Technical Guidelines Webinar

June 1, 2021
2:00 pm to 3:30 pm

You can also dial in using your phone.
You must select "Use Telephone" after joining the webinar and call in using the numbers below.
United States: +1 (562) 247-8321
Access Code: 886-899-920
Agenda Item 1: Agenda Overview

1. Introductions, Opening Comments, and Agenda Overview
2. Director Jackson Opening Remarks
3. Presentation: Regional Flood Planning Technical Guidelines
4. Presentation: Regional Flood Planning Data
5. Questions
Agenda Item 1: Introductions

Reem Zoun, PE, CFM
Director, Flood Planning
reem.zoun@twdb.texas.gov
512-475-1546

James Bronikowski, PE, CFM
Manager, Regional Flood Planning
james.bronikowski@twdb.texas.gov
512-475-0145

Steven Richter
Team Lead, Flood Data
floodplanningdata@twdb.texas.gov
TWDB Flood Planning Staff

Morgan White  
**Team Lead**, Region 11

Anna Gonzalez  
Executive Assistant

Cynthia Roush  
Flood Data Team

Richard Bagans  
Regions 3, 5, 14

Hayley Gillespie  
Regions 9, 10, 13

Megan Ingram  
Regions 6, 15

Ryke Moore  
Regions 4, 7, 8

Anita Machiavello  
Regions 1, 2, 12
Agenda Item 2: Opening Remarks by Director Kathleen Jackson

Brooke T. Paup
Chairwoman

Kathleen Jackson
Board Member
Agenda Item 3: Technical Guidelines for Regional Flood Planning

Flood Planning Guidelines


- **Technical Guidelines for Regional Flood Planning** provides technical guidelines and submittal requirements for each scope item and additional technical guidance regarding population estimates, hydraulic and hydrologic modeling, benefit-cost ratio analysis, etc.

- **Data Submittal Guidelines for Regional Flood Planning** provides data submittal guidelines for regional flood planning.

- Benefit-Cost Analysis Input Tool and Instructions
Purpose

While each regional plan will be unique the technical guidance is intended to ensure that the 15 regional flood plans are consistent and at the state level, to support the development of a meaningful and credible state flood plan.
Organization of the Technical Guideline

1. Part 1: Orientation
2. Part 2: Scope of work task-specific general guidelines
Goal: In general, the goal of this task is for RFPGs to describe the flood planning region, inventory and assess natural features and constructed major flood infrastructure, and describe proposed or ongoing flood mitigation projects in the region.

Primary deliverables:
• Chapter 1 of Regional Flood Plan
• Existing flood infrastructure summary table and GIS layers
• Proposed or ongoing flood mitigation projects summary table and GIS layers
Goal: The goal of these tasks is for RFPGs to perform existing and future condition flood risk analyses (hazard, exposure, vulnerability) for the region.

Primary deliverables:
- Chapter 2 of Regional Flood Plan
- Existing condition flood risk summary table, GIS layers, and maps
- Future condition flood risk summary table, GIS layers, and maps
Task 3A – Eval. & Recommendations on Floodplain Mgmt. Practices

Goal: The goal of this task is for RFPGs to evaluate and make recommendations on floodplain management practices within the flood planning region. The intent of regional flood planning is twofold:
1) identify and reduce the risk and impact to life and property that already exists and, importantly,
2) avoid increasing or creating new flood risk by addressing future development within the areas known to have existing or future flood risk.

Primary deliverables:
• Chapter 3 of Regional Flood Plan
• Existing floodplain management practices summary table and GIS layer
• Qualitative assessment and adopted recommendations or region-specific minimum standards for floodplain management practices

West Fork San Jacinto River near Humble, Texas after Hurricane Harvey
Image: Steve Fitzgerald, Harris County Flood Control District
Goal: The goal of this task is for RFPGs to define the overarching flood mitigation and floodplain management goals for their regional flood plans. These goals will guide the overall approach and recommendations in the plan and, to ensure the coherence of the entire plan, may also be used in developing the recommendations for floodplain management in the previous task.

Primary deliverables:
- Chapter 3 of Regional Flood Plan
- Flood mitigation and floodplain management goals summary table and GIS layer
Key Terms for Tasks 4 & 5: FME, FMP, FMS

**Flood Management Evaluation (FME)**
- A proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs.

**Flood Mitigation Project (FMP)**
- A proposed project (structural and non-structural) that when implemented will reduce flood risk, mitigate flood hazards to life or property.

**Flood Management Strategy (FMS)**
- A proposed plan to reduce flood risk or mitigate flood hazards to life or property (may or may not require associated FMPs to be implemented).
Flood Mitigation Project Flowchart
Task 4A – Flood Mitigation Needs Analysis

Goal: The goal of this task is for RFPGs to conduct a two-piece, big picture analysis to guide the RFPG’s subsequent efforts (under Task 4B) by identifying:

• The region’s flood prone areas where the greatest flood risk knowledge gaps exist and where the RFPG should consider identifying potentially feasible flood risk studies as FMEs. (See Task 4B), and,
• The areas of greatest known flood risk and flood mitigation needs in the regions and resulting need of potential strategies and projects, as FMSs and FMPs, to reduce those known risks. See Task 4B).

Primary deliverable:

• Chapter 4 of Regional Flood Plan, including summaries, descriptions, and maps
Task 4B – Identification and Evaluation of Potential FMEs & Potentially Feasible FMSs and FMPs

Goal: The goal of this task is for RFPGs to identify and evaluate potential FMEs, and potentially feasible FMPs, and FMSs. While the evaluation of FMEs, FMSs, and FMPs can be initiated in Task 4, they will be completed during Task 5.

Primary deliverables:

• Chapter 4 of Regional Flood Plan
• Quantitative analysis and evaluation of FMEs, FMSs, and FMPs
• Potential FMEs, FMSs, and FMPs summary tables, GIS layers, and maps
Task 4C – Prepare and Submit Technical Memorandum

Goal: The goal for this task is for RFPGs to submit their mid-point deliverable, the Technical Memorandum.

Due date: January 7, 2022
### Required Information (Deliverables)

| A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities; |
| A list of previous flood studies considered by the RFPG to be relevant to development of the RFP; |
| A geodatabase and associated maps for: region-wide 1.0% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined; |
| A geodatabase and associated maps that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge; |
| A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available; |
| A list of available flood-related models that the RFPG considers of most value in developing its plan; |
| The flood mitigation and floodplain management goals adopted by the RFPG per §361.36; |
| The documented process used by the RFPG to identify potentially feasible FMSs and FMPs; |
| A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and |
| A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary |

### RFPGs Must Provide

- **Information in written format and may provide a limited version of associated GIS data or deliverables.**
- **Required to provide associated GIS data and feature layers identified in Exhibit D**
- **Information in written format and are required to provide a limited version of associated GIS data or deliverables**
Task 5 – Recommendation of FMEs, FMSs & FMPs

Goal: The goal of this task is for RFPGs to recommend FMEs, FMSs, and FMPs for inclusion in the regional flood plan.

Primary deliverables:

• Chapter 5 of Regional Flood Plan
• Continued quantitative analysis and evaluation of FMEs, FMSs, and FMPs
• Recommended FME, FMP, and FMS summary tables, GIS layers, and maps
Regional & State Flood Planning Long-Range Planning Process

Regional Flood Plans will identify flood risk and recommend FMEs, FMSs, and FMPs within regions.

State Flood Plan will rank recommended FMEs, FMSs, and FMPs statewide.

Future state financial assistance may be allocated using a to-be-determined prioritization criteria.*

*Funding to implement projects can also come from local, federal, or other sources.
Task 6A/6B – Impact and Contributions of the Regional Flood Plan and Water Supply

Goal: The goal of this task is for RFPGs to summarize the impacts of implementation of the regional flood plan.

Primary deliverables:

- Chapter 6 of Regional Flood Plan
- Summaries, descriptions, tables, and other quantifications of impacts
Task 7 – Flood Response Information and Activities

Goal: The goal of this task is for RFPGs to summarize existing flood response and recovery activities in the region.

Primary deliverable:

• Chapter 7 of Regional Flood Plan, including qualitative analysis and summaries
Task 8 – Administrative, Regulatory, and Legislative Recommendations

Goal: The goal of this task is for RFPGs to develop legislative, regulatory, administrative, or other recommendations.

Primary deliverable:

• Chapter 8 of Regional Flood Plan, including qualitative analysis and summaries
Task 9 – Flood Infrastructure Financing Analysis

Goal: The goal of this task is for RFPGs to indicate how sponsors will propose to finance recommended FMPs, and FMEs.

Primary deliverable:

• Chapter 9 of Regional Flood Plan
• Survey results, methodology documentation, and summaries
Agenda Item 4: Regional Flood Planning Data Presentation

This map shows the layers that are used as inputs to the TWDB Flood Quilt.
Flood Planning Data HUB

GIS Resources

Texas Flood Planning

The following GIS resources have been gathered to assist the Texas Regional Flood Planning Groups (RFPGs). Many of the referenced layers are intended for cartographic purposes. Before using layers for engineering or modeling, check the intended use on the original site.

Critical Infrastructure

- Hospitals, Schools, Fire Stations, Shelters, Electric and Gas Lines

- Fire Stations (HIFLD) Filtered for Texas
- Hospitals (HIFLD) Filtered for Texas
- National Shelter System (HIFLD) Filtered for Texas
- Schools (TEA)

- Natural Gas Pipelines
- Electric Power Transmission
The TWDB generated template GIS geodatabases with multiple feature classes and tables for the Regional Flood Planning Groups (RFPGs). Each planning group must fill the template geodatabase with relevant regional flood planning data.

The following template file geodatabases are populated with feature classes and fields to match the specifications in Exhibit D Data Submittal Guidance Document. Feature classes are empty except for the Entities feature class which has been prepopulated to include the Counties, Municipalities, various types of Water Districts, Flood Districts, and Councils of Government (COGs) which intersect the flood planning region. A table of feature classes is available here.

https://twdb-flood-planning-resources-twdb.hub.arcgis.com/pages/fpr-templates
Draft Floodplain Quilt
Regional Flood Planning Groups

The TWDB hosts a region-specific webpage for each planning group that contains a general description of the region, the list of counties that lie within the regional boundary, and meeting updates. To view a region of interest, please click the region's name in the list.

Search by address to find your Flood Planning Region

- Region 1 Canadian-Upper Red
- Region 2 Lower Red-Sulphur-Cypress
- Region 3 Trinity
- Region 4 Sabine
- Region 5 Neches
- Region 6 San Jacinto
- Region 7 Upper Brazos
- Region 8 Lower Brazos
- Region 9 Trinity-San Jacinto
- Region 10 Neches-Brazos
- Region 11 Sabine-Congaree
- Region 12 Costilla
- Region 13 Guadalupe-Bay
- Region 14 Nueces-Brazos
- Region 15 Lower Colorado

What to Do? Before, During, and After a Flood

Flood Infrastructure Fund (FIF)

Flood Planning

- Flood Planning Group Meeting Schedule
- 1st Planning Cycle Documents (2020-2023)
- Planning Group Information
- New Members Resources
- Frequently Asked Questions
- Flood Planning Useful Links and Resources
- Flood Planning Data

Flood Financial Assistance Programs

National Flood Insurance Program (NFIP)

Flood Mapping

Floodplain Management Training
Statewide Buildings Data

Building Attributes:
- ~10million footprints
- Land Use
- Improvement Value (from tax records)
- Night Population
- Day Population
- Social Vulnerability Index (SVI)
- To be published in June on the Data Hub
Flood Data Next Steps

- Fathom Flood Risk Data
  - June – coarse terrain, 30m raster
  - Fall – LIDAR terrain, raster/polygon TBD

Questions or Comments?
Send an E-mail to: FloodPlanningData@TWDB.Texas.gov
Agenda Item 5: Questions