REGION 3 TRINITY
REGIONAL FLOOD PLANNING GROUP

November 17, 2022

1. Call to order

2. Roll call

3. Approval of minutes

Region 3 Trinity Flood Planning Group Hybrid Meeting
Thursday, July 21, 2022
10:00 a.m.
Dallas County Records
Building Results Training
Room #7.Y11 (7th Floor)
500 Elm St
Dallas, TX 75202

The Region 3 Trinity Flood Planning Group held a meeting, in person as well as virtual, on Thursday, July 21, 2022, at 10:00 AM. Chairman Glenn Clingenpeel called the meeting to order at 10:00 AM.

Voting Members Present:

Melissa Bookhout
Lissa Shepard
Sano Blocker (absent)
Jordan Macha (absent)
Rachel Ickert
Craig Ottman (alternate for Rachel Ickert)
Matt Robinson
Sarah Standifer
Andrew Isbell
Glenn Clingenpeel
Chad Ballard
Galen Roberts
Scott Harris

10 voting members were present at the time of roll call, constituting a quorum.

Ex Officio Members Present:

Adam Whisenant
Rob Barthen
Allen Nash for Steve Bednarz
Kevin Enoch for Andrea Sanders
Richard Bagans
Humberto (Bert) Galvan
Kris Robles for Brittany Frazier (joined after roll call)
Greg Waller (absent)
Ellen Buchanan
Todd Burrer (joined after roll call)
Jerry Cotter (joined after roll call)
Lisa McCracken (absent)
Cameron Cornett for Diane Howe
Edith Marvin (joined after roll call)
Justin Bower
Lonnie Hunt (absent)

Approval of the Minutes of the Last Meeting

Motion: Sarah Standifer moved to approve the minutes as presented; Second: Galen Roberts; Action: Minutes were unanimously approved.

Approval of the Minutes of the previous Technical Subcommittee meeting

Motion: Scott Harris moved to approve the minutes as presented; Second: Lissa Shepard; Action: Minutes were unanimously approved.

Acknowledgement of written public comments received

No written public comments were received.

Receive registered public comments on specific agenda items

No registered public comments were received.

TWDB Update

Richard Bagans with TWDB provided an agency update.

Region 3 RFPG is the first region to have executed all contracts for the additional funding provided for Task 11, 12, and 13.

The RFPG and consultants were reminded of the recent email that was distributed regarding the submission requirements for the Draft Regional Flood Plans. In the next 3 weeks, all other regions will meet to approve their Draft Regional Flood Plans, followed by public hearings in September.

Once the Draft Regional Flood Plan has been approved for submission, members of the RFPG have the discretion to include language to accommodate edits, such as “the RFPG approves to submit the Draft Regional Flood Plan with the updates discussed today or with substantial updates from the Technical Consultant.” Once the Draft Regional Flood Plan is submitted to the TWDB, no edits can be made. However, edits may be allowed through documented public comments or TWDB comments. Every comment received from the public and TWDB will need to be documented and responded to prior to adopting the Final Regional Flood Plan. Members of the RFPG are allowed to submit public comments on the Draft Regional Flood Plan to permit additional review. In summation, edits are allowed, but they will need to be made through a formal documentation process until the final adoption. The Final Regional Flood Plan is expected to be adopted in December 2022 or January 2023. The Amended Regional Flood Plan will allow for continued outreach and for updates in data collection as necessary to enhance Chapters 1-9. In

addition, it will allow for revisions of FMXs and the addition of FMXs under Tasks 4b and 5.

Update from Region 3 Technical Consultant – Stephanie Griffin with Halff Associates:

Ms. Griffin provided an overview of the agenda. Ms. Griffin stated that a summary of individual chapters within the Draft Regional Flood Plan would be presented. The Draft Regional Flood Plan chapters one, two, three, four, five, seven, and eight had previously been discussed in detail with the RFPG members and so only a short summary of those chapters would be presented. Chapters six, nine, and ten were recently finalized and provided to the RFPG members for review. Ms. Griffin stated that those chapters would be presented in more detail and that TWDB responses to the Technical Memorandum Addendum would also be presented before the members would be asked to consider adoption of the draft plan. In addition, she stated that Public Outreach initiatives, including the upcoming open houses, would also be discussed.

a. Overview of the Draft Region 3 Trinity Regional Flood Plan including goals and recommended FMEs, FMPs and FMSs

- Executive Summary, Stephanie Griffin with Halff Associates:

  The Executive Summary was limited to 20 pages and provided background on the Regional Flood Planning process, key findings, recommendations and highlights of the Draft Regional Flood Plan. TWDB required statements were also included.

- Chapter 1 Planning Area Description, Stephanie Griffin with Halff Associates:

  Disaster Declarations and flood issues from the past twenty years were summarized in Chapter 1. The chapter also includes a summary of land uses in the region, such as working lands and urbanized areas. In order to identify vulnerable areas within the region, a Social Vulnerability Index (SVI) was used. The SVI supported the development of the Draft Regional Flood Plan by assisting in the identification of proposed and recommended FMXs.

- Chapter 2 Flood Risk Assessment, Samuel Amoako-Atta with Halff Associates:

  Chapter 2 included a summary of the regional online data collection tool that was created as an outreach tool to gather local flood-risk information. The regional online data collection tool is still publicly accessible, but is no longer actively monitored. The tool will be actively monitored during the amendment process. Chapter 2 also included the flood risk analysis for the region. The analysis examined current and future flood risk conditions, flood exposure, and the

vulnerability of communities and critical facilities to floods. More information had been collected since the last RFPG meeting, therefore an updated flood risk analysis table was presented side by side with the initial flood risk analysis table.

There was discussion on the regional online data collection tool. It was proposed that a funding mechanism be explored in future flood planning cycles to enable continuous submissions and active monitoring.

- Chapter 3 Floodplain Management Practices and Goals, Stephanie Griffin with Halff Associates:

  The RFPG solicited local entity and public input in the development of floodplain management practices and flood protection goals for the Trinity Region. The RFPG recommended six floodplain management standards that were based on responses and input received. In addition, the RFPG developed seven overarching flood mitigation and floodplain management goals that met TWDB requirements. Each goal has at least one specific goal statement provided in the chapter.

- Chapter 4 Assessment and Identification of Flood Mitigation Needs, David Rivera with Freese and Nichols, Inc.:

  Chapter 4 describes the process adopted by the RFPG to conduct a flood mitigation needs analysis to identify the areas of greatest known flood risk and areas where the greatest flood risk knowledge gaps exist. The assessment guided the effort of identifying the FMXs. 356 FMEs, 33 FMPs, and 143 FMSs were identified across the basin and subsequently divided into different categories prior to the deadline of April 2022. Additional FMXs have been submitted after the deadline and will be reviewed under the amended plan process.

- Chapter 5 Recommendation of FME, FMS, and Associated FMP, David Rivera with Freese and Nichols, Inc.:

  Chapter 5 utilized the information developed in Chapter 4 to recommend flood mitigation actions, also known as FMXs, for inclusion in the Draft Regional Flood Plan. The RFPG Technical Subcommittee met several times to review all FMXs to ensure they met the TWDB requirements. 342 of the 356 FMEs were recommended and included in the Draft Regional Flood Plan. During the review process, 14 FMEs were not recommended due to the study being completed, the sponsor's lack of interest, or duplication. The total cost for implementing 342 recommended FMEs was estimated at $145,966,000 million dollars.

  During the review process, seven of 33 FMPs were recommended and included in the Draft Regional Flood Plan. These seven FMPs

had the necessary supporting documentation to be fully evaluated and met the TWDB requirements. The total cost for implementing seven recommended FMPs was estimated at $175,770,000 million dollars.

During the review process, 136 of 143 FMSs were recommended and included in the Draft Regional Flood Plan. Seven FMSs were not recommended due to similarities to other FMSs, with which they were ultimately combined in the plan. The total cost for implementing seven recommended FMSs was estimated at $746,900,000 million dollars.

- Chapter 6 Impacts of Regional Flood Plan, David Rivera with Freese and Nichols, Inc.:

  Chapter 6, Task 6A summarizes the overall impacts of the FMXs recommended in the Draft Regional Flood Plan. Chapter 6, Task 6B summarizes the recommended FMXs that would measurably contribute to or impact water supply development and the State Water Plan. A few FMX examples were presented.

  Impact of FME example: It was determined that approximately 70% or 38,000 stream miles of the Trinity River Basin had outdated or approximated floodplain mapping. The Draft Regional Flood Plan recommended 35 county-wide FMEs to improve floodplain mapping coverage. The recommended FMEs would provide up-to-date floodplain mapping for approximately 9,500 streams or 25% of the entire Trinity River Basin.

  Impact of FMP example: One of the recommended FMPs presented was a regional detention project that would replace an existing undersized detention pond and provide sufficient storage capacity to mitigate flood events associated with the 100-year flood. The benefits of implementing the seven recommended FMPs would provide flood risk reduction benefits to over 4,000 people within their zone of influence and help ameliorate roadway flooding conditions. Chapter 6 will be updated as the consultants continue with the amendment process.

  Impact of FMS example: Because of the nature of the actions, recommended FMSs are not readily quantifiable. However, sponsors of three of the recommended FMSs dealing with property acquisitions provided detailed evaluations regarding the estimated effects of implementation. They estimated that the three recommended property acquisition FMSs would reduce flood exposure to 183 structures and 207 people.

  Task 6B evaluated and summarized the impacts of the recommended FMSs and FMPs on the State Water Plan. The recommended FMSs or FMPs will not have a measurable impact on water supply, water availability, or the operation of existing water supply reservoirs.

Similarly, the recommended FMSs and FMPs are not anticipated to have any measurable impact on the State Water Plan.

A comment was provided to the Consultants regarding the duplication of Region C text in Chapter 6. It appeared on page 6-19 and again on page 6-22.

- Chapter 7 Flood Response Information and Activities, Audrey Giesler with Halff Associates:

  Chapter 7 summarizes the current flood response preparations in the Trinity Region using demographic, historical, projected, and statistical data from Chapters 1 through 6. Survey responses received from entities through the online data collection tool were also documented. The survey revealed that 1) most participating jurisdictions do not have comprehensive flood plans, 2) coordination between city and county entities is essential at all stages of a flood event, and 3) online and on-the-ground outreach regarding mitigation measures is essential.

- Chapter 8 Administrative, Regulatory & Legislative Discussion, Audrey Giesler with Halff Associates:

  Chapter 8 included Legislative, Administrative, Regulatory, Flood Planning, and New Funding Recommendations. Eight Legislative recommendations, nine Administrative and Regulatory recommendations, and 17 Flood Planning recommendations were approved by the RFPG for inclusion in the Draft Regional Flood Plan. New Funding recommendations were not identified through the regional flood planning process. However, several existing funding mechanisms as well as recommended changes to those existing funding recommendations were proposed and included under Legislative or Administrative recommendations. The RFPG recommendations emphasize Counties' responsibilities and abilities, the acquiring of additional funding or the State providing additional funding, and rural and small communities challenges faced due to minimized resources.

  It was proposed that a working group be established to revisit these recommendations prior to the next flood planning cycle.

- Chapter 9 Flood Infrastructure Financing Analysis, David Rivera with Freese and Nichols, Inc.:

  Chapter 9 summarized how sponsors of recommended FMXs proposed to finance the recommended actions. The chapter focused on understanding the funding needs of the sponsors and recommended the role the State should have in financing the recommended FMXs. Methodology and results of the financing survey

were presented. As of July 5th, 2022, only 22 of 158 sponsors had responded to the survey. The overall total cost needed to implement the recommended FMXs was estimated at over one billion dollars. It was projected that the majority of the funds, $961,274,000 dollars, would need to be provided by state and federal sources. It was mentioned that the financing survey will continue to be promoted throughout the region, and that the amendment process will allow information form future responses to be included in the Amended Plan.

It was stated that the RFPG had met with several sponsors to address outstanding questions. Further comments and additional FMXs received will be documented as public comment and will be responded too and addressed after the public comment period closes, but they cannot be added to the Draft Plan. However, edits and additions may be incorporated in the Amended Draft Regional Flood Plan. TWDB stated that they will review the public comment process and provide clarification to the RFPG.

There was some discussion on the availability of funding for recommended FMXs, and how those funds would be allocated. It was clarified that all data and supporting materials submitted in the Region 3 Regional Flood Plan will be incorporated into the Statewide Flood Plan which the TWDB will then use to determine which actions receive funding. A prioritization review may occur if limited funding is available. Chapter 5 of the Regional Flood Plans will be used by the TWDB as one resource in the ranking process.

The first regional flood plan errored on the side of inclusion and sought to identify all eligible FMXs and areas at risk of flooding within the region. During subsequent flood planning cycles, additional efforts will be made to identify potential FMXs in areas of flood risk that do not have local or regional champions. It was suggested that an RFPG meeting be held during the interim flood planning cycles to discuss FMX funding and provide input.

- Chapter 10 Public Participation and Plan Adoption, Owen Ramsey with Cooksey Communications:

  An overview of Chapter 10 was provided. Chapter 10 highlights the efforts that have been undertaken to increase public awareness about flood planning, gather data for the regional flood plan, and encourage continued engagement throughout the flood planning process. Chapter 10 includes four appendices that encompass informational flyers, written comments received prior to submissions of the Draft Regional Flood Plan, oral comments that will be received, and written comments that will be received.

i. Responses to select TWDB comments on the Technical

Memorandum and Technical Memorandum Addendum, Stephanie Griffin with Halff Associates:

TWDB provided informal comments on the Technical Memorandum that was submitted in January 2022 and the Technical Memorandum Addendum that was submitted in March 2022. TWDB requested clarification on short-term goals to establish a baseline measurement. A "Baseline" column was added to the short-term goals that are found in Chapter 3 and baselines were clarified. TWDB also provided comments on the included tables, maps, and the geodatabase. The consultants have addressed all comments.

TWDB provided a checklist to the consultants on July 1st to ensure that all deliverables associated with the Draft Plan have been met. It was requested that in the motion to adopt the Draft Region 3 Regional Flood Plan, that the RFPG provide flexibility to the consultants to allow for modifications based on the checklist or other non-material changes such as typographical errors.

b. * Consider approval of the Draft Regional Flood Plan to be submitted to the TWDB, the RFPG website and three libraries within the region

Chairman Glenn Clingenpeel called for a motion to approve the Draft Regional Flood Plan to be submitted to the TWDB contingent upon the incorporation of any necessary non substantive comments or changes, published to the RFPG website and provided to three libraries within the region for public access.

Motion: Scott Harris approved the Draft Regional Flood Plan to be submitted to the TWDB contingent upon the incorporation of any necessary non substantive comments or changes, published to the RFPG website and provided to three libraries within the region for public access; Second: Rachel Ickert; Action: Motion passed unanimously.

c. Process to receive, review and respond to comments received on Draft Regional Flood Plan, Stephanie Griffin with Halff Associates:

Written comments from the public must be received by October 10th, 2022. Oral comments will be received at the September 8th RFPG meeting. TWDB is expected to provide comments in mid-October. The Consultant Team will group comments together by common topics and develop draft responses for RFPG's consideration. An RFPG meeting will be scheduled in November or December to review all comments and consider draft responses. Any additional FMXs received will be considered for potential inclusion in the amended plan.

d. Public outreach updates, Allison Chvojan with Cooksey Communications:

Open House Informational Sessions have been scheduled for August 29th – August 31st. For the purpose of preventing a quorum, members of the RFPG should notify the consultants if they wish to attend. Scott Harris, Andrew Isbell, and Glenn Clingenpeel confirmed they will attend the Open House meeting in Dayton on August 29th. Andrew Isbell tentatively confirmed and Glenn Clingenpeel confirmed they will attend the Open House meeting in Crockett on August 30th. Rachel Ickert and Glenn Clingenpeel confirmed they will attend the Open House meeting in Arlington on August 31st.

The purpose and format of the Open House Informational Sessions was presented. Breakout sessions are planned for the public to ask specific questions. Informational postcards will be sent to interested parties. Informational flyers and news releases will be provided via email to the RFPG and interested stakeholders to share.

It was requested that the flyers include a Regional Flood Planning overview and Draft Regional Flood Plan highlights.

Updates from liaisons for adjoining coastal regions

a. Region 5 Neches RFPG: Andrew Isbell reported that the Region 5 meeting will be held on Friday, July 22nd.

b. Region 6 San Jacinto RFPG: Scott Harris reported that Region 6 has approved the Draft Regional Flood Plan and is open for public comment. Todd Burrer also reported via WebEx Chat Feature:

> "My report from the San Jacinto basin is that our plan is finished and online ready for review. Will be having our public engagement meeting on August 5."

Update from Planning Group Sponsor

There were no updates.

Review administrative costs requiring certification

There were no administrative costs requiring certification.

Receive registered public comments – limit 3 minutes per person

Mr. Clingenpeel opened the floor for public comments. No public comments were received and the public comment section was closed.

Announcements

Scott Harris suggested that the RFPG start engaging with the Gulf Coast Protection District on current and future projects in the lower basin. Scott Harris

will provide a point of contact and continue the discussion with Glenn Clingenpeel.

Confirm meeting date for next meeting

Thursday, September 8th, 2022, at 6:00 p.m. the Public Hearing will take place at the NCTCOG Transportation Meeting Room

Thursday, November 17th, 2022, at 10:00 a.m. Location TBD

Thursday, December 8th, 2022, at 11:00 a.m. Location TBD

Consider agenda for next meeting

Adjourn
11:51 am pm adjourned

THE ABOVE AND FOREGOING ARE CERTIFIED TO BE TRUE AND CORRECT MINUTES OF THE REGULAR MEETING OF THE REGION 3 TRINITY FLOOD PLANNING GROUP HELD JULY 21, 2022.

_____ _____

SCOTT HARRIS, Secretary
REGION 3 TRINITY FLOOD
PLANNING GROUP

Date

_____ _____

GLENN CLINGENPEEL, Chair
REGION 3 TRINITY FLOOD
PLANNING GROUP

Date

Region 3 Trinity Flood Planning Group Public Comment Meeting
Thursday, September 8, 2022
6:00 p.m.

North Central Texas Council of Governments
Transportation Council Room, Centerpoint II Building
616 Six Flags Dr
Arlington, TX 76011

The Region 3 Trinity Flood Planning Group convened a public comment meeting, in person as well as virtual, on Thursday, September 8, 2022, at 6:00 PM. Chairman Glenn Clingenpeel opened the meeting at 6:10 PM. The meeting was not an official meeting of the Region 3 Flood Planning Group, and no official action was taken.

Comments from the Texas Water Development Board

Richard Bagans with TWDB provided an agency update.

TWDB is currently reviewing all Draft Regional Flood Plans. TWDB comments are expected to be delivered to the RFPG and the Technical Consultants by the end of October.

Attendees were reminded that this is an important opportunity to provide input on the Draft Regional Flood Plan. More opportunities will be available through the amendment process next year.

Overview of regional flood planning process - Glenn Clingenpeel with Trinity River Authority:

The Legislature intended the flood planning process to be inclusive from the bottom up. Twelve stakeholder interests were appointed as RFPG voting members and were represented throughout the entire process. Additionally, 16 non-voting members attended and contributed to the RFPG process.

Stephanie Griffin, with Halff Associates, provided additional information on the State flood planning process. The Draft Regional Flood Plan was due to TWDB on August 1st, 2022. The Final Regional Flood Plan will be submitted to TWDB on January 10th, 2023. The Amended Regional Flood Plan will be submitted to TWDB on July 14th, 2023. The TWDB will review and consolidate the 15 regional flood plans into a State Flood Plan. The State Flood Plan is due to the Legislature in September 2024.

Presentation on the Draft Region 3 Trinity Regional Flood Plan

Stephanie Griffin, with Halff Associates, provided an overview of Chapters One through Three. The chapters provide an overview of the Trinity Region (Region 3), the current and future flood risks, and the regional flood planning goals. A

data collection tool was utilized to collect and compile floodplain ordinances, master plans, known flooding locations, and flood mitigation strategies from communities and counties. The data collection tool was also used as an outreach mechanism for the public to identify flood-prone areas in their community.

Caroline Short, with Freese and Nichols, provided an overview of Chapter Four, Potentially Feasible Actions, and Chapter Five, Recommended Actions. As outlined in Chapters Four and Five, 342 potentially feasible flood management studies were recommended, including flood mapping and alternative studies. In addition, there were 136 flood management plans such as floodproofing properties or regulation and ordinance updates. Finally, 7 flood mitigation projects that utilized models were recommended. The Draft Regional Flood Plan includes a variety of recommendations for each category that would cost over $1 billion to fully implement.

Caroline Short, with Freese and Nichols, provided an overview of Chapter Six, Potential Impact of Actions, and Chapter Nine, Potential Funding. Chapter Seven, Flood Response Summary, and Chapter Eight, Recommended Planning Process Improvements, were not presented, but are available online for review. She stated that an analysis that found 35 Region 3 counties to have inadequate flood mapping. Therefore, the Draft Regional Flood Plan recommends county-wide flood management studies to improve mapping coverage for all of those 35 counties.

There was a presentation of the effects of the seven flood management projects recommended. Exposed Structures, Exposed Populations, Exposed Low Water Crossings, Number of Road Closure Occurrences, and Road Length exposed to flooding would be reduced if the seven projects were implemented. Impacts on the State Water Plan were also presented. The State Flood Plan will not have an impact on water supply or water availability.

A financing analysis was completed as part of Chapter Nine. Funding surveys were sent to potential Sponsors of all recommended actions. Over $1 billion is needed to implement the recommended actions, however, it was projected that $960 million of state and federal funding will be needed.

Colby Walton, with Cooksey Communications, provided an overview of Chapter Ten. The RFPG developed and implemented a robust public outreach plan that encouraged and solicited input from a wide variety of local and regional entities with flood-related or flood planning authority, as well as from the general public. Examples of strategies that were implemented to engage the public were presented. The public was reminded that the public comment period on the Draft Regional Flood Plan is open until October 10th. Further, the Flood Planning

process is a recurring, iterative process. The Flood Plan is a living document and will be reviewed and improved over time.

Acknowledgement of written public comments received

No written public comments were received.

Receive registered public comments on specific agenda items

No registered public comments were received on specific items.

Receive registered public comments – limit 3 minutes per person

Chairman Glenn Clingenpeel opened the floor for RFPG members to provide comments. Lissa Shepard provided complements to the Technical Consultant team and RFPG members.

Chairman Glenn Clingenpeel opened the floor for the public to provide comments. No registered public comments were received. Chairman Glenn Clingenpeel closed the public comment section.

Adjourn
6:47 PM adjourned

THE ABOVE AND FOREGOING ARE CERTIFIED TO BE TRUE AND CORRECT MINUTES OF THE PUBLIC COMMENT MEETING FOR THE DRAFT REGION 3 TRINITY FLOOD PLAN HELD September 8, 2022.

_____ _____

SCOTT HARRIS, Secretary
REGION 3 TRINITY FLOOD
PLANNING GROUP

Date

_____ _____

GLENN CLINGENPEEL, Chair
REGION 3 TRINITY FLOOD
PLANNING GROUP

Date

4. Acknowledgement of written comments received

5. Public comments on agenda items

6. TWDB update

7. Consultant update

CONSULTANT UPDATE

- **Update on Draft Regional Flood Plan**
  - Recap of Open Houses
  - Public comments received and proposed responses
  - TWDB comments received and proposed responses
- **Request Approval of Responses to Public and TWDB Comments**
- **Update on Final Regional Flood Plan**
- **Request Approval to Revise and Submit Final Regional Flood Plan**
- **Update on Task 12**
  - Purpose
  - Technical Subcommittee recommendations
- **Request Approval of Task 12 Approach & Deadline**
- **Update on Project Budget**
- **Request Approval of Budget Amendment**
- **Project Schedule**

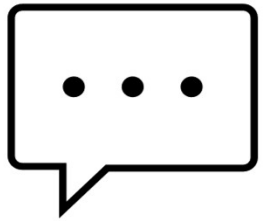
Update on Draft Region 3 Trinity Regional Flood Plan

- Recap of Open Houses
- Public Comments Received & Proposed Responses
- TWDB Comments Received & Proposed Responses

Outreach for the Draft Plan

- In-Person Open Houses
  - August 29th in Dayton
  - August 30th in Crockett
  - August 31st in Arlington
- Public Meeting (Hybrid)
  - September 8th in Arlington

Public Comment Period

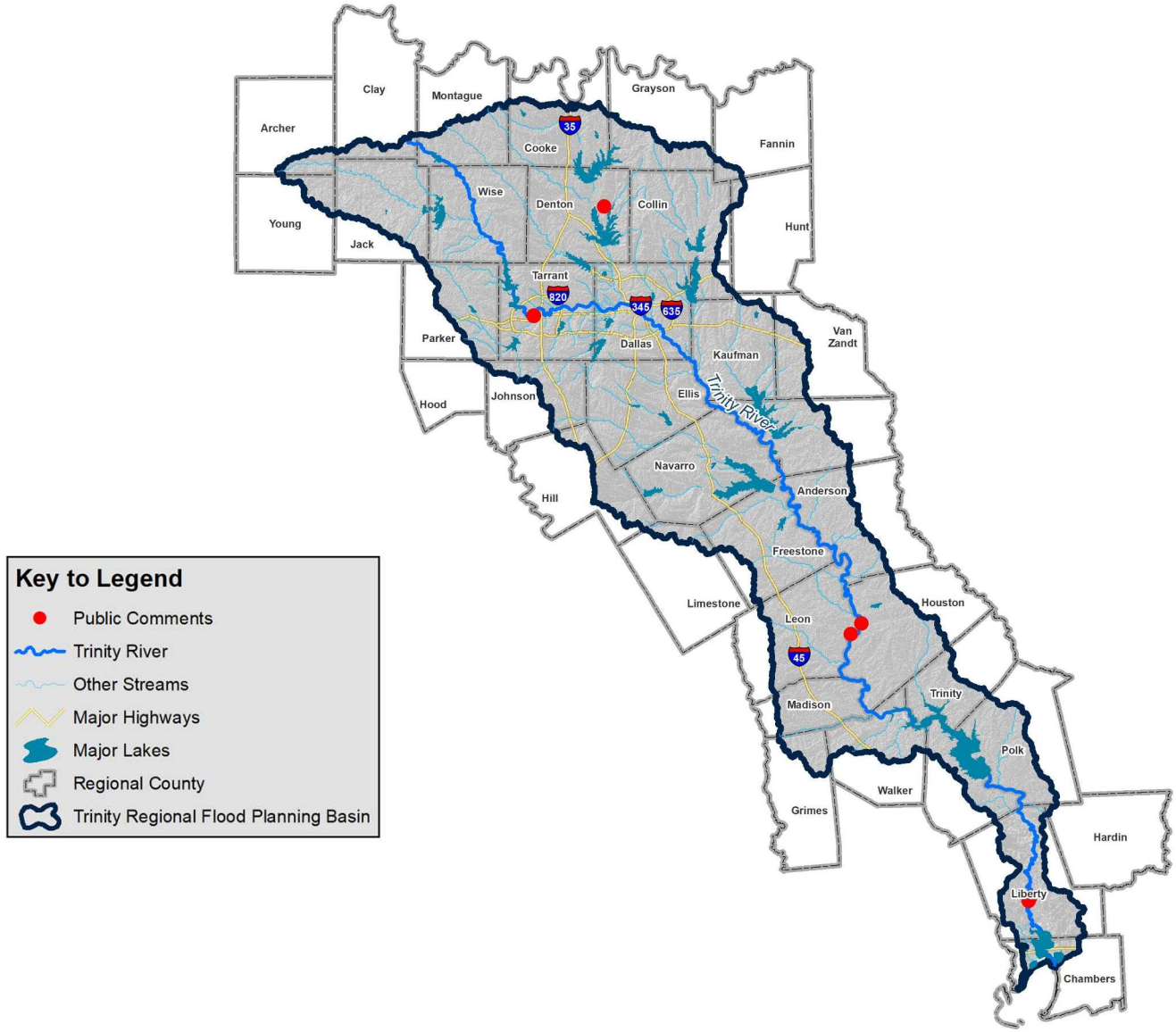


- August 1 – October 10
- Submittal formats
  - Interactive web map
  - Public comment web form
  - Emails to info@trinityrfpg.org
  - Emails to consultant team
  - Verbal or written during September 8th meeting
- Comments received
  - 0 verbal
  - 9 written
  - 8 interactive web map

Themes of Public Comments

- Editorial
- Neighborhood flooding
- Detention study needed
- Low water crossing
- Agricultural flooding
- Legislative, administrative and planning process suggestions
  - Potential subcommittee to review suggestions in next planning cycle
  - Request TWDB to establish best practices for future conditions modeling
- Support for nature-based solutions
- Concern about 6 recommended FMPs with minimal negative impacts
- Some comments would be more appropriate for TWDB to respond

Interactive Web Map



TWDB Comments

- Focused on Chapters 1 through 5
  - Level 1 comments must be addressed (43 total)
  - Level 2 comments optional, but recommended (39 total)
- November 3rd meeting with TWDB
  - Reviewed draft RFPG responses
  - Discovered TWDB had not seen Appendix folder with maps; confirmed missing information had been provided
  - Discussed GIS and table updates
  - Agreed BCRs assumed 0 for potentially feasible FMPs that were not recommended FMPs
  - Understood additional clarification text and table needed for FMPs

Public Comments Received on Draft Trinity Regional Flood Plan with Draft Proposed Responses
(August 1 - October 10, 2022)

Comment #	Date Comment Received	Name	Associated Entity	Comment	Initial Response and/or Action Taken Upon Receipt
1	July 18, 2022	Russell Erskine	City of Plano	I find it interesting that in Table 1.1 that Duck Creek is listed as a major tributary to the East Fork of the Trinity River when Rowlett Creek has a large drainage area (approximately 137 square miles) and longer length (39 miles). I guess Plano doesn't have a population over 25,000 either (list on pages 1-9 and 1-10). Documents looking good. Couple of other comments: •On Page 1-20, Collin County is shown as "Colin". •On Page 2-136, a statement on CRS states "CRS Rating of 5 (or 25%) discount". Should this not be 45%? •On Page 2-35, I am really surprised that BLE is being used if it under-predicts the flood levels. But I understand that it is the best available. Personally, I would rather use FEMA Zone A as a guide (if available). I would rather be over conservative on location of floodplains than under like BLE. •Seems to me that the report should be using the latest and greatest information on CRS. Under Risk Rating 2.0 Equity in Action, Table 3.2 is now outdated. Everyone now gets the same discount. I would think Dallas (and Halff) would want to show off that CRS Rating of 4.	Did let Russell at City of Plano know we will address his comments
2	August 28, 2022	Bennie Peek	Self	I saw the recent article in Fortworthreport.org regarding the possibility of future funding to correct the West Seventh Street area problems. In the best case scenario, that is many years away. What is city going to do now to reduce the severity of the flooding problem?	Shared comment with Clair Davis, City of Fort Worth floodplain administrator. Also provided Clair Davis' contact information to the homeowner and shared with the homeowner that we would update our maps of flood-prone areas to incorporate his concerns, but that we did not have emergency response authority to deal with the immediate issue.
3	August 28, 2022	Bennie Peek	Self	The flooding problem on Templeton Dr in Linwood is made much worse by the fact that during heavy rains the storm drains run backward and push pressurized water at high volumes onto Templeton. This, not local surface runoff, is the biggest source of flood water on Templeton. What can be done to change this so that Templeton and any other areas where this happens do not operate as the "retaining ponds" for other parts of the neighborhood?	Shared comment with Clair Davis, City of Fort Worth floodplain administrator. Also provided Clair Davis' contact information to the homeowner and shared with the homeowner that we would update our maps of flood-prone areas to incorporate his concerns, but that we did not have emergency response authority to deal with the immediate issue.
4	August 29, 2022 and October 7, 2022 (duplicate comment except the latter included a new sentence referring to the potential Floodwater Detention Basin and an extra description of the affected area as a high-end neighborhood)	Dane Steinhagen	Self	This serves to notify that I am a resident of Fort Worth and recently purchased my Townhome , closing that purchase on Thursday, August 11th and moving into my home August 16th having new furniture delivered that day. Heavy rains commenced Wednesday August 17th causing severe flash flooding due to stopped-up city sewer drainage systems in and around Templeton Drive @ Hamilton Street and 5th, 6th and 7th Streets in which turned the entire Templeton Drive roadway into a flowing 7-foot Deep Floodwater River by 9pm,,thereby submerging my Ford Truck completely underwater to the dashboard (total loss) and flooding the ground floor of my townhome with up to 2" - inches of floodwater in the first flood, and thereafter to 8"-10" inches of water in the second and third flooding of my home only days apart. THIS SHOULD NOT BE HAPPENING IN Fort Worth, TEXAS and a high-end neighborhood. As you know, this continuous Fort Worth City Street Flooding is caused by absolutley inadequate and/or Completely Plugged-Up City Street System's, and because of this, Myself and ALL surrounding property owners (my Templeton Drive Neighbors) wish for you the CITY OF Fort Worth to immediately establish a "TEMPLETON DRIVE DRAINAGE TASK FORCE" in effort to plunge-out/Clean-out All Templeton Drive City Street Drainage Sewer Piping and all in-line connector pipping eliminating all blockage, and in addition to that, We The People of Templeton Drive hereby this writing request that you immediately dispatch a team of designated streets & drainage-public works engineers to "At Soonest" determine what underground stormwater sewer modifications, replacements, and/or enlargements must be Immediately Dispatched so to elevate/eliminate this constant Templeton Drive street and home flooding by-which has been so devastating to all Templeton Drive Homeowners. In addition, the 4 acre Linwood Park located at 301 Wimberly Street is a close proximity to Templeton Drive to be considered for development of a "Floodwater Detention Basin" being only a part of the overall solution in-effort to divert stormwater flooding away from the Linwood-Templeton Drive neighborhood. Time is of the essence that you please take Immediate Action Now On Templeton Drive City Sewer Piping Clean-out and further assessment. CAN CALL ME ANYTIME	Shared comment with Clair Davis, City of Fort Worth floodplain administrator. Also provided Clair Davis' contact information to the homeowner and shared with the homeowner that we would update our maps of flood-prone areas to incorporate his concerns, but that we did not have emergency response authority to deal with the immediate issue.
5	September 1, 2022	Leonard Vyoral	Liberty County WCID #1	We prepared the attached request to study creating a retention pond for the Liberty County Water Control and Improvement District #1. Please let us know if this adequate to kick off the study. Thank you in advance for your help.	David Rivera acknowledged receipt of the response and shared that, from a cursory review, the level of information provided would be sufficient for consideration as a potential FME. David also requested the drainage area to this pond as a boundary on a map. Finally, David noted that the location of the proposed detention pond would fall in the San Jacinto Region and copied the consultant team in charge of that Plan for further assistance. David also indicated the consultant team would review the other 8-10 projects as they are provided, in order to determine in which Region they would belong - to ensure all FME requests are considered by the appropriate RFPG.

Public Comments Received on Draft Trinity Regional Flood Plan with Draft Proposed Responses
(August 1 - October 10, 2022)

Comment #	Proposed RFPG Response
1	Table 1.1 and Figure 1.5 will be updated to reflect Rowlett Creek as being a major tributary. The list of cities with populations greater than 25,000 will be updated to include Plano, as well as several other cities that were missing from the list in the Draft Plan. Page 1-20 typo will be corrected in the Final Plan. Page 2-136: CRS Rating of 5 results in a 25% discount. No changes made. Page 2-35: The RFPG approved the hierarchy of data to be considered best available, which aligned with the TWDB's recommendations. No changes made. Table 3.2: CRS Ratings shown were cited as "December 1, 2020." This was the data that was available when the RFPG began its data collection effort in June 2021. NFIP updates its CRS list periodically. The next cycle of regional flood planning will likely use a more recent CRS publication date. No changes made.
2	This comment was forwarded to the City of Fort Worth upon receipt. The RFPG does not have emergency response capabilities. The area was included in the Draft Flood Plan as one of the recommended FMPs, Linwood Park Flood Mitigation (Western Arlington Heights).
3	This comment was forwarded to the City of Fort Worth upon receipt. The RFPG does not have emergency response capabilities. The area was included in the Draft Flood Plan as one of the recommended FMPs, Linwood Park Flood Mitigation (Western Arlington Heights).
4	This comment was forwarded to the City of Fort Worth upon receipt. The RFPG does not have emergency response capabilities. The area was included in the Draft Flood Plan as one of the recommended FMPs, Linwood Park Flood Mitigation (Western Arlington Heights).
5	Information provided by Liberty County Water Control and Improvement District #1 was reviewed by Region 3 RFPG and determined that the level of information provided was sufficient to be considered as a potential FME. However, the location of this particular detention pond falls in the San Jacinto Region (Region 6), not Region 3. The information was relayed to the San Jacinto Regional Flood Planning Group. Region 3 will help follow up with this request with Region 6. If additional actions (FME, FMP, FMS) are sent for consideration, the Region 3 RFPG will determine the Region they belong to and ensure they are considered by the appropriate Regional Flood Planning Group.

Public Comments Received on Draft Trinity Regional Flood Plan with Draft Proposed Responses
(August 1 - October 10, 2022)

Comment #	Date Comment Received	Name	Associated Entity	Comment	Initial Response and/or Action Taken Upon Receipt
6	September 8, 2022	Sonia Sams (on behalf of Je	USACE	Good morning, Please see the following attachment for our initial comments on the Texas State Flood Plan, and there may be additional comments from others at USACE.	Colby Walton acknowledged receipt of the comment and shared the comment with the RFPG consultant team. The referenced attachment (Excel document) is saved in the Teams - Shareholder Engagement - Public Comments Letters and Attachments subfolder. All of the comments pertain to the Legislative Recommendations, Regulatory and Administrative Recommendations, and State Flood Planning Recommendations (Tables 8.1., 8.2 and 8.3).
7	September 22, 2022	James Knicker	Self	Please allow me to introduce myself. My name is James - I'm a local resident of Cross Roads, Texas and am asking for your help. The creek crossing nearby floods every year. I've lived at this residence for over 20 years and have become wrecked with worry about the crossing. Several times a year as a kid I struggled to cross the creek when DFW thunderstorms would flood. It routinely made me miss school and fall behind on my studies. As I've entered adulthood the problem has gotten worse. A nearby subdivision is being built and continues to increase the volume of water that flows through the creek which has caused infrastructure damage for residence of my hometown. This is incredibly risky. It was bad enough that the flooding made the crossing impassable by vehicle but now as my neighbors and I age - it has become a risk to our lives. You see the bridge is out of code, it's over 30 years old and building codes have moved on from when it was originally built. If there was an emergency event at our residence, emergency services would likely be delayed precious minutes in arriving at the address due to the caution needed when crossing an out of date crossing which could result in loss of life or damage of expensive emergency vehicles. To make matters worse - there is wildlife at risk. My neighbor has several horses. Their property also exists in the flood plain. In the event that there's a flood, these animals may be seriously injured or killed due to lack of access to care or fast moving water. I'm writing today to include our crossing in TWDB's Trinity region for consideration in future funding opportunities. After talking with professional engineers to provide a study, design, solution, and FEMA coordination - there could be charges in excess of hundreds of thousands of dollars. Please help the horses and I.	Colby Walton acknowledged receipt of the comment and asked for more location info. Also note the two creek flooding photos submitted in a follow-up email from Mr. Knicker.
8	October 10, 2022	Marty Kelly	TPWD	Good Day! Please find the attached comments for the draft Trinity Regional Flood Plan. Thank you for all of your efforts and hard work to create this plan. Please feel free to contact me with any questions.	Colby Walton acknowledged receipt of the comment. The referenced letter attachment is saved in the Teams folder for consultant review.

Comment #	Proposed RFPG Response
6	A significant number of suggestions were provided for the RFPG's consideration. The RFPG discussed many of these concepts during its meetings in 2022. Unfortunately, time constraints do not afford the RFPG the opportunity to delve into these ideas and consider potential unintended consequences or potential liability that were of concern during those discussions. The RFPG may establish a subcommittee in a future cycle of flood planning to review these ideas for potential recommendations, consistent with state, federal and other reluatory bodies, prior to making recommendations for adjustments to the Legislative, Regulatory and Administrative, and/or State Flood Planning process.
7	Region 3 RFPG recommended to Mr. Knicker to initiate conversations with the City of Cross Roads for a potential submittal of an FME to study this situation as part of the Amended Plan. Region 3 RFPG indicated that TWDB funding is only available to public entities and not to private owners.
8	Cover Letter Point A: The RFPG supports and encourages nature-based actions. If a sponsor wishes to advance either or both of these potentially feasible FMEs, the RFPG will consider recommending them in the next cycle of regional flood planning. No changes made. Cover Letter Point B: The RFPG's Technical Consultant used engineering judgement to determine no negative impacts for the six recommended FMPs in question. Additional explanation regarding the recommendations of these six FMPs will be added in Chapter 5. Cover Letter Point C: The RFPG welcomes TPWD's input on the necessary flows to maintain habitat for Alligator Gar. No changes made. Cover Letter Point D: The RFPG is not responsible for designing or constructing the recommended FMXs. The RFPG recommends that TPWD contact the local sponsor to discuss TPWD's preferred design requirements. No changes made. Cover Letter Point E: The RFPG is not responsible for designing or constructing FMXs that might widen, deepen or straighten channels. The RFPG recommends that TPWD contact the local sponsor to discuss TPWD's preferred design requirements. No changes made. Attachment Recommendation 1: The Draft Regional Flood Plan includes recommendations for increased funding for flood mitigation solutions, which includes nature-based solutions. However, the RFPG does not have funding to implement the recommended trainings. The RFPG incorporated the best available models within the region. The RFPG acknowledges the loss of floodplain function as an adverse impact. The RFPG encourages collaboration for developing and implementing regional solutions, including nature-based solutions. No changes made. Attachment Recommendation 2: The Regional Flood Plan reflects benefit costs according to the TWDB's benefit cost analysis tool. Requests for adjustments to the TWDB's BCA tool should be made directly to the TWDB. No changes made. Attachment Recommendation 3: The Draft Regional Flood Plan addresses the need for local land development codes and includes a goal to increase the implementation of these codes within the region. The Draft Plan includes recommendations for educating county officials on their authorities related to development within the floodplain. Land use policies are also addressed in the Draft Plan. The Draft Plan did not include discussion regarding Natural Aquifer Storage and Recovery. The RFPG includes representatives from many agencies and incorporated the best available data. No changes made. Attachment Recommendation 4: The RFPG does not have funding to develop a Texas Watershed Initiative similar to Louisiana. The RFPG does not have funding to provide training to the various entities with flood control responsibilities. The RFPG does not have the authority to prioritize the use of federal or state funds to preserve and restore natural flood mitigation features. The RFPG supports the idea of developing a list of nature-based resources for non-coastal communities that could be incorporated into an education program. The Draft Plan considered nature-based solutions and recommended those supported by local sponsors. Many of the suggestions included in this attachment are beyond the RFPG's authority. The RFPG recommends TPWD work directly with TWDB to incorporate these ideas into future cycles of regional flood planning.

Public Comments Received on Draft Trinity Regional Flood Plan with Draft Proposed Responses
(August 1 - October 10, 2022)

Comment #	Date Comment Received	Name	Associated Entity	Comment	Initial Response and/or Action Taken Upon Receipt
9	October 10, 2022	Danielle Goshen	NWF	Dear Stephanie Griffin, Please see NWF's recommendations on Region 3's Draft Regional Flood Plan, and an associated letter of recommendations incorporating nature-based solutions into the Regional and State Flood Plans.	Colby Walton acknowledged receipt of the comment. The referenced attachments (2) are saved in the Teams folder for consultant review.
10	8/29/2022	Ellis Pickett	Self	illegal Coffer Dam blocking floodwater flow	None
11	8/29/2022	Ellis Pickett	Self	Abandoned pipeline. Public safety and navigation hazard.	None
12	8/29/2022	Ellis Pickett	Self	Second abandoned pipeline since 1940s. Looks like a tree, but not a tree	None
13	8/30/2022	Charles Brown	Self	Major Agricultural Flooding in this area when water gets released from reservoirs	None
14	8/30/2022	Mr. and Mrs. Brown	Self	Major Flooding in this dam area. Also flooding from water releases from reservoirs upstream. Costing major damages to crops and ranchland	None
15	9/1/2022	Seth Wicks	Self	Major Flooding in this whole area both upstream and downstream.m Pluvial and Fluvial flooding. extensive flooding. Potential backflow issues in this whole area	None
16	9/1/2022	Bennie Peek	Self	Massive stormdrain Backflow flooding in this area	None
17	9/23/2022	James Knicker	Self	At this pin there is a low water crossing over Cantrell Slough. This crossing floods several times annually and poses dire emergency risk to both residents and wildlife. This risk has been amplified by the recent housing subdivision development,	None

Public Comments Received on Draft Trinity Regional Flood Plan with Draft Proposed Responses
(August 1 - October 10, 2022)

Comment #	Proposed RFPG Response
9	Comment I: The RFPG appreciates your support of the future conditions approach. No changes made. Comment II: The RFPG spent considerable amount of time developing the goals and specific, measurable statements for inclusion in the Draft Plan. The addition of a goal to increase the enforcement of floodplain ordinances may be considered for inclusion in the next cycle of regional flood plan development due to time constraints for this first Flood Plan. No changes made. Comment III: The six FMPs in question were determined to have minimal negative impacts. When these projects are fully designed, the sponsors will have to prove no negative impacts to obtain the necessary local, state and/or federal permits for each project prior to construction. The RFPG does not agree that the proposed goal is appropriate to include in the regional flood plan. No changes made. Comment IV: The RFPG discussed minimum floodplain standards extensively. The RFPG concluded that because this was the first-ever regional flood plan and the compressed schedule to develop the plan, the RFPG wanted to allow entities with flood-control responsibilities to pursue potential future state funding to implement recommended actions without being penalized for having misunderstood the planning process requirements. Therefore, the RFPG did not adopt a minimum floodplain management standard for this first-ever regional flood plan. The RFPG may revisit this subject in the next planning cycle and come to a different conclusion at that time. No changes made. Comment V: The RFPG appreciates the idea of adding a recommendation for the TWDB to provide best management practices on how to incorporate future conditions into models. The RFPG will consider incorporatng this recommendation in the Final Plan. Comment VI: The six FMPs in question were determined to have minimal negative impacts. When these projects are fully designed, the sponsors will have to prove no negative impacts to obtain the necessary local, state and/or federal permits for each project prior to construction. No changes made. Comment VII: Nature-based solutions were considered by the RFPG. The RFPG did not consider the movement of a solution from a FMP to a FMS to be "downgraded" as both categories will be eligible for future TWDB funding. The TWDB requirements for recommending FMPs are very stringent. The FMS category is intended to capture those solutions that do not readily meet the TWDB FMP requirements. No changes made. Comment VIII: The Draft Plan incorporated the critical facilities definition and information as provided by TWDB. Any changes to the definition need to be approved by the TWDB for consistency across the state. The comment should be directed to the TWDB. No changes made.
10	The Trinity RFPG does not have regulatory or enforcement authority. Please contact Liberty County to report the situation. The RFPG will forward your comment to the county as well. No changes made.
11	The Trinity RFPG does not have regulatory or enforcement authority. Please contact Liberty County to report the situation. The RFPG will forward your comment to the county as well. No changes made.
12	The Trinity RFPG does not have regulatory or enforcement authority. Please contact Liberty County to report the situation. The RFPG will forward your comment to the county as well. No changes made.
13	The Trinity RFPG recognizes that flooding impacts agricultural operations and production. The property is located within the 1% annual chance (100-year) floodplain. Thus, the area marked on the map was previously included in the GIS flood quilt used in the Draft Plan. No changes made.
14	The Trinity RFPG recognizes that flooding impacts agricultural operations and production. The property is located within the 1% annual chance (100-year) floodplain. Thus, the area marked on the map was previously included in the GIS flood quilt used in the Draft Plan. No changes made.
15	The RFPG previously notified the City of Fort Worth regarding the flooding at this location. The area was included in the Draft Flood Plan as one of the recommended FMPs, Linwood Park Flood Mitigation (Western Arlington Heights). No changes made.
16	The RFPG previously notified the City of Fort Worth regarding the flooding at this location. The area was included in the Draft Flood Plan as one of the recommended FMPs, Linwood Park Flood Mitigation (Western Arlington Heights). No changes made.
17	The roadway is located within the 1% annual chance (100-year) floodplain. The RFPG will add the location as apoint in the GIS low water crossing layer. This will be accounted for in the exposure analysis in the Final Plan. Please contact Liberty County to report this situation. The RFPG will forward your comment to the county as well.

Public Comment #1

From: Russell Erskine <Rerskine@plano.gov>
Sent: Monday, July 18, 2022 4:31 PM
To: Amoako-Atta, Samuel <sAmoako-Atta@Halff.com>
Cc: Overbey, Jarred <jOverbey@Halff.com>
Subject: FW: Trinity Regional Planning Group

Documents looking good.

Couple of other comments:

- On Page 1-20, Collin County is shown as "Colin".
- On Page 2-136, a statement on CRS states "CRS Rating of 5 (or 25%) discount". Should this not be 45%?
- On Page 2-35, I am really surprised that BLE is being used if it under-predicts the flood levels. But I understand that it is the best available. Personally, I would rather use FEMA Zone A as a guide (if available). I would rather be over conservative on location of floodplains than under like BLE.
- Seems to me that the report should be using the latest and greatest information on CRS. Under Risk Rating 2.0 Equity in Action, Table 3.2 is now outdated. Everyone now gets the same discount. I would think Dallas (and Halff) would want to show off that CRS Rating of 4.

Russell

Engineering Department

Serving Since 2018

Russell P. Erskine, P.E., CFM

Senior Engineer

1520 K Avenue, 2nd Floor

Suite 250, Plano, Texas 75074

T 972.941.7589

F 972.941.7397

rerskine@plano.gov

plano.gov

From: Russell Erskine
Sent: Friday, July 15, 2022 3:38 PM
To: Overbey, Katy <kOverbey@Halff.com>; Amoako-Atta, Samuel <samoak-atta@Halff.com>
Cc: Overbey, Jarred <jOverbey@Halff.com>
Subject: FW: Trinity Regional Planning Group

I guess Plano doesn't have a population over 25,000 either (list on pages 1-9 and 1-10).

Please take a moment to complete the City of Plano Customer Satisfaction Survey.

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Senior Engineer

1520 K Avenue, 2nd Floor

Suite 250, Plano, Texas 75074

T 972.941.7589

F 972.941.7397

rerskine@plano.gov

plano.gov

From: Russell Erskine
Sent: Friday, July 15, 2022 3:34 PM
To: Amoako-Atta, Samuel <samoak-atta@Halff.com>
Subject: Trinity Regional Planning Group

I find it interesting that in Table 1.1 that Duck Creek is listed as a major tributary to the East Fork of the Trinity River when Rowlett Creek has a large drainage area (approximately 137 square miles) and longer length (39 miles).

Russell

Please take a moment to complete the City of Plano Customer Satisfaction Survey.

Engineering Department

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Suite 250, Plano, Texas 75074

T 972.941.7589

F 972.941.7397

rerskine@plano.gov

plano.gov

Public Comment #2

Griffin, Stephanie

From: Trinity RFPG <webmaster@trinityrfpg.org>
Sent: Sunday, August 28, 2022 6:47 PM
To: Trinity RFPG
Subject: Public Comment Submission

Name: Bennie Peek
Company/Organization: Peek
Address: 410 Templeton Dr Fort Worth, TX 76107 Phone Number: 8173205081
Email: benniepeek@hotmail.com
Category Interest:
Public Comments Characteristic: Pertaining to a past agenda item, Related to flood planning documents
Comments: The flooding problem on Templeton Dr in Linwood is made much worse by the fact that during heavy rains the storm drains run backward and push pressurized water at high volumes onto Templeton. This, not local surface runoff, is the biggest source of flood water on Templeton. What can be done to change this so that Templeton and any other areas where this happens do not operate as the “retaining ponds” for other parts of the neighborhood?
--
This e-mail was sent from a contact form on Region 3 Trinity (https://protect-us.mimecast.com/s/WyLGCo2vr7hK18llT1IMEc?domain=trinityrfpg.org)

Public Comment #3

Griffin, Stephanie

From: Trinity RFPG <webmaster@trinityrfpg.org>
Sent: Sunday, August 28, 2022 6:41 PM
To: Trinity RFPG
Subject: Public Comment Submission

Name: Bennie Peek
Company/Organization: Peek
Address: 410 Templeton Dr Fort Worth, TX 76107 Phone Number: 8173205081
Email: benniepeek@hotmail.com
Category Interest:
Public Comments Characteristic: Pertaining to a past agenda item, Related to flood planning documents
Comments: I saw the recent article in Fortworthreport.org regarding the possibility of future funding to correct the West Seventh Street area problems. In the best case scenario, that is many years away. What is city going to do now to reduce the severity of the flooding problem?
--
This e-mail was sent from a contact form on Region 3 Trinity (https://protect-us.mimecast.com/s/WyLGCo2vr7hK18llT1IMEc?domain=trinityrfpg.org)

Public Comment #4

From: Dane Steinhagen <dane.steinhagen10@gmail.com>
Sent: Monday, August 29, 2022 1:39 PM
To: Trinity RFPG <info@trinityrfpg.org>
Subject: PUBLIC COMMENT - Linwood Flooding

To:

Trinity Regional Flood Planning Group

From:

Dane Steinhagen / Templeton Drive Home Owner (Linwood Fort Worth Neighborhood)

This serves to notify that I am a resident of Fort Worth and recently purchased my Townhome @ 407 Templeton Drive, closing that purchase on Thursday, August 11th and moving into my home August 16th having new furniture delivered that day.

Heavy rains commenced Wednesday August 17th causing severe flash flooding due to stopped-up city sewer drainage systems in and around Templeton Drive @ Hamilton Street and 5th, 6th and 7th Streets in which turned the entire Templeton Drive roadway into a flowing 7-foot Deep Floodwater River by 9pm,,thereby submerging my Ford Truck completely underwater to the dashboard (total loss) and flooding the ground floor of my townhome with up to 2" - inches of floodwater in the first flood, and thereafter to 8"-10" inches of water in the second and third flooding of my home only days apart.

THIS SHOULD NOT BE HAPPENING IN Fort Worth, TEXAS.

As you know, this continuous Fort Worth City Street Flooding is caused by absolutley inadequate and/or Completely Plugged-Up City Street System's, and because of this, Myself and ALL surrounding property owners (my Templeton Drive Neighbors) wish for you the CITY OF Fort Worth to immediately establish a "TEMPLETON DRIVE DRAINAGE TASK FORCE" in effort to plunge-out/Clean-out All Templeton Drive City Street Drainage Sewer Piping and all in-line connector pipping eliminating all blockage, and in addition to that, We The People of Templeton Drive hereby this writing request that you immediately dispatch a team of designated streets & drainage-public works engineers to "At Soonest" determine what underground stormwater sewer modifications, replacements, and/or enlargements must be Immediately Dispatched so to elevate/eliminate this constant Templeton Drive street and home flooding by-which has been so devastating to all Templeton Drive Homeowners.

Time is of the essence that you please take Immediate Action Now On Templeton Drive City Sewer Piping Clean-out and further assessment.

Can reach me anytime on my cell

Dane Steinhagen
m: 409.781.0078

From: Trinity RFPG <webmaster@trinityrfpg.org>
Sent: Friday, October 7, 2022 11:49 AM
To: Trinity RFPG <info@trinityrfpg.org>
Subject: Public Comment Submission

Name: Dane Steinhagen
Company/Organization: Linwood Home Owner
Address: 407 Templeton Drive
Phone Number: 4097810078
Email: dane.steinhagen10@gmail.com
Category Interest: Flood Districts
Public Comments Characteristic: Concerning an upcoming agenda item, Related to flood planning documents
Comments: This serves to notify that I am a resident of Fort Worth, TX and recently purchased my Townhome @ 407 Templeton Drive, closing that purchase on Thursday, August 11th and moving into my home August 16th having new furniture delivered that day.

Heavy rains commenced Wednesday August 17th causing severe flash flooding due to stopped-up city sewer and backed-up drainage systems in and around Linwood / Templeton Drive @ Hamilton Street and 5th, 6th and 7th Streets in which turned the entire Templeton Drive roadway into a flowing 7-foot Deep Floodwater River by 9pm,,thereby submerging my Ford Truck completely underwater to the dashboard (total loss) and flooding the ground floor of my townhome with up to 2+" - inches of floodwater in the first flood, and thereafter to 8"-10" inches of water in the second and third flooding of my home only days apart.

THIS SHOULD NOT BE HAPPENING IN Fort Worth, TEXAS and a high-end neighborhood.

As you know, this continuous Fort Worth City Street Flooding is caused by absolutley inadequate and/or Completely Plugged-Up City Street System's, and because of this, Myself and ALL surrounding property owners (my Templeton Drive Neighbors) wish for you, the CITY OF Fort Worth to immediately establish a "TEMPLETON DRIVE DRAINAGE TASK FORCE" in effort to plunge-out/Clean-out All Templeton Drive City Street Drainage Sewer Piping and all in-line connector pipping eliminating all blockage, and in addition to that, We The People of Templeton Drive hereby this writing request that you immediately dispatch a team of designated streets & drainage-public works engineers to "At Soonest" determine what underground stormwater sewer modifications, replacements, and/or enlargements must be Immediately Dispatched so to mitigate/eliminate this constant Templeton Drive street and home flooding by-which has been so devastating to all Templeton Drive Homeowners.

In addition, the 4 acre Linwood Park located at 301 Wimberly Street is a close proximity to Templeton Drive to be considered for development of a "Floodwater Detention Basin" being only a part of the overall solution in-effort to divert stormwater flooding away from the Linwood-Templeton Drive neighborhood.

Time is of the essence that you please take Immediate Action Now On Linwood - Templeton Drive.

Can reach me anytime on my cell - Thank you

Dane Steinhagen

m: 409.781.0078
--
This e-mail was sent from a contact form on Region 3 Trinity (https://trinityrfpg.org)

Public Comment #5

August 31, 2022

David Rivera

469-773-9190

David.rivera@freese.com

Hi David,

It was a pleasure to meet you at the Trinity Regional Flood Planning Group-Lower Basin Open House on Monday August 29th, 2022. Overall, our group, Liberty County Water Control and Improvement District #1 (WCID#1), was very impressed with the presentation. We are very interested in pursuing a project we think is worthwhile to include in the Regional Flood Plan. We ask your help to study the feasibility of converting an existing reservoir into a retention pond which we believe will solve a long-standing flooding problem for the residents/landowners in this area. See below project location:

Approximate Project Location

Study Description

The project may include obtaining the land or right to the land and convert the Enderli Reservoir into a retention pond to facilitate orderly flow of water into the Cedar Bayou. Currently, the Coffee Slew and Zarsky-Nemy ditches send water into south into the reservoir then into the Cedar Bayou. Over decades, the reservoir has silted up causing the ditches to back up and flood to the north during heavy rains. These 2 ditches help drain water over approximately 12 square miles or 7,700 acres.

Cost Estimate

We believe that the cost to acquire the land could be $2.5 million and the engineering and construction costs would be $1.5 million. Total $4.0 million.

We have 8-10 additional projects we are working through and will submit to you shortly.

Public Comment #6

From: Sams, Sonia L CIV USARMY CESWF (USA) <Sonia.L.Sams@usace.army.mil>
Sent: Thursday, September 8, 2022 8:53 AM
To: Trinity RFPG <info@trinityrfpg.org>
Cc: Reem Zoun <Reem.Zoun@twdb.texas.gov>; James Bronikowski <James.Bronikowski@twdb.texas.gov>; Mairs, Lisa Mccracken CIV USARMY CESWG (USA) <Lisa.M.Mairs@usace.army.mil>; Higginbotham, Bret W CIV USARMY CESWF (USA) <Bret.W.Higginbotham@usace.army.mil>; HUNTER, JOHN M CIV USARMY CESWF (USA) <John.M.Hunter@usace.army.mil>; Cotter, Jerry L CIV USARMY CESWF (USA) <Jerry.L.Cotter@usace.army.mil>; Williams, David J CIV USARMY CESWT (USA) <David.J.Williams@usace.army.mil>; Scissons, Stephen K CIV USARMY CESPA (USA) <Stephen.K.Scissons@usace.army.mil>; Kerr, Patrick C CIV USARMY CESWG (USA) <Patrick.C.Kerr@usace.army.mil>; Lepinski, Matthew T CIV USARMY CESWF (USA) <Matthew.T.Lepinski@usace.army.mil>
Subject: Region 3 Trinity

Good Morning,

Please see the following attachment for our initial comments on the Texas State Flood Plan, and there may be additional comments from others at USACE.

Thank you,

Sonia Sams
Project Coordinator
Water Resources Branch
U.S. Army Corps of Engineers
Fort Worth, TX District
817-886-1920

RFPG #3 Comments Regarding Legislative Recommendations, Regulatory and Administrative Recommendations and State Flood Planning Recommendations		
Name	**Flood Plan Recommendations**	**Comments**
Jerry Cotter	**Table 8.1 Legislative**	
	Non regulatory regional flood control or drainage districts should be established and funded for rapidly growing urban areas such as DFW, Houston, San Antonio, etc. Responsibility would be to provide consistency, technical resources, funding and reviews in support of FME's, FMS's. These organizations would also implement or support implementation of FMP's. These organizations would augment communities and counties that just don't have the resources and expertise to manage flooding.	Rapidly developing areas surrounding larger urban centers are at greater risk of having runoff patterns increasing because of development. These urban areas are comprised of many communities and unincorporated county areas. Many of the smaller communities are not funded or resourced to deal with the complexities of floodplain management and therefore there is a lack of or inconsistencies in floodplain management practices.
	Clarify the early 2000's state legislation that provide counties the authority to regulate floodplains to explicidly allow and encorage activiites associated with floodplain management such as development of land use plans, regulatory authorites, e.g. permitting.	Although state legislation was passed in the early 2000's which gave counties the ability to regulate floodplains, interpretation of these regulations varies widely from county to county. The legislate bill lacks implementation guidance in the form of administrative rules. If development is occuring in unincorporated areas, this development can dynamically impact flood risk.
Jerry Cotter	**Table 8.2 Regulatory**	
	Require the use of n-values and channel conditions which would likely result if the channel or project were not maintained. Exceptions would be golf courses or other areas where an organization exists which would maintain the channel in perpetuity. Disallow maintence by marginal organizations such as home owners associations to justify acceptance of lower n-values as this is an unrealistric expectation.	When channels are constructed, most often channel bed, banks and overbanks are cleared; however; with many miles of these channels, it is often difficult for communities to maintain those beds, banks and overbanks at their design conditions. Generally, there is a lack of channel maintenance to ensure flood conveyance areas, established as part of a development or improvement projects, to retain their design level n-values. This results in unexpected changes in channel conveyance and increased flooding. Channel maintenance is very expensive activity that can trigger environmenatl permitting requirements.
	No loss of valley storage to the 500-year level. Communities could allow redistribution of valley storage to allow interactions with natural areas but no loss of storage.	Land development in upstream areas increases runoff in downstream areas. This happens because of increased impervious cover and decreased tree cover, and therefore less ability to absorb rainfall. Additionally, development, in most communities, encroaches into riparian areas and decreases the amount of storage available to accommodate flood waters. Just the main thread of the Trinity River though DFW stors more flood waters during of flood than any three of the USACE reservoirs that provide flood protection for DFW. The many other stream provide even more storage than the main stem. There is limited capacity in rivers and streams to convey floodwaters. This means that all areas above any given conveyance point have to stor flood water until sufficient time has laps to pass the water away from the impacted area. The streams are where this water is stored and depleting these storage areas will impact DS areas.
	Establish future land use plans for unincorporated areas associated with rapidly growing urban areas.	"
	Use of ultimate development land use conditions in the development of future flows. Require use of future flows for regulation of floodplains and development of FMP's.	"
Jerry Cotter	**Table 8.3 State Flood Planning Recommendations**	
	None	
	Potential FMS	
	Encorage storm shifting to validate 100-yr estimates and to provide a broader understanding of communities actual flood risk Storms identified and cataloged as part of the GLO funded USACE led Texas Storm Study could be the primary source of storms to be shifted.	Notes: Great deal of uncertainty in 100-yr estimates. Use of observed storms that approximately match depth duration data from NOAA Atlas 14 or other precipitation frequency sources validates 100-yr estimates. Additionally wet, dry and average conditions as well as conditions at the time the storm occured can be presented. Additionally, communities have and can experience storms that exceed the 100-yr. While not regulatory, this information will provide additional hazard mitigation data so communities can address critical infrastructure impacts and be better prepared.
	Add detail to Watersshed Hydrology Assessments (WHA) for communities within basins with completed WHA's. The WHA for the Trinity has been completed.	The WHA's, funded by FEMA, are considered the best available flood flow frequency estimates, e.g. 100-yr. These estimates consider the latest precipitation frequencies, the variations in watershed response and determine critical flood drivers by employing a wide range of sensitivity analysis for each computation point.
	Update WHA's when future precipitation frequency estimates become available. Efforts to develop future precipitation frequency estimates for Texas are starting.	
	Establish regional efforts, for large urban centers to develop future land use data for all developing areas, not just encorporated areas, for use in developing future flood flow frequency estimates and future 100-yr (and other recurrence interval) hazard boundaries.	

Public Comment #7

Email from James Knicker, 9/22/22, jamescknicker@gmail.com

To info@trinityrfpg.org

To Whom It May Concern,

Please allow me to introduce myself. My name is James - I'm a local resident of Cross Roads, Texas and am asking for your help.

The creek crossing nearby floods every year. I've lived at this residence for over 20 years and have become wrecked with worry about the crossing. Several times a year as a kid I struggled to cross the creek when DFW thunderstorms would flood. It routinely made me miss school and fall behind on my studies.

As I've entered adulthood the problem has gotten worse. A nearby subdivision is being built and continues to increase the volume of water that flows through the creek which has caused infrastructure damage for residence of my hometown.

This is incredibly risky. It was bad enough that the flooding made the crossing impassable by vehicle but now as my neighbors and I age - it has become a risk to our lives. You see the bridge is out of code, it's over 30 years old and building codes have moved on from when it was originally built.

If there was an emergency event at our residence, emergency services would likely be delayed precious minutes in arriving at the address due to the caution needed when crossing an out of date crossing which could result in loss of life or damage of expensive emergency vehicles.

To make matters worse - there is wildlife at risk. My neighbor has several horses. Their property also exists in the flood plain. In the event that there's a flood, these animals may be seriously injured or killed due to lack of access to care or fast moving water.

I'm writing today to include our crossing in TWDB's Trinity region for consideration in future funding opportunities. After talking with professional engineers to provide a study, design, solution, and FEMA coordination - there could be charges in excess of hundreds of thousands of dollars. Please help the horses and I.

Respectfully,

James

Public Comment #8

October 10, 2022

TEXAS PARKS & WILDLIFE

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Glenn Clingenpeel, Chair
Trinity Regional Flood Planning Group c/o
Trinity River Authority
5300 South Collins Street
Arlington, TX 76018

Re: 2023 Trinity River Regional Flood Plan

Dear Mr. Clingenpeel,

In 2019 Senate Bills 7 and 8 established a regional and state flood planning process for Texas, aimed at better managing flood risk to reduce loss of life and property. As part of the process, Texas Parks and Wildlife Department (TPWD) was identified as a member of the regional flood planning groups (Texas Water Code Sec. 16.062). The mission of TPWD is to manage and conserve the natural and cultural resources of Texas and its ability to provide opportunities of hunting, fishing, and outdoor recreation for the use and enjoyment of present and future generations. TPWD values this opportunity to contribute to the flood planning process with the goal of enhancing flood risk management and achieving beneficial flood mitigation outcomes. Toward this effort TPWD members serve a dual role of supporting the voting membership in development of the plans and representing the natural resource interests of the state.

TPWD applauds the Trinity River Regional Flood Planning Group (TRFPG) for their efforts in completing the inaugural regional flood plan (RFP) especially considering the abbreviated timeline. Through the exceptional efforts of the TRFPG, this plan will be a meaningful tool for reducing flood impacts to society, especially in those disastrous events that cause loss of life and injury. Because this represents the initial region-wide plan, it has the potential to be precedent setting for subsequent iterations. As such, it is important this plan recognizes the role nature and nature-based solutions can play in flood risk management and promotes opportunities to protect, enhance and restore the flood mitigation benefits provided by natural landforms.

TPWD is supportive of the planning process outlined by the Texas Water Development Board (TWDB) because it aims to achieve an integrative flood risk management (FRM) approach that prioritizes risk reduction through implementation of floodplain management, land use regulations, policy, and a balanced use of grey and natural and nature-based (NNBS) flood mitigation measures that are formed by inclusive participation at all levels of society. TPWD believes this integrative approach when implemented holistically will achieve the maximum benefits for society and natural ecosystems while minimizing environmental impacts. Recent published works on FRM and NNBS (Bridges et al 2021, Glick et al 2020, World Wildlife Fund 2016, Sayers et al 2013) support TWDB integrative flood management approach and provide extensive resources for flood planners.

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

In the interest of achieving the state's flood risk management goals while protecting the state's fish and wildlife resources, TPWD reviewed regional flood plans based on the TWDB guidance principals as described in 31 Texas Administrative Code Chapters 361 and 362. Special focus was provided on the following subset of guidance principals due to its relevance to fish and wildlife management.

- Does the draft flood plan use the best available science, data, models, and flood risk mapping?
- Does the draft flood plan consider the potential upstream and downstream effects, including environmental, of potential flood management strategies (and associated projects) of neighboring areas?
- Does the draft flood plan include strategies and projects that provide for a balance of structural and non-structural flood mitigation measures, including projects that use nature-based features that lead to long-term mitigation of flood risk?
- Does the draft flood plan consider natural systems and beneficial functions of floodplains, including flood peak attenuation and ecosystem services?
- Does the draft flood plan encourage flood mitigation design approaches that work with, rather than against, natural patterns and conditions of floodplains?
- Does the draft flood plan seek to not cause long-term impairment to the designated water quality as shown in the state water quality management plan as a result of a recommended flood management strategy or project?
- Does the draft flood plan consider benefits of flood management strategies to water quality, fish and wildlife, ecosystem function, and recreation, as appropriate?
- Does the draft flood plan minimize adverse environmental impacts and conform with adopted environmental flow standards?
- Does the draft flood plan consider multi-use opportunities such as green space, parks, water quality, or recreation, portions of which could be funded, constructed, and or maintained by additional, third-party project participants?

Additionally, TPWD emphasizes that the following FRM concepts identified in the forementioned literature be incorporated into the RFP.

- Flood is a natural process that has many benefits to human and natural systems.
- Promoting some flooding as desirable and making room for water promotes native species, maintains vital ecosystem services, and reduces the chance of flooding elsewhere.
- Natural landscapes and watersheds provide flood mitigation functions that should be promoted, protected, enhanced, and restored.
- Prioritize risk reduction over flood control by focusing first on reducing loss of life and injury.
- Utilize limited resources fairly.
- Address flood risk using a portfolio approach to first implement non-structural (policy, land management, emergency management) followed by structural (grey and natural and nature-based) strategies.
- Criteria for assessing projects strategies should include a comprehensive suite of measures spanning economical, operational, societal, and environmental

advantages and disadvantages. Assessments focusing on economics alone (number of buildings, acres) should be avoided.

Trinity Regional Flood Plan Comments

Chapter 1 introduces the benefits of natural features in the Trinity River Basin for flood mitigation and ecosystem health and highlights the increasing trend of fragmentation of these features. The plan suggests the region take a deliberate approach to manage its natural areas to continue to receive the benefits of open spaces. The plan includes state parks and wildlife management areas (WMAs) as natural areas that can provide flood mitigation and ecosystem function. These state properties have existing management objectives that can support TRFPG flood mitigation goals. As the region refines its natural infrastructure areas and needs, we encourage TRFPG to continue to work with TPWD and other landowners in the region to meet the flood mitigation goals while also considering existing recreational use, land use and historical management objectives, to ensure those resources are protected as well.

A The RFP recommended 342 Flood Management Evaluations (FMEs), seven potentially feasible Flood Mitigation Projects (FMPs), and 136 Flood Management Strategies (FMSs). The FMPs and FMSs were evaluated for whether they included nature-based solutions. One FMP and 14 FMSs include a nature-based solution for flood mitigation. The FMP with a nature-based solution, Arlington VC(A)-1 Drainage and Erosion Improvements (033000016), is estimated to amount to 15% nature-based. The nature-based FMSs include open space conservation through property acquisition, implementation of green infrastructure, implementation of open space and trail programs, and regulatory guidance to protect open space flood-prone areas. TPWD encourages TRFPG to continue to support the inclusion of nature-based solutions for flood mitigation. Two potential FMEs or similar evaluations that may guide the inclusion of additional nature-based solutions are the Trinity Basin NBS Prioritization and Feasibility Analyses (031000356) and Trinity Basin Assessment of Flood Mitigation and Performance of Nature-based Solutions (031000357).

B Evaluation of FMPs includes determining if each potential project meets all TWDB no negative impacts requirements. Of the seven recommended FMPs, six do not meet all the no negative impact requirements to upstream or downstream areas. Identified negative impacts include increases in water surface elevation and peak discharge. Engineering judgments have been made for each project to determine no negative impacts. No negative impact judgements include findings that increases in water surface elevation do not impact insurable structures, mitigation options an offset increases in water surface elevation, and increases in water surface elevation and peak discharge are acceptable. When an FMP is recommended without meeting the no negative impacts requirements, it is setting a precedent that allows for negatively impacting neighboring areas. TPWD would like to see this practice minimized and well documented when an FMP does not meet all the no negative impacts required by TWDB.

C Chapter 6 discusses the impacts and contributions of the RFP. The plan indicates that the recommended FMPs and FMSs should be able to maintain the environmental flows established through the Senate Bill 3 (SB 3) process. The recommended FMSs and FMPs

are expected to reduce extreme peak flows of the high pulse flow SB 3 values yet maintain the periodic high pulse flows required for sediment transport and ecosystem services. River-floodplain connectivity is important for the reproductive and recruitment success of fish such as the Alligator Gar in the Trinity River. During large flood pulses that inundate the floodplain during spring and summer, Alligator Gar use shallow habitats in the floodplain to spawn. TPWD would like to continue to work with the TRFPG to ensure conservation goals for Alligator Gar and other Species of Greatest Conservation Need are met while also reducing loss of life and property from flooding.

D As the TRFPG and project sponsors continue to evaluate and recommend FMXs (an FMP, FME, or FMS), TPWD would like to encourage the consideration of stream crossing designs that allow for sediment transport and passage of aquatic organisms and do not impound water. Basically, designs that are invisible to the creek. This includes bridges that span the creek where possible or culverted crossings designed with the culvert(s) in the active channel area lower than those in the floodplain benches so that the flow in the channel is not overly spread out. The central/low-flow culvert(s) should be large enough to handle a 1.5-year flow without backing up water. The bottoms of these lower culverts should be set at least a foot below grade (i.e., recessed) to allow natural substrate to cover the culvert bottom and to allow for aquatic organism passage. These lower, recessed culverts should be installed in the thalweg or deepest part of the channel and be aligned with the low flow channel (Clarkin et al., 2006).

E Similarly, FMXs that include channel improvement projects may include widening, deepening, and straightening streams. Channelization and over-widening of streams slows flow, which increases deposition of sediment, decreases fish habitat, increases water temperatures, and can result in channel erosion. Streams in good condition naturally reach bankfull and start spilling onto the floodplain during a 1.5 to 2-year flood event. Widening and deepening a stream channel to force it to contain the 100-year flow negatively impacts the adjacent water table and riparian area and has geomorphic effects upstream and downstream of the modification. If channelization is necessary, constructing a two-stage channel with a low-flow channel and a floodplain allows for the continued transport of sediment, habitat for aquatic wildlife, and can reduce maintenance (Rosgen 1996). TPWD encourages the TRFPG to protect existing streams, riparian areas, and floodplains.

Thank you for your consideration of these comments. TPWD looks forward to continuing to work with the planning group to develop flood plans that protect life and property that are also beneficial to the environment. Please contact me at (512) 389 – 8214 or at Marty.Kelly@TPWD.Texas.gov or Adam Whisenant at (903) 566 – 8387 or at Adam.Whisenant@TPWD.Texas.gov if you have any questions or comments.

Sincerely,

Marty Kelly
Water Resources Program Coordinator

MK:aw

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Letter of Recommendations to the TWDB Promoting the Protection of Natural Flood Mitigation Features and Use of Nature Based Flood Mitigation Solutions

Background

State legislation enabling the Regional Flood Plan process provided guidelines and deliverables to be accomplished by each flood planning group, with regional plans becoming the basis of a state flood plan. Included in deliverable was the request for proposed flood mitigation projects to be considered for future funding. Enabling legislation also directed the Texas Water Development Board (TWDB) to identify and evaluate natural flood mitigation features and include Nature Based Solutions (NBS) within proposed flood mitigation projects.

While TWDB has been very responsive to the questions and concerns expressed by the various Regional Flood Planning Groups (RFPG), the process highlighted several areas of concern regarding the evaluation of natural flood mitigation features for their level of function and use in flood mitigation. This process highlighted the current lack of data specific to Texas regions needed to accurately evaluate natural flood mitigation features and, therefore, the need for methods beyond a traditional Hydrologic Engineering Center's - River Analysis System (HEC-RAS) approach. In addition, Technical Consultant outreach to communities demonstrated the need to increase knowledge on incorporating not only the protection and restoration of natural flood mitigation features but also in general, NBS into flood control strategies.

Nature Based Solutions will need to be woven into every facet of this program and incorporated into future policies and strategies in order to empower community collaboration and leveraging the state's vast network of natural ecosystems in building resilient communities.

Recommendations

Broad and specific recommendations have been collected across the state from RFPG committee members and collaborators, including:

1. Increase funding for and use of Nature Based Solutions, and reduce hurdles to their incorporation into the Regional Flood Plans as Flood Mitigation Strategies, Evaluations and Projects by:
    a. Increasing number of trainings and workshops on accurate cost benefit analysis and use of NBS;
    b. Improving modeling methods to provide greater sensitivity beyond traditional hydrological models to include soil porosity and moisture holding capacity, plant interception, evaporation, and transpiration; and other processes that affect flows and interactions with groundwater; as well as water quality improvements and groundwater recharge that can be realized with NBS;
    c. Expanding the TWDB's concept of "adverse impact" to include loss of functioning floodplains and the resiliency that they provide;
    d. Incentivizing collaboration across watersheds and jurisdictions towards a regional approach to floodplain management using NBS by prioritizing such projects.

2. Ensure that the TWDB's cost benefit analysis appropriately weights projects offering:
    a. Increased social and environmental benefits,
    b. Reduced negative environmental impact,
    c. Reduced cost avoidance for infrastructure replacement (for data on gray infrastructure replacement costs: https://mediaspace.du.edu/media/David+Skuodas+-+Seeing+the+Forest+and+the+Trees/1_g90zp1xz), and

d. Increased flood prevention for future conditions while also creating resiliency to recover after natural disasters.

3. Recognize the role that land development codes and location of infrastructure have on flood impacts:
    a. Educate on the need for counties to use their ability provided by the State to exert authority to influence development and reduce negative impacts to natural features that mitigate flooding and enable counties to levy stormwater/drainage utility fees to retrofit and maintain natural flood infrastructure,
    b. Promote and fund the use of NBS throughout watersheds with the understanding that most natural flood mitigation features, including floodplains, are in some state of degradation and can be improved with appropriate land use policies,
    c. Recommend policy changes that enable Counties or Groundwater Conservation Districts to protect Natural Aquifer Storage and Recovery features (e.g., karst, fracture zones, and sinkholes) that help mitigate flood severity while transferring potential flood water into aquifers, and
    d. Partner with other agencies to incorporate flood considerations into applicable agency activities (e.g., ensure TxDOT builds to 1% annual probability ("100-year") standards and uses updated flood maps defined by the National Oceanic and Atmospheric Administration (currently the Atlas 14 data) and that such infrastructure does not increase downstream flooding nor damage floodplains and riparian corridors.

4. Specific project recommendations:
    a. Fund a Texas Watershed Initiative similar to Louisiana's[1] with a robust program on use and adoption of NBS,
    b. Provide training and technical resources to flood districts, river authorities, municipal utility districts, water control and improvement districts, and municipal and county floodplain managers to advance understanding and adoption of NBS and best practices for maintaining floodplains and other natural flood mitigation features to fully realize potential benefits,
    c. Use all available federal and state programs to prioritize the preservation and restoration of natural flood mitigation features throughout watersheds,
    d. Develop a compendium of Nature-Based resources for non-coastal communities, and
    e. Review submitted FMPs, FMEs and FMSs submitted for this first 5-year cycle to determine the feasibility to augment with NBS aspects.

Conclusions

If preventative flood mitigation strategies are not prioritized for funding, then flood events will be more frequent and cause greater harm, leading to much higher costs for Texas taxpayers. Similarly, if natural infrastructure that mitigates flooding is degraded, undoing the damage to some of these features may be cost-prohibitive. Retrofitting with flood control projects is also not cost-effective, given pathways for prevention already in use in many other states. Conversely, strategically protecting natural infrastructure and placing Nature Based Solutions throughout a watershed can significantly reduce flood risks along tributaries and major riverine systems alike.

[1] https://watershed.la.gov/nature-based-solutions

Public Comment #9

National Wildlife Federation's Letter of Recommendations to Region 3 Regional Flood Planning Group Promoting an Equitable Regional Flood Plan, the Protection of Natural Flood Mitigation Features, and Use of Nature Based Flood Mitigation Solutions

Background

State legislation enabling the Regional Flood Plan process provided guidelines and deliverables to be accomplished by each flood planning group, with regional plans becoming the basis of a state flood plan. These plans would be developed through the creation and identification of projects to be considered for future funding. Enabling legislation also directed the Texas Water Development Board (TWDB) to identify and evaluate natural flood mitigation features and include Nature Based Solutions (NBS) among proposed flood mitigation projects.

Region 3, along with all the other Regional Flood Planning Groups (RFPGs) have had to work under a tight timeline during the initial planning round – and we appreciate the work the Region has put into making a holistic flood plan. In particular, in addition to the various flood mitigation evaluations, strategies, and projects that incorporate nature-based solutions, we are encouraged by the following items included in Region 3's draft Regional Flood Plan:

- *Legislative Recommendations*:
    - 8.1.1. (Increase state funding to help counties maintain drainage and stormwater infrastructure in unincorporated areas);
    - 8.1.3. (Provide funding and/or technical assistance to develop regulatory floodplain maps); and
    - 8.1.7. (Extend Local Government Code, Title 13, Subtitle A, Chapter 552 to allow counties the opportunity to establish and collect drainage utility fees in unincorporated areas).
- *State Flood Planning Recommendation*:
    - 8.3.2. (Develop a fact sheet and/or other publicity measure to encourage entities to participate in the regional flood planning effort).
- *Adopted Flood Protection Goals*:
    - Increase acreage of publicly protected natural areas for flood and ecosystem purposes to reduce future impacts of flooding;
    - Increase number of nature-based practices as part of flood risk reduction projects; and
    - Increase the number of participating entities in the regional flood planning process.

While Region 3 and the TWDB has been very responsive to the questions and concerns expressed by the public and various RFPGs, the process and initial regional planning round has highlighted several areas of concern regarding the evaluation of natural flood mitigation features for their level of function and the incorporation of NBS into flood control strategies. This process highlighted the current lack of data specific to Texas regions needed to accurately evaluate natural flood mitigation features and, therefore, the need for methods beyond a traditional Hydrologic Engineering Center's - River Analysis System (HEC-RAS) approach. In addition, Technical Consultant outreach to communities demonstrated the need to increase knowledge on incorporating Nature Based Solutions into flood control strategies.

Equity and nature-based solutions will need to be woven into every facet of this program and incorporated into future policies and strategies in order to empower community collaboration and leverage the state's vast network of natural ecosystems in building resilient communities.

The following **comments and recommendations specific to Region 3** seek to better ensure an equitable flood plan, and one that centers natural infrastructure and nature-based projects. We recognize that the region will not be able to address some comments provided, however it is our hope that during subsequent rounds, these comments will be taken into consideration.

I. *We support Region 3's "future conditions analysis" that applied the State Climatologist Recommendations to local studies to better incorporate climate change considerations*

Future conditions analysis is a vital component in the Regional Flood Planning Process. A 2020 report[1] published by the Association of State Floodplain Managers highlighted the following statistics:

- by 2100, the 1% annual chance floodplain would increase in size by 45% in riverine areas and of that growth, 30% would be attributable to development and 70% to climate change;
- coastal special flood hazard areas would increase by as much as 55% by 2100; and
- Sea level rise is accelerating and a majority of coastal communities will experience 30 days of high tide flooding annually by 2050.

These are just a few statistics that show just how quickly floodplains are changing both due to development and climate change. This makes future conditions analysis critical in determining the flood needs of the region.

[1]ASFM, Flood Mapping for the Nation: A Cost Analysis for Completing and Maintaining the Nation's NFIP Flood Map Inventory, available at: https://asfpm-library.s3-us-west-2.amazonaws.com/FSC/MapNation/ASFPM_MaptheNation_Report_2020.pdf.

For the potential future 100-year floodplain, Region 3 used the existing 500-year floodplain quilt as a proxy for the maximum increase and applied the State Climatologist's recommendations to two large scale regional rain on grid studies to determine the minimum extent of the future 100-year floodplain.[2] A 40 foot buffer was provided along the future 100-year floodplain to determine the extent of the 500-year flood hazard boundary.

By incorporating the State Climatologist's recommendations on climate change considerations into future conditions analysis, climate change impacts are taken into consideration through this proxy. While additional studies would be helpful to help refine the methodology across the region, we are pleased to see utilization of local studies and incorporation of the State Climatologist's recommendations.

II. Add a Flood Protection Goal to have increased enforcement of floodplain ordinances

Region 3 noted that approximately 44% of entities within the region have low, none, or unknown activity with regards to enforcing floodplain regulations. As is noted in the Draft Flood Plan, "[t]hese entities have a significant opportunity to improve the effectiveness of their ordinance or court order by increasing the enforcement of their existing floodplain ordinances." In order to address this shortfall, we recommend that Region 3 adopt a Goal under Category 3 to increase enforcement of floodplain ordinances.

III. Add a Flood Protection Goal to decrease number of FMPs that have negative impacts associated with the project and add an administrative recommendation to provide best management practices to local entities on how to avoid negative impacts

In the draft Flood Plan, six out of seven projects would result in negative impacts, such as increased Water Surface Elevation (WSE) or an increase in peak flow. The goal for these projects is to provide flood mitigation benefits to the region, and we are concerned that projects with significant negative impacts, are not properly mitigated for. The region, therefore, should strive to decrease the amount of projects with negative impacts over time – which could be reflected in a Flood Protection Goal. Further, Region 3 can provide an administrative recommendation to the TWDB to provide best management practices to local entities on how to reduce negative impacts associated with projects.

IV. Adopt NFIP participation as a minimum floodplain management standard

Region 3 did not adopt any minimum floodplain management standards into its draft plan. Minimum floodplain management standards can be adopted by the region, which local entities

[2] Region 3, Draft Regional Flood Plan, at 2-111.

must adopt before a FME, FMS, or FMP is included under the Regional Flood Plan, and therefore eligible for funding under FIF.

We encourage Region 3 to consider NFIP participation as a minimum floodplain management standard. In Region 3, 87% of all communities participate in the NFIP and 89% of communities have floodplain regulations that meet or exceed NFIP minimum standards.[3] Participation in the NFIP requires participants to adopt a floodplain management ordinance and to designate a floodplain administrator who is responsible for understanding and interpreting local floodplain management regulations and reviewing them for compliance with NFIP standards.

Since floodplain management ordinances and designation of a floodplain administrator are essential to proper flood planning at the local level, requiring the remaining communities to participate in the NFIP seems like an appropriate baseline, before entities can potentially receive funding for flood mitigation projects. We recommend that the Region uses its power to adopt minimum floodplain standards, by requiring NFIP participation as a minimum standard. This adoption received 49% support during surveying done by the region.[4]

V. Add a regulatory recommendation to direct TWDB to provide best management practices on how to incorporate assumptions into modeling future conditions

Region 3 requested local maps and models from communities within the region, and a few communities included future conditions in their mapping and modeling. However, the Region noted that assumptions varied from one entity to another in regard to information included in determining future conditions. We recommend that Region 3 encourage the TWDB to provide best management practices and guidance to local entities on how to incorporate climate change into their modeling. This guidance can be modeled after the State Climatologist's Climate Change Recommendations for Regional Flood Planning document.[5]

VI. Include impact to natural infrastructure when analyzing "No Negative Impacts"

Of 33 potential FMPs, 7 were adopted in the Draft Flood Plan as FMPs. Even out of the 7 FMPs, 6 showed negative impacts, with one project meeting all No Negative Impact requirements. There seemed to be considerable discretion from the Region on which projects to incorporate, using engineering judgment. For example, the West Irving Creek Phases 2, 3, and 4 showed increases in peak discharge in downstream areas due to significant increase in channel capacity. Appendix F notes that impacts however, "are fully contained within the proposed channel and

[3] Region 3, Draft Regional Flood Plan, at 3-3.
[4] Region 3, Draft Regional Flood Plan, at 3-18.
[5] John Nielsen-Gammon and Savannah Jorgensen, Climate Change Recommendations for Regional Flood Planning (April 16, 2021) available at: https://climatexas.tamu.edu/files/CliChFlood.pdf.

do not cause any adverse impact to adjacent properties." The description later goes on to state that "[t]here is one area within the project's zone of influence that would experience an increase of approximately 1 foot in water surface elevation but this is a public park area with no insurable structures." Open spaces, such as parks, provide significant flood mitigation benefits to neighboring communities. The analysis of "No Negative Impacts" should include impacts to natural infrastructure. A one foot increase in water surface elevation could result in reduced ability for the park to provide flood mitigation benefits, which should be considered when selecting FMPs for the region.

VII. Consider discretion when analyzing nature-based FMPs and provide an administrative recommendations to the TWDB on how to apply potential FMP requirements to nature-based projects

Only projects with significant amounts of detail are incorporated as Flood Management Projects in the Draft Regional Flood Plans. We are concerned that natural infrastructure projects could be downgraded to FMSs due to lack of data provided to the Region. It is important to note that analyses like the BCR are not always tailored for natural infrastructure projects. For example, while preserving open space within the floodplain helps protect land from development which could negatively impact flooding, a traditional BCR may not adequately account for protection of development that hasn't occurred yet. Since we are unsure where to view which projects were submitted to the Region, but subsequently removed because it didn't align with a goal or other reason, or downgraded to a strategy, we recommend the RFPG to provide discretion to potential FMPs that are largely nature-based. We also encourage the Region to provide an administrative recommendation to the TWDB to provide guidance to the Regions on how to apply potential FMP requirements to nature-based projects.

VIII. Refine Assessment and Identification of Flood Mitigation Needs

Critical facilities in particular need additional attention when assessing and identifying flood mitigation needs. Certain critical facilities pose higher risk to surrounding communities during flooding, such as superfund sites and refineries. We recommend that the Region include in its weighted approach risks based on the number of industrial facilities that pose environmental justice risks to neighboring and fenceline communities. If facilities are identified that are within floodplains and are not adequately protected, the region should propose legislative, administrative, and regulatory recommendations to better ensure facilities do not pose a risk to neighboring communities during flooding.

Include natural features in flood exposure analysis

Region III provides a good description of the protective values provided by healthy and functional natural systems. Losing these critical systems means that the flood risks will often compound for communities due to the loss of the hazard risk reduction provided by them. We recommend including natural systems in the flood exposure assets to assess damages for present and future flood risks which can help delineate areas most prone to flooding, priority areas for conservation and flood mitigation, and subsequently influence recommendations for FMPs.

We appreciate the work the Region is doing to help better plan for and protect our communities from flooding. Further, we appreciate the opportunity to submit these comments. In addition to the comments, above, we've attached a letter providing additional comments for consideration by the region during future planning cycles.

Sincerely,

Arsum Pathak
Adaptation and Coastal Resilience Specialist, South Central Region
National Wildlife Federation
PathakA@NWF.org

Danielle Goshen
Policy Specialist/Counsel, Texas Coast and Water Program
National Wildlife Federation
GoshenD@NWF.org

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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
General	1	Please ensure that all "submittal requirements" identified in each of the Exhibit C Guidance document sections are submitted in the final flood plan.	1	All "submittal requirements" identified in each of the Exhibit C Guidance document sections will be included in the final flood plan.
1	2	Existing Infrastructure GIS Feature Class, ExFldInfraPt: Please include all low water crossings (LWCs) identified during the flood planning process in this feature layer. The ExFldExpAll feature class contains 2,830 LWCs, and the ExFldInfraPt feature class contains only 1,285 LWCs. Note: This is required in contrast to the optional LWC feature class. See Table 7 of Exhibit D for a list of valid entries [31 TAC §361.31].	1	Number mismatches will be identified and reconciled where applicable
1	3	Existing Infrastructure GIS Feature Class, ExFldInfraPol: It appears that some fields are missing entries, including 'NATBUILT', 'CONDITION', and 'LOS'. Please ensure all required fields are populated with valid entries per Exhibit D Table 5 [31 TAC §361.31 & Exhibit D 3.3].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. Per call on 11/03/2022, preference is to use default ArcGIS <null>
1	4	Existing Infrastructure GIS Feature Classes, ExFldInfraLn: It appears that some fields are missing entries, including 'NATBUILT', 'CONDITION', 'LOS', 'DEF_TYPE', and 'DEF_DESCR'. Please ensure all required fields are populated with valid entries per Exhibit D Table 6 [31 TAC §361.31 & Exhibit D 3.3].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. Per call on 11/03/2022, preference is to use default ArcGIS <null>
1	5	Existing Projects Table 2: It appears that some fields are missing entries, including 'HUC8' and 'Project Status'. Please ensure all required fields are populated with valid entries per Exhibit C Table 2 [31 TAC §361.32].	1	GIS Layer is attributed. Need to Reconcile with Table 2
1	6	Existing Projects GIS Feature Class, ExFldProjs: It appears that some fields are missing entries, including 'EXPRJDESC' and 'FUNDING'. Please ensure all required fields are populated with valid entries per Exhibit D Table 8 [31 TAC §361.32].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. Per call on 11/03/2022, preference is to use default ArcGIS <null>
2A	7	Existing Condition Flood Hazard Analysis: It appears that a summary depicting flood type is missing. Please include a summary of total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency [Exhibit C Section 2.2.A.1, page 24, Submittal requirement #2].	1	Table will be included to show summary by flood risk type. Verify from TWDB if table is needed in Report also
2A	8a	Existing Condition Flood Hazard GIS Feature Class, ExFldHazard: The Total Area in Floodplain for both 1% and 0.2% Annual Chance Flood Risks in Table 3 does not appear to match the same area totals in the ExFldHazard feature class. Please review and reconcile as appropriate.	1	Number mismatches will be identified and reconciled where applicable
2A	8a [sic]	Existing Condition Flood Hazard GIS Feature Class, ExFldHazard It appears that some fields are missing entries, including 'HUC8'. Please ensure all required fields are populated with valid entries per Exhibit D Table 9 [31 TAC §361.33(b)].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. Per call on 11/03/2022, preference is to use default ArcGIS <null>
2A	9a	Existing Condition Flood Exposure (Exhibit C Table 3): Please ensure that the feature counts for both Residential Structures and total Structures are consistent with the ExFldExpAll GIS feature class.	1	Number mismatches will be identified and reconciled where applicable
2A	9b	Existing Condition Flood Exposure (Exhibit C Table 3): The day and night populations in Table 3 do not appear to match those in the ExFldExpAll feature class. Please review and reconcile [31 TAC §361.33 & Exhibit C 2.2.A.3].	1	Number mismatches will be identified and reconciled where applicable

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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
2A	10	Existing Condition Flood Exposure GIS Feature Class, ExFldExpPt: Please ensure that the following facility types are included in the Polygon (ExFldExpPol) feature class instead of the Point (ExFldExpPt) feature class: Schools, hospitals, and fire stations [31 TAC §361.33(c) & Exhibit C 2.2.A.2].	1	Data type received was used as-is. Critical Facilites were received as point data. Guidelines didn't specify to change to polygon in Exhibit C and D. Significant effort was used to fix building data received including geometry issues and fixing some of the building type designations. Overall, the exposure counts, populations, etc. has been greatly improved. The extra signifcant effort needed to make this change with very little time (and in a highly developed basin like Trinity with large datasets) will not change to the resuts at a planning level. Per call on 11/03/2022, TWDB wants numbers to match between points, lines, and polygons for exposure counts. TWDB asked that we do the minimum and ensure that any critical facilities data received as points are accounted for in the building polygon layer. Not necessary to re-attribute existing buildings as critical faciities in areas where there are multiple buildings like schools and hospitals.
2A	11a	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: It appears that this feature class may not equal the sum of point, line, and polygon layers. Please ensure that count of ExFldExpAll is the sum of ExFldExpPt, ExFldExpLn, and ExFldExpPol feature class counts.	1	Number mismatches will be identified and reconciled where applicable
2A	11b	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: Please ensure that the following facility types are included in the Polygon (ExFldExpPol) feature class instead of the Point (ExFldExpPt) feature class: Schools, hospitals, and fire stations.	1	Data type received was used as-is. Critical Facilites were received as point data. Guidelines didn't specify to change to polygon in Exhibit C and D. Significant effort was used to fix building data received including geometry issues and fixing some of the building type designations. Overall, the exposure counts, populations, etc. has been greatly improved. The extra signifcant effort needed to make this change with very little time (and in a highly developed basin like Trinity with large datasets) will not change to the resuts at a planning level. Per call on 11/03/2022, TWDB wants numbers to match between points, lines, and polygons for exposure counts. TWDB asked that we do the minimum and ensure that any critical facilities data received as points are accounted for in the building polygon layer. Not necessary to re-attribute existing buildings as critical faciities in areas where there are multiple buildings like schools and hospitals.
2A	11c	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: It appears that the Structure count in Table 3 does not match the count in ExFldExpAll. Please reconcile.	1	Number mismatches will be identified and reconciled where applicable
2A	11d	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: The day and night populations in Table 3 do not appear to match those in the ExFldExpAll feature class. Please review and reconcile.	1	Number mismatches will be identified and reconciled where applicable
2A	11e	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: It appears that some fields contain invalid entries, including 'CRIT_TYPE' and 'EXP_TYPE'. Please ensure all required fields are populated with valid entries Exhibit D Table 14.	1	The Valid Value Domain List will be updated per recent TWDB updates and applied to layers
2A	11f	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: Please use the updated 'CRIT_TYPE' valid entry list: "Medical, Police, Fire, EMS, Shelter, School, Infrastructure, Water Treatment, Wastewater Treatment, Power Generation, Other" [31 TAC §361.33(c),(d) & Exhibit C 2.2.A.2].	1	Similar to 11 e and will be revised where applicable

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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
2A	12	Existing Vulnerability Map (Exhibit C Map 7): It appears the map displays an average SVI per county. Please depict all features (structures, low water crossings, critical infrastructure, etc.) with SVI values over 0.75 in the region [31 TAC §361.34(d),(e) & Exhibit C 2.2.A.3 Submittal requirements 2 & 3].	1	Map appears to be available. Will check with TWDB if something else needed. Per call on 11/03/2022, TWDB was not looking at the Appendix folder that has all the final submitted required maps. They confirmed this on the call and will revert back if we need to place maps elsewhere in the final submittal
2A	13	Model Coverage GIS Feature Class, ModelCoverage: It appears that some fields contain invalid/missing entries, including 'MODEL_ID' and 'MODEL_SOFTW'. Please ensure all required fields are populated with valid entries per the Summary Update to Exhibit D document available on the TWDB website [31 TAC §361.33(b)(2)].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999
2B	14	Future Condition Flood Analysis text: It appears that a summary depicting flood type is missing. Please include a summary table of total land areas (square miles) of flood risk by flood risk type, counties, regions, and frequency [Exhibit C Section 2.2.B.1, page 33, Submittal requirement #3].	1	Table will be included to show summary by flood risk type. Verify from TWDB if table is needed in Report also
2B	15	Future Condition Map Gaps GIS Feature Class, Fut_Map_Gaps: It appears that some fields are missing entries, including 'COUNTY'. Please ensure all required fields are populated with valid entries [31 TAC §361.34(b)(6)].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. Per call on 11/03/2022, preference is to use default ArcGIS <null>
2B	16	Future Condition Flood Exposure GIS Feature Class, FutFldExpLn: It appears that some fields are missing entries, including 'HUC8'. Please ensure all required fields are populated with valid entries per Exhibit D Table 17 [31 TAC §361.34(c) & Exhibit D 3.6.2].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999 Per call on 11/03/2022, preference is to use default ArcGIS <null>
2B	17	Future Condition Flood Exposure GIS Feature Class, FutFldExpAll: It appears the count for this feature class is more than sum of features in the FutFldExpPol, FutFldExpLn, and FutFldExpPt feature classes. Please reconcile. [31 TAC §361.34(c) & Exhibit D 3.6.2].	1	Number mismatches will be identified and reconciled where applicable
2B	18	Future Vulnerability Map (Exhibit C Map 12): It appears the map displays an average SVI per county. Please depict all features (structures, low water crossings, critical infrastructure, etc.) with SVI values over 0.75 in the region [31 TAC §361.34(d), Exhibit C 2.2.B.3 Submittal requirements 2 & 3].	1	Map appears to be available. Will check with TWDB if something else needed. Per call on 11/03/2022, TWDB was not looking at the Appendix folder that has all the final submitted required maps. They confirmed this on the call and will revert back if we need to place maps elsewhere in the final submittal
3A	19	Existing Floodplain Management Practices GIS Feature Class, ExFpMp: It appears that some fields contain invalid entries, including 'LEV_ENFRC'. Please ensure all required fields are populated with valid entries per Exhibit D Table 20 [31 TAC §361.35 & Exhibit D 3.7].	1	The Valid Value Domain List will be updated per recent TWDB updates and applied to layers
4B	20	Streams GIS Feature Class, Streams: It appears that some fields are missing entries, including 'STR_NAME'. Please ensure all required fields are populated with valid entries per Exhibit D Table 22 [Exhibit D 3.9].	1	Missing attributes will be populated where applicable. Additonal required attribute data where not available will be left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999. For stream segments with no names, should we do "Unnamed Stream"? Per call on 11/03/2022, preference is to use default ArcGIS <null>
4B	21	Flood Management Evaluations (FME) GIS Feature Class, FME: Several required fields contain NULL values. For example, 'SOURCE' and 'DESCR'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 23 [31 TAC §361.38(i) & Exhibit D 3.10].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999 Per call on 11/03/2022, preference is to use default ArcGIS <null>

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4B	22	Flood Management Evaluations (FME) Map (Exhibit C Map 16): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.38(m) & Exhibit C 2.4.B].	1	Another feature class can be added to the map to show this designation for previously studied areas. Every recommended FME will leverage any existing studies and H&H models and expand the analysis as necessary to achieve a higher level of detail that will allow performing an accurate No Negative Impact Analysis.
4B	23	Flood Mitigation Projects (FMP) (Exhibit C Table 13): It appears that some FMPs do not have a BCR. Please include a BCR for each project. Consider using the TWDB BCR tool as appropriate [31 TAC §361.38(c-e) & Exhibit C 2.4.B].	1	Table 13 for the potentially feasible FMPs includes a column for BCR. However, the BCR requires significant effort to develop for FMPs that are ultimately not recommmended. The BCRs for the potentially feasible FMPs that are not recommended are assumed to be zero. The table will be populated accordngly.
4B	24	Flood Mitigation Projects (FMP) GIS Feature Class, FMP: Several required fields contain NULL values. For example, 'RECOMMEND' and 'FARMACRE100'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361. 38(c-e)].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999
4B	25	Flood Management Strategies (FMS) (Exhibit C Table 14): Please add the 'Nonrecurring, Noncapital Cost ($)' field. Please include the estimated non-recurring, noncapital cost, and if available, the estimated total strategy cost separately in 'Estimated Total Strategy Cost ($)'. Refer to the Summary Update to Exhibit D document available on the TWDB website for more detail on how to properly include this data [31 TAC §361.38(d) & Exhibit C 2.4.B].	1	GIS fields will be added and updated
4B	26	Flood Management Strategies (FMS) GIS Feature Class, FMS: Several required fields contain NULL values. For example, 'CONSTRUCT', 'REDSTRUCT100', and 'REMSTRC500'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361. 38(d)].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999

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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
5	27.a.i	Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following: West Irving Creek Phases 2, 3, and 4 (FMP 033000008) Approximately 1ft increase in elevation of water surface elevation (WSE) in public park may be allowable if associated mitigation measures as part of implementation of project will alleviate negative impacts.	1	Table 5.3.1 in Appendix F will be updated to include rationale behind the determination of No Negative Impacts based on engineering judgement. The West Irving Creek Drainage Improvements Comprehensive Planning Study (FNI, 2022) describes the alternatives that were considered for this area as part of the project design (Section 3.3.1). Multiple grading alternatives were presented to the City Parks Department, and after discussion it was decided that some alternatives would not be feasible for construction while others would be investigated further during the design phase of the project. The first alternative involved grading out a bench above the Ordinary High Water Mark (OHWM). This option resulted in the greatest WSE decreases, but grading would result in the removal of Markwood Park. The second alternative involved deepening the channel. This option would cause moderate impact to Markwood Park, but it would conflict with existing sewer lines in the park and require more extensive environmental permitting as grading would occur below the OHWM. Both alternatives were discarded by the CIty since they would cause negative impacts on Markwood Park. Three additional alternatives were investigated. All involved grading out a bench in the Dallas College Irving Center Campus above the OHWM. These would provide greater capacity and storage and would also allow the majority of the existing open space in the Dallas College Irving Center campus to remain in use. In Markwood Park, various levels of grading and modifications were considered. Through evaluation of these alternatives, it was determined that grading in the Dallas College Irving Center campus provides significant benefits and is necessary in order for any changes within Markwood Park to be beneficial. The improvements in the Dallas College Irving Center campus will remove six structures from the 100-year floodplain, and the finalized Markwood Park improvements will not impact the design of the upstream channel. Further evaluation of the Markwood Park alternatives will be
5	27.a.ii	Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following: West Irving Creek Phases 2, 3, and 4 (FMP 033000008) Please identify jurisdiction and regulation or other basis that allows for a 1foot of increase in WSE in a public park. Please locate the public park on map.	1	Public park areas within the City's jurisdiction will be identified on a map along with existing and proposed 100-yr floodplain limits. See response to comment #27.a.i for rationale behind the selection of the current alternative and why this was considered the option with the least impacts to the City park areas.
5	27.b	Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following: Arlington VC(A)-1 (FMP 033000016): Appendix F page F-15 states “The increases do not impact insurable structures in the watershed.” Please confirm that the project does not increase inundation of infrastructure such as residential and commercial buildings and structures’ as per Exhibit C Section 3.6.A (page 108) or remove project from the recommended project list.	1	Model results will be reevaluated to determine if the reported increases in WSE would impact infrastructure such as residential and commercial buildings and structures. Initial research indicates the increases in WSE are contained within drainage easements or roadway right-of-way.

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5	27.c.i	Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following: Linwood Park Flood Mitigation (FMP 033000031): Please provide additional clarification about the ~3ft increase. Is this increase below ground? Does this impact any structures? Is the increase contained within drainage easement. Please confirm that the project does not increase inundation of infrastructure such as residential and commercial buildings and structures' as per Exhibit C Section 3.6.A (page 108) or remove project from the recommended project list.	1	Model results will be reevaluated to identify the exact location where this increase is observed. Additional clarification and/or justification for considering that this FMP has no negative impacts will be provided.
5	27.c.ii	Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following: Linwood Park Flood Mitigation (FMP 033000031): Please identify locations of water surface elevation (WSE) increase and clarify how it does not cause negative impact [31 TAC §361.38(c-e)].	1	Model results will be reevaluated to identify the exact location where this increase is observed. Additional clarification and/or justification for considering that this FMP has no negative impacts will be provided.
5	28	Flood Mitigation Project (FMP) Recommendations: Each recommended FMP must be accompanied with an associated model or supporting documentation to show no negative impact. Please confirm that this was done and provide reference to supporting materials.	1	The models were uploaded prior to the September 30, 2022 deadline. The name of the associated FMP model will be added to the FMP summary table in the chapter.
5	29	Flood Management Evaluation (FME) Recommendations GIS Feature Class, FME: Several required fields contain NULL values. For example, 'ROADCLS', and 'SOURCE'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 23 [31 TAC §361.39(c),(f) & Exhibit D 3.10].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999
5	30	Flood Management Evaluation (FME) Recommendations Map (Exhibit C Map 19): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.39 & Exhibit D 3.10].	1	Another feature class can be added to the map to show this designation for previously studied areas. Every recommended FME will leverage any existing studies and H&H models and expand the analysis as necessary to achieve a higher level of detail that will allow performing an accurate No Negative Impact Analysis.
5	31	Flood Mitigation Project (FMP) Recommendations GIS Feature Class, FMP: Several required fields contain NULL values. For example, 'RECOMMEND' and 'COSTSTRUCT'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361.39 & Exhibit D 3.11.1].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999
5	32	Flood Management Strategies (FMS) Recommendations GIS Feature Class, FMS: Several required fields contain NULL values. For example, 'RECOMMEND', 'CONSTRUCT', 'REDSTRUCT100', and 'REMSTRC500'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 26 [31 TAC §361.39 & Exhibit D 3.10].	1	Additonal required attribute data where not available left as null. Will check with TWDB to leave as ArcGIS <null>, null empty string " ", or 999999
General	33	To better align with our agency's preferred nomenclature, please consider using the name, "Cursory Floodplain Data" instead of "Fathom" or Cursory Fathom Data" throughout the regional flood plan.	2	Noted. No changes made.
ES	34	Please consider updating blank highlighted section (Page ES-2)	2	The word "approved" will replace the blank highlighted section on Page ES-2.
1	35	Planning Area Description text: Please consider providing a description of how Low Water Crossings were identified within the text of Chapter 1.	2	The source of the low water crossings is already included below Table 1.9 in the Draft Flood Plan. Additionally, references to Chapter 2 are already included in the text of of the Draft Flood Plan. No changes made.

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1	36a	Existing Infrastructure Map (Exhibit C Map 1): It appears that the wetlands in Map 1 do not seem to represent the full extent of the wetlands in ExFldInfraPol. Please consider reviewing and revising as appropriate.	2	Will verify and update if applicable
1	36b	Existing Infrastructure Map (Exhibit C Map 1): Map 1 in Appendix B-Required Maps does not appear to include a title. Please consider adding.	2	Map appears to show Title. Check with TWDB
1	37a	Deficient Infrastructure Map (Exhibit C Map 3): Please consider matching the black outline on the dam symbol used in the legend.	2	Will check on this and revise where applicable
1	37b	Deficient Infrastructure Map (Exhibit C Map 3): Map 3 in Appendix B-Required Maps does not appear to include a title. Please consider adding.	2	Map appears to show Title. Check with TWDB Per call on 11/03/2022, TWDB was not looking at the Appendix folder that has all the final submitted required maps. They confirmed this on the call and will revert back if we need to place maps elsewhere in the final submittal
1	38	Previous Studies Text: Please consider including a list of previous flood studies considered by the RFPG to be relevant to development of the RFP.	2	Noted. No changes made.
1	39	Existing Projects Map (Exhibit C Map 2): Please consider improving map readability of text and the extents of existing projects.	2	Map seeems to be readable at 30% zoom and above Per call on 11/03/2022, TWDB was not looking at the Appendix folder that has all the final submitted required maps. They confirmed this on the call and will revert back if we need to place maps elsewhere in the final submittal
2A	40	Existing Condition Gaps GIS Feature Class, Ex_Map_Gaps: Please consider clipping this feature class to the planning region.	2	Features will be clipped to the Region
2A	41a	Existing Condition Flood Exposure GIS Feature Class, ExFldExpPol: Please ensure that critical facilities are not duplicated in the point and polygon feature classes. It is preferred for critical features to be shown in the polygon feature class.	2	Data type received was used as-is. Critical Facilites were received as point data. Guidelines didn't specify to change to polygon in Exhibit C and D. Significant effort was used to fix building data received including geometry issues and fixing some of the building type designations. Overall, the exposure counts, populations, etc. has been greatly improved. The extra signifcant effort needed to make this change with very little time (and in a highly developed basin like Trinity with large datasets) will not change to the resuts at a planning level. Per call on 11/03/2022, TWDB wants numbers to match between points, lines, and polygons for exposure counts. TWDB asked that we do the minimum and ensure that any critical facilities data received as points are accounted for in the building polygon layer. Not necessary to re-attribute existing buildings as critical faciities in areas where there are multiple buildings like schools and hospitals.
2A	41b	Existing Condition Flood Exposure GIS Feature Class, ExFldExpPol: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please review and revise, as appropriate.	2	This is a function of floodplain geometry. Even if the agricultural areas were smoothed, clipping to get exposure in Existing and future conditions mapping will still generate slivers. Not using the agric data as classified and received will affect the calulcated dollar exposure values, since they are dependent on a areas (acreage, etc.) when calculating the agric $ value density. We will avoid filling holes in the polygons from the rasters and use as-is for not to avod data mis-interpretation issues. This dataset is quite and large and challenging to geoprocess in a short time for exposure analysis, so will keep as-is for this cycle.

TWDB Comments on Draft Trinity Regional Flood Plan with Proposed Responses
(Received October 18, 2022)

Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
2A	42.a	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please consider reviewing and revising, as appropriate.	2	This is a function of floodplain geometry. Even if the agricultural areas were smoothed, clipping to get exposure in Existing and future conditions mapping will still generate slivers. Not using the agric data as classified and received will affect the calulcated dollar exposure values, since they are dependent on a areas (acreage, etc.) when calculating the agric $ value density. We will avoid filling holes in the polygons from the rasters and use as-is for not to avod data mis-interpretation issues. This dataset is quite and large and challenging to geoprocess in a short time for exposure analysis, so will keep as-is for this cycle.
2A	42.b	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: Please ensure that critical facilities are not duplicated in the from the ExFldExpPt, ExFldExpLn, and ExFldExpPol feature classes.	2	Per call on 11/03/2022, TWDB wants numbers to match between points, lines, and polygons for exposure counts. TWDB asked that we do the minimum and ensure that any critical facilities data received as points are accounted for in the building polygon layer. Not necessary to re-attribute existing buildings as critical faciities in areas where there are multiple buildings like schools and hospitals.
2A	42.c	Existing Condition Flood Exposure GIS Feature Class, ExFldExpAll: Multiple cells have “0” entries for required fields 'POP_DAY’, ‘POP_NIGHT’, and ‘SVI’, which may be acceptable for vacant or unknown buildings. Please consider reviewing data for accuracy.	2	Per call on 11/03/2022, TWDB wants numbers to match between points, lines, and polygons for exposure counts. TWDB asked that we do the minimum and ensure that any critical facilities data received as points are accounted for in the building polygon layer. Not necessary to re-attribute existing buildings as critical faciities in areas where there are multiple buildings like schools and hospitals.
2A	43	Future Condition Gaps GIS Feature Class, Fut_Map_Gaps: Please consider clipping this feature class to the planning region boundary.	2	Features will be clipped to the Region
2B	44	Future Condition Flood Exposure GIS Feature Class, FutFldExpLn: Please consider including natural gas pipelines and electric power transmission lines in the future exposure analysis. Relevant data can be accessed through the Flood Planning Data Hub: https://twdb-flood-planning-resources-twdb.hub.arcgis.com	2	This dataset is already in our analysis for both existing and future in the ExFldExpLn and FutFldExpLn layers. We may just have to go and attribute it as CRITICAL. Most of these features were above ground, so including all of them as being exposed was over estimating to begin with. Will check with TWDB
2B	45.a	Future Condition Flood Exposure GIS Feature Class, FutFldExpPt: Please consider reclassifying features with entries of “Other” for the ‘EXP_TYPE’ field. For example, some features may be better categorized as “Roadway Stream Crossings”.	2	Will verify and update where applicable
2B	45.b	Future Condition Flood Exposure GIS Feature Class, FutFldExpPt: Please ensure that all roadway crossings with identified flood risk are shown. There appear to be some road crossings within the ExFldHazard layer that do not appear to be identified as point features (where the roads and streams cross within the ExFldHazard layer).	2	Will verify and update where applicable
2B	46.a	Future Condition Flood Exposure GIS Feature Class, FutFldExpAll: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please consider reviewing and revising, as appropriate.	2	This is a function of floodplain geometry. Even if the agricultural areas were smoothed, clipping to get exposure in Existing and future conditions mapping will still generate slivers. Not using the agric data as classified and received will affect the calulcated dollar exposure values, since they are dependent on a areas (acreage, etc.) when calculating the agric $ value density. We will avoid filling holes in the polygons from the rasters and use as-is for not to avod data mis-interpretation issues. This dataset is quite and large and challenging to geoprocess in a short time for exposure analysis, so will keep as-is for this cycle.
2B	46.b	Future Condition Flood Exposure GIS Feature Class, FutFldExpAll: Please ensure that points are included for polygons in the FutFldExpPol feature class. When converting from an exposure polygon, the centroid may be used or any other method determined to best locate the point. Please review why ExFldExpAll has more points than FutFldExpAll.	2	Will verify and update where applicable

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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
2B	46.c	Future Condition Flood Exposure GIS Feature Class, FutFldExpAll: If the 'CRITICAL' field contains a "No" entry, then please leave 'CRIT_TYPE' as NULL.	2	Will verify and update where applicable
4A	47	Greatest Gaps Map (Exhibit C Map 14): In the legend, please consider adding an explanation next to all colors possibly providing numbers next to the levels (e.g., 1=Lowest and 5=Highest).	2	Color codes reflect Flood Risk Knowledge Gaps primarily based on the Inadequate mapping criteria (See Table 4.4 in Chapter 4). We could include the % inadequate ranges shown in Table 4.4 to the levels in the legend to add clarity or adopt the TWDB recommendation and add numbers (1 to 5).
4A	48	Greatest Risk Map (Exhibit C Map 15): In the legend, please consider adding an explanation next to all colors possibly providing numbers next to the levels. (e.g., 1=Lowest and 5=Highest).	2	Color codes reflect a relative scale of Greatest Known Flood Risk. We will adopt the TWDB recommendation and add numbers (1 to 5) to levels in the legend to add clarity.
4B	49.a	Flood Management Evaluation (FME) text: Please consider reviewing the Watersheds and FME feature classes for alignment. For example, FME_ID: 031000110 does not appear to align with the Watershed boundary feature class. (Other examples include but are not limited to FME_IDs: 031000097-031000119, 031000131, 031000136, 031000140, 031000158, 031000173, 03100069)	2	GIS features will be updated where appropriate. Maps will be updated to match any changes.
4B	49.b	Flood Management Evaluation (FME) text: For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please consider explaining how the strategy benefits the region and please coordinate with other RFPGs to make sure that efforts are not duplicated. For example, FME_ID: 031000035 and 031000001.	2	All evaluations included in the Plan are partially or completely within the Trinity regional boundary. The Trinity RFPG wants to be inclusive of all counties within their boundary. Therefore, any recommended countywide evaluation will benefit the portion of the county within the Trinity region's jurisdiction. Coordination with adjacent regions has already started and it will be an ongoing process.
4B	49.c	Flood Management Evaluation (FME) text: Some FMEs appear to overlap. Please review the spatial boundaries of FME_ID: 031000110, 031000101, 031000118. Some overlap may be intended if there are differences in FME scope.	2	FME boundaries will be revised. It is very likely that overlap is due to having multiple studies with different scopes within the same basin.
4B	49.d	Flood Management Evaluation (FME) text: In areas where there are detailed FEMA maps, please describe how this would be incorporated into the County FEMA Mapping studies (FME ID: 031000001- 031000035).	2	Will edit Chapter 4 page 4-22 as follows: Flood mapping Updates: Flood mapping data helps communities quantify and manage their flood risk. It also provides communities a pathway to access flood insurance administered through the NFIP. Flood mapping FMEs were identified for all counties within the Trinity Region except for Tarrant and Dallas counties. The FMEs included both the development of regulatory maps where none exist and updating existing maps to account for revised rainfall data, recent development conditions, and advances in floodplain modeling and mapping methodologies. **Existing Base Level Engineering (BLE) studies will be leveraged and the H&H analysis will be expanded as necessary to achieve a higher level of detail that will allow communities to adopt the mapping products as Zone AE. Areas currently classified as FEMA Zone AE based on recent H&H studies (less than 10-yrs) are considered adequate and will not be updated as part of the recommended flood mapping FMEs.**
4B	49.e	Flood Management Evaluation (FME) text: For those areas in RFPG with existing BLE models state how the FME will improve upon the current BLE models (FME_ID: 031000001- 031000035). BLE is available for the entire Region 3. For reference the BLE data is available here: https://webapps.usgs.gov/infrm/estbfe/	2	Will edit Chapter 4 page 4-22 as follows: Flood mapping Updates: Flood mapping data helps communities quantify and manage their flood risk. It also provides communities a pathway to access flood insurance administered through the NFIP. Flood mapping FMEs were identified for all counties within the Trinity Region except for Tarrant and Dallas counties. The FMEs included both the development of regulatory maps where none exist and updating existing maps to account for revised rainfall data, recent development conditions, and advances in floodplain modeling and mapping methodologies. **Existing Base Level Engineering (BLE) studies will be leveraged and the H&H analysis will be expanded as necessary to achieve a higher level of detail that will allow communities to adopt the mapping products as Zone AE. Areas currently classified as FEMA Zone AE based on recent H&H studies (less than 10-yrs) are considered adequate and will not be updated as part of the recommended flood mapping FMEs.**

TWDB Comments on Draft Trinity Regional Flood Plan with Proposed Responses
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Task #	Comment #	TWDB Comment	Level #	Proposed RFPG Response
4B	49.f	Flood Management Evaluation (FME) text: In areas where there is an ongoing TWDB-funded FIF Category 1 study, please consider describing how duplication of efforts would be avoided and how TWDB-funded TWDB-funded FIF Category 1 study data would be incorporated into the proposed FMEs. For example, FME_IDs 031000003, 03100020, and 031000284 appear to overlap with current TWDB-funded FIF Category 1 studies such as FIF ID 40010 (Trinity River Mid-Basin Watershed Study Phase II).	2	Every recommended FME will leverage any existing studies and H&H models and expand the analysis as necessary to achieve a higher level of detail that will allow performing an accurate No Negative Impact Analysis for the specific alternative that will be recommended as a potential FMP for the second cycle of the State Flood Plan. The above general statement could be added as a new paragraph in Chapter 4 under the "Comparison and Assessment of Flood Mitigation Evaluations" section.
4B	50	Flood Management Evaluation (FME) GIS Feature Class, FME: Please consider filling out the 'MODEL_DESC' field for clarity on existing studies to be used. Please ensure existing or ongoing BLE and TWDB-funded FIF Category 1 studies are included.	2	This field will be populated to the extent possible considering time limitations.
4B	51	Flood Management Evaluation (FME) Map (Exhibit C Map 16): It appears unclear what various shades of orange represent. Please consider revising map for clarity.	2	The text in Chapter 4 indicates the following: "Color gradations in Figure 4.6 reflect the number of FMEs that overlap for the same area, the darker the color, the greater the number of FMEs." A similar footnote may be added to Map 16 for clarity.
4B	52	Flood Management Strategy (FMS) Table (Exhibit C Table 14): Please consider if FMS_IDs: 032000034, 032000042, 032000049, 032000053, 032000056-032000057, 032000074 should be reclassified as FMPs. Please refer to non-structural FMPs section in Exhibit C p. 54.	2	The listed FMSs will be reconsidered as non-structural FMPs, if adequate data has been provided by the Sponsor.
4B	53	Flood Management Strategy (FMS) GIS Feature Class, FMS: For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please consider including justification how the strategy benefits the RFPG and please coordinate with other RFPGs to make sure the efforts are not duplicated. For example, FMS_ID 032000087.	2	All evaluations included in the Plan are partially or completely within the Trinity regional boundary. The Trinity RFPG wants to be inclusive of all counties within their boundary. Therefore, any recommended countywide evaluation will benefit the portion of the county within the Trinity region's jurisdiction. Coordination with adjacent regions has already started and it will be an ongoing process.
4B	54	Flood Management Strategy (FMS) Map (Exhibit C Map 18): It appears unclear what various shades of red represent. Please consider revising map for clarity.	2	The text in Chapter 4 indicates the following: "Color gradations in Figure 4.8 reflect the number of FMSs that overlap for the same area, the darker the color, the greater the number of FMSs." A similar footnote may be added to Map 18 for clarity.
5	55	Flood Management Evaluation (FME) Recommendations text: In areas where there is an ongoing TWDB-funded FIF Category 1 study, please consider describing how duplication of efforts would be avoided and how TWDB-funded FIF Category 1 study data would be incorporated into the proposed FMEs. For example, FME_IDs 031000003, 03100020, and 031000284 appear to overlap with current TWDB-funded FIF Category 1 studies such as FIF ID 40010 (Trinity River Mid-Basin Watershed Study Phase II).	2	Every recommended FME will leverage any existing studies and H&H models and expand the analysis as necessary to achieve a higher level of detail that will allow performing an accurate No Negative Impact Analysis for the specific alternative that will be recommended as a potential FMP for the second cycle of the State Flood Plan. The above general statement could be added as a new paragraph in Chapter 4 under the "Comparison and Assessment of Flood Mitigation Evaluations" section.
5	56	Flood Management Evaluation (FME) Recommendations GIS Feature Class, FME: Please consider filling out the 'MODEL_DESC' field for clarity on existing studies to be used. Please ensure existing or ongoing BLE and TWDB-funded FIF Category 1 studies are included.	2	This field will be populated to the extent possible considering time limitations.
5	57	Flood Management Evaluation (FME) Recommendations Map (Exhibit C Map 19): It appears unclear what various shades of orange represent. Please consider revising map for clarity.	2	The text in Chapter 4 indicates the following: "Color gradations in Figure 4.6 reflect the number of FMEs that overlap for the same area, the darker the color, the greater the number of FMEs." A similar footnote may be added to Map 19 for clarity.

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

October 17, 2022

Mr. J. Kevin Ward
Executive Manager
Trinity River Authority
P.O. Box 60
Arlington, TX 76004-0060

RE: Texas Water Development Board Comments on Region 03 Trinity RFPG's Draft Regional Flood Plan Contract No. 210792488.

Dear Mr. Ward:

Texas Water Development Board (TWDB) staff has performed a review of the draft regional flood plan submitted by August 1, 2022, on behalf of the Region 03 Trinity Regional Flood Planning Group (RFPG). The attached comments will follow this format:

- **LEVEL 1**: Comments and questions that must be satisfactorily addressed to meet specific statute, rule, or contract requirements; and,

- **LEVEL 2**: Comments and suggestions for consideration that may improve the readability and/or overall understanding of the regional flood plan

Please note that while Level 2 comments are provided for the planning group's consideration, Level 1 comments must be addressed prior to the submission of final Regional Flood Plans by the January 10, 2023, deadline.

It is expected that the data contained in all written report sections, tables, excel spreadsheets, and the geodatabase will be consistent throughout. In cases where there are any discrepancies in data, the geodatabase dataset will supersede other data and the TWDB will utilize the geodatabase dataset when developing the state flood plan.

TWDB review of the draft regional flood plans is comprised of many spot checks of data across several deliverables and is not an all-encompassing data review. Please note that TWDB's review does not imply accuracy of the draft regional flood plan. Each RFPG is responsible for ensuring the completeness and accuracy of the plan and all associated data.

To facilitate efficient and timely completion, and Board approval, of your final regional flood plan, please provide your TWDB Regional Flood Planner with a draft of your response to these comments (e.g., informally via email) on the draft RFP as soon as possible. This will allow TWDB staff to provide preliminary feedback on proposed RFPG responses to assist you in meeting your RFPG's timeline for approval and submission to TWDB of the final plan by the deadline. It will also help to minimize the need for subsequent follow-ups after final regional flood plan submission to TWDB.

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Phone (512) 463-7847, Fax (512) 475-2053

Title 31 TAC §361.50(c) requires the regional flood planning group to consider any written or oral Comment received from the public on the draft regional flood plan (RFP); and the EA's written comment on the draft RFP prior to adopting a final RFP. Section 361.50(d) requires the final adopted plan include summaries of all timely written and oral comments received, along with a response, for each, explaining any resulting revisions or why changes are not warranted. Copies of TWDB's Level 1 and 2 written comments and the RFPG's responses must be included in the final, adopted RFP. While the comments included in this letter represent TWDB's review to date, please anticipate the need to respond to additional comments or questions, as necessary, regarding data integrity related to the Board's State Flood Plan Database (that is built from the 15 regional databases), even after submission of the final plan to TWDB.

Standard to all RFPGs is the need to include certain content in the final RFPs that was not yet available at the time that drafts were prepared and submitted. In your final RFP, please be sure to incorporate in the final submitted plan, documentation, for example, that a public meeting to receive comments was held as required and that comments received on the draft RFP were considered in the development of the final plan [31 TAC §361.50(d)].

If you have any questions regarding these comments or would like to discuss your approach to addressing any of these comments, please do not hesitate to contact Richard Bagans at 512-936-0129 or via email at richard.bagans@twdb.texas.gov. TWDB staff are available to assist you in any way possible to ensure successful completion of your final regional flood plan.

Lastly, on behalf of TWDB, I would like to thank you, the sponsor, the RFPG members and the technical consultants for accomplishing this major milestone of a herculean effort and advancing the flood risk reduction mission in our state.

Sincerely,

Reem J. Zoun, PE, CFM, ENV SP
Director
Flood Planning

Attachment: TWDB Comments

Cc: Glenn Clingenpeel, RFPG Chair
Howard Slobodin, Trinity River Authority
Stephanie Griffin, Halff Associates, Inc.
Matt Nelson, TWDB
James Bronikowski, TWDB
Anita Machiavello, TWDB
Richard Bagans, TWDB

October 17, 2022

TWDB Comments on Region 03 Trinity Regional Flood Planning Group's Draft Regional Flood Plan

Level 1: Comments and questions must be satisfactorily addressed to meet statutory, agency rule, and/or contract requirements.

General Comments

1. Please ensure that all "Submittal requirements" identified in each of the Exhibit C Guidance document sections are submitted in the final flood plan.

SOW Task 1

2. Existing Infrastructure GIS Feature Class, *ExFldInfraPt*: Please include all low water crossings (LWCs) identified during the flood planning process in this feature layer. The *ExFldExpAll* feature class contains 2,830 LWCs, and the *ExFldInfraPt* feature class contains only 1,285 LWCs. Note: This is required in contrast to the optional LWC feature class. See Table 7 of Exhibit D for a list of valid entries [31 TAC §361.31].
3. Existing Infrastructure GIS Feature Class, *ExFldInfraPol*: It appears that some fields are missing entries, including 'NATBUILT', 'CONDITION', and 'LOS'. Please ensure all required fields are populated with valid entries per Exhibit D Table 5 [31 TAC §361.31 & Exhibit D 3.3].
4. Existing Infrastructure GIS Feature Classes, *ExFldInfraLn*: It appears that some fields are missing entries, including 'NATBUILT', 'CONDITION', 'LOS', 'DEF_TYPE', and 'DEF_DESCR'. Please ensure all required fields are populated with valid entries per Exhibit D Table 6 [31 TAC §361.31 & Exhibit D 3.3].
5. Existing Projects Table 2: It appears that some fields are missing entries, including 'HUC8' and 'Project Status'. Please ensure all required fields are populated with valid entries per Exhibit C Table 2 [31 TAC §361.32].
6. Existing Projects GIS Feature Class, *ExFldProjs*: It appears that some fields are missing entries, including 'EXPRJDESC' and 'FUNDING'. Please ensure all required fields are populated with valid entries per Exhibit D Table 8 [31 TAC §361.32].

SOW Task 2A

7. Existing Condition Flood Hazard Analysis: It appears that a summary depicting flood type is missing. Please include a summary of total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency [Exhibit C Section 2.2.A.1, page 24, Submittal requirement #2].
8. Existing Condition Flood Hazard GIS Feature Class, *ExFldHazard*:
    a. The Total Area in Floodplain for both 1% and 0.2% Annual Chance Flood Risks in Table 3 does not appear to match the same area totals in the *ExFldHazard* feature class. Please review and reconcile as appropriate.

   a. It appears that some fields are missing entries, including 'HUC8'. Please ensure all required fields are populated with valid entries per Exhibit D Table 9 [31 TAC §361.33(b)].
9. Existing Condition Flood Exposure (Exhibit C Table 3):
   a. Please ensure that the feature counts for both Residential Structures and total Structures are consistent with the *ExFldExpAll* GIS feature class.
   b. The day and night populations in Table 3 do not appear to match those in the *ExFldExpAll* feature class. Please review and reconcile [31 TAC §361.33 & Exhibit C 2.2.A.3].
10. Existing Condition Flood Exposure GIS Feature Class, *ExFldExpPt*: Please ensure that the following facility types are included in the Polygon (*ExFldExpPol*) feature class instead of the Point (*ExFldExpPt*) feature class: Schools, hospitals, and fire stations [31 TAC §361.33(c) & Exhibit C 2.2.A.2].
11. Existing Condition Flood Exposure GIS Feature Class, *ExFldExpAll*:
   a. It appears that this feature class may not equal the sum of point, line, and polygon layers. Please ensure that count of *ExFldExpAll* is the sum of *ExFldExpPt*, ExFldExpLn, and *ExFldExpPol* feature class counts.
   b. Please ensure that the following facility types are included in the Polygon (*ExFldExpPol*) feature class instead of the Point (*ExFldExpPt*) feature class: Schools, hospitals, and fire stations.
   c. It appears that the Structure count in Table 3 does not match the count in *ExFldExpAll*. Please reconcile.
   d. The day and night populations in Table 3 do not appear to match those in the *ExFldExpAll* feature class. Please review and reconcile.
   e. It appears that some fields contain invalid entries, including 'CRIT_TYPE' and 'EXP_TYPE'. Please ensure all required fields are populated with valid entries Exhibit D Table 14.
   f. Please use the updated 'CRIT_TYPE' valid entry list: "Medical, Police, Fire, EMS, Shelter, School, Infrastructure, Water Treatment, Wastewater Treatment, Power Generation, Other" [31 TAC §361.33(c),(d) & Exhibit C 2.2.A.2].
12. Existing Vulnerability Map (Exhibit C Map 7): It appears the map displays an average SVI per county. Please depict all features (structures, low water crossings, critical infrastructure, etc.) with SVI values over 0.75 in the region [31 TAC §361.34(d),(e) & Exhibit C 2.2.A.3 Submittal requirements 2 & 3].
13. Model Coverage GIS Feature Class, *ModelCoverage*: It appears that some fields contain invalid/missing entries, including 'MODEL_ID' and 'MODEL_SOFTW'. Please ensure all required fields are populated with valid entries per the Summary Update to Exhibit D document available on the TWDB website [31 TAC §361.33(b)(2)].

SOW Task 2B

14. Future Condition Flood Analysis text: It appears that a summary depicting flood type is missing. Please include a summary table of total land areas (square miles) of flood risk by flood risk type, counties, regions, and frequency [Exhibit C Section 2.2.B.1, page 33, Submittal requirement #3].

15. Future Condition Map Gaps GIS Feature Class, *Fut_Map_Gaps*: It appears that some fields are missing entries, including 'COUNTY'. Please ensure all required fields are populated with valid entries [31 TAC §361.34(b)(6)].
16. Future Condition Flood Exposure GIS Feature Class, *FutFldExpLn*: It appears that some fields are missing entries, including 'HUC8'. Please ensure all required fields are populated with valid entries per Exhibit D Table 17 [31 TAC §361.34(c) & Exhibit D 3.6.2].
17. Future Condition Flood Exposure GIS Feature Class, *FutFldExpAll:* It appears the count for this feature class is more than sum of features in the *FutFldExpPol*, *FutFldExpLn*, and *FutFldExpPt* feature classes. Please reconcile. [31 TAC §361.34(c) & Exhibit D 3.6.2].
18. Future Vulnerability Map (Exhibit C Map 12): It appears the map displays an average SVI per county. Please depict all features (structures, low water crossings, critical infrastructure, etc.) with SVI values over 0.75 in the region [31 TAC §361.34(d), Exhibit C 2.2.B.3 Submittal requirements 2 & 3].

SOW Task 3A

19. Existing Floodplain Management Practices GIS Feature Class, *ExFpMp*: It appears that some fields contain invalid entries, including 'LEV_ENFRC'. Please ensure all required fields are populated with valid entries per Exhibit D Table 20 [31 TAC §361.35 & Exhibit D 3.7].

SOW Task 4B

20. Streams GIS Feature Class, *Streams*: It appears that some fields are missing entries, including 'STR_NAME'. Please ensure all required fields are populated with valid entries per Exhibit D Table 22 [Exhibit D 3.9].
21. Flood Management Evaluations (FME) GIS Feature Class, *FME*: Several required fields contain NULL values. For example, 'SOURCE' and 'DESCR'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 23 [31 TAC §361.38(i) & Exhibit D 3.10].
22. Flood Management Evaluations (FME) Map (Exhibit C Map 16): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.38(m) & Exhibit C 2.4.B].
23. Flood Mitigation Projects (FMP) (Exhibit C Table 13): It appears that some FMPs do not have a BCR. Please include a BCR for each project. Consider using the TWDB BCR tool as appropriate [31 TAC §361.38(c-e) & Exhibit C 2.4.B].
24. Flood Mitigation Projects (FMP) GIS Feature Class, *FMP*: Several required fields contain NULL values. For example, 'RECOMMEND' and 'FARMACRE100'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361. 38(c-e)].
25. Flood Management Strategies (FMS) (Exhibit C Table 14): Please add the 'Nonrecurring, Noncapital Cost ($)' field. Please include the estimated non-recurring, noncapital cost, and if available, the estimated total strategy cost separately in 'Estimated Total Strategy Cost ($)'. Refer to the Summary Update to Exhibit D document available on the TWDB website for more detail on how to properly include this data [31 TAC §361.38(d) & Exhibit C 2.4.B].

26. Flood Management Strategies (FMS) GIS Feature Class, *FMS*: Several required fields contain NULL values. For example, 'CONSTRUCT', 'REDSTRUCT100', and 'REMSTRC500'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361. 38(d)].

SOW Task 5

27. Flood Mitigation Project (FMP) Recommendations: Appendix F, Table 5.3.1 appears to show that only one FMP meets all "no negative impact" requirements per guidelines in Exhibit C Section 3.6. However, all seven recommended FMPs are listed as having no negative impacts based on engineering judgement. Please provide additional details and clarification on the following:
    a. West Irving Creek Phases 2, 3, and 4 (FMP 033000008)
        i. Approximately 1ft increase in elevation of water surface elevation (WSE) in public park may be allowable if associated mitigation measures as part of implementation of project will alleviate negative impacts.
        ii. Please identify jurisdiction and regulation or other basis that allows for a 1foot of increase in WSE in a public park. Please locate the public park on map.
    b. Arlington VC(A)-1 (FMP 033000016): Appendix F page F-15 states "The increases do not impact insurable structures in the watershed." Please confirm that the project does not increase inundation of infrastructure such as residential and commercial buildings and structures' as per Exhibit C Section 3.6.A (page 108) or remove project from the recommended project list.
    c. Linwood Park Flood Mitigation (FMP 033000031):
        i. Please provide additional clarification about the ~3ft increase. Is this increase below ground? Does this impact any structures? Is the increase contained within drainage easement. Please confirm that the project does not increase inundation of infrastructure such as residential and commercial buildings and structures' as per Exhibit C Section 3.6.A (page 108) or remove project from the recommended project list.
        ii. Please identify locations of water surface elevation (WSE) increase and clarify how it does not cause negative impact [31 TAC §361.38(c-e)].
28. Flood Mitigation Project (FMP) Recommendations: Each recommended FMP must be accompanied with an associated model or supporting documentation to show no negative impact. Please confirm that this was done and provide reference to supporting materials.
29. Flood Management Evaluation (FME) Recommendations GIS Feature Class, *FME*: Several required fields contain NULL values. For example, 'ROADCLS', and 'SOURCE'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 23 [31 TAC §361.39(c),(f) & Exhibit D 3.10].
30. Flood Management Evaluation (FME) Recommendations Map (Exhibit C Map 19): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.39 & Exhibit D 3.10].

31. Flood Mitigation Project (FMP) Recommendations GIS Feature Class, *FMP*: Several required fields contain NULL values. For example, 'RECOMMEND' and 'COSTSTRUCT'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 24 [31 TAC §361.39 & Exhibit D 3.11.1].
32. Flood Management Strategies (FMS) Recommendations GIS Feature Class, *FMS*: Several required fields contain NULL values. For example, 'RECOMMEND', 'CONSTRUCT', 'REDSTRUCT100', and 'REMSTRC500'. Please confirm that all NULL values utilized for numeric fields represents either 'not applicable' or 'unknown'. Please ensure all required fields are populated with valid entries per Exhibit D Table 26 [31 TAC §361.39 & Exhibit D 3.10].

Level 2: Comments and suggestions for consideration that may improve the readability and overall understanding of the regional flood plan.

General Comments

33. To better align with our agency's preferred nomenclature, please consider using the name, "Cursory Floodplain Data" instead of "Fathom" or Cursory Fathom Data" throughout the regional flood plan.

Executive Summary

34. Please consider updating blank highlighted section (Page ES-2)

SOW Task 1

35. Planning Area Description text: Please consider providing a description of how Low Water Crossings were identified within the text of Chapter 1.
36. Existing Infrastructure Map (Exhibit C Map 1):
    a. It appears that the wetlands in Map 1 do not seem to represent the full extent of the wetlands in ExFldInfraPol. Please consider reviewing and revising as appropriate.
    b. Map 1 in Appendix B-Required Maps does not appear to include a title. Please consider adding.
37. Deficient Infrastructure Map (Exhibit C Map 3):
    a. Please consider matching the black outline on the dam symbol used in the legend.
    b. Map 3 in Appendix B-Required Maps does not appear to include a title. Please consider adding.
38. Previous Studies Text: Please consider including a list of previous flood studies considered by the RFPG to be relevant to development of the RFP.
39. Existing Projects Map (Exhibit C Map 2): Please consider improving map readability of text and the extents of existing projects.

SOW Task 2A

40. Existing Condition Gaps GIS Feature Class, *Ex_Map_Gaps*: Please consider clipping this feature class to the planning region.
41. Existing Condition Flood Exposure GIS Feature Class, *ExFldExpPol*:

a. Please ensure that critical facilities are not duplicated in the point and polygon feature classes. It is preferred for critical features to be shown in the polygon feature class.
b. The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please review and revise, as appropriate.

42. Existing Condition Flood Exposure GIS Feature Class, *ExFldExpAll*:
    a. The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please consider reviewing and revising, as appropriate.
    b. Please ensure that critical facilities are not duplicated in the from the *ExFldExpPt*, ExFldExpLn, and *ExFldExpPol* feature classes.
    c. Multiple cells have "0" entries for required fields 'POP_DAY', 'POP_NIGHT', and 'SVI', which may be acceptable for vacant or unknown buildings. Please consider reviewing data for accuracy.
43. Future Condition Gaps GIS Feature Class, *Fut_Map_Gaps*: Please consider clipping this feature class to the planning region boundary.

SOW Task 2B

44. Future Condition Flood Exposure GIS Feature Class, *FutFldExpLn*: Please consider including natural gas pipelines and electric power transmission lines in the future exposure analysis. Relevant data can be accessed through the Flood Planning Data Hub: https://twdb-flood-planning-resources-twdb.hub.arcgis.com
45. Future Condition Flood Exposure GIS Feature Class, *FutFldExpPt*:
    a. Please consider reclassifying features with entries of "Other" for the 'EXP_TYPE' field. For example, some features may be better categorized as "Roadway Stream Crossings".
    b. Please ensure that all roadway crossings with identified flood risk are shown. There appear to be some road crossings within the *ExFldHazard* layer that do not appear to be identified as point features (where the roads and streams cross within the *ExFldHazard* layer).
46. Future Condition Flood Exposure GIS Feature Class, *FutFldExpAll*:
    a. The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please consider reviewing and revising, as appropriate.
    b. Please ensure that points are included for polygons in the *FutFldExpPol* feature class. When converting from an exposure polygon, the centroid may be used or any other method determined to best locate the point. Please review why *ExFldExpAll* has more points than *FutFldExpAll*.
    c. If the 'CRITICAL' field contains a "No" entry, then please leave 'CRIT_TYPE' as NULL.

SOW Task 4A

47. Greatest Gaps Map (Exhibit C Map 14): In the legend, please consider adding an explanation next to all colors possibly providing numbers next to the levels (e.g., 1=Lowest and 5=Highest).

48. Greatest Risk Map (Exhibit C Map 15): In the legend, please consider adding an explanation next to all colors possibly providing numbers next to the levels. (e.g., 1=Lowest and 5=Highest).

SOW Task 4B

49. Flood Management Evaluation (FME) text:
    a. Please consider reviewing the *Watersheds* and *FME* feature classes for alignment. For example, FME_ID: 031000110 does not appear to align with the Watershed boundary feature class. (Other examples include but are not limited to FME_IDs: 031000097-031000119, 031000131, 031000136, 031000140, 031000158, 031000173, 03100069)
    b. For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please consider explaining how the strategy benefits the region and please coordinate with other RFPGs to make sure that efforts are not duplicated. For example, FME_ID: 031000035 and 031000001.
    c. Some FMEs appear to overlap. Please review the spatial boundaries of FME_ID: 031000110, 031000101, 031000118. Some overlap may be intended if there are differences in FME scope.
    d. In areas where there are detailed FEMA maps, please describe how this would be incorporated into the County FEMA Mapping studies (FME ID: 031000001-031000035).
    e. For those areas in RFPG with existing BLE models state how the FME will improve upon the current BLE models (FME_ID: 031000001- 031000035). BLE is available for the entire Region 3. For reference the BLE data is available here: https://webapps.usgs.gov/infrm/estbfe/
    f. In areas where there is an ongoing TWDB-funded FIF Category 1 study, please consider describing how duplication of efforts would be avoided and how TWDB-funded TWDB-funded FIF Category 1 study data would be incorporated into the proposed FMEs. For example, FME_IDs 031000003, 03100020, and 031000284 appear to overlap with current TWDB-funded FIF Category 1 studies such as FIF ID 40010 (Trinity River Mid-Basin Watershed Study Phase II).
50. Flood Management Evaluation (FME) GIS Feature Class, *FME*: Please consider filling out the 'MODEL_DESC' field for clarity on existing studies to be used. Please ensure existing or ongoing BLE and TWDB-funded FIF Category 1 studies are included.
51. Flood Management Evaluation (FME) Map (Exhibit C Map 16): It appears unclear what various shades of orange represent. Please consider revising map for clarity.
52. Flood Management Strategy (FMS) Table (Exhibit C Table 14): Please consider if FMS_IDs: 032000034, 032000042, 032000049, 032000053, 032000056-032000057, 032000074 should be reclassified as FMPs. Please refer to non-structural FMPs section in Exhibit C p. 54.
53. Flood Management Strategy (FMS) GIS Feature Class, *FMS*: For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please consider including justification how the strategy benefits the RFPG and please coordinate with other RFPGs to make sure the efforts are not duplicated. For example, FMS_ID 032000087.
54. Flood Management Strategy (FMS) Map (Exhibit C Map 18): It appears unclear what various shades of red represent. Please consider revising map for clarity.

SOW Task 5

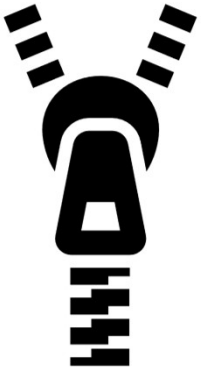
55. Flood Management Evaluation (FME) Recommendations text: In areas where there is an ongoing TWDB-funded FIF Category 1 study, please consider describing how duplication of efforts would be avoided and how TWDB-funded FIF Category 1 study data would be incorporated into the proposed FMEs. For example, FME_IDs 031000003, 03100020, and 031000284 appear to overlap with current TWDB-funded FIF Category 1 studies such as FIF ID 40010 (Trinity River Mid-Basin Watershed Study Phase II).
56. Flood Management Evaluation (FME) Recommendations GIS Feature Class, *FME*: Please consider filling out the 'MODEL_DESC' field for clarity on existing studies to be used. Please ensure existing or ongoing BLE and TWDB-funded FIF Category 1 studies are included.
57. Flood Management Evaluation (FME) Recommendations Map (Exhibit C Map 19): It appears unclear what various shades of orange represent. Please consider revising map for clarity.

Consider Approval of Responses to Public and TWDB Comments

Update on Final Region 3 Trinity Regional Flood Plan

Draft → Final Plan

- Incorporate public comments and RFPG responses in appendix
- Incorporate TWDB comments and RFPG responses in appendix
- Revise plan to address
  - Responses to comments
  - Updates to benefit-cost analyses
  - Updates to sponsor funding survey results (Chapter 9)
  - Editorial, map, table and other minor edits
- Send to printer mid-December
- Send to TWDB by January 10, 2023



Consider Approval to Revise and Submit the Final Regional Flood Plan


Task 12 Update

- **Purpose**
- **Technical Subcommittee Recommendations**

Purpose/Background

- Purpose of Task 12 - Increase number of FMPs in the Regional Flood Plans by:
  - Performing FMEs – Elevate FME to FMP status
  - Evaluating additional FMPs – Complete missing FMP requirements

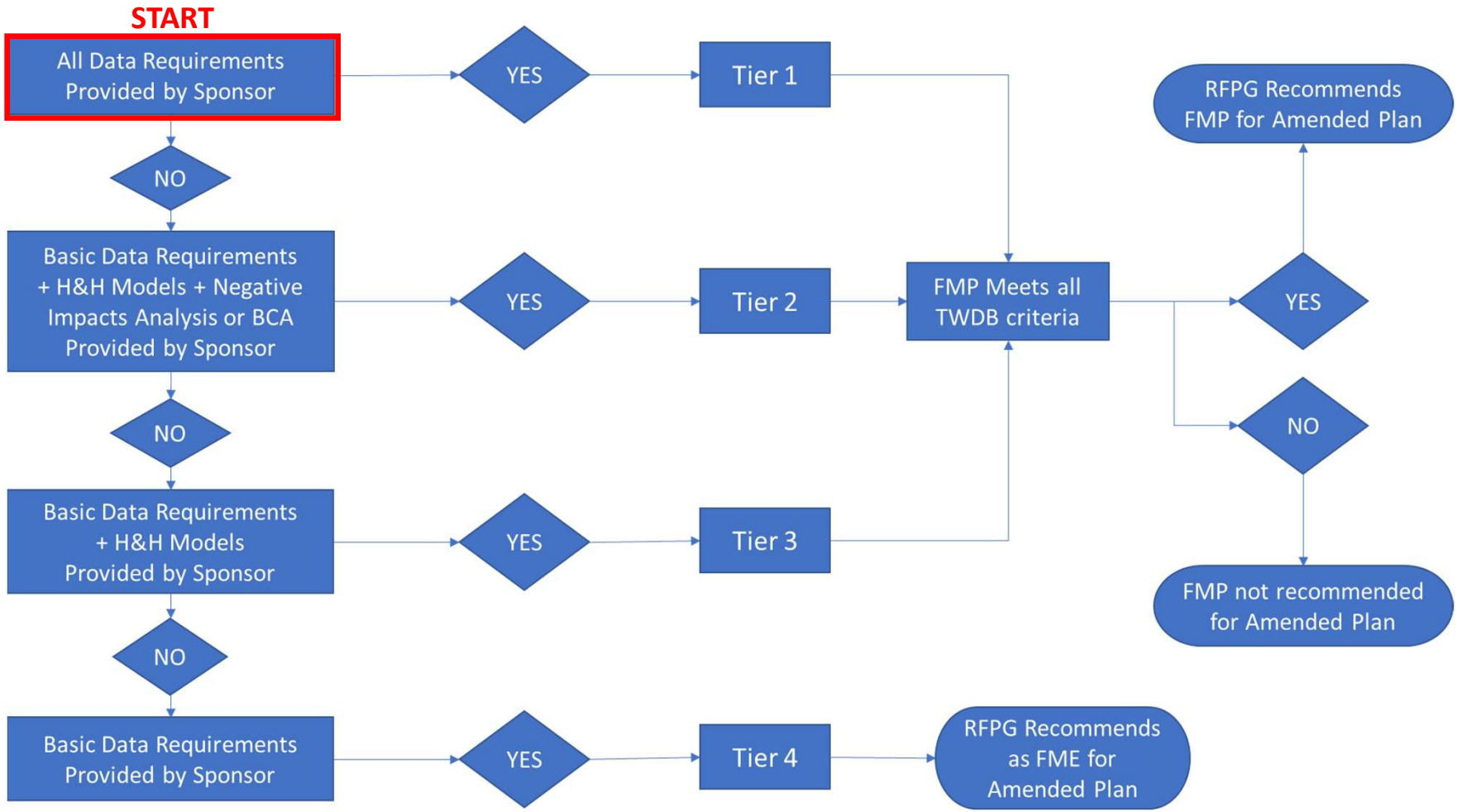
Purpose/Background

- Region 3 received 106 potential FMP candidates after the Draft Plan deadline in April 2022.
- Based on time and budgetary constraints, this amount may be more than can be analyzed for Amended Plan.
- Oct 20, 2022 - Technical Subcommittee met to develop:
  - Approach on how to allocate Task 12 budget
  - Prioritization plan for analysis and potential inclusion of FMPs in the Amended Plan

Technical Subcommittee Recommendations

- Focus Task 12 budget on evaluating additional FMPs.
- Deadline for new FMP submittals – **January 27, 2023**
- Categorize potential FMP candidates into tiers based on degree of completeness of data provided by Sponsor.
- Tiers will be used to determine the order in which FMPs will be evaluated.
- Prioritization plan should provide a mechanism for jurisdictions that are not in current list to include at least one FMP.

Task 12 – FMP Prioritization Plan



FMP Requirements	Tier 1	Tier 2	Tier 3	Tier 4	Comments
Name	X	X	X	X	
Description (Scope of Work narrative)	X	X	X	X	
Hydrologic & Hydraulic Models	X	X	X		
Opinion of Probable Construction Cost	X	X	X		See Section 3.7 of Exhibit C
Proposed project components map (PDF acceptable)	X	X	X		
Existing Conditions 100-yr floodplain boundary	X	X	X		
Proposed Conditions 100-yr floodplain boundary	X	X	X		
Pre-Project Level of Service	X	X	X		
Post-Project Level of Service	X	X	X		
FMP implementation issues (ROW, permitting, utilities, etc.)	X	X	X		
No Negative Impacts Certification	X	*			See Section 3.6 of Exhibit C
Benefit Cost Ratio (BCR)	X	*			See Section 3.8 of Exhibit C
Project boundary (GIS format preferred, PDF acceptable)	X			X	
Estimated Recurring Costs (Debt Service, O&M, Other)	X				See Section 3.7 of Exhibit C
Anticipated source of funding (taxes, general revenue, stormwater fees, etc.)	X				
Funding to be financed by sponsor (%)	X				
Estimated # of structures at 100-yr flood risk	X				
Daytime population at 100-yr flood risk	X				
Nighttime population at 100-yr flood risk	X				
Critical Facilities at 100-yr flood risk	X				
Number of low water crossings at 100-yr flood risk	X				
Length of roads at 100-yr flood risk	X				
Acres of farm and ranch land at 100-yr flood risk	X				
Number of structures with reduced 100-yr flood risk	X				
Number of structures removed from 100-yr flood risk	X				
Residential structures removed from 100-yr flood risk	X				
Population removed from 100-yr flood risk	X				
Number of critical facilities removed from 100-yr flood risk	X				
Number of low water crossings removed from 100-yr flood risk	X				
Length of roads removed from 100-yr flood risk	X				
Acres of farm and ranch land removed from 100-yr flood risk	X				
Number of road closures over past 10-yrs	X				
Estimated reduction in number of road closures over 10-yrs	X				
Description of residual, post-project, and future risks	X				
Percent nature-based solution by cost	X				
Other benefits (environmental, public benefits, etc.)	X				
Social Vulnerability Index (SVI)	X				
Project contributes to water supply?	X				
Project Details Spreadsheet (Criteria 1-15, #16 is not required)	X				See Section 3.9.C of Exhibit C

FMP Tiers - FMP submittals will be reviewed and categorized into tiers. Tier 1 FMPs will be analyzed first, followed by Tier 2 FMPs and then Tier 3 FMPs.

Tier 1 - Sponsor submits all required data by **Jan/27/2023**. RFPG performs cursory review to confirm that potential Tier 1 FMP meets all TWDB criteria. If it does, RFPG will recommend for inclusion in Amended RFP.

Tier 2 - Sponsor submits Tier 2 requirements along with **at least one** additional completed requirement (*) by **Jan/27/2023**. For example, a BCR **OR** a Negative Impacts Analysis have been submitted by the entity. RFPG performs cursory review to confirm that potential Tier 2 FMP meets all TWDB criteria. Missing requirements will be analyzed by the RFPG. If analysis is completed on time and FMP meets all TWDB criteria, RFPG will recommend for inclusion in Amended RFP.

Tier 3 - Sponsor submits required data by **Jan/27/2023**. RFPG performs cursory review to confirm that provided data is sufficient to perform the required FMP analyses. If it is, RFPG evaluates **community variance****. Then, RFPG performs analysis to complete all TWDB requirements. RFPG will perform analysis for potential Tier 3 FMPs in the order they are received. Completing the analysis is subject to schedule and budget constraints. There is no guarantee that the analysis for all Tier 3 FMPs will be completed on time for inclusion in the Amended RFP. If analysis is completed on time and FMP meets all TWDB criteria, RFPG will recommend for inclusion in Amended RFP.

****Community variance** - The RFPG currently has a list of Tier 3 FMPs that were submitted after the Apr/18/2022 deadline for inclusion in the DRAFT RFP. Some Jurisdictions have several FMPs on this list. If Tier 3 FMPs are submitted by Jurisdictions that are not currently on this list, the RFPG will give priority to one (1) FMP per Jurisdiction over the FMPs on the current list. The RFPG will contact the Sponsors to determine which potential FMP is their highest priority and will analyze it first. If one FMP for each entity has been evaluated and funds remain, then the RFPG will continue with the second FMP for entities that submitted more than one FMP. This process will continue for as long as budget remains.

Tie Breaker for Tier 3 - If two or more Tier 3 FMPs are submitted the same day, a Jurisdiction without any FMP would gain priority over the others. If all come from the same Jurisdiction, then the RFPG will ask the Sponsor to select their top priority FMP and the RFPG will perform analysis for that one, if time and budget allows. If both jurisdictions are already included, then the less expensive (less effort needed by the RFPG) project will be analyzed for inclusion in the Amended Plan.

Tier 4 - Sponsor submits data by Jan/27/2023. Potential Tier 4 FMPs will be reclassified as FME (Studies). RFPG will utilize the submitted project boundary to complete TWDB requirements for FMEs. If FME meets all TWDB criteria, RFPG will recommend for inclusion in Amended RFP.

Exhibit C - Technical Guidelines for Regional Flood Planning:

https://www.twdb.texas.gov/flood/planning/planningdocu/2023/doc/04_Exhibit_C_TechnicalGuidelines_April2021.pdf

Task 12 – FMP Prioritization Plan

Tier 3 Order – Current List

Original List:
in order they were received

Sponsor	FMP
A	A-1
A	A-2
A	A-3
B	B-1
B	B-2
C	C-1
C	C-2
C	C-3
C	C-4
C	C-5

Reorganized List:
Analyze 1 FMP per Sponsor

Sponsor	FMP
A	A-1
B	B-1
C	C-1
A	A-2
B	B-2
C	C-2
A	A-3
C	C-3
C	C-4
C	C-5

***Note**: RFPG needs to contact Sponsors on current list to determine priority of their FMPs*

Task 12 – FMP Prioritization Plan

Tier 3 New FMPs – New Sponsor

Sponsor	FMP
A	A-1
B	B-1
C	C-1
A	A-2
B	B-2
C	C-2
A	A-3
C	C-3
C	C-4
C	C-5

New FMPs received from New Sponsor D

Give priority to 1 FMP from New Sponsor

Sponsor	FMP
A	A-1
B	B-1
C	C-1
D	D-1
A	A-2
B	B-2
C	C-2
A	A-3
C	C-3
C	C-4
C	C-5
D	D-2
D	D-3

Amended Plan Outreach

- Contact sponsors with existing FMPs in “parking lot”
  - Identifying missing information that each sponsor needs to provide to get to Tier 3
- Email entire contact list announcing opportunity to submit additional FMPs
- Deadline to respond: January 27, 2023

Sponsors: Submit Your Flood Mitigation Project Data Now for Potential Inclusion in the Amended Regional Flood Plan!

To all Region 3 Trinity Flood Planning Stakeholders and Interested Parties:

There is a new opportunity now to submit Flood Mitigation Project (FMP) data for inclusion in the amended Trinity Regional Flood Plan. In order to be considered for the Amended Plan, you must provide the necessary data for your prioritized projects **no later than Friday, January 27, 2023**.

Providing us data and getting your community's most needed FMPs into the amended 2023 Trinity Regional Flood Plan is **the best way to make sure they're eligible for potential future state funding in the near future – because it will be five more years before the Regional Flood Plan (and State Flood Plan) is updated again.**

This new window of opportunity for data submissions is open to all potential FMP sponsors. Our goal is to get FMPs from as many possible project sponsors (communities, counties and others with flood-related responsibilities) as possible into the Amended Plan before its adoption and submission to the Texas Water Development Board (TWDB) in July 2023.

How and What to Submit:

- To submit proposed FMP data for consideration, please **contact Trinity RFPG technical consultant team member David Rivera with Freese and Nichols at 214-217-2263 or David.Rivera@freese.com.**
- All proposed project submissions will be grouped into tiers, based on certain criteria. To see our approach for FMP tiering, including a list of the specific criteria/data required for FMPs to achieve "Tier 1" status, please click here [hyperlink].
    - Please note that essentially all project classified as Tier 1 will be included in the Amended Plan, so long as the sponsor provides FMP data that meets the TWDB Technical Guideline requirements described in Section 3.9.C [hyperlink].
    - For a visual depiction of our tiering and evaluation process, see the flowchart below.

[flowchart graphic will be added – currently undergoing redesign]

Please know that we have significant FMP data already from some sponsors. If you previously submitted proposed projects for consideration, we may contact you directly if more information is needed – including asking for your help with prioritization if you've submitted multiple projects.

While not every proposed project can be included in the Amended Plan due to time and budget constraints, the more information you can submit to us now, the better!

Thank you for your assistance with this important regional planning process.

Sincerely,

The Region 3 Trinity Regional Flood Planning Group Consultant Team

Consider Approval of Approach to Task 12 and Deadline

Project Budget

Consultant Budget Status and Proposed Modifications

- Remaining balances for Tasks 1-9 to be moved to Task 12
  - $198,800.03
- Remaining balances for Tasks 10-11 to be moved to Task 13
  - $58,000.04
- If approved, TWDB approval also required (> 35%)
  - Task 6A
  - Task 6B
  - Task 9

(Details provided in handout)

Trinity RFPG Proposed Budget Modifications
November 9, 2022

Task #	Task Name	Approved Budget	Budget Spent thru Oct 2022	Remaining Balance	% Remaining of Task Budget	Proposed Move	Proposed Budget	Proposed Remaining Balance
Task 1	Planning Area Description	$126,010.00	$116,624.21	$9,385.79	7%	to Task 12	$116,624.21	$0.00
Task 2A	Existing Condition Flood Risk	$302,424.00	$281,840.04	$20,583.96	7%	to Task 12	$281,840.04	$0.00
Task 2B	Future Condition Flood Risk	$277,222.00	$273,228.35	$3,993.65	1%	to Task 12	$273,228.35	$0.00
Task 3A	Floodplain Management Practices	$50,404.00	$50,344.46	$59.54	0%	to Task 12	$50,344.46	$0.00
Task 3B	Mitigation & Management Goals	$25,202.00	$25,147.84	$54.16	0%	to Task 12	$25,147.84	$0.00
Task 4A	Needs Analysis	$75,606.00	$73,694.25	$1,911.75	3%	to Task 12	$73,694.25	$0.00
Task 4B	Identify FME, FMS, FMP	$453,636.00	$435,384.84	$18,251.16	4%	to Task 12	$435,384.84	$0.00
Task 4C	Tech Memo	$50,404.00	$50,313.00	$91.00	0%	to Task 12	$50,313.00	$0.00
Task 5	Evaluate/Recommend FME, FMS, FMP	$554,444.00	$514,195.06	$40,248.94	7%	to Task 12	$514,195.06	$0.00
Task 6A	Impacts of Regional Plan	$100,808.00	$45,530.99	$55,277.01	55%	to Task 12	$45,530.99	$0.00
Task 6B	Contribution/Impacts of Water Supply	$25,202.00	$8,158.03	$17,043.97	68%	to Task 12	$8,158.03	$0.00
Task 7	Flood Response Information & Activities	$25,202.00	$19,521.34	$5,680.66	23%	to Task 12	$19,521.34	$0.00
Task 8	Admin, Regulatory & Leg Recommendations	$25,202.00	$21,579.64	$3,622.36	14%	to Task 12	$21,579.64	$0.00
Task 9	Flood Infrastructure Finance	$50,404.00	$27,807.92	$22,596.08	45%	to Task 12	$27,807.92	$0.00
Task 10	Public Involvement & Plan Adoption	$363,830.00	$335,595.50	$28,234.50	8%	to Task 13	$335,595.50	$0.00
Task 11	Outreach and Data Collection to Support Tasks 1-9	$105,840.00	$76,074.46	$29,765.54	28%	to Task 13	$76,074.46	$0.00
Task 12	Perform Identified FMEs; Additional Flood Mitigation	$461,160.00	$12,607.73	$448,552.27	97%	from Tasks 1-9	$659,960.03	$647,352.30
Task 13	Prepare and Adopt Amended Regional Flood Plan	$189,000.00	$31,155.68	$157,844.32	84%	from Tasks 10-11	$247,000.04	$215,844.36
Total		**$3,262,000.00**	**$2,398,803.34**	**$863,196.66**			**$3,262,000.00**	**$863,196.66**

Red indicates proposed budget modifications that are greater than 25% of the original Task budget. If approved by the RFPG, TWDB will also need to approve these Task budget adjustments.

Consider Approval of Budget Amendment

LOOK-AHEAD

January 10, 2023 (no meeting)

- Consultant submits Final Regional Flood Plan to TWDB

February 2023 Meeting

- Consultant provides update on Tasks 12 and 13

April 2023 Meeting

- Consultant provides update on Tasks 12 and 13

June 2023 Meeting

- RFPG approves amended regional flood plan

July 14, 2023 (no meeting)

- Consultant submits Amended Regional Flood Plan to TWDB

Notes: indicates target date.

Yellow highlight indicates hard deadline.

8. Updates from adjoining coastal regions

9. Updates from Planning Group Sponsor

10. Administrative costs

11. General public comments

Limit 3 minutes per person

12. Announcements

13. Meeting date for next meeting

14. Agenda items for next meeting

15. Adjourn