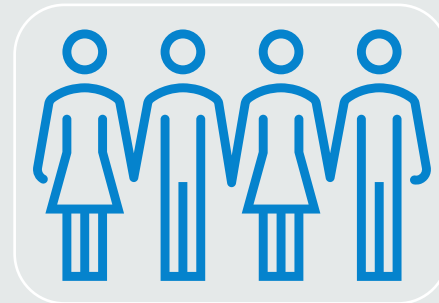
TOP 4 FLOODING CONCERNS IN REGION 15



INADEQUATE
INFRASTRUCTURE



FLOODED
ROADWAYS



INJURY, SICKNESS,
AND/OR LOSS OF
HUMAN LIFE



DAMAGE TO
PRIVATE PROPERTY



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Inadequate Flood Mitigation Infrastructure

Recommended Standard:

Storm drainage systems should convey the 4% annual chance (25-Yr) flood event underground (within a storm sewer/pipe system) and the 1% annual chance (100-Yr) flood event within the right-of-way.

Action Taken:

Recommended, regionwide.

Proposed Action?



Approve



No change



Recommend



Adopt



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Flooded Roadways

Recommended Standard:

New and significantly altered roadways with curb and gutter should have a 10% annual chance (10-Yr) flood event water surface elevation below the top of curb and a 25-YR design for culverts.

Action Taken:

Recommended, regionwide.

Proposed Action?



Approve



No change



Recommend



Adopt



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Damage to Private Property

Recommended Standard:

New construction shall (and the retrofitting or pre-existing residential/commercial buildings outside of coastal areas should) have a finished floor elevation of 1-foot above the 1% annual chance event Base Flood Elevation (BFE). New Construction shall (and retrofitting of pre-existing residential/commercial buildings in coastal areas should) have a finished floor elevation of 1-foot above the highest elevation of either the riverine or coastal BFE including combined riverine and coastal effects.

Proposed Action?



Approve



No change



Recommend



Adopt



TASK 3 – FLOODPLAIN MANAGEMENT STANDARD

Injury, Sickness, and/or Loss of Human Life

Recommended Standard:

Where injury, sickness, or loss of life has happened, or where structural flood mitigation alternatives are not practical or are otherwise infeasible, communities should have a Buyout program to buy out properties, if funding available. The program should assist owners relocate to areas with reduced flood risk.

Action Taken:

Recommended *adoption*, regionwide.

Proposed Action?



Approve



No change



Recommend



Adopt



TASK 8

ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS



TASK 8 – ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS

- ❑ The purpose of this task is for the RFPGs to voice their recommendations to TWDB and to the State of Texas regarding **Regional Flood Planning**
 - ❑ What is necessary (from an administrative, regulatory or legislative perspective) to facilitate floodplain management and flood mitigation and implementation
 - ❑ Other recommendations the RFPG considered necessary or desirable to meet flood mitigation and floodplain management goals.
 - ❑ Recommendations will be taken over the next two weeks, discussion for inclusion will be at the next meeting.



TASK 8 – ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS

- ❑ What are some Legislative, Regulatory or Administrative Recommendations that the RFPG should recommend to the State of Texas and TWDB regarding Regional Flood Planning?
 - ❑ Establish a 100-year timeline for future planning studies
 - ❑ Recommend changes to, or establishment of implementation funding opportunities
 - ❑ Requirements for future planning studies
 - ❑ Changes to qualifying requirements for funding programs
 - ❑ BCA
 - ❑ Rural vs urban
 - ❑ Legislative ability to allow counties to establish and access drainage (stormwater) utility fees.





TASK 8 – ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS

Are there other Legislative, Regulatory or Administrative Recommendations that the RFPG should recommend to the State of Texas and TWDB regarding Regional Flood Planning?



Yes



No





TASK 8 – ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS

- ❑ What are some Recommendations regarding the Regional Flood Planning Process that the RFPG should recommend to the State of Texas and TWDB?
 - ❑ Flood planning should include options that do not cause irreparable damage to coastal habitats
 - ❑ The plan needs to include tools and resources to continuously include all significant impacts to the watersheds and floodplain management





TASK 8 – ADMINISTRATIVE, REGULATORY, AND LEGISLATIVE RECOMMENDATIONS

Are there other Legislative, Regulatory or Administrative Recommendations that the RFPG should recommend regarding the Regional Flood Planning Process to the State of Texas and TWDB?



Yes



No





**TASK 9
FLOOD
INFRASTRUCTURE
FINANCING
ANALYSIS**



TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

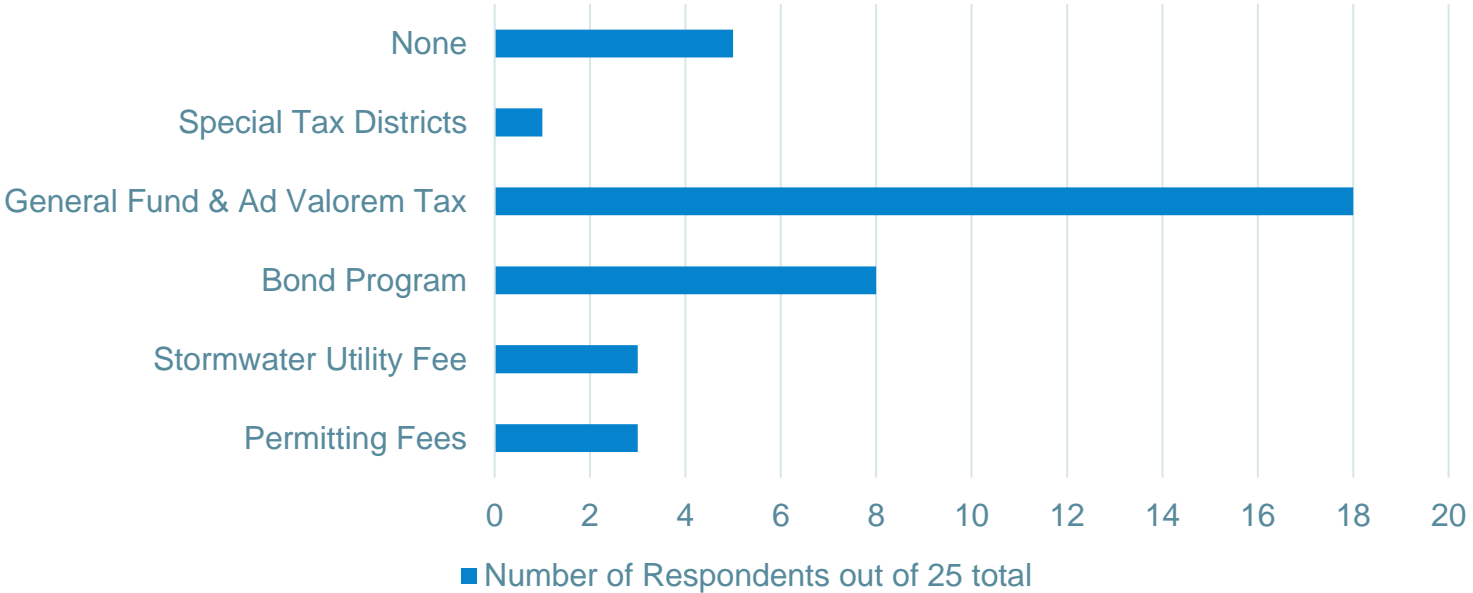
- Written Chapter is a summary of how the stakeholders will fund their individual or region wide Flood Mitigation Activities (FMXs) outlined in the plan.
- What role should the State take in the financing the recommended FMXs?





TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

Local funding sources that Entities in the Lower Rio Grande Region use to fund their Flood Management Activities



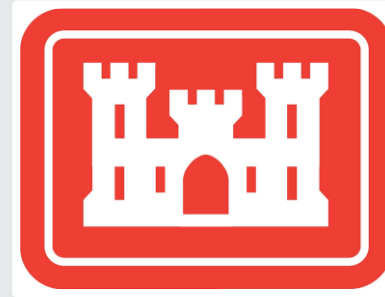


TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

The need is great.

- FMEs = \$ 82,000,000
- FMPs = \$228,000,000
- FMSs = \$ 88,000,000

\$398,000,000 in needs for Region 15 alone.



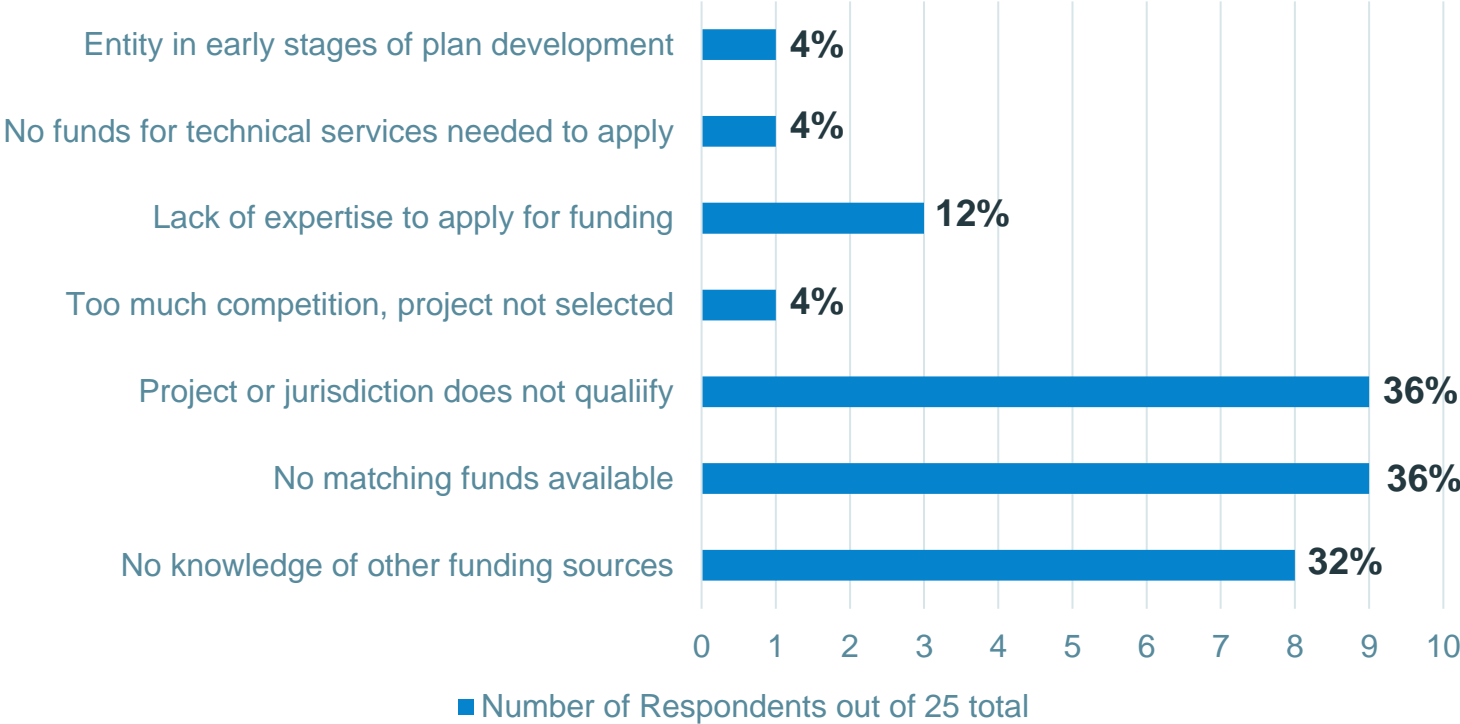
FEMA





TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

Are there reasons your jurisdiction does not seek other funding to pay for implementation of your flood management activities?





TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

- What role should the RFPG recommend that the State of Texas take when financing recommended FMSs, FMPs, and FMEs?
 - The State of Texas should:
 - Take additional steps to inform communities of funding opportunities
 - Expand the eligibility of project and entity types under existing programs
 - Expand funding opportunities or create new programs for communities and special districts unable to meeting local cost sharing requirements.
 - Provide resources for communities unable to apply for funding due to lack of expertise
 - Provide technical resources (or funding to acquire technical resources) to provide technical and professional services needed for funding opportunities applications
 - Prioritize vulnerable communities when considering financing recommendations
 - Require that all projects consider impacts on downtown areas.



TASK 9 – FLOOD INFRASTRUCTURE FINANCING ANALYSIS

Are there other financing recommendations that the RFPG wants to recommend to the State of Texas and TWDB for financing FMSs, FMPs, and FMEs?



Yes



No





TASK 7

FLOOD RESPONSE

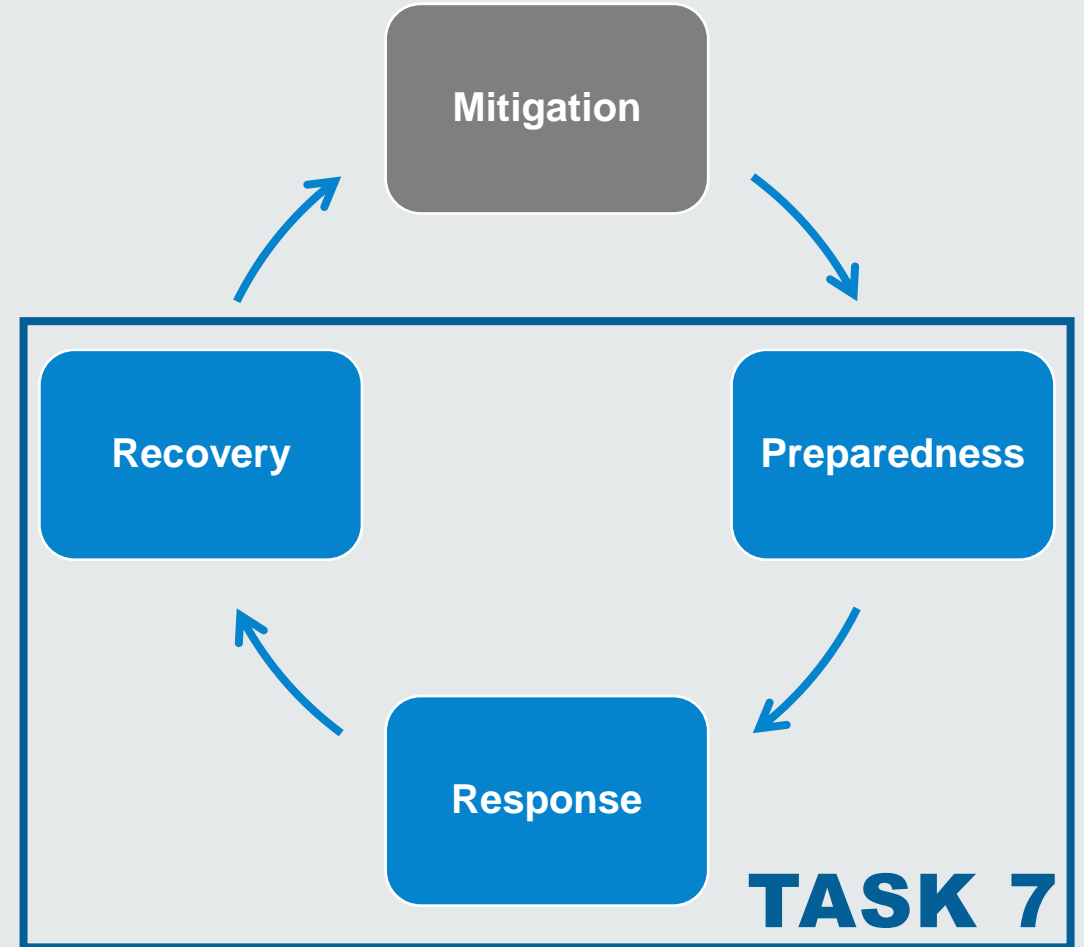
INFORMATION AND

ACTIVITIES



TASK 7 – FLOOD RESPONSE INFORMATION AND ACTIVITIES

- ❑ The focus of Task 7 is on the preparedness, response and recovery aspects of Flood Hazard Management.
 - ❑ What communities do immediately before, during, and after a storm to resume daily lives
- ❑ **Format**
 - ❑ Summary of Flood Hazard Planning in the region
 - ❑ Summary of the three categories of activities that are common to multiple jurisdictions





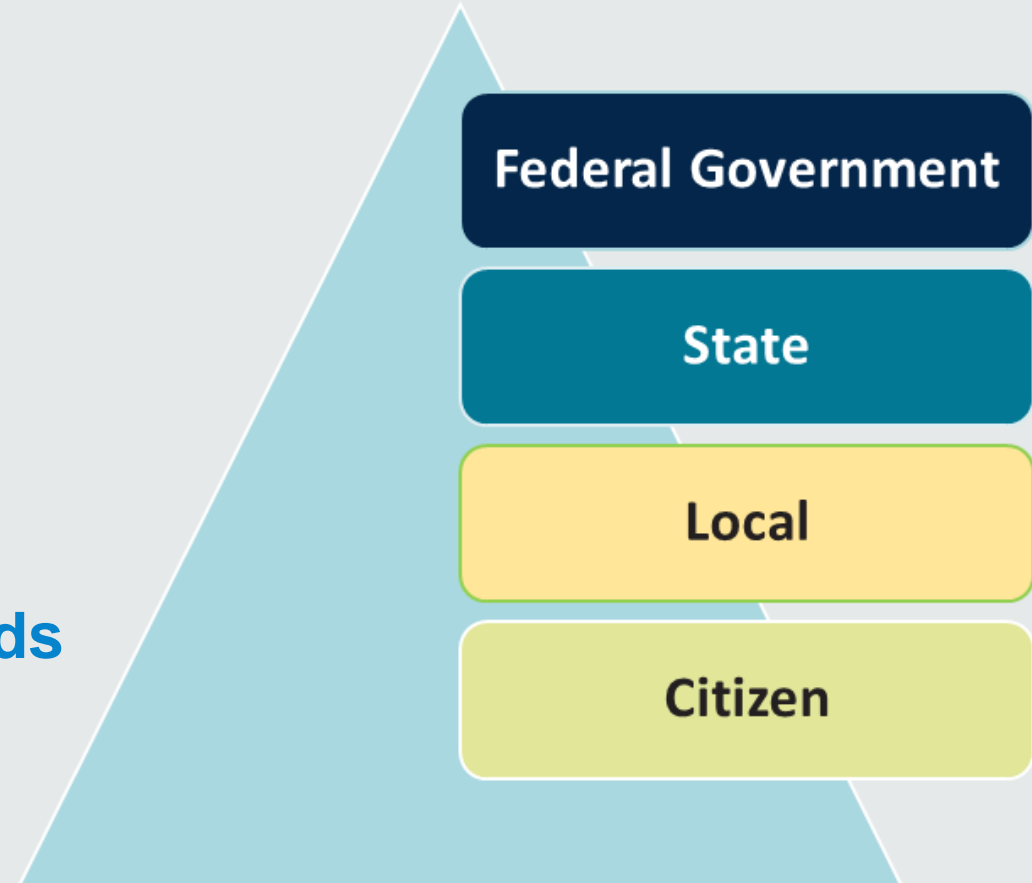
TASK 7 – FLOOD RESPONSE INFORMATION AND ACTIVITIES

Roles and Responsibilities

Shared Responsibilities.

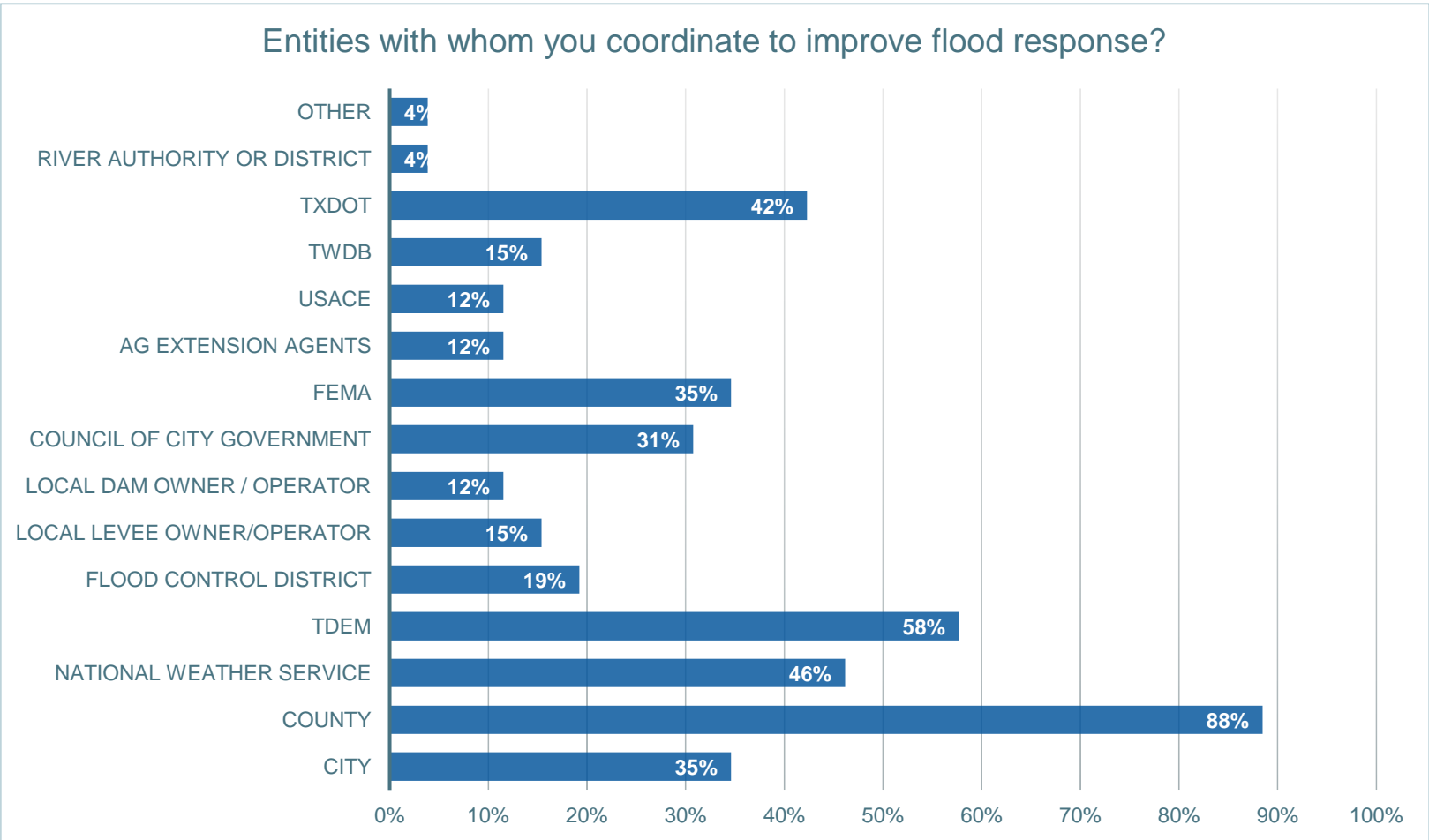
- FEMA
- TDEM
- Counties
- Cities

Bottom up understanding of needs





TASK 7 – FLOOD RESPONSE INFORMATION AND ACTIVITIES





TASK 7 – PREPAREDNESS ACTIVITIES

Activities before a flood event

☐ Preparedness Activities

- ☐ Early Warning Systems
- ☐ Education on Suggested Response Activities
- ☐ Procurement of Emergency Response Equipment
- ☐ Hazard Mitigation Planning



<p>WARNING</p> <p>A warning is issued when a hazardous weather or hydrologic event is occurring, imminent or likely. A warning means weather conditions pose a threat to life or property. People in the path of the storm need to take protective action.</p>
<p>WATCH</p> <p>A watch is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location or timing is still uncertain. A watch means that hazardous weather is possible. People should have a plan of action in case a storm threatens and they should listen for later information and possible warnings especially when planning travel or outdoor activities.</p>
<p>ADVISORY</p> <p>An advisory is issued when a hazardous weather or hydrologic event is occurring, imminent or likely. Advisories are for less serious conditions than warnings, that cause significant inconvenience and if caution is not exercised, could lead to situations that may threaten life or property.</p>
<p>OUTLOOK</p> <p>An outlook is issued when a hazardous weather or hydrologic event is possible in the next week. Outlooks are intended to raise awareness of the potential for significant weather that could lead to situations that may threaten life or property.</p>



TASK 7 – RESPONSE ACTIVITIES

Efforts during and immediately after a flood

Response Activities

- Distribution of Emergency Supplies
 - Sandbags
- Deployment of Emergency Response Equipment and Activities
 - Rescue
 - Debris Removal
 - Mobile Pumps
 - Notification System for Closures





TASK 7 – PREPAREDNESS ACTIVITIES

Restoration efforts after the flood

Recovery Activities

- Restoration of Utilities
- Removal of Excess Debris
- Continued use of Response Equipment
- Documentation of activities for future mitigation efforts
- Damage Assessments and Repairs





TASK 5 – RECOMMENDATION OF FME, FMS & ASSOCIATED FMP



TASK 4B – POTENTIAL FMEs, FMSs & FMPs

Review of FMEs, FMPs, and FMSs

FLOOD MANAGEMENT STRATEGIES (FMSs)

(proposed plans)

- Infrastructure Projects
- Property/Easement Acquisition
- Elevation of Structures
- Education and Outreach
- Flood Warning and Measurement
- Regulatory and Guidance

FLOOD MANAGEMENT EVALUATIONS (FMEs)

(proposed studies)

Studies		Risk Reduction Analysis	
Flood Preparedness Study	Modeling and Mapping / Risk Identification	Alternatives Analysis / Feasibility Assessment	Preliminary Engineering (30% design)

FLOOD MITIGATION PROJECTS (FMPs)

(proposed projects)

Structural Infrastructure	Non-Structural
Advanced Analysis / Design / Construction (30 - 100% design)	Project Implementation <ul style="list-style-type: none"> • Property/Easement Acquisition • Elevation of Structures • Floodproofing • Flood Readiness and Resilience • Flood Warning, Gauges • Regulatory Requirements



TASK 4B – Proposed Selection Process

STEP 1

INITIAL SCREENING OF *EVALUATIONS, PROJECTS & STRATEGIES* RECEIVED

Screen for minimum TWDB rules and guidance requirements

Does it address the following?

- 1.1 Flood mitigation or floodplain management goal (Task 3B)
- 1.2 Meet an emergency need
- 1.3 Flood problem with drainage area of 1 square mile or greater*
- 1.4 Reduce flood risk for 100-year (1% annual chance) flood

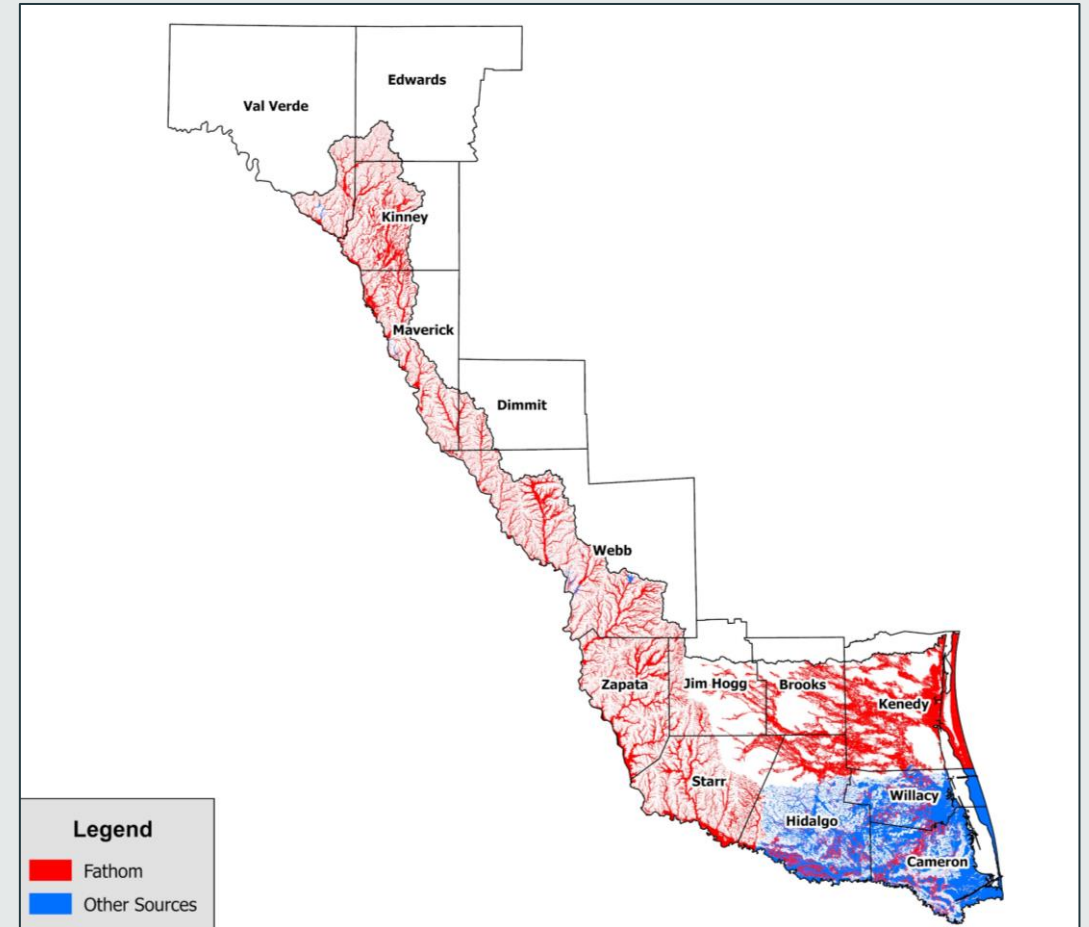
*except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG



TASK 5 - LIST OF RECOMMENDED FMEs IDENTIFIED BY RFPG

FMEs (Evaluations)

- Hazard Mitigation Action Plans
(Technical Memo, Part 1)
- Gaps Identified in Task 2 & 4
- Local Needs Assessments
- Unfunded Projects





TASK 4B – Proposed Selection Process

STEP 3

SCREENING OF *EVALUATIONS*

Three General Categories of Evaluations:

1. Projects (FMPs) that didn't make the cut in Step 2
2. Planned flood studies or flood risk reduction alternatives analyses provided by communities
3. Flood study or flood risk reduction alternatives analysis needs identified in Task 4A

Screen for minimum TWDB rules and guidance requirements

- 3.1 If detailed H&H and mitigation alternatives analysis → *Project or Strategy*
- 3.2 Sensible
- 3.3 Reasonable planning-level cost estimate
- 3.4 Identified sponsor(s)
- 3.5 Structures, population and critical facilities at risk
- 3.6 Roadways at risk
- 3.7 Area of farm and ranch land at risk



TASK 5 - LIST OF RECOMMENDED FMEs IDENTIFIED BY RFPG

FME Types in RFP

Flood Risk Modeling/ Mapping

- Detailed study of flood risks in area
- Identifies the flood risk in an area

Flood Mitigation Alternative Analysis/ Feasibility Study

- Models areas and/or watersheds known to flood to produce FMPs and FMSs
- Projects identified in HMPs resulting from no MDP

Preliminary Engineering

- Addresses a known needed
- Provide detailed study/analysis needed for FMP requirements



TASK 5 - LIST OF RECOMMENDED FMEs IDENTIFIED BY RFPG

FME Type	FME Description	# of Potential FMEs Identified	# of FMEs Recommended	Total Cost of Recommended FMEs
Watershed Planning	Flood Risk Modeling/ Mapping	28	23	\$8,750,000
Preparedness	Flood Mitigation Alternative Analysis/ Feasibility Study	140	55	\$108,918,000
Other	Preliminary Engineering	135	153	\$43,687,000
Total		82	80	\$161,355,000

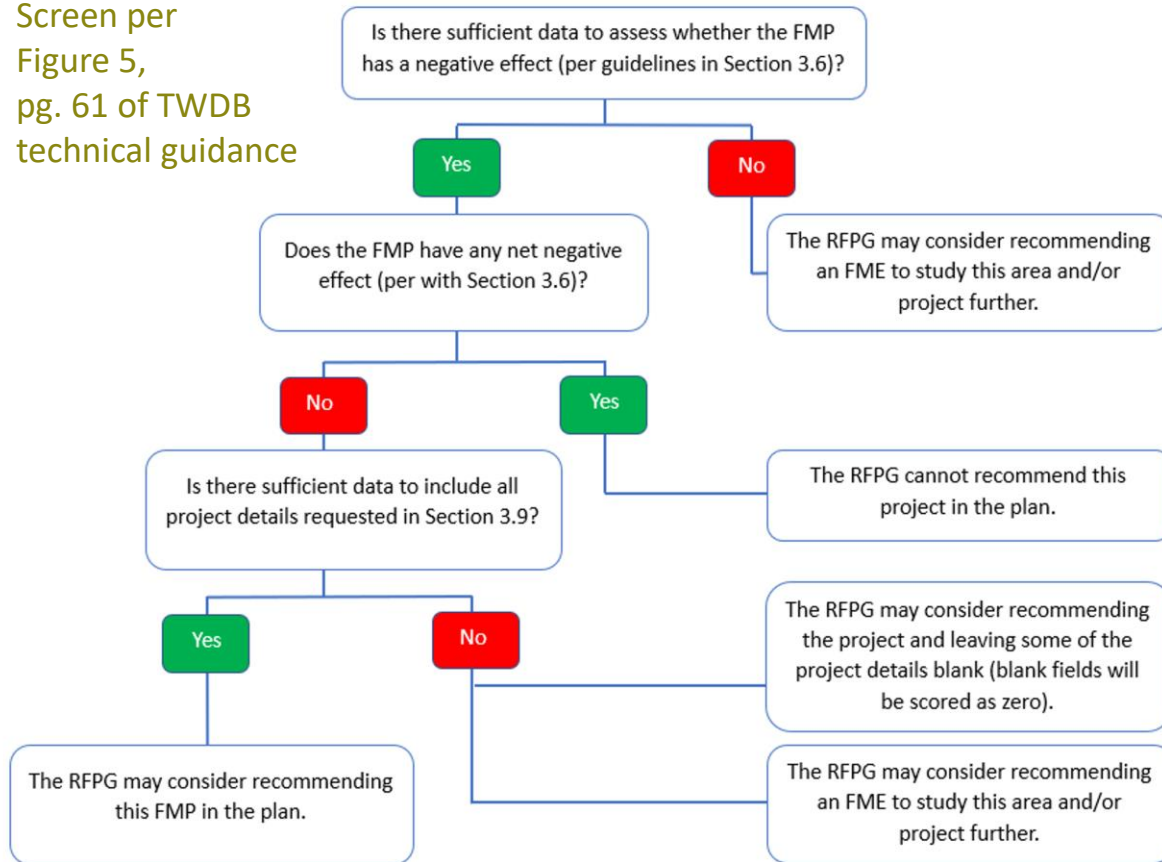


TASK 4B – Proposed Selection Process

STEP 2

SCREENING OF PROJECTS

Screen per
Figure 5,
pg. 61 of TWDB
technical guidance



“Sufficient data”

- H&H modeling, mapping, and basis for mitigation project analysis generally meets Section 3.5 of TWDB technical guidelines
 - Reliable
 - Minimal uncertainty

“Negative effect”

- For the 100-year (1% annual chance) flood event, no rise in flood elevation or discharge should be permissible. Projects should not:
 - Increase inundation on homes or commercial buildings
 - Increase inundation beyond ROW or easements
 - Increase inundation beyond existing drainage infrastructure capacity



TASK 5 - LIST OF RECOMMENDED FMPs IDENTIFIED BY RFPG

FMP ID	FMP Name	FMP Description	Cost
15300049	North Pharr Mitigation Project	Construct 3400-linear feet of channel improvements on the ditch running from south to north along North Fir Street and 2800-linear feet of channel improvements on the Pharr-McAllen Lateral Ditch up to North I road. Install culvert improvements, 2 – 8' X 4' RCB, alongside the ditch running parallel to Fir Street at crossings of W. Sioux Road and at connection to outfall of maintained ditch to the Pharr-McAllen Lateral System. Construct an inline Regional Detention Facility (RDF) along the Pharr-McAllen drain within the City Limits of San Juan. The pond will require a footprint of 35-acres.	\$7,450,000
15300054	Southwest Pharr Drainage Mitigation Project	Construct four regional detention facilities (RDF). RDF 1 has a footprint of 19.75-acres and is a lateral detention facility located between Dicker and Thomas Road west of Highway 281 and near Carmen Anaya Elementary. RDF 2 has a footprint of 7.4-acres and located in the western section of Jones Box Park. RDF 3 has a footprint of 5.5-acres and located in the central section of Jones Box Park. Redirect flow from the Los Ranchitos Subdivisions via a reconfigured 36" RCP into a pilot channel located in the deepest section of the pond. Install 36"RCP and flap gate at the outfall to prevent backflow from the South Floodwater Channel into the subdivisions north of Jones Box Park. RDF 4 is located between Dicker and Las Milpas Road east of Highway 281, south of the South Floodwater Channel, and will require a footprint of 13.8-acres.	\$5,587,000
Total			\$13,037,000



TASK 4B – Proposed Selection Process

STEP 4

SCREENING OF *STRATEGIES*

“A proposed plan to reduce flood risk or mitigate flood hazards to life or property”

- Any proposed action that doesn't qualify as an FME or FMP
- RFPG has flexibility with Strategies
- Flood study or flood risk reduction alternatives analysis needs identified in Task 4A

Screen for minimum TWDB rules and guidance requirements

Does it have the following?

4.1 Planning-level cost estimate

4.2 Identified sponsor(s)

4.3 Estimated flood risk and flood risk reduction



TASK 5 - LIST OF RECOMMENDED FMSs IDENTIFIED BY RFPG

FMS Type	FMS Description	# of Potential FMSs Identified	# of FMSs Recommended	Total Cost of Recommended FMSs
Education and Outreach	NFIP Education; Flood Education; Floodplain Regulatory Awareness; Emergency Contact Awareness	4	4	\$94,000
Flood Measurement and Warning	Flood Warning Systems; Mass Notifications during Natural Hazard Incident; Dam Inundation Studies	36	21	\$810,000
Other	Generators for Critical Facilities; Cooperative Agreement between State and County; Pump Purchase/ Maintenance; Levee and Dam Inspections and Maintenance	10	9	\$435,000
Property Acquisition and Structural Elevation	Acquire High Risk and Repetitive Loss Properties; Acquire and Preserve Open Spaces; Flood-Proofing Facilities	14	10	\$4,234,000
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regulations; Land Use Programs; Open Space Regulations	19	17	\$2,580,000
Total		98	69	\$8,153,000



TASK 4B – Proposed Selection Process

STEP 5

DETAILED EVALUATIONS OF SELECTED *EVALUATIONS, PROJECTS & STRATEGIES*

Does it have the following?

- 5.1 Project benefit-cost ratios > 1.0
- 5.2 A *willing* sponsor(s)
- 5.3 No known challenging implementation constraints or hurdles
(ROW, utility conflicts, permitting, etc.)
- 5.4 Met RFPG specific requirements to incorporate a project or strategy into the RFP?



TASK 4B – Proposed Selection Process

STEP 6

FINAL RECOMMENDATIONS OF *EVALUATIONS, PROJECTS & STRATEGIES*

Final required steps

- 6.1 Public comment of Recommended FMEs, FMSs and FMPs
- 6.2 Initial/Final adoption by RFPG



LOOK AHEAD



GOALS FOR UPCOMING MEETINGS

Regional Flood Plan Due January 10, 2023

August 1, 2022

- Draft RFP Published

September

- Public Meeting(s)
- Intake comments on RFP

October

- Review Comments

November

- Review Draft

December

- Approve Draft Regional Flood Plan

**Regional Flood Plan
Amendment**

due

July 14, 2023



**WRITTEN
COMMENTS
WELCOMED.**