

Lower Colorado-Lavaca
**REGIONAL FLOOD
PLANNING GROUP**

REGION 10

October 18, 2021

Region 10 Lower Colorado-Lavaca RFPG

- 1. Call to Order**
- 2. Welcome**
- 3. Approval of minutes from the previous meeting**

Meeting Minutes
Region 10 Lower Colorado-Lavaca Flood Planning Group Meeting
August 16, 2021
9:00 AM
Zoom Virtual Meeting

Roll Call:

Voting Member	Interest Category	Present (x) /Absent () Alternate Present (*)
Terry Been	<i>Agricultural interests</i>	
Phillip Spenrath	<i>Counties</i>	
Jason Ludwig	<i>Electric generating utilities</i>	
Kirby Brown	<i>Environmental interests</i>	X
G. Nicholas "Nick" Textor	<i>Flood districts</i>	X
Brandon Klenzendorf	<i>Industries</i>	X
Matt Hollon	<i>Municipalities</i>	X
Frances Acuña	<i>Public</i>	X (joined after Item 3)
Patrick Brzozowski	<i>River authorities</i>	
Ann Yakimovicz	<i>Small business</i>	X
Kacey Cubine Paul	<i>Water districts</i>	X
Hank Smith	<i>Water utilities</i>	X
Kelly Payne	<i>River authorities</i>	X

Non-voting Member	Agency	Present(x)/Absent()/ Alternate Present (*)
Shonda Mace	General Land Office	* Sarah Douglass
Charles "CW" Schneider	Texas Commission on Environmental Quality	X
Lauren Mayes	Texas Department of Agriculture	X
Natalie Johnson	Texas Division of Emergency Management	X
Beth Bendik	Texas Parks and Wildlife Department	X
Allen Nash	Texas State Soil and Water Conservation Board	X
Morgan White	Texas Water Development Board	X
Ronald G. Fieseler	Region 11 – Guadalupe Liaison	X
Mark Vogler	Region 8 – Lower Brazos Liaison	* Brian Fambrough
Cara Tackett	Region 12 – San Antonio Liaison	X
Chuck Brown	Region 9 – Upper Colorado Liaison	

Quorum:

Quorum: **Yes**

Number of voting members or alternates representing voting members present: 8

Number required for quorum per current voting membership of 13: 7

Other Meeting Attendees: **

Morgan White, TWDB
Michael Moya, Halff Associates, Inc.
Michael Personett, Halff Associates, Inc.
Matt Bucchin, Halff Associates, Inc.
Cindy Engelhardt, Halff Associates, Inc.
Jay Scanlon, Freese
Augusto Villalon, Freese

Cris Parker, HDR, Inc.
Karen Ford, WaterPR
Lauren Graber, LCRA
Annette Keaveny, LCRA
Marcin Tyszka, LCRA
Jennifer Walker, National Wildlife Federation
Arsum Pathak, National Wildlife Federation

Danielle Goshen, Galveston Bay Foundation
Evan Adrian
Fabiola de Carvalho
A Hielscher
Kathryn Johansen
Stephen Johnson
Nick Kincaid

Allison Land
Shannon Longoria
Jorge Losoya
Mieko Mahi
John P. Nett
S Rockwood
Jacob M. Torres

****Meeting attendee names were gathered from those who entered information for joining the Zoom meeting.**

All meeting materials are available for the public at:
www.lowercoloradolavacafood.org/meetings

Agenda:

1. Call to Order

Vice Chair Kacey Paul called the meeting to order at 9:04 AM CDT. A roll call of the planning group members was taken to record attendance and a quorum was established prior to calling the meeting to order.

2. Welcome

Vice Chair Kacey Paul welcomed members and other attendees to the meeting.

3. Approval of minutes from the previous meeting

The draft meeting minutes were reviewed, and no corrections or additions were made. Kirby Brown moved to approve the minutes, seconded by Kelly Payne. The motion passed by a vote of 8-0.

4. Public comments– limit 3 minutes per person

Vice Chair Kacey Paul called for public comments.

An online comment from Mieko Mahi was received and will be addressed.

5. TWDB Update

Morgan White from the Texas Water Development Board (TWDB) reported that additional funding will likely be available and that she would report more in the next meeting.

Morgan White also noted that a conference call with the RFPG sponsors would be held Wednesday, August 18. RFPG Chairs would also be invited to share their experiences and learn what other regions are doing. Attendance is optional.

Morgan White also said that TWDB was working to determine the mechanics of compliance with the Open Meetings Act during Covid conditions.

6. Update from RFPG liaisons

Ron Fieseler reported that Region 11 Flood Planning Group (Guadalupe Region) hosted a public input meeting in Wimberley on August 4, with 35-40 people in attendance and receiving 12-15 comments. The meeting was well-attended, and Region 11 is on the same approximate timeline as is Region 10.

7. Update from the Planning Group Sponsor

Lauren Graber reported that meetings will be transitioning from 100% virtual to in-person or hybrid formats, with the intent to have hybrid meetings. The Chairman must be present; a Zoom link will be provided to other members. All details will be finalized between now and the next meeting.

Lauren Graber also announced that the regular September RFPG meeting will be cancelled and thus the next meeting will be held in October. (See Item 11 below.)

8. Technical Consultant presentations and discussions related to regional flood planning

Mike Personett, Cindy Englehardt, and Matt Bucchin (all Halff Associates, Inc.), Karen Ford (WaterPR), and Cris Parker (HDR) provided updates, briefings, and discussion on the following: project status, including the status of Task 8 – Policy Recommendations; public outreach and stakeholder engagement strategies; Task 1 – Planning Area Description: Present preliminary draft Chapter 1; Task 3A – Floodplain Management Practices: Preliminary results; Task 3B – Floodplain Management Goals: Review draft goal statements; Task 4B – Present and discuss proposed process to identify and select Studies, Strategies, and Projects; and Look-ahead to September to December 2021.

9. Presentation: Nature-based Solutions for Flood Mitigation: Overview for Region 10 RFPG

Jennifer Walker and Arsum Pathak (both National Wildlife Federation) and Danielle Goshen (Galveston Bay Foundation) presented on Nature-based Solutions for Flood Mitigation.

Frances Acuña reiterated the importance of positive effects that nature-based solutions have on mental and physical health. Matt Hollon commended the use of nature-based solutions, especially as a component of other structural and non-structural solutions; he noted that they may have difficulty meeting cost-benefit thresholds as stand-alone projects.

10. Public comments– limit 3 minutes per person

Vice Chair Kacey Paul called for public comments.

Mieko Mahi recommended that plan goals acknowledge the complexity of the subject matter and that all information be presented.

11. Consider date and agenda items for next meeting

Vice Chair Kacey Paul opened discussion to consider the date and agenda items for the next meeting. After general discussion, Vice Chair Kacey Paul concluded that the next meeting will be held on Monday, October 18, 2021.

12. Adjourn

Kirby Brown made a motion to adjourn, seconded by Nick Textor. The motion passed 9-0 and the meeting adjourned at 11:34 AM CDT by Vice Chair Kacey Paul.

*Approved by the Lower Colorado-Lavaca RFPG at a meeting held on **DATE**.*

Matt Hollon, SECRETARY

Phillip Spenrath, CHAIR

Region 10 Lower Colorado-Lavaca RFPG

- 4. Public comments – limit 3 minutes per person**
- 5. TWDB Update**
- 6. Update from RFPG liaisons**
- 7. Update from the Planning Group Sponsor**

Region 10 Lower Colorado-Lavaca RFPG

- 8. Discussion and potential action to authorize the Planning Group Sponsor to negotiate and execute an amendment to the Regional Flood Planning Grant contract with the TWDB, to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget**

- 9. Discussion and potential action to authorize the Planning Group Sponsor to negotiate and execute an amendment to the Regional Flood Planning Grant subcontract with the technical consultant, Halff Associates, Inc., to incorporate additional funding for the first cycle of regional flood planning, including necessary revisions to the contract scope of work and budget**

Region 10 Lower Colorado-Lavaca RFPG

10. Discussion and potential action regarding administrative expenses to be submitted to the Texas Water Development Board for reimbursement

Administrative Costs from Jan 1, 2021 - Jun 30, 2021

Vendor	Amount
Squarespace (Website Account)	\$207.06
TOTAL	\$207.06

Approved Budget	Project Cost This Report	Cumulative Project Cost	Balance
\$60,000.00	\$207.06	\$207.06	\$59,792.94

Administrative Costs from Jul 1, 2021 - Aug 31, 2021

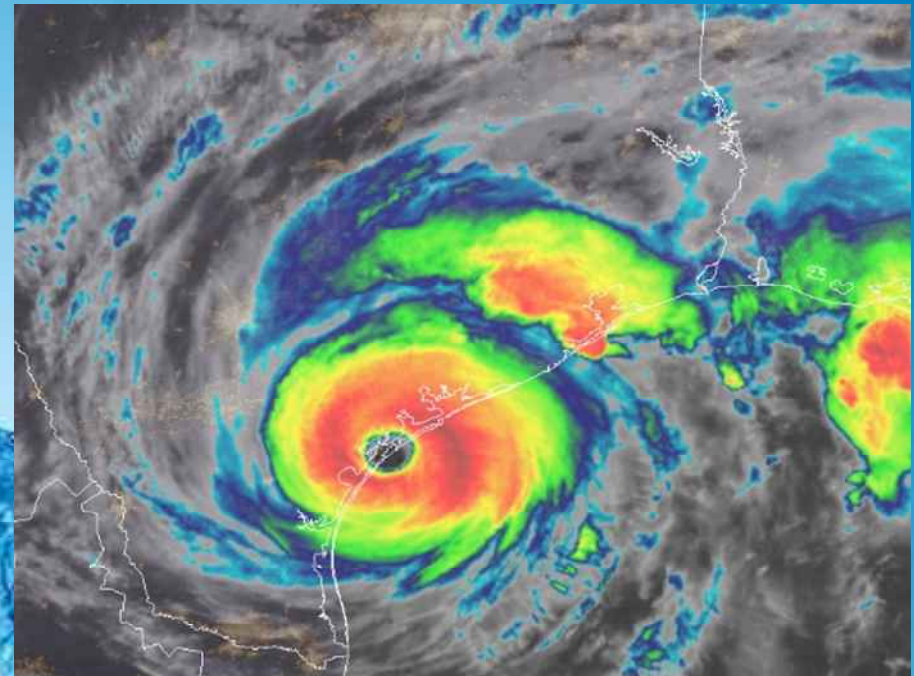
Vendor	Amount
LCRA Labor & Fringe	\$1,473.09
TOTAL	\$1,473.09

Approved Budget	Project Cost This Report	Cumulative Project Cost	Balance
\$60,000.00	\$1,473.09	\$1,680.15	\$58,319.85

Region 10 Lower Colorado-Lavaca RFPG

- 11. Presentation: Wharton County Flood Warning Project and Matagorda County Levees by Eric Scheibe of Scheibe Consulting LLC**

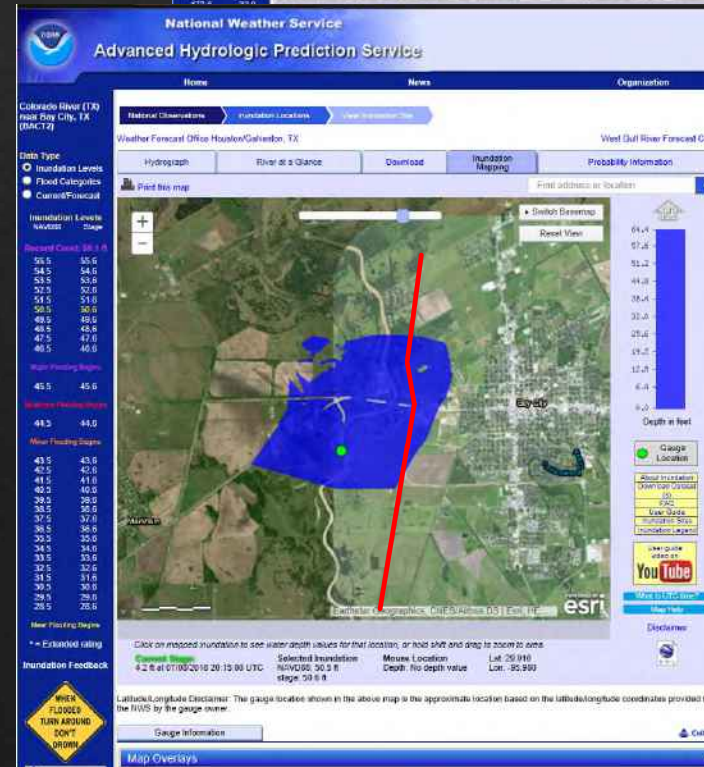
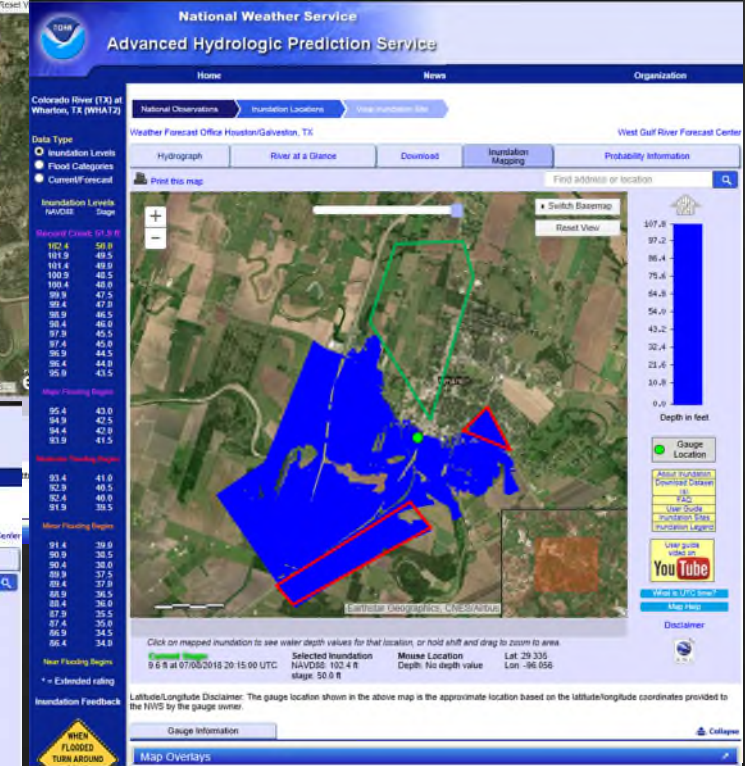
LOWER COLORADO RIVER BASIN ACTIVITIES



**REGIONAL FLOOD PLANNING GROUP
MEETING OCTOBER 18, 2021**

Background

- Limitations to NWS Real-Time and Forecast System
 - Harvey higher than maximum water surface elevation at Columbus (193 vs. 192.1)
 - Some areas shown as not flooded but flooded during Harvey
 - Some areas shown as flooded but did not flood
 - Forecast was too high at Bay City
 - Impacts of levee not reflected in data at Bay City



Tangential Activities: Federal Level

- InFRM Team



- FEMA
- US Army Corps of Engineers
- NOAA / NWS
- USGS

- Goal:

1. Develop (0.5 ft interval) Inundation Mapping for full length of Colorado River (Austin to Gulf) – Using “Gold Standard” Model
2. Update Web Interface for ease of use by local OEMs.

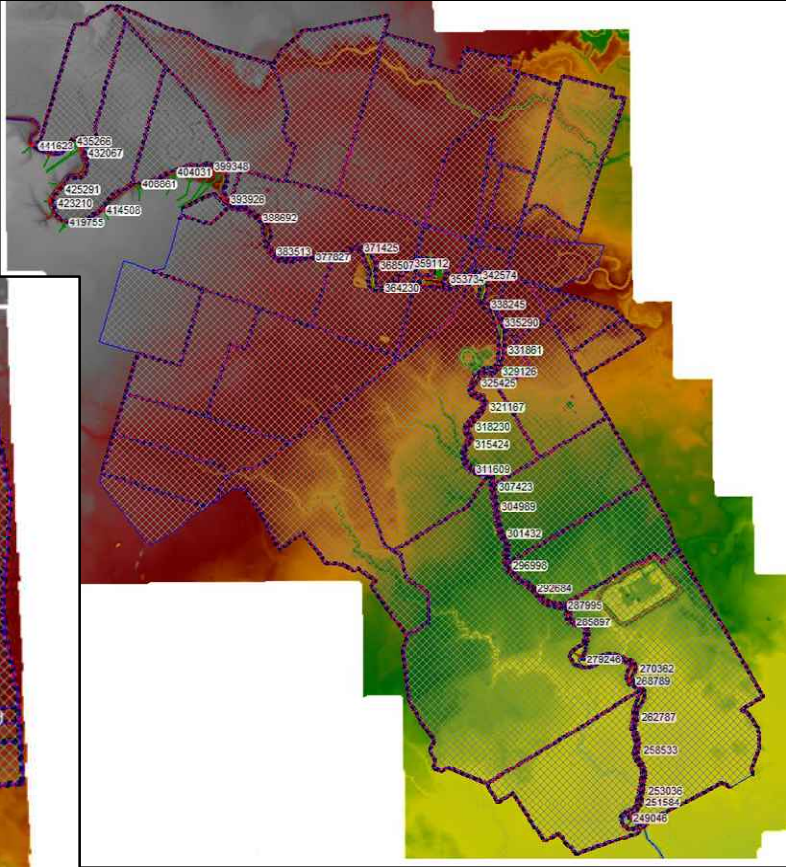
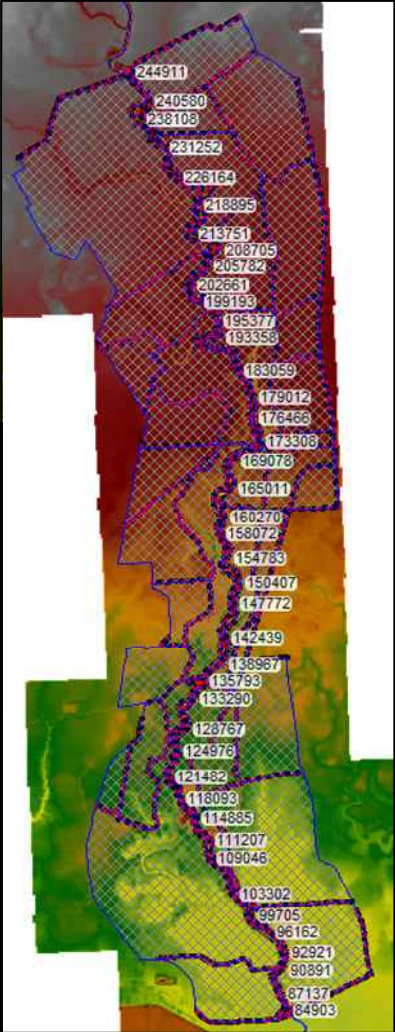
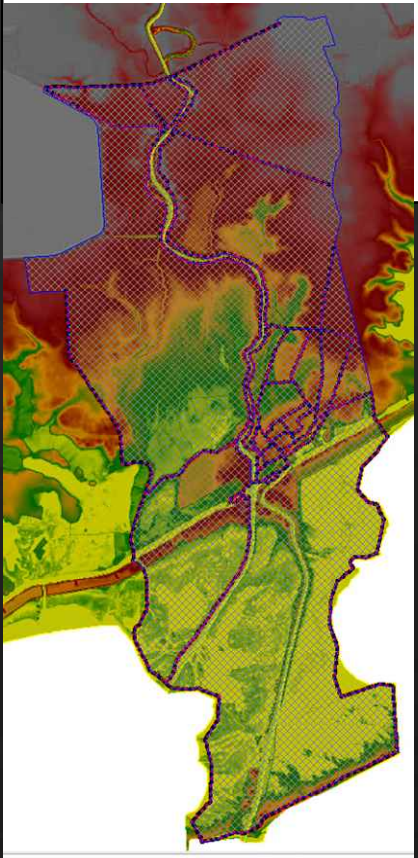
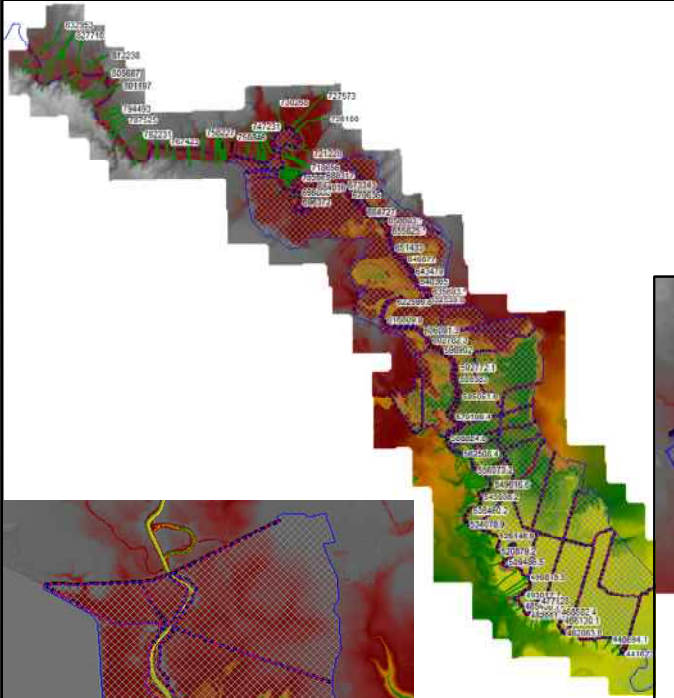


Flood Support Decision Toolbox



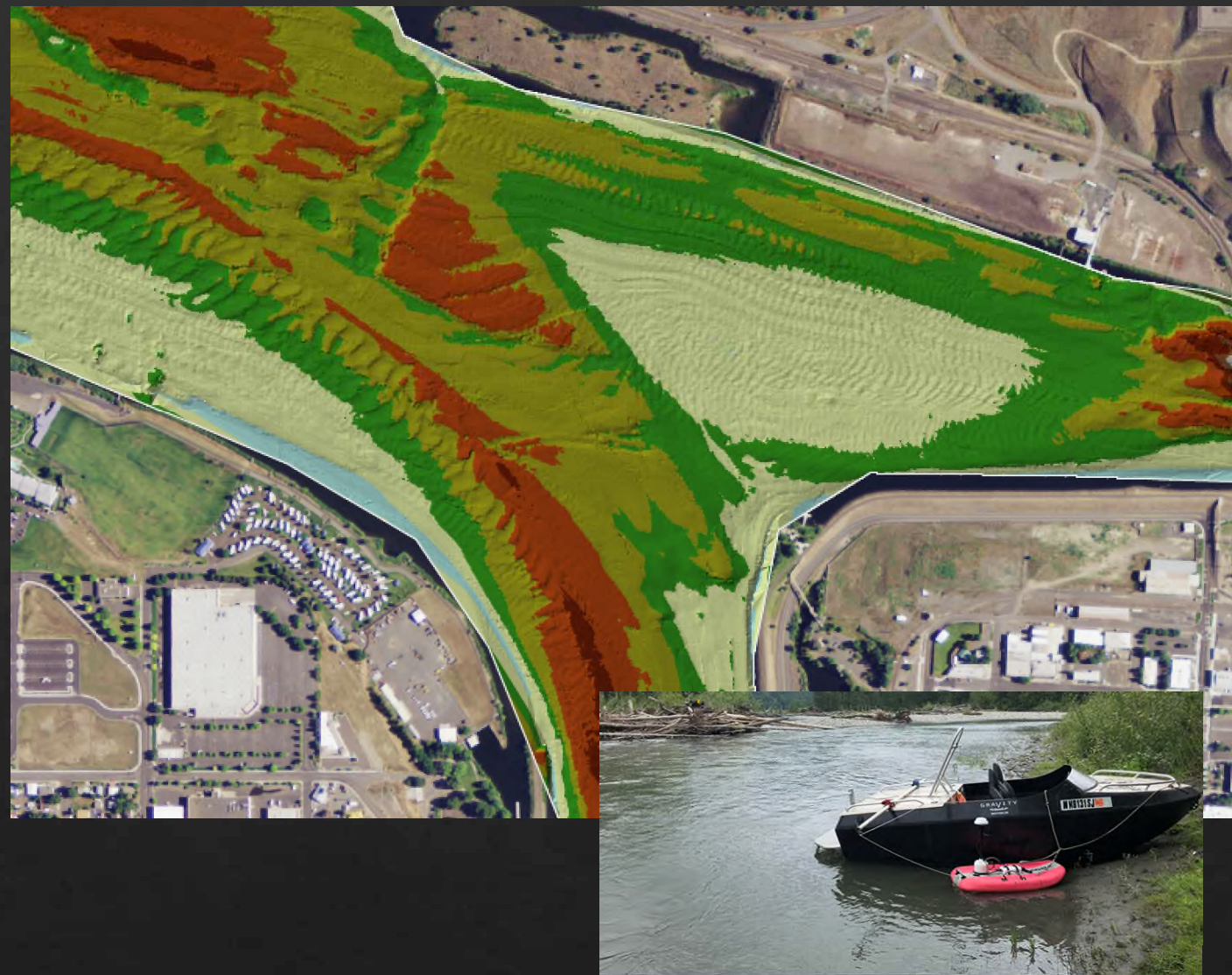
Hydraulic Modeling Completed!

- 1D/2D Hydrodynamic Modeling
- 4 Sections (Columbus and Garwood combined)
- Reviewed by Fort Worth USACE
- Responded to USACE comments
- Gage rating curve comparisons complete



New Bathymetric Survey (~153 Linear Miles of Multi-Beam Survey)

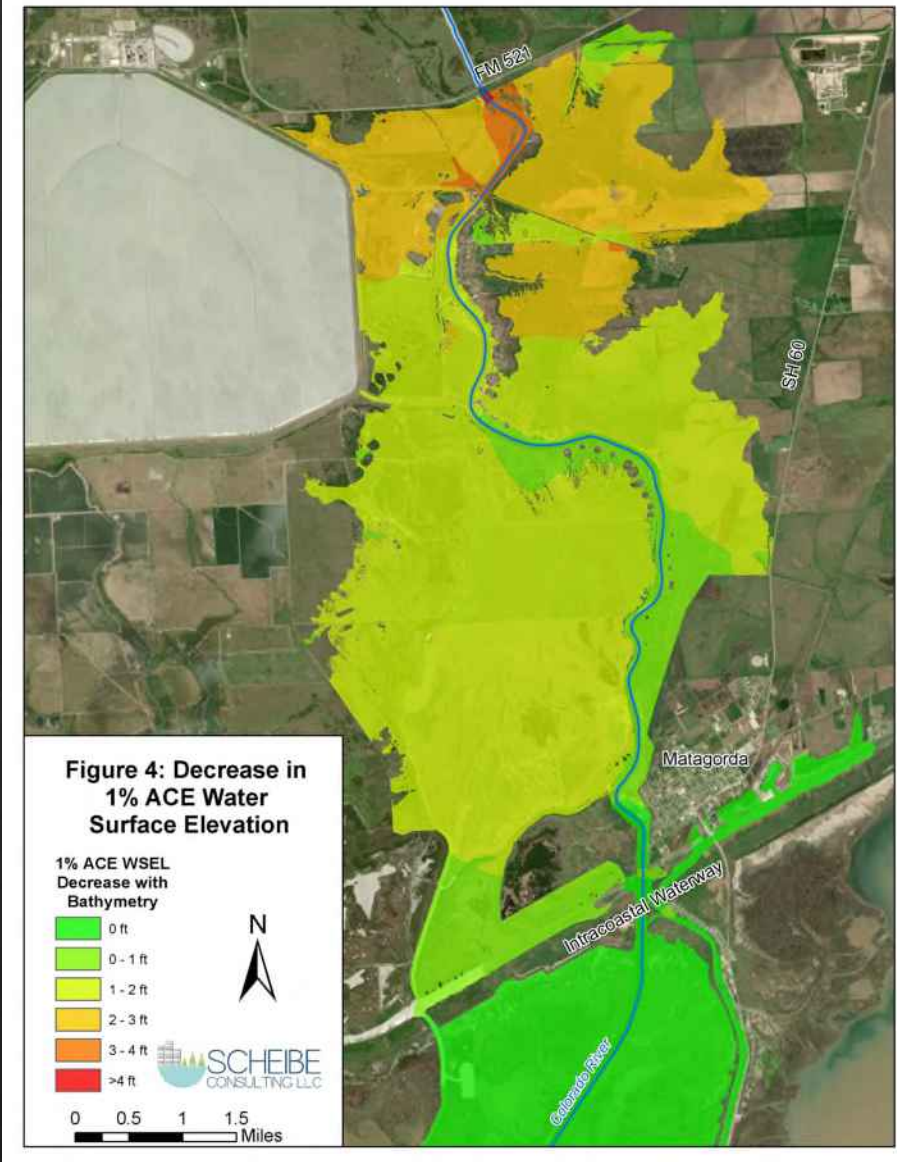
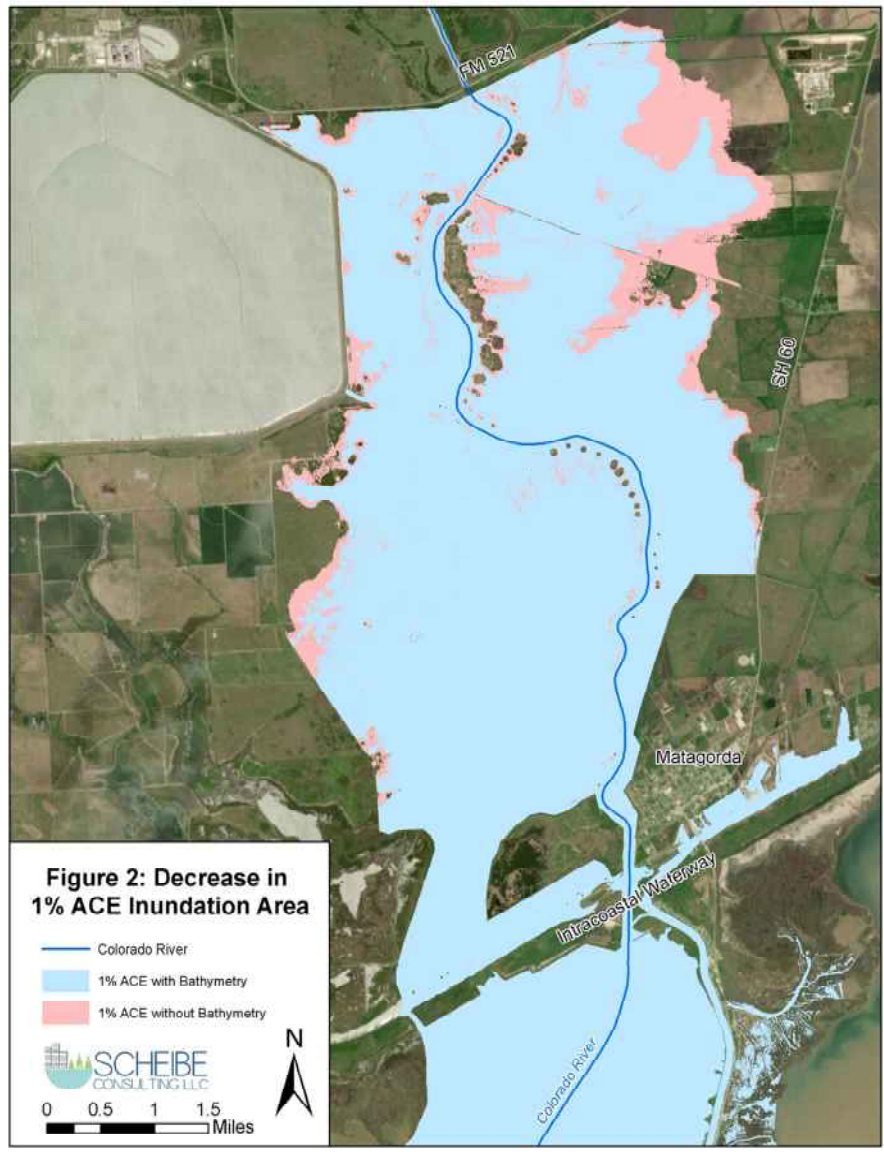
- This will provide information to understanding channel erosion/scour post Harvey,
- Help to identify channel constrictions and key areas that need to be represented in model,
- Help with regional geomorphologic assessments needed to better understand the hydraulics at the mouth of the river.
- Merge with new LiDAR Topography from TNRIS



FPP Study

Benefits of Bathymetric Survey

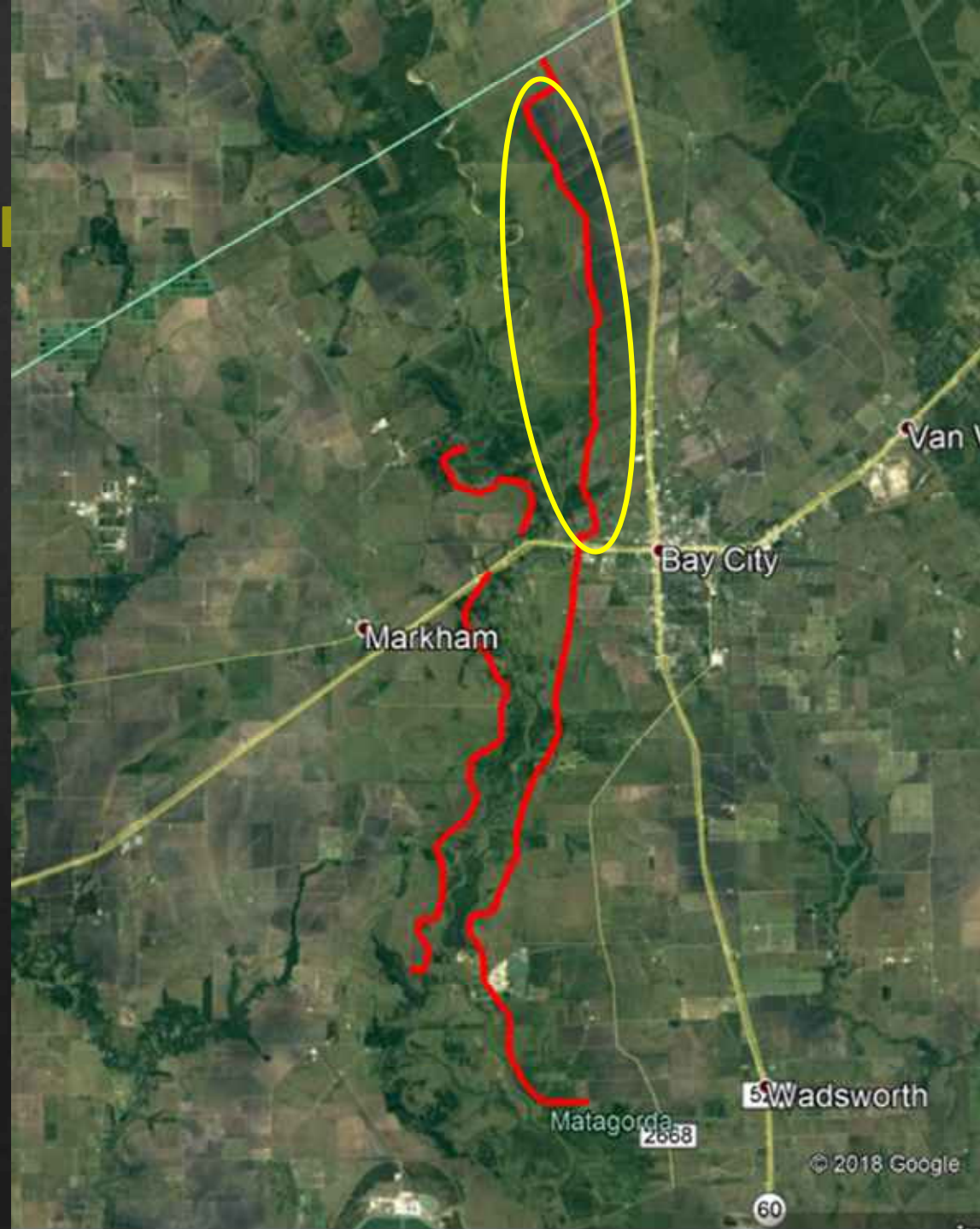
- Test run on Mouth section hydraulic model with and without bathymetric data
- 7.6% decrease in 1% ACE inundation area
- 59% of the inundation area shows at least a 1 foot water surface elevation decrease



Matagorda Co. Conservation and Reclamation District

River Levee System Reevaluation

- Western Levee and Eastern Levee downstream of Hwy 35 were not significantly engaged during the Harvey event
- Currently Analyzing Impacts to Levees for 100yr and 500yr Events
- Need to confirm culvert crossings in Eastern Levee upstream of Bay City

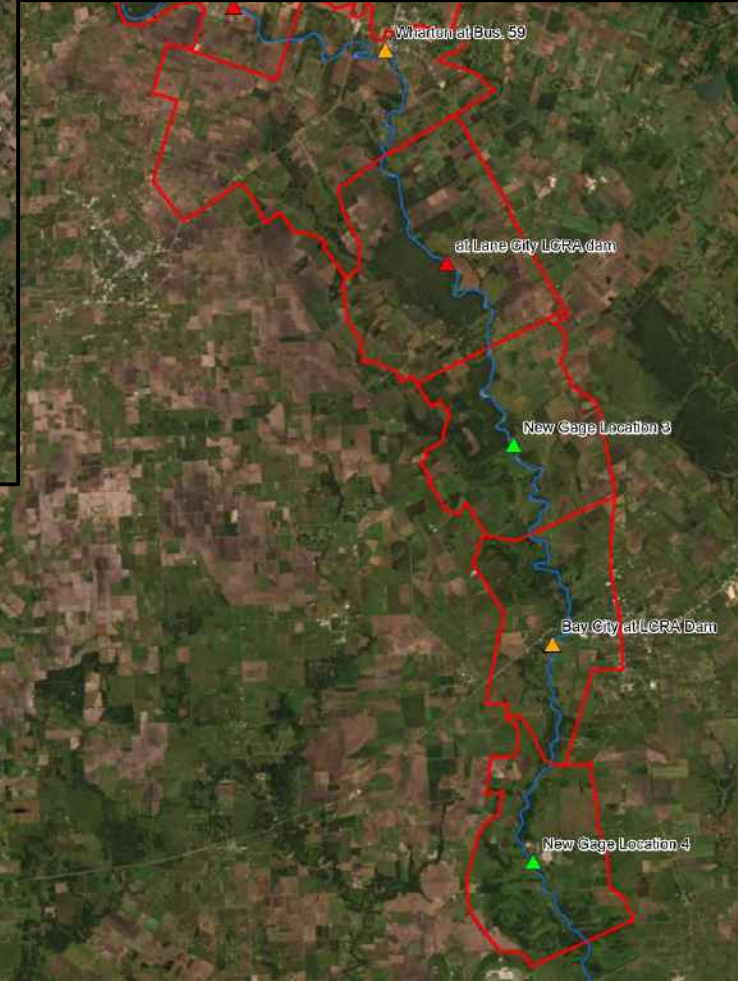


Matagorda River Levees:

1. Eastern Levee = 24 Miles
2. Western Levee = 14 Miles

FDST Tasks Complete!

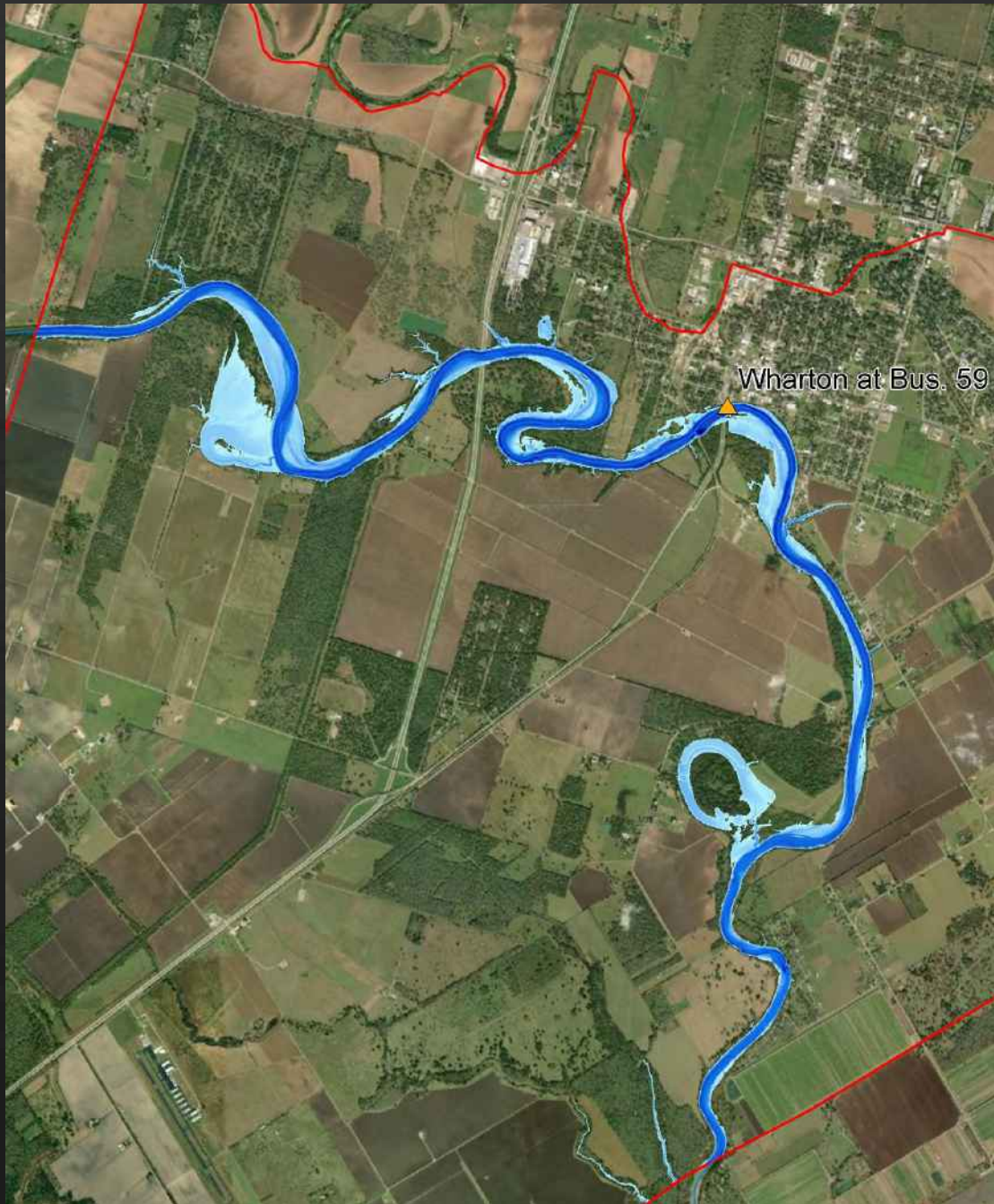
- Determine Mapping Zones for Current Gauges
- Determine Proposed Location for New Gauges (4 locations)
- Develop Map Inundation Libraries











Map Libraries Complete!

- Inundation map libraries for USGS and LCRA gauge locations
- Libraries consist of depth grids at $\frac{1}{2}$ ft. WSEL intervals at gauge location starting from NWS flood stage to maximum 500-yr WSEL
- Approx. 20-30 depth grids per gauge location



Columbus Inundation Map Library

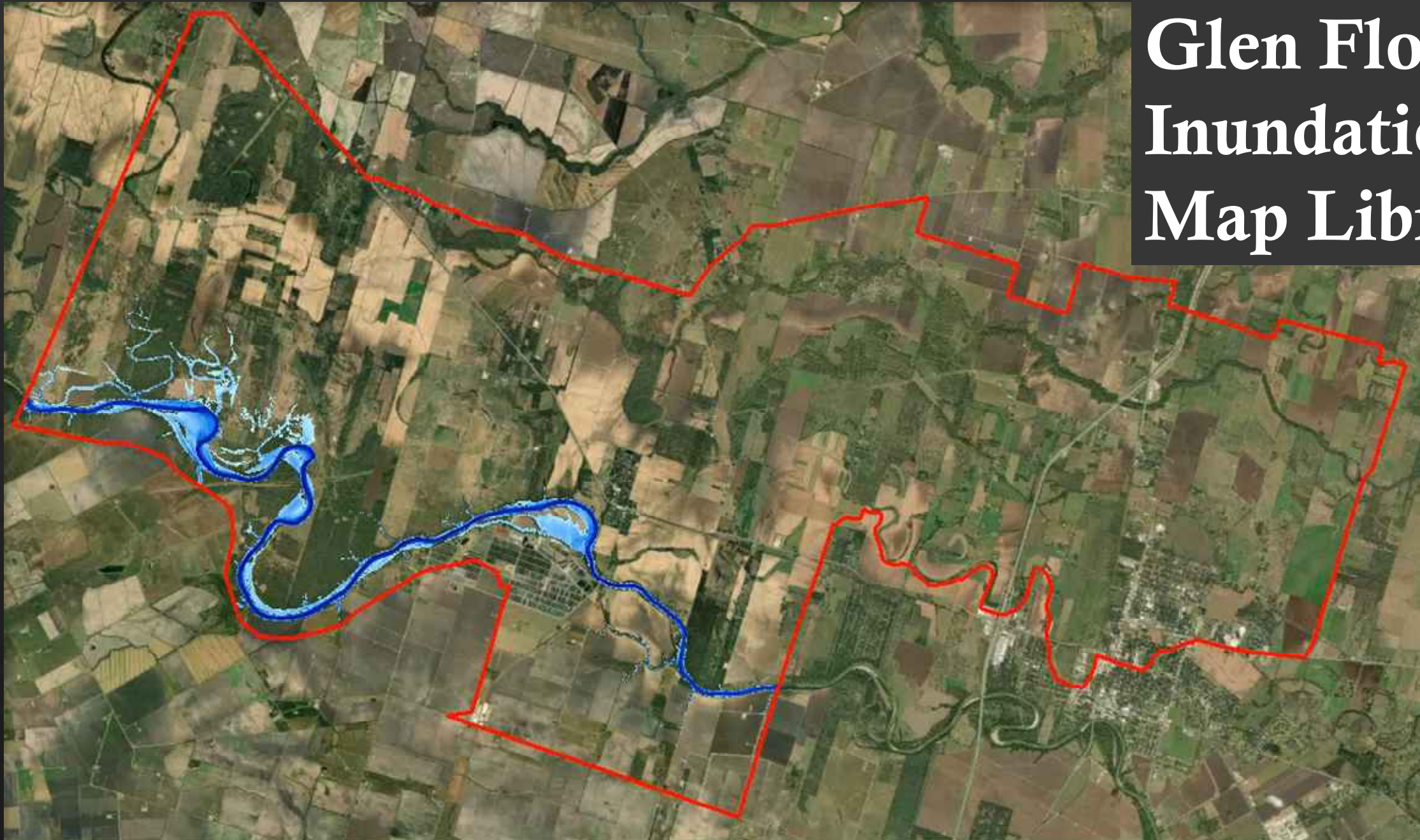


Altair Inundation Map Library



Garwood Inundation Map Library

Glen Flora Inundation Map Library





Wharton Inundation Map Library



Lane City Inundation Map Library



Bay City Inundation Map Library

Near Future Activities:

1. Finalize inundation map libraries for existing USGS and LCRA gages and submit to USGS. (by end of Oct.)
2. Final Report (For Colorado River) Completion by end of April 2022
3. Lower Caney Ck FIF Study
4. Lavaca River FIF Study

Region 10 Lower Colorado-Lavaca RFPG

12. Technical Consultant presentations and discussions related to regional flood planning

- a. Project status
- b. Public and stakeholder engagement strategies update
- c. Task 1 – Planning Area Description: Review and discussion of preliminary draft Chapter 1
- d. Task 2A/B – Existing and Future Conditions: Status and outlook
- e. Task 3A – Floodplain Management Practices: Review and discussion of preliminary draft Chapter 3
- f. Task 4A – Flood Mitigation Needs Analysis: Status and outlook
- g. Task 4B – Identification/Evaluation of Studies, Strategies, and Projects
- h. Task 8 – Administrative, Regulatory, and Legislative Recommendations: Suggested topics/issues
- i. Task 4C – Technical Memorandum: Discuss organization, content, and schedule
- j. Look-ahead – November and December RFPG meetings



LOWER COLORADO – LAVACA
REGIONAL FLOOD PLAN
A TEXAS INITIATIVE

REGIONAL FLOOD PLANNING GROUP MEETING | OCTOBER 18, 2021



AGENDA

Project Status

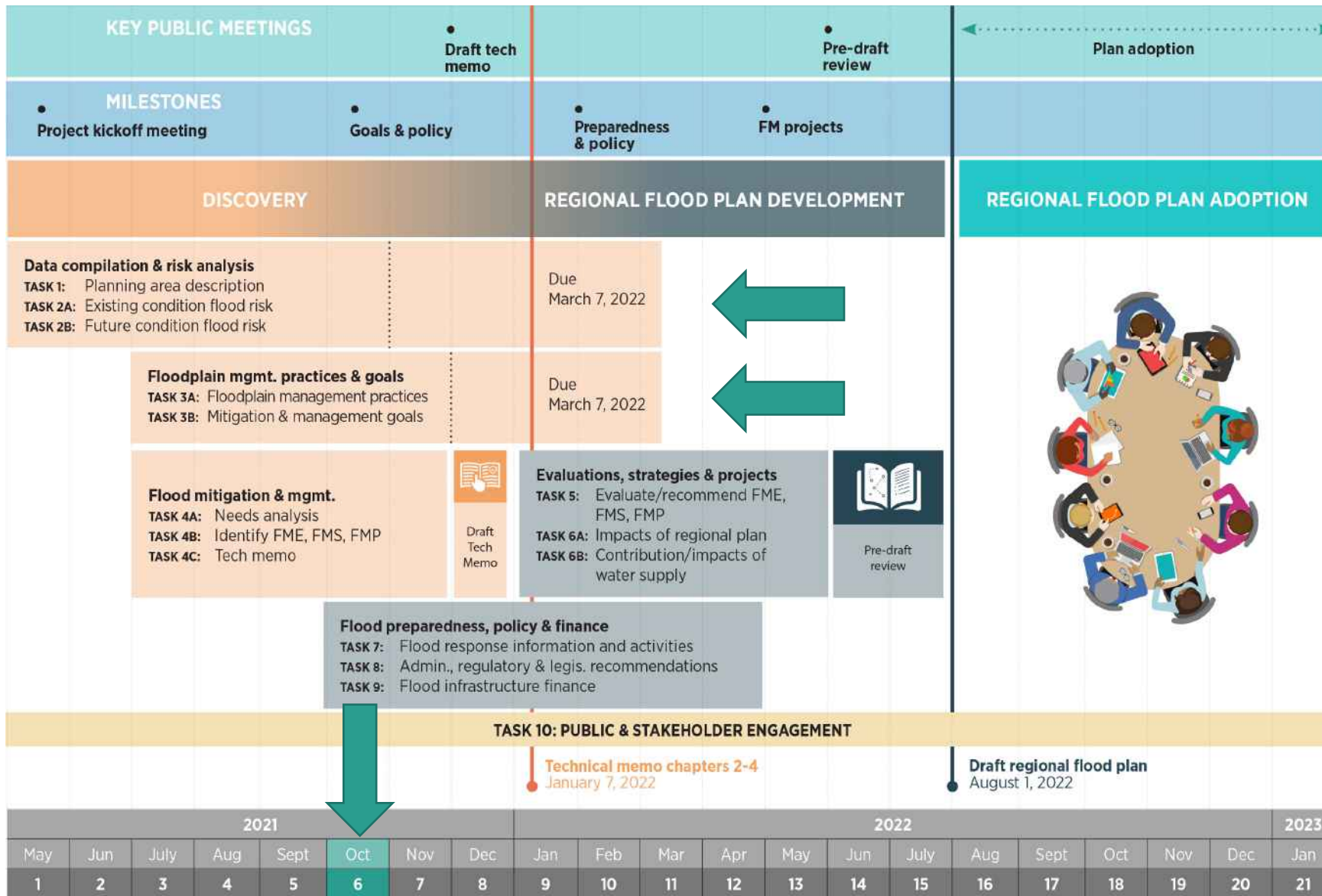
- Public and Stakeholder Engagement
- Task 1 - Planning Area Description: Review and discuss preliminary draft Chapter 1
- Task 2A/B - Existing and Future Conditions: Status and outlook
- Task 3A - Floodplain Management Practices: Review and discuss preliminary draft Chapter 3
- Task 4A - Flood Mitigation Needs Analysis: Status and outlook
- Task 4B - Identification/Evaluation of Studies, Strategies, and Projects
- Task 8 - Administrative, Regulatory, and Legislative Recommendations: Topics / issues

Task 4C – Technical Memorandum: Discuss organization, content, and schedule

Look-ahead Calendar



Project Status



PUBLIC OUTREACH AND ENGAGEMENT

Karen Ford – WaterPR



Ongoing Strategies to Reach Audiences

Email blast to Community & Public Stakeholders (10/12)

- October meeting notice
- Public comment opportunity: goals & process
- Schedule and progress update

Website

- Documents for Public Review page + comments
- Spanish language page

Media

- Media Alert for October 18 meeting
- Social media posts: news, meeting
 - Share/Like



NEXT MEETING
Monday
October 18, 2021
9:30am to Noon

Lower Colorado-Lavaca
**REGIONAL FLOOD
PLANNING GROUP**
REGION 10

Virtual | Agenda & Link at:
LowerColoradoLavacaFlood.org



Task 1

Planning Area Description

TASK 1 – PLANNING AREA DESCRIPTION

Matt Bucchin – HALFF



Review and Discuss Preliminary Draft Chapter 1

Introduction – The Regional Plan in Context

- Overview of Establishing Legislation
- Overview of Planning Process

Characterization – The Lower Colorado-Lavaca Region

- Social and Economic Character
- Flood Prone Areas and Flood Risk to Life and Safety
- Key Historical Flood Events
- Political Subdivisions with Flood-Related Authority

Assessment – Existing Flood Infrastructure

- Natural Features
- Structural Flood Infrastructure
- Condition and Functionality of Existing Flood Infrastructure

Proposed or Ongoing – Flood Mitigation Activities

- Current Flood Mitigation Activities
- Projects Under Construction

Task 1: Planning Area Description

Source: Lower Colorado River Authority Mansfield Dam flood gates

Introduction - The Regional Flood Plan in Context

Overview of Establishing Legislation

In Texas, the billion-dollar disaster is becoming a typical occurrence. Between 2015 and 2017, flooding alone caused almost \$5 billion in damages to Texas communities. As the state grappled with how to better manage flood risk and decrease loss of life and property from future disasters, the Texas Water Development Board (TWDB) led the first ever flood assessment, which described Texas' flood risks, provided an overview of roles and responsibilities, and contained an estimate of potential flood mitigation costs and a summary of stakeholder views on the future of flood planning. This assessment was created because:

- Flood risks, impacts and mitigation costs had never been assessed at a statewide level
- Flood risks pose a danger to lives and livelihoods
- Much of Texas is unmapped, or uses outdated maps (Peter M. Lake, 2019).

The TWDB presented its findings to the Texas Legislature during the 86th legislative session in 2019. Later that year, the Legislature adopted changes to Texas Water Code §16.061 which established a regional and state flood planning process led by the TWDB. The legislation provided funding to improve the State's floodplain mapping efforts and to develop regional plans to mitigate the impact of future flooding. A mandate required the TWDB to facilitate the creation of a regional flood plan for each of the State's 15 major river basins by January 10, 2023. Updates are required every five years thereafter (TWDB Flood Planning Frequently Asked Questions, 2021). The overarching intent of the plans are to protect against the loss of life and property to:

1. Identify and reduce the risk and impact to life and property that already exists, and
2. Avoid increasing or creating new flood risk by addressing future development within the areas known to have existing or future flood risk.

Task 1: Planning Area Description

Figure 9: Major Industries by Payroll

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in the region,
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technical services
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oding on
ents more
y index
rest predictors
munities. The Index (SVI) uses 15 different census variables to help
before, during, and after a disaster. A severe flood event which
heavily impact those vulnerable populations.

revenue by industry may provide the most useful insight into potential
scating the sectors most likely to be exposed to this risk, as it serves as a
st economic impact. Inside the region, the county producing the largest
at \$163.7 billion, is Travis, which also has the greatest number of firms or
alaska trade. Fort Bend County has the second greatest number of total
coi, of which almost \$10 billion is in the retail trade industry. Brazoria
ng Fort Bend County, produces the third greatest revenue, at \$35.5 billion,
ing industry sector. The western side of rural Fort Bend County and
nd the greater economic activity is in the Lower Brazos Basin. The eastern
ston metropolitan area. Table 4: Top Four Counties by Total Revenue, Firms,
e most sales and revenue in the region. Travis and Fort Bend counties also
and their main industry sectors employ between 28,150 and 87,164

County	Total Number of Firms and Businesses	Total Number of Employees	Dominant Industry Sector
Travis	26,318	540,055	Wholesale Trade
Fort Bend	15,663	213,164	Wholesale Trade
Fort Worth	5,304	91,045	Manufacturing
Fort Bend	3,066	51,798	Retail Trade

Source: US Census (Economic Census Summary Table, 2017, By County)

Disclaimer: The preliminary draft is subject to revision and refinement as the process advances.



Task 2A/B

Existing & Future Conditions

TASK 2A/B – EXISTING AND FUTURE CONDITION FLOOD RISK

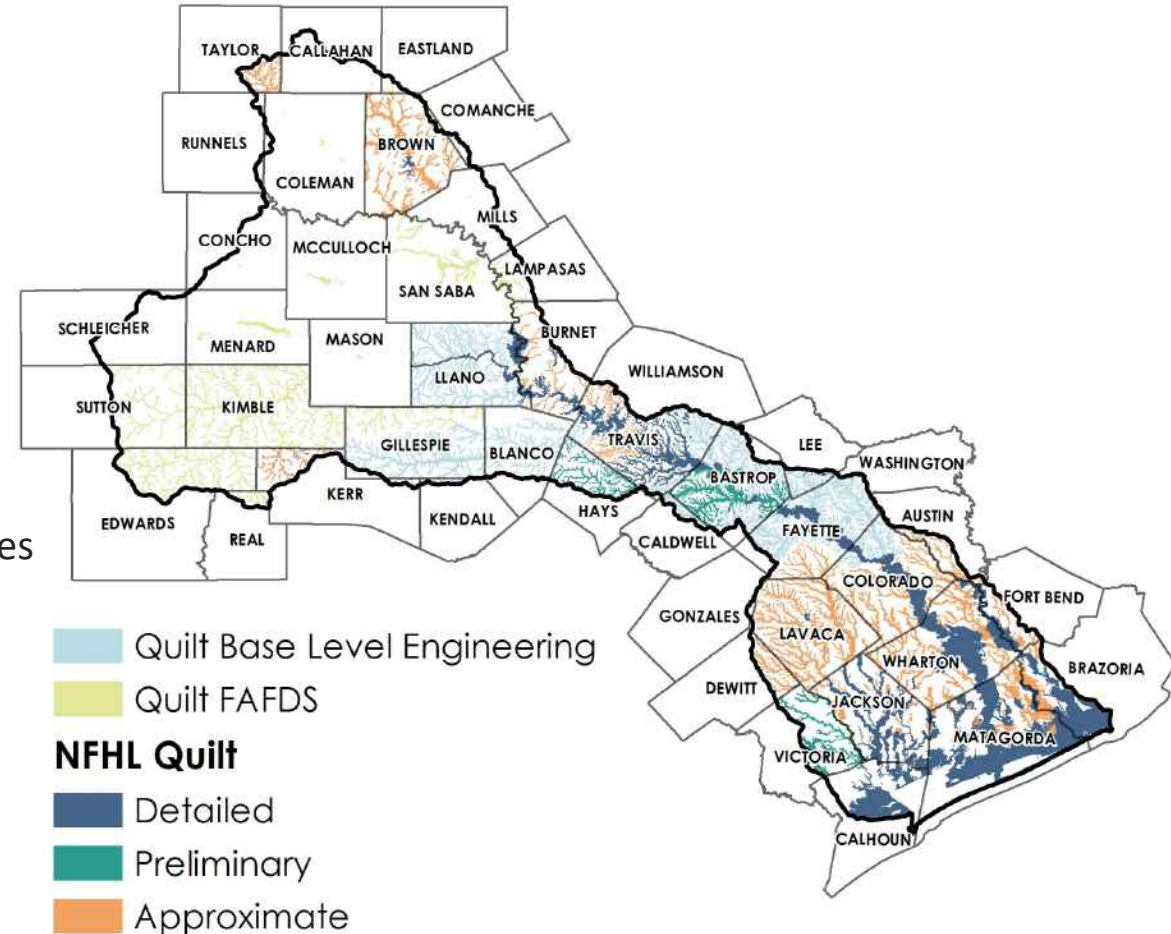
Status and Outlook

TWDB Floodplain Quilt - Late October 2021

- Fathom dataset is critical to Task 2 - provides more accurate floodplain data where:
 - Data is missing (gaps)
 - Data is outdated/unreliable
- Advancing Tasks 2 to extent possible
 - Collecting and integrating best available floodplains / studies
 - Evaluating future condition assumptions and process

Draft Task 2A/2B - January 20, 2021

Due to TWDB - March 7, 2022





Task 3A

Floodplain Management Practices

TASK 3 – FLOODPLAIN MANAGEMENT PRACTICES

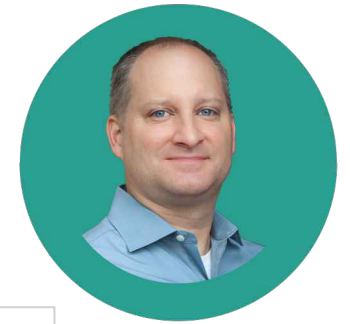
Review and Discuss Preliminary Draft Chapter 3

Task 3A – Evaluation and Recommendations on Floodplain Management Practices

- Current Floodplain Management and Land Use Practices
- Addressing Future Flood Hazards
- Consideration of Potential Floodplain Management, Land Use Practices, and Standards
- Recommendations for Floodplain Management Practices

Task 3B – Floodplain Mitigation and Management Goals

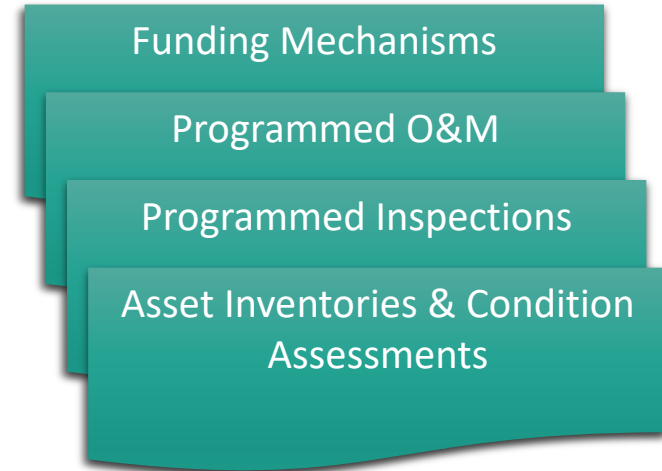
- Goal Focus Areas and Benefits
- Consideration of Potential Goals
- Lower Colorado-Lavaca Goals




Disclaimer: The preliminary draft is subject to revision and refinement as the process advances.

TASK 3A – FLOODPLAIN MANAGEMENT PRACTICES

Review and Discuss Preliminary Draft Table 6



Entity	Floodplain management regulations	Adopted minimum regulations	NFIP Participant	Higher Standards Adopted	Floodplain Management Practices	Level of enforcement of practices	Existing Stormwater or Drainage Fee
County 1	Yes	Yes	Yes	No	Moderate	Moderate	Yes
City 1	No	No	No	No	Low	Low	No
Special Purpose District	Unknown	No	No	No	None	None	No

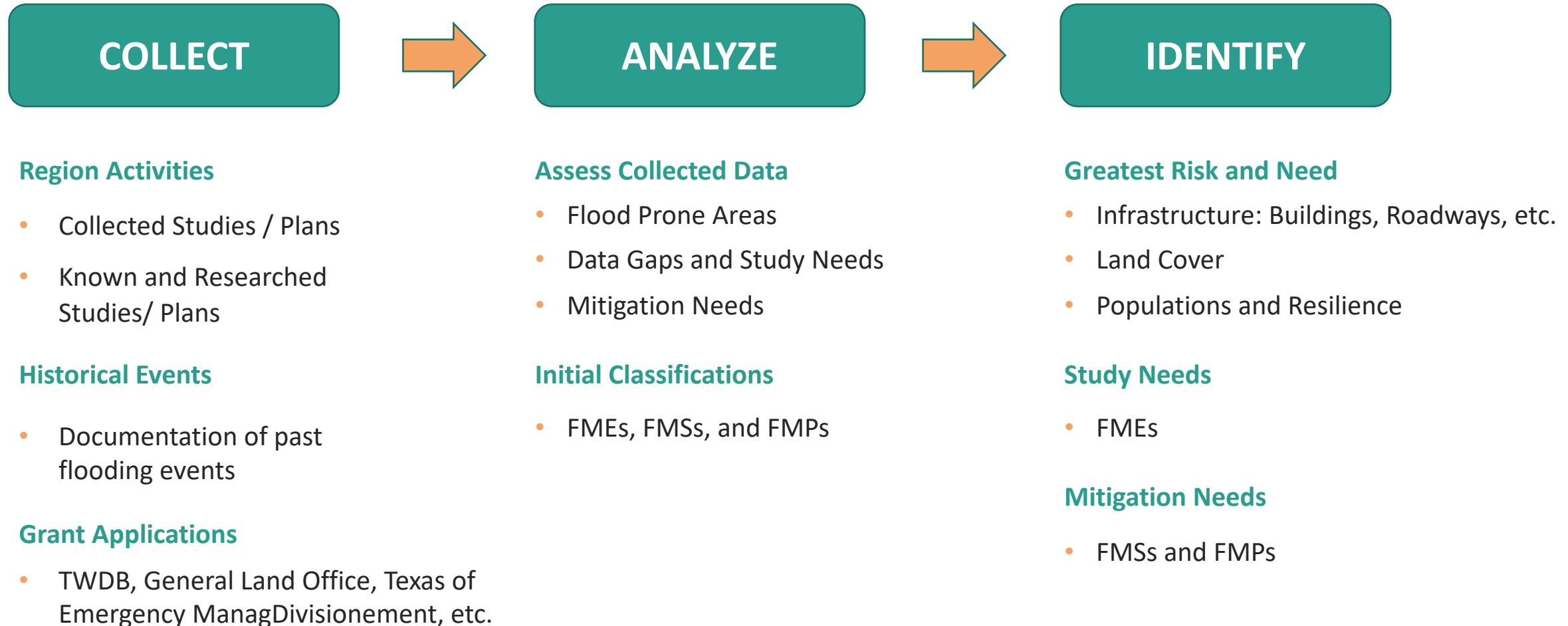


Task 4A

Flood Mitigation Needs

TASK 4A – FLOOD MITIGATION NEEDS ANALYSIS

Status and Outlook





Task 4B

Identification and Evaluation of Potential Studies, Strategies and Projects

TASK 4B – POTENTIAL FMEs, FMSs AND FMPs

Overview

FLOOD MANAGEMENT STRATEGIES (FMSs)

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

FLOOD MANAGEMENT EVALUATIONS (FMEs)

Studies

Flood Preparedness Study

Modeling and Mapping / Risk Identification

Risk Reduction Analysis

Alternatives Analysis / Feasibility Assessment

Preliminary Engineering (30% design)

FLOOD MITIGATION PROJECTS (FMPs)

Structural Infrastructure

Advanced Analysis / Design / Construction (30 - 100% design)

Non-Structural

Project Implementation

- Property/Easement Acquisition
- Elevation of Structures
- Floodproofing
- Flood Readiness and Resilience
- Flood Warning, Gauges
- Regulatory Requirements



Task 8

Policy Recommendations

TASK 8 – POLICY RECOMMENDATIONS

Mike Personett – HALFF



Policy Issues and Topics:

Administrative

- Regional flood planning process improvements
- Develop model ordinances for general law cities (e.g., building codes, Low Impact Design/Development)

Regulatory

- City and county regulatory authority re: regulation of land use and development in floodplains

Legislative

- Recurring appropriations to Flood Infrastructure Fund for Study, Strategy and Project implementation
- State incentives for establishment of municipal drainage utilities
- Legal impediments to use of public funds to improve private properties for flood risk reduction (e.g., elevation of structures in floodplains)

Send ideas/suggestions to Mike Personett at mpersonett@halff.com

TASK 8 – POLICY RECOMMENDATIONS

Examples from Trinity Flood Planning Region

Administrative

- Assist smaller jurisdictions in preparing funding applications or make the application process easier.
- Funding for projects that benefit agricultural activities should not be scored or awarded based on a traditional benefit-cost ratio.
- Use consistent HUC reporting requirements throughout the TWDB-required tables.
- Establish common criteria across the region or subregions (common floodplain management standards).
- Provide funding and/or assistance to develop floodplain maps.
- Develop a statewide database and tracking system to document flood-related fatalities that is publicly available.

Regulatory

- State adoption of 2015 or 2018 versions of International Building Code and International Residential Code
- TxDOT design criteria should require all roadways to be elevated above the 1% ACE water surface elevation.
- Establish a levee safety program similar to the dam safety program.

Legislative

- Add legislative ability to allow counties the opportunity to establish and assess drainage (stormwater) utility fees.
- Develop and allocate State funding to assist privately-owned dam owners with the costs associated in repairing and maintaining dam structures.



Task 4C

Technical Memorandum

TASK 4C – TECHNICAL MEMORANDUM #1

Content and Schedule

Status Overview Text

- Brief Introduction of Regional Planning Process
- Summary of Activities through November 2021
 - Public Outreach and Engagement and Tasks 1, 2, 3, 4 and 8
- Approach to Produce Initial Draft Regional Flood Plan by August 1, 2022
- Introductory Text for Technical Memorandum Deliverables

Task 4C Attachments (excluding Items 1c-e)

- List of existing political subdivisions with flood-related authority/responsibility
- List of previous flood studies and models considered relevant for the plan
- Adopted flood mitigation and floodplain management goals
- Process used to identify potentially feasible FMSs and FMPs
- List of potential FMEs and potentially feasible FMSs and FMPs
- List of infeasible FMSs and FMPs with reason of exclusion
- Associated geospatial database

DRAFT MEMO #1
November 15, 2021

DUE TO TWDB
January 7, 2022

TASK 4C – TECHNICAL MEMORANDUM #2

Content and Schedule

Status Overview Text

- Summary of Activities November 2021 – January 2022
 - Public Outreach and Engagement and Tasks 1, 2, 3, 4 and 8
- Introductory Text for Technical Memorandum Deliverables

Task 4C Attachments (Items 1c-e)

- Tables, Maps, and Geospatial Database
 - Existing and Future Condition Flood Risk
 - Flood Mapping Gaps
 - Hydrologic and Hydraulic Model Availability

DRAFT MEMO #2
January 2022

DUE TO TWDB
March 7, 2022



Look-Ahead

NOVEMBER–DECEMBER 2021

RFPG Meetings

November 15, 2021

- APPROVE flood mitigation and floodplain management goals
- APPROVE process to be used by the RFPG to identify and select Studies, Strategies and Projects (FMEs, FMSs and FMPs)
- Review draft Technical Memorandum

December 16, 2021

- APPROVE submittal of Technical Memorandum (due 01/07/22)



Wrap Up

Region 10 Lower Colorado-Lavaca RFPG

- 13. Discuss and accept public comments regarding flood mitigation and floodplain management goals**



LOWER COLORADO – LAVACA
REGIONAL FLOOD PLAN
A TEXAS INITIATIVE

REGIONAL FLOOD PLANNING GROUP MEETING | OCTOBER 18, 2021





Task 3B

Flood Mitigation and Floodplain Management Goals

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Matt Bucchin – HALFF



Goals and Framework & Statements

- Explored values – June
- Overviewed framework – July
- Homework – July
- Refinements / Discussion – August
- Homework – September
- Refinements / Discussion – October
- Public comment – October

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

TASK 3: FLOODPLAIN MANAGEMENT PRACTICES AND FLOOD PROTECTION GOALS

Benefits

The adopted goal statements were developed in a manner to set the stage for specific actions that can be quantified and measured through subsequent state flood plan processes, including future discovery data collection processes, or through implementation of evaluations, strategies, and/or projects, rather than high-level goal statements associated with outcomes (e.g., reducing fatalities). Implementation of the goals will demonstrate progress towards the overall purpose and intent of the regional flood planning process and will provide various benefits to individuals, communities, and the region as a whole. The types of benefits to be realized with implementation of the Lower Colorado-Lavaca Regional Flood Plan are presented below.

Table 3.X, Lower Colorado-Lavaca Region Flood Planning Goal Focus Areas and Benefits

Benefits / Overarching Goals	Focus Area 1 Flood Education and Outreach	Focus Area 2 Flood Warning and Readiness	Focus Area 3 Flood Studies and Analysis	Focus Area 4 Flood Prevention	Focus Area 5 Non-Structural Flood Infrastructure Projects	Focus Area 6 Structural Flood Infrastructure Projects
Protect life	○	●	○	○	●	●
Protect infrastructure	○		○	●	○	●
Protect property	○	○	○	●	●	●
Protect the environment	○		○	●	●	●
Protect/enhance water supply				○	○	○
Sustain the economy	○	○		○	●	○
Achieve co-benefits*				○	○	○
Increase public awareness	●	●	○	○	○	
Build community support	●	●	○	○		

○ – Potential benefit
● – Direct benefit

* co-benefits which could be achieved through flood protection include improved water supply, increased public recreation opportunities, etc.

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TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 1 – Education and Outreach

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
✓	Increase the number of public outreach and educational communications and activities conducted by the RFPG to improve awareness of flood hazards and benefits of flood planning in the FPR.	TBD	TBD	Number of public communications (emails, social media, news blasts, public service announcements, educational packets, etc.)

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 2 – Flood Warning and Readiness

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
?	Increase the number of communities with warning and emergency response capabilities, or which participate in regional flood warning systems (e.g., LCRA Hydromet, City of Austin Flood Early Warning System) that can detect flood threats in real time and provide timely warning of impending flood danger.	TBD	TBD	Number of communities with warning and emergency response capabilities (e.g., real time flood gauge monitoring)

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 3 – Flood Management Evaluations (aka Studies)

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
?	Increase the number of entities that have updated watershed models and floodplain maps to reflect current conditions, including as applicable Atlas 14 (Volume 11) revised rainfall data.	TBD%	TBD%	Number of entities that have updated watershed models and floodplain maps
?	Increase the number of entities that have evaluated priority flood risk areas and flood risk reduction measures (e.g., alternatives analysis and preliminary engineering).	TBD	TBD	Number of entities that identify risk reduction measures
✓	Increase the number of entities that have digital flood insurance rate maps (DFIRMS) that reflect current conditions.	TBD	TBD	Number of entities that have digital flood insurance rate maps (DFIRMS)

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 4 – Flood Prevention

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
✓	Increase the number of eligible entities that are participating in the National Flood Insurance Program (NFIP).	100% participation by eligible entities	Maintain	Number of eligible entities that are participating in the NFIP
?	Increase the number of entities that have adopted higher standards over and above NFIP minimum standards (see minimum baseline set out in Task 3A).	TBD	TBD	Number of entities that regulate with higher standards
?	Increase the number of NFIP participating entities which also participate in the FEMA Community Rating System (CRS).	TBD	TBD	Number of entities that are CRS participants

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 4 – Flood Prevention (Continued)

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
?	Increase the number of entities that have established a drainage utility per state law and which assess drainage fees as a dedicated source of funding for risk reduction activities.	TBD	TBD	Number of entities that have an established drainage utility
✓	Increase the number of entities that have adopted regulations to reduce the risk from localized flooding.	TBD (establish baseline)	TBD (improve numbers)	Number of entities that have local drainage protection requirements in their development code
?	Increase the number of entities which regulate to one or more feet above the Base Flood Elevation (BFE) for existing 1% annual chance event (100-year) conditions.	TBD	TBD	Number of entities that indicate BFE + 1 or more as part of their survey response

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 4 – Flood Prevention (Continued)

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
✓	Increase the number of entities which provide alternate compliance options that allow or incentivize nature-based solutions to reduce future flood risk.	TBD (establish baseline)	TBD (improve numbers)	Number of entities that allow/incentivize nature-based solutions as part of alternate compliance
?	Increase the number of entities in the FPR that designate the 1% annual chance (100-year) floodplain on the entity's future land use plan.	TBD (establish baseline)	TBD (improve numbers)	Number of entities that delineate floodplains on land use maps

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 5 – Non-Structural Flood Risk Reduction Projects

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
?	Reduce the number of structures and critical infrastructure that are at high risk of repetitive loss through property/easement acquisitions, relocations, and/or elevation.	TBD%	TBD%	Number of NFIP repetitive-loss / severe repetitive-loss properties mitigated by acquisitions, relocations, and/or elevation
?	Increase the acreage of publicly protected open space to reduce future impacts of flooding through property buyouts, land conservation easements, acquisitions, or other comparable means.	TBD	TBD	Acreage of preserved land in region

TASK 3B FLOODPLAIN MANAGEMENT GOALS

Proposed Goals

Category 6 – Structural Flood Risk Reduction Projects

Status	Goal	Short Term (2033)	Long Term (2053)	Metric
?	Reduce the number of structures and critical facilities that are at high risk of repetitive loss through the implementation of structural flood mitigation projects.	TBD	TBD	Number of NFIP repetitive-loss / severe repetitive-loss properties mitigated by structural flood mitigation projects
?	Increase the number of entities that assess flood risk at vulnerable roadways (e.g., low-water crossings) to identify priorities for flood risk mitigation.	TBD	TBD	Number of entities that assess low water crossings or vulnerable roadway segments

Region 10 Lower Colorado-Lavaca RFPG

- 14. Discuss and accept public comments regarding the process to be used by the RFPG to identify and select FMEs, FMSs, and FMPs**



Task 4B – Potential Studies, Strategies and Projects (FMEs, FMSs, FMPs respectively)

Proposed Selection Process for Public Comment

TASK 4B – POTENTIAL STUDIES, STRATEGIES & PROJECTS

Cris Parker – HDR



Proposed Selection Process – Task 4B-5 General Steps

Step 1: *Initial screening of Studies, Projects & Strategies received*
Screen for minimum TWDB rules and guidance requirements

Step 2: *Screening of Projects*
Screen per TWDB flowchart and guidance

Step 3: *Screening of Studies*
Screen for minimum TWDB guidance requirements

Step 4: *Initial screening of Strategies*
Screen for minimum TWDB guidance requirements

Step 5: *Detailed evaluation of selected Studies, Projects & Strategies*

Step 6: *Final recommendations of Studies, Projects & Strategies*

JUST IN CASE SLIDES BEYOND THIS POINT

NOTE: The document for public comment on Task 4B will be in the backup documents too.

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 1: Initial screening of *Studies, Projects & Strategies* received

Screen for minimum TWDB rules and guidance requirements

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

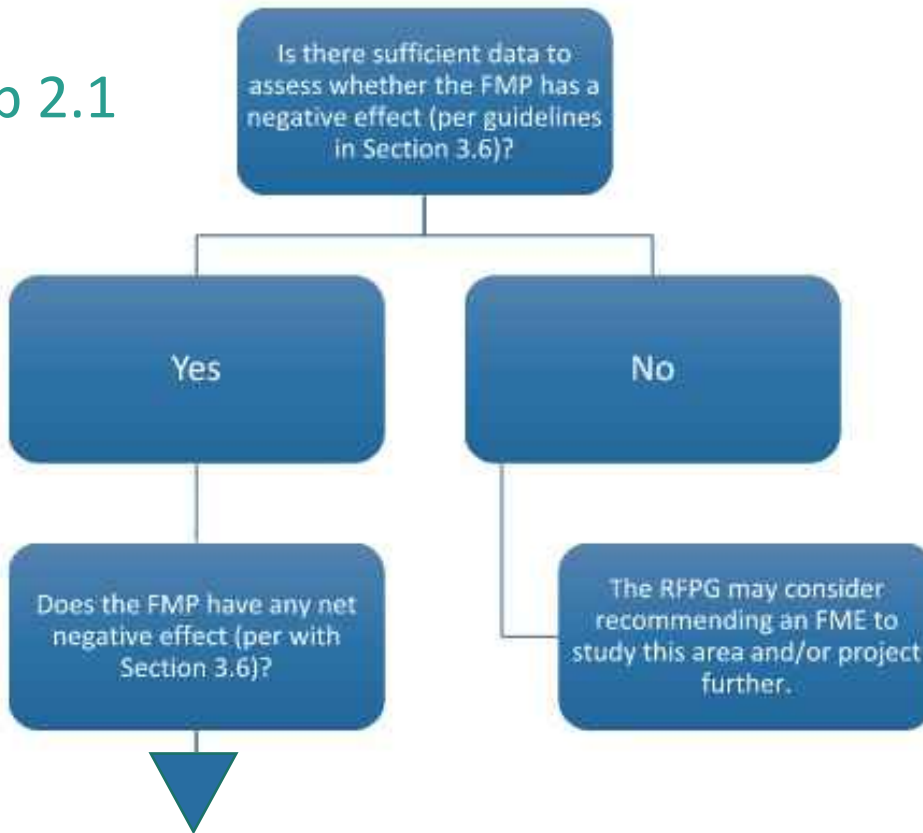
*except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 2: Screening of *Projects*

Screen per TWDB flowchart and guidance

Step 2.1



“Sufficient data”

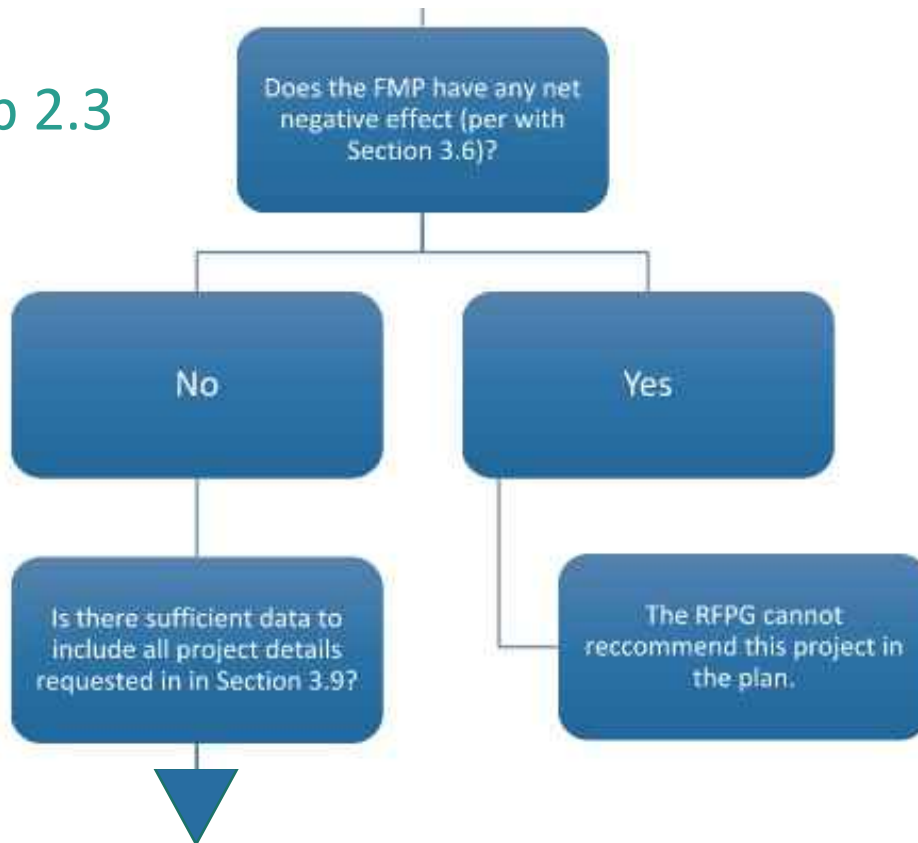
- H&H modeling, mapping, and basis for mitigation project analysis generally meets Section 3.5 of TWDB technical guidelines
 - Reliable
 - Minimal uncertainty

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 2: Screening of *Projects*

Screen per TWDB flowchart and guidance

Step 2.3



“Negative effect”

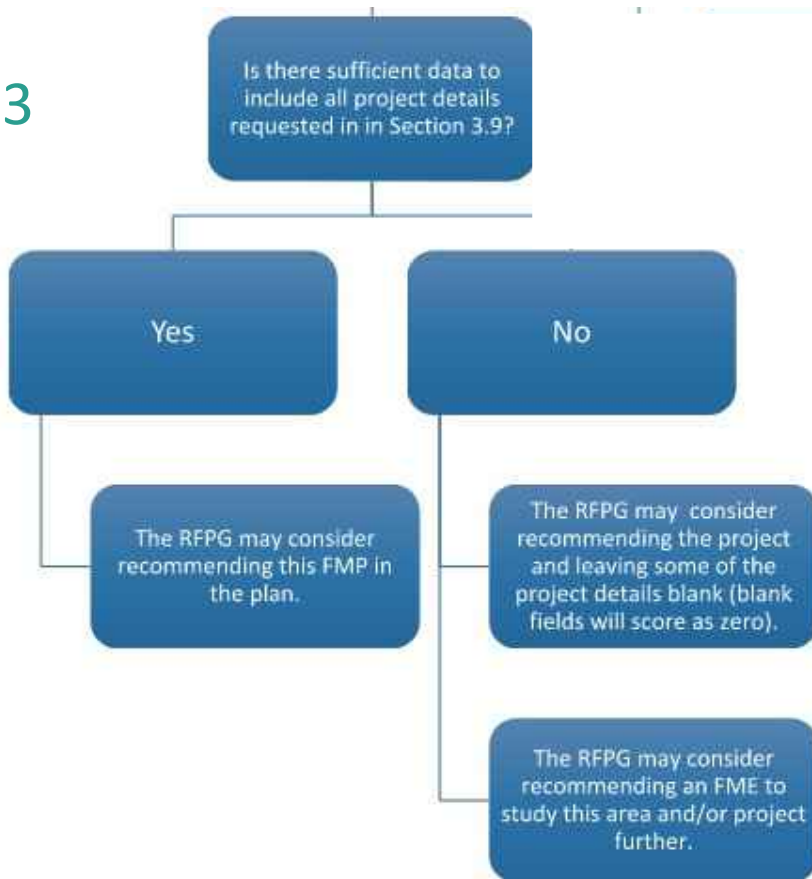
- For the 100-year (1% annual chance) flood event, no rise in flood elevation or discharge should be permissible. Projects should not:
 - Increase inundation on homes or commercial buildings
 - Increase inundation beyond ROW or easements
 - Increase inundation beyond existing drainage infrastructure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

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 2: Screening of *Projects*

Screen per TWDB flowchart and guidance

Step 2.3



Section 3.9 “Project Details”

- Flood severity level metrics
- Flood risk/damage reduction metrics
- Estimated capital and O&M cost
- Benefit/Cost Ratios
- Environmental benefits/impacts
- Implementation constraints
- Water supply benefits
- Others...

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 3: Screening of *Studies*

Screen for minimum TWDB guidance requirements

Three General Categories of *Studies*:

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

3.1 If detailed H&H and mitigation alternatives analysis → *Project* or *Strategy*

3.2 Sensible

3.3 Reasonable planning-level cost estimate

3.4 Identified sponsor(s)

3.5 Structures, population and critical facilities at risk

3.6 Roadways at risk

3.7 Area of farm and ranch land at risk

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 4: Initial screening of *Strategies*

Screen for minimum TWDB guidance requirements

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

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

Step 1 – Initial Screening

1.1 Flood mitigation or floodplain management goal

1.2 Meets an emergency need

*1.3 Flood problem with drainage area of 1 square mile or greater**

1.4 Reduces flood risk for 100-year (1% annual chance) flood

4.1 Planning-level cost estimate

4.2 Identified sponsor(s)

4.3 Estimated flood risk and flood risk reduction

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 5: Detailed evaluation of selected *Studies, Projects & Strategies*

5.1 Project benefit-cost ratios > 1.0

5.2 Have identified a *willing* sponsor(s)

5.3 No known insurmountable implementation constraints or hurdles (ROW, utility conflicts, permitting, etc.)

5.4 Evaluate RFPG specific requirements to incorporate a project or strategy into the RFP?

- Example: Must include X% of “other” benefits?
 - Environmental/water quality
 - Water Supply
 - Erosion/sedimentation
 - Recreational
- Example: X% of project includes nature-based solutions?

TASK 4B – POTENTIAL STUDIES, PROJECTS & STRATEGIES

Step 6: Final recommendations of *Studies, Projects & Strategies*

Incorporate into the draft and final Reginal Flood Plan

6.1 Public comment of Recommended FMEs, FMSs and FMPs

6.2 Initial/Final adoption

Technical Memorandum

- Potentially feasible
- Potentially not feasible

Draft Regional Flood Plan

- Recommended FMEs, FMSs and FMPs

Region 10 Lower Colorado-Lavaca RFPG

- 15. Public comments– limit 3 minutes per person**
- 16. Consider date and agenda items for next meeting**
- 17. Adjourn**