



Region 11: Guadalupe Regional Flood Planning Group Meeting

Wednesday, February 9, 2022
2:00pm

Agenda Item 1

Call to Order

1. Attendance
2. Individuals attending in-person, please sign-in

Agenda Item 2

Welcome

Agenda Item 3

Approval of Meeting Minutes

1. Approval of meeting minutes from December 1, 2021 Region 11 RFPG Meeting

Meeting Minutes
Region 11 Guadalupe Regional Flood Planning Group Meeting
December 1, 2021 at 2:00 PM
Guadalupe-Blanco River Authority River Annex (905 Nolan Street, Seguin, TX 78155)
or
GoToWebinar Virtual Meeting

Roll Call:

<u>Voting Member</u>	<u>Interest Category</u>	<u>Present (x) / Absent () / Alternate Present (*)</u>
Doug Miller Melissa Reynolds*	<i>Agricultural</i>	X
John Johnston	<i>Counties</i>	X
Lon Shell	<i>Counties</i>	X
Bobby Christmas	<i>Electric Generating Utilities</i>	X
Annalisa Peace Vanessa Puig-Williams*	<i>Environmental</i>	X
Beth Parker Doug Sethness*	<i>Flood districts</i>	*
Kevin Stone	<i>Industries</i>	
Joseph Pantalion Laurie Moyer* John Espinoza**	<i>Municipalities</i>	X
Ken Gill	<i>Municipalities</i>	X
Dr. Kimberly Meitzen	<i>Public</i>	X
R. Brian Perkins Charlie Hickman*	<i>River Authorities</i>	X
Ray Buck Jonathan Letz*	<i>River Authorities</i>	X
Gian Villarreal Tami Norton*	<i>Small Business</i>	Arrived at 2:06pm
Ronald (Ron) Fieseler	<i>Water Districts</i>	X
Steven Fonville	<i>Water Utilities</i>	X

<u>Non-voting Member</u>	<u>Agency</u>	<u>Present(x)/Absent () / Alternate Present (*)</u>
Sue Reilly Beth Bendik*	Texas Parks and Wildlife Department	X
Jim Guin	Texas Division of Emergency Management	Arrived at 2:07pm
Jami McCool Kristin Lambrecht*	Texas Department of Agriculture	X
Allen Nash	Texas State Soil and Water Conservation Board	X
Kris Robles Teresa Williams*	General Land Office	X
Morgan White Ryke Moore*	Texas Water Development Board (TWDB)	*

Joel Klumpp Brittney Wortham-Teakell*	Texas Commission on Environmental Quality	
Don Durden	Public	X
Suzanne Scott	Region 12 Liaison	
Patrick Brzozowski Scott Hartl*	Region 10 Liaison	Arrived at 2:09pm

Quorum:

Quorum: **Yes**

Number of voting members or alternates representing voting members present: **14**

Number required for quorum per current voting positions of 15: **8**

Other Meeting Attendees:

Lauren Willis, GBRA (Facilitator)

Ram Mendoza, GBRA (IT)

Jay Scanlon, Freese & Nichols, Inc.

Adam Conner, Freese & Nichols, Inc.

Velma Danielson, Blanton & Associates

Vanessa Escobar, Blanton & Associates

Ben Eldridge, Cibolo Nature Center

Pratibha Sapkota, San Antonio River Authority

John Espinoza, City of San Marcos

Laurie Moyer, City of San Marcos

Daniel Harris, Scheibe Consulting

Hollie Hischer, TDEM

Timothy Patek, Gonzales

Shane Porter, Atkins Global

Epifanio Ruiz, Kendall County

James Cowey, City of Gonzales

Gustavo Tirado, City of Gonzales

All meeting materials are available for the public at: <http://www.quadalupeRFPG.org>

AGENDA ITEM NO. 1: Call to Order

Chairman Doug Miller called the meeting to order at 2:02 PM. Lauren Willis called roll of the planning group members to record attendance and a quorum was established.

AGENDA ITEM NO. 2: Welcome

Chairman Miller welcomed members to the meeting.

AGENDA ITEM NO. 3: Approval of Minutes from the November 3, 2021 Region 11 RFPG Meeting

Chairman Miller opened discussion on approving the minutes from the November 3 Region 11 RFPG Meeting.

A motion was made by Annalisa Peace to approve the November 3, 2021 Region 11 RFPG Meeting minutes. John Johnston seconded the motion. The meeting minutes were approved by consensus.

AGENDA ITEM NO. 4: Region 11 Guadalupe RFPG Chair Updates

Chairman Miller did not have any updates for the group.

AGENDA ITEM NO. 5: Texas Water Development Board (TWDB) Updates

Ryke Moore is filling in for Morgan White until the New Year. The TWDB sent the contract amendment 1 to the RFPG sponsor to process. The TWDB is hosting a Chairs and Technical Consultant conference call in the month of December. Annalisa Peace mentioned that the TWDB is going through the sunset process and public comments are due by December 15, 2021.

AGENDA ITEM NO. 6: Guadalupe Region 11 RFPG Sponsor Guadalupe-Blanco River Authority (GBRA) Updates

Lauren Willis reminded the RFPG members that the GoToMeeting link can be found on the guadalupeRFPG.org website on top of the agendas. The TWDB Contract Amendment 1 is to be processed as soon as Agenda Item 8 is discussed.

AGENDA ITEM NO. 7: Update from Region 10 (Lower Colorado-Lavaca) and Region 12 (San Antonio) Liaisons.

Ron Fieseler updated that Region 10 is on the same schedule as Region 11 and are having hybrid meetings. Annalisa Peace and Susan Scott (Region 12) recommended that the group watch the last San Antonio meeting for the robust discussion of goal setting.

AGENDA ITEM NO. 8: Discussion and authorization for the voting planning member travel associated with the TWDB Contract Amendment 1 between TWDB and GBRA.

Chairman Miller opened discussion on reimbursement for voting planning member travel.

A motion was made by John Johnston to not reimburse for member travel. Ron Fieseler seconded the motion. The vote passed by a vote of 14 Ayes, 0 Nays.

AGENDA ITEM NO. 9: Discussion regarding Region 11 RFPG Technical Consultants work and schedule.

Vanessa Escobar, Blanton & Associates updated the RFPG on public participation & outreach and reviewed the summary of data/information received to date by the technical consultants.

a. Discussion and potential action approving the Technical Memorandum to be submitted to the TWDB by January 7, 2022.

Jay Scanlon discussed the comments received on the technical memorandum from the RFPG voting members and how those would be incorporated. A motion was made by Joe Pantalione to approve the technical memorandum subject to revisions based on comments that have been submitted for the ultimate submittal to the TWDB. Brian Perkins seconded the motion. The vote passed by a vote of 14 Ayes, 0 Nays.

Jay Scanlon led an overview and discussion on Task 2B, looking at the possible future flood risks analysis. He also reviewed an example Dashboard for the data within the Guadalupe basin.

AGENDA ITEM NO.10: Consider date and agenda items for next meeting

The next meeting will be held on February 2, 2022 at 2pm and will be held in-person. It was requested that a calendar appointment be put on everyone's calendar for the year 2022.

AGENDA ITEM NO. 11: Public General comments (Public comments limited to 3 minutes per speaker)

Doug Miller provided instructions for public comments. One public comment was received.

1. Mr. Ben Eldredge – Cibolo Nature Center spoke about the San Antonio River Flood planning group, Dr. Troy Dorman's work with the City of Boerne on Stormwater Ordinances and how this is playing a role in the San Antonio Regional Flood Planning Group (RFPG). The San Antonio RFPG has created a menu of suggested recommendations/ordinances that are based off of the work done with the City of Boerne. Essentially, plug and play options have been created to improve stormwater quality for the cities. The Guadalupe RFPG would be interested in Dr. Troy Dorman presenting at the February meeting.

AGENDA ITEM NO. 12: Adjourn

Ron Fieseler made a motion to adjourn. The motion was seconded by Brian Perkins. The motion passed by unanimous consent.

The meeting adjourned at 3:29 PM by Doug Miller.

Approved by the Region 11 Guadalupe RFPG at a meeting held on February 2, 2022.

Brian Perkins, SECRETARY

Doug Miller, CHAIR

Region 11 Guadalupe RFPG Chair Updates

Agenda Item 4

Texas Water Development Board Updates

Agenda Item 5

Agenda Item 6

Guadalupe Region 11 RFPG Sponsor – GBRA Updates

1. Website

2. Dr. Troy Dorman scheduled to speak in-person at April Meeting

Agenda Item 7

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

Agenda Item 7

Administrative Costs from Sept. 1, 2021 – Nov. 30, 2021

GBRA Salaries & Fringe	\$ 2,700.52
TOTAL	\$ 2,700.52

Approved Budget	Project Cost This Report	Cumulative Project Cost	Balance
\$37,866	\$2,700.52	\$7,946.91	\$29,919.09

Agenda Item 8

Consider nominating and taking action electing RFPG Officers for 2022 (Chair, Vice Chair, Secretary and two members-at-large).

Agenda Item 9

Discussion regarding the solicitation to fill the vacant voting position in the Flood Districts interest category.

Flood Districts Definition

Defined as any districts or authorities, created under authority of either Texas Constitution, Article III, §52(b)(1) and (2), or Article XVI, §59 including all Chapter 49 districts, particularly districts with flood management responsibilities, including drainage districts, levee improvement districts, but does not include river authorities

Agenda Item 10

Discussion and potential action regarding Region 11 RFPG Technical Consultants work and schedule.

A. Discussion and potential action approving the Technical Memorandum No. 2 to be submitted to the TWDB by March 7, 2022.

Guadalupe Regional Flood Planning Group - Public Comment Tracking Matrix

For Public Meeting February 9, 2022

[Comments received November 20, 2021 – February 1, 2022](#)

Comments Received Via comments@guadalupefpg.org or via lwillis@gbra.org

Date Comment Received	Name/Affiliation of Commenter	Comment/Question	Respondent and Response Date
12/7/21	Rick Tobolka Kendall County	<p>From: Rick Tobolka <rtobolka@co.kendall.tx.us> Sent: Tuesday, December 7, 2021 4:40 PM To: Jay Scanlon <JWS@freese.com> Subject: Cypress Creek Feasibility Study</p> <p>Mr. Scanlon,</p> <p>Thank you for returning my call.</p> <p>Kendall County wishes to propose a project consisting of a feasibility study on Cypress Creek and North Creek (tributaries of the Guadalupe River). I believe the study would be classified as a FME. Possibly a future FMP depending on the benefit cost analysis. The proposed study is substantially situated in Kerr County. Kendall County has coordinated with Kerr County Commissioner, Pct. #3, Jonathan Letz pertaining to the proposed study. Commissioner Letz supports the feasibility study.</p> <p>I have attached a proposed scope and location map of the proposed project. Kendall County planned to move forward with the feasibility study in the next 12 months.</p> <p>Please let me know if you have any questions or comments or need additional information.</p> <p>Thank you for your consideration,</p> <p>Richard Tobolka, P.E. 201 East San Antonio Avenue, Suite 101 Boerne, Texas 78006 830-331-8250</p>	Respondent: FNI (Jay) Response Date: 12/7/21

Guadalupe Regional Flood Planning Group - Public Comment Tracking Matrix

For Public Meeting February 9, 2022

Comments received November 20, 2021 – February 1, 2022

Comments Received Via comments@guadalupefpg.org or via lwillis@gbra.org

<p>11/20/21 to 12/1/21</p>	<p>Voting Members, Non-Voting Members and Public</p>	<p>The following individuals provided written comments to the technical consultant on the draft technical memorandum:</p> <p><u>Voting Members</u></p> <ul style="list-style-type: none"> • 11/23/21 Brian Perkins – GBRA • 11/29/21 Annalisa Peace – Great Edwards Aquifer Alliance • 11/30/21 Ken Gill – City of Victoria • 12/1/21 Gian Villarreal – WEAT/Seagull PME <p><u>Non-Voting Member</u></p> <ul style="list-style-type: none"> • 12/7/21 Don Durden – Kendall County <p><u>Public</u></p> <ul style="list-style-type: none"> • 12/1/21 Joe Pantalion – City of San Marcos 	<p>Respondent: FNI (Jay) Response Dates: 11/20 to 12/1</p>
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An aerial photograph of a vast wetland area. The landscape is a mosaic of green marshes and blue water channels. The water reflects the sky, which appears overcast. The vegetation is dense and green, interspersed with narrow waterways that meander across the terrain.

Region 11 Guadalupe

Regional Flood Planning Group Meeting

February 9, 2022

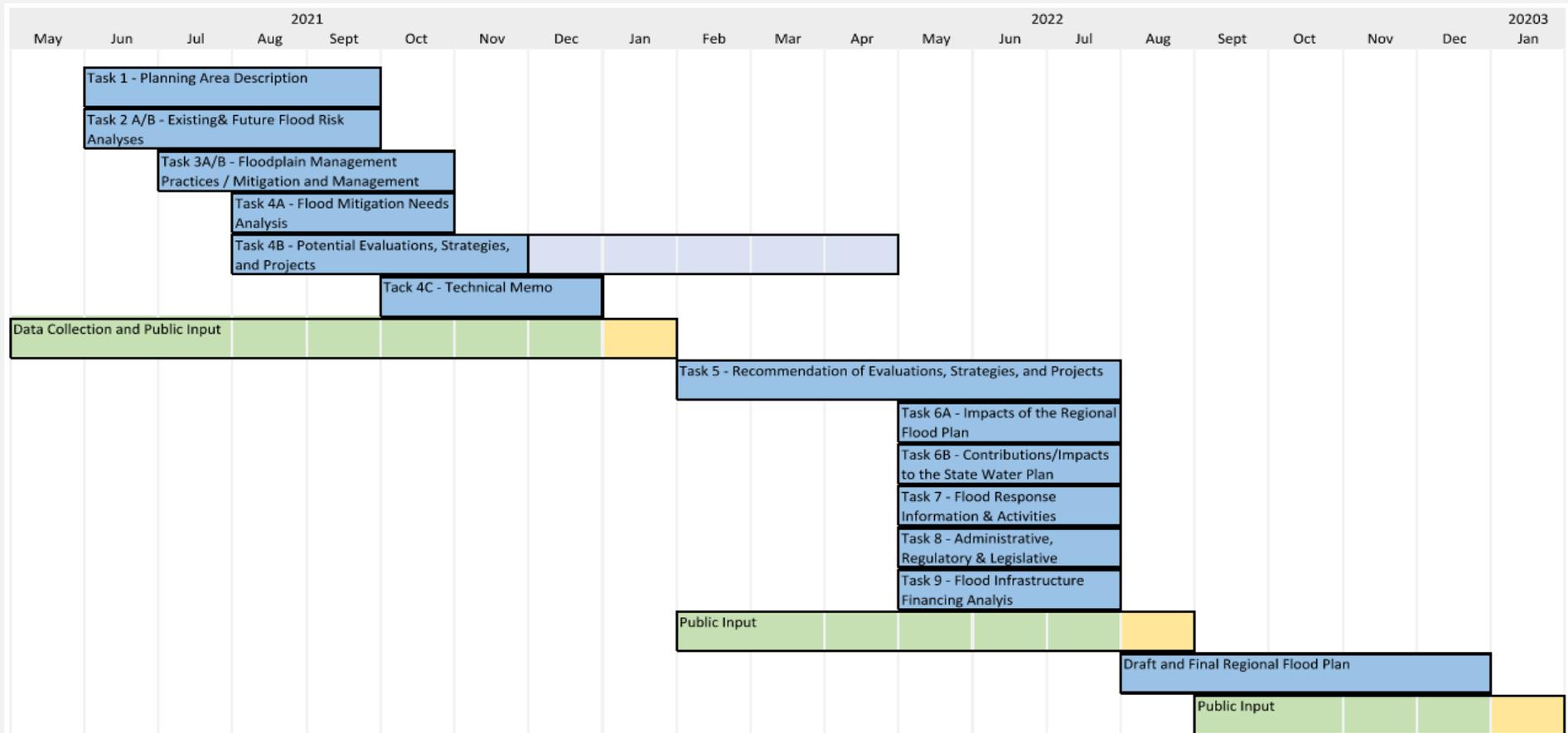
Item 10



Agenda

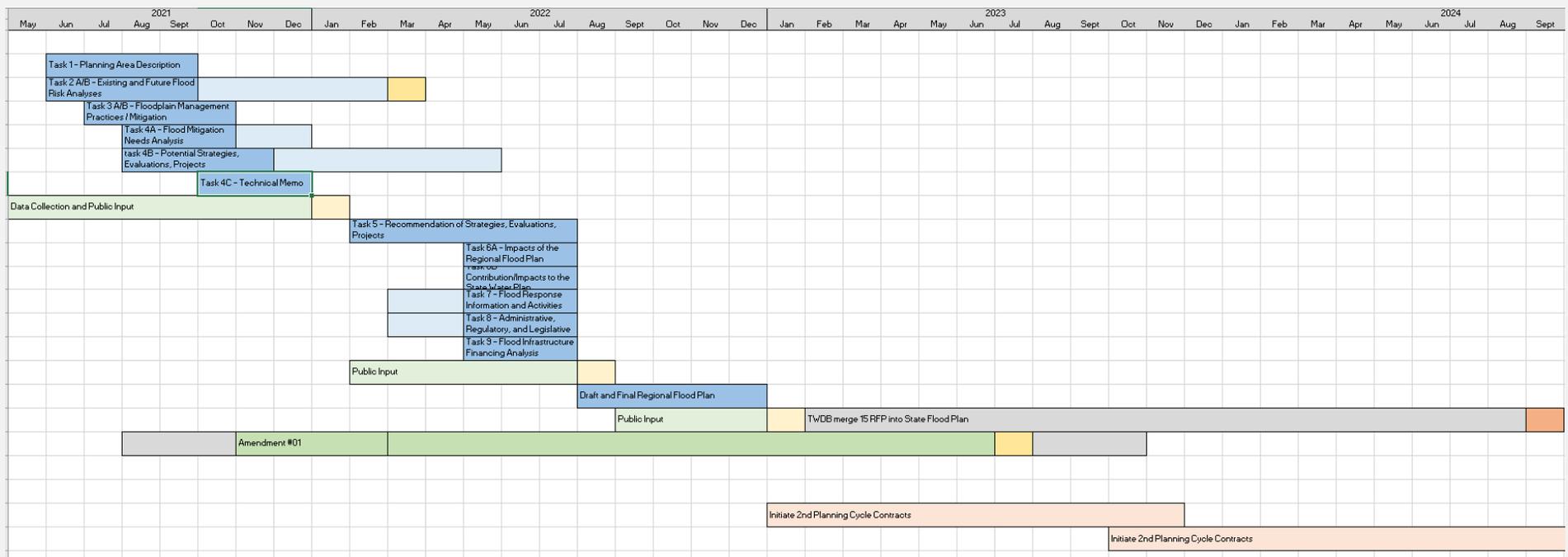
- Public Participation/Outreach Update
- TWDB Process and Update
 - Process
 - Technical Memorandum #1
 - Discuss/Potential Approval of Technical Memorandum #2
 - Task 4B Update
- Region 11 Dashboard
- Look ahead

Regional Flood Plan Process



Regional and State Flood Plan Process

Regional and State Flood Plan Schedule (amended)



Technical Memorandum No. 1

Texas Water Development Board

P. O. Box 13021, 1700 N. Congress Ave.
Austin, TX 78711-3021, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2003

January 26, 2022

Lauren Willis
Director of Regulatory & Customer Affairs
Guadalupe-Blanco River Authority
933 E. Court St
Seguin, TX 78155

RE: Regional Flood Planning Grant Contract with Guadalupe-Blanco River Authority;
Contract No. 2101792496, Technical Memorandum Administratively Complete and
Notice to Proceed for Task 5

Dear Ms. Willis:

Staff members of the Texas Water Development Board (TWDB) have completed their review of the Technical Memorandum under the above referenced contract and found the deliverable to be administratively complete. The Region 11 Guadalupe Regional Flood Planning Group (RFPG) is hereby notified to proceed with work set forth in the Regional Flood Planning Grant Contract Scope of Work Task 5 - Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects.

TWDB staff will be performing a more detailed technical review of the Technical Memorandum. This will result in informal comments for the RFPG to consider during the remainder of the planning cycle. These informal comments and feedback will not require formal responses unless specifically requested by staff. Instead, they will be provided to support each region in producing a complete draft Regional Flood Plan that will meet all requirements. You will receive these informal comments in late Spring 2022. The TWDB recognizes that the Technical Memorandum is a midpoint deliverable and progress report, and that many aspects of Regional Flood Plan development may change after its receipt and up until final adoption.

Additionally, as the Region 11 Guadalupe RFPG continues to evaluate flood management evaluations, flood management strategies, and flood mitigation projects, we encourage you to coordinate with your neighboring regions to proactively identify and resolve elements of your Regional Flood Plan that could potentially negatively affect a neighboring area in a different region.

Our Mission

Leading the state's efforts in ensuring a secure water future for Texas and its citizens

Board Members

Brooke J. Patis, Chairwoman | Kathleen Jackson, Board Member
Jeff Walker, Executive Administrator

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Technical Memorandum #2

- **Status and overview of Texas**

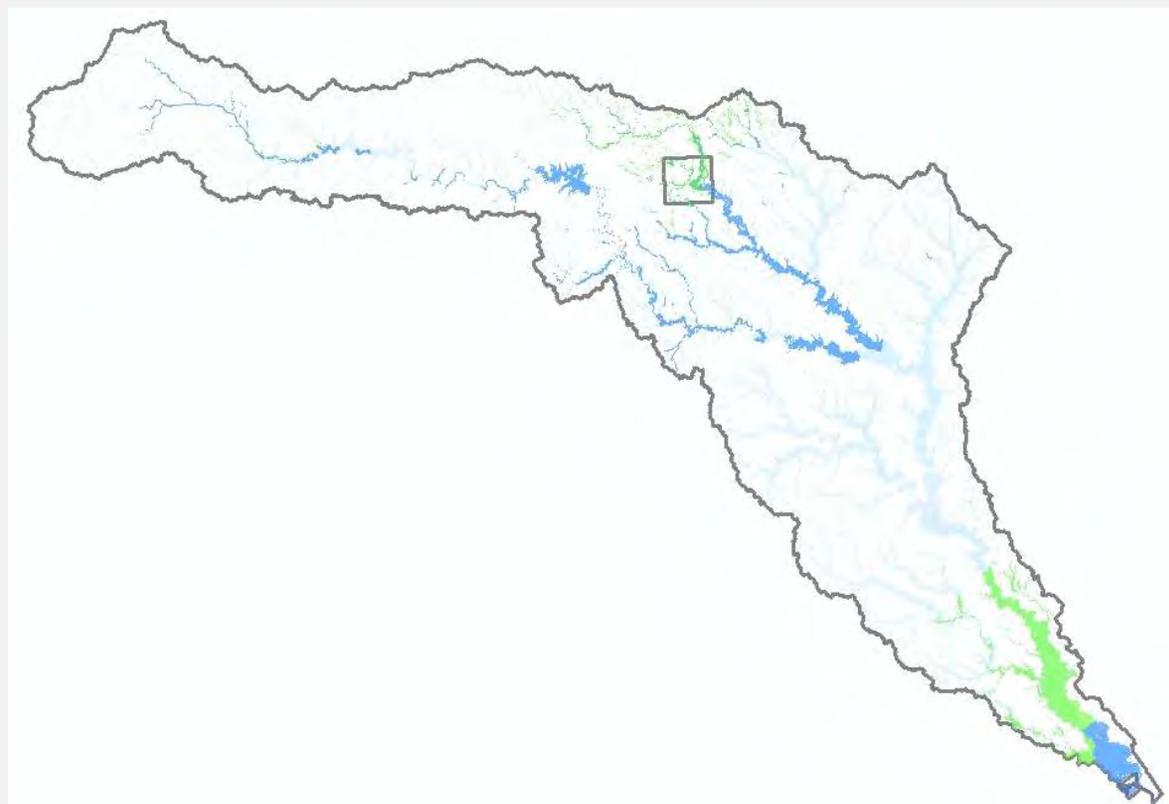
- More focused on presenting data and preliminary analyses
 - Flood hazards, exposure, vulnerability
 - Gaps and available models/maps
- Geodatabase and Maps
- Like January Memo – interim deliverable

Flood Risk Condition	Number of At-Risk Buildings	Number of At-Risk Critical Facilities	Number of At-Risk Roadway Crossings (low water crossings)	Estimated At-Risk Daytime Population (based on building populations)	Impacted Agricultural Land (percent of at-risk land cover)
Existing Condition 1% Annual Chance (100-year)	TBD	TBD	TBD	TBD	TBD
Future Condition 1% Annual Chance (100-year)	TBD	TBD	TBD	TBD	TBD

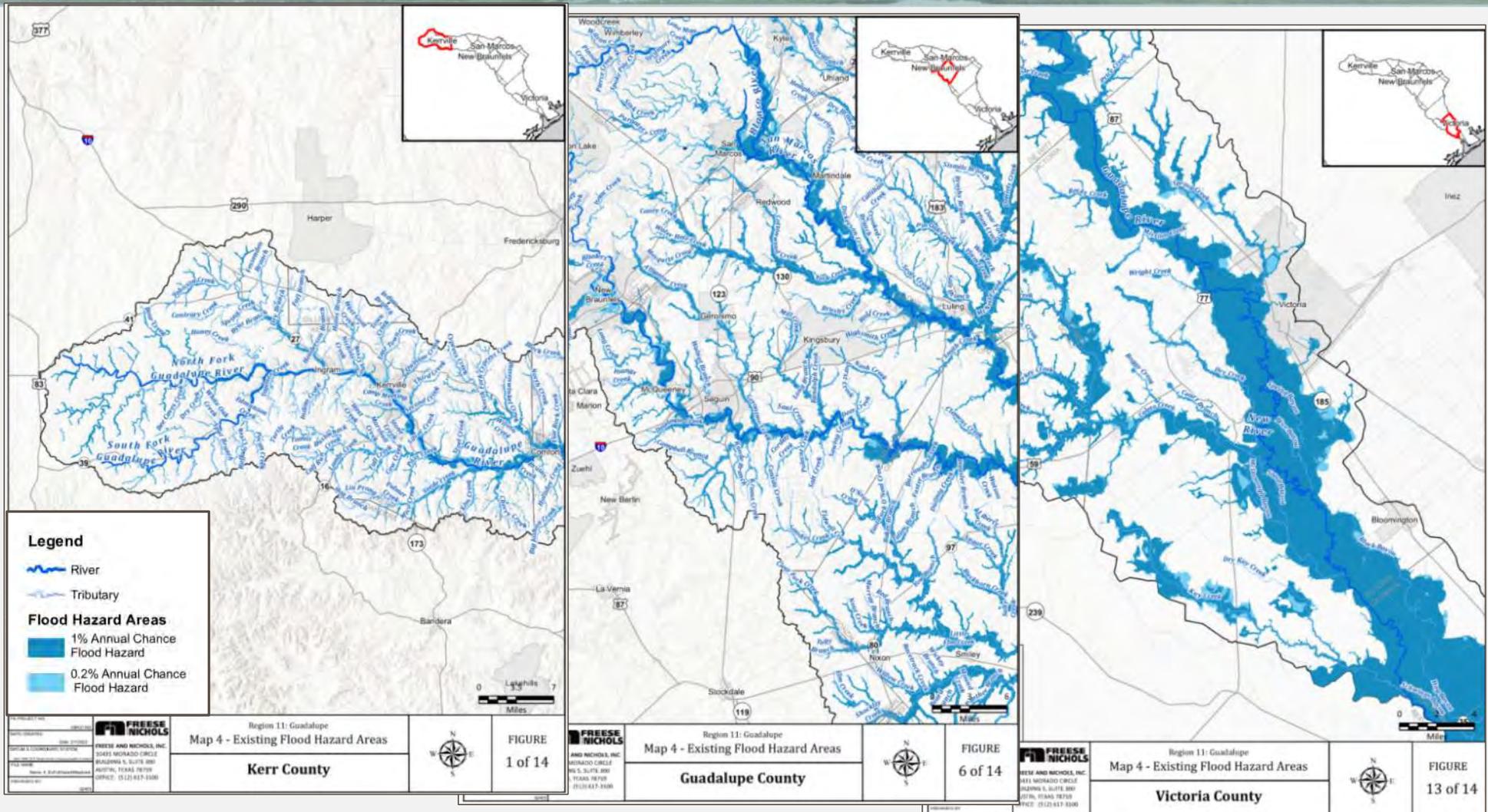
Map 4: Existing Condition Flood Hazard

- **Existing Condition Flood Risk**

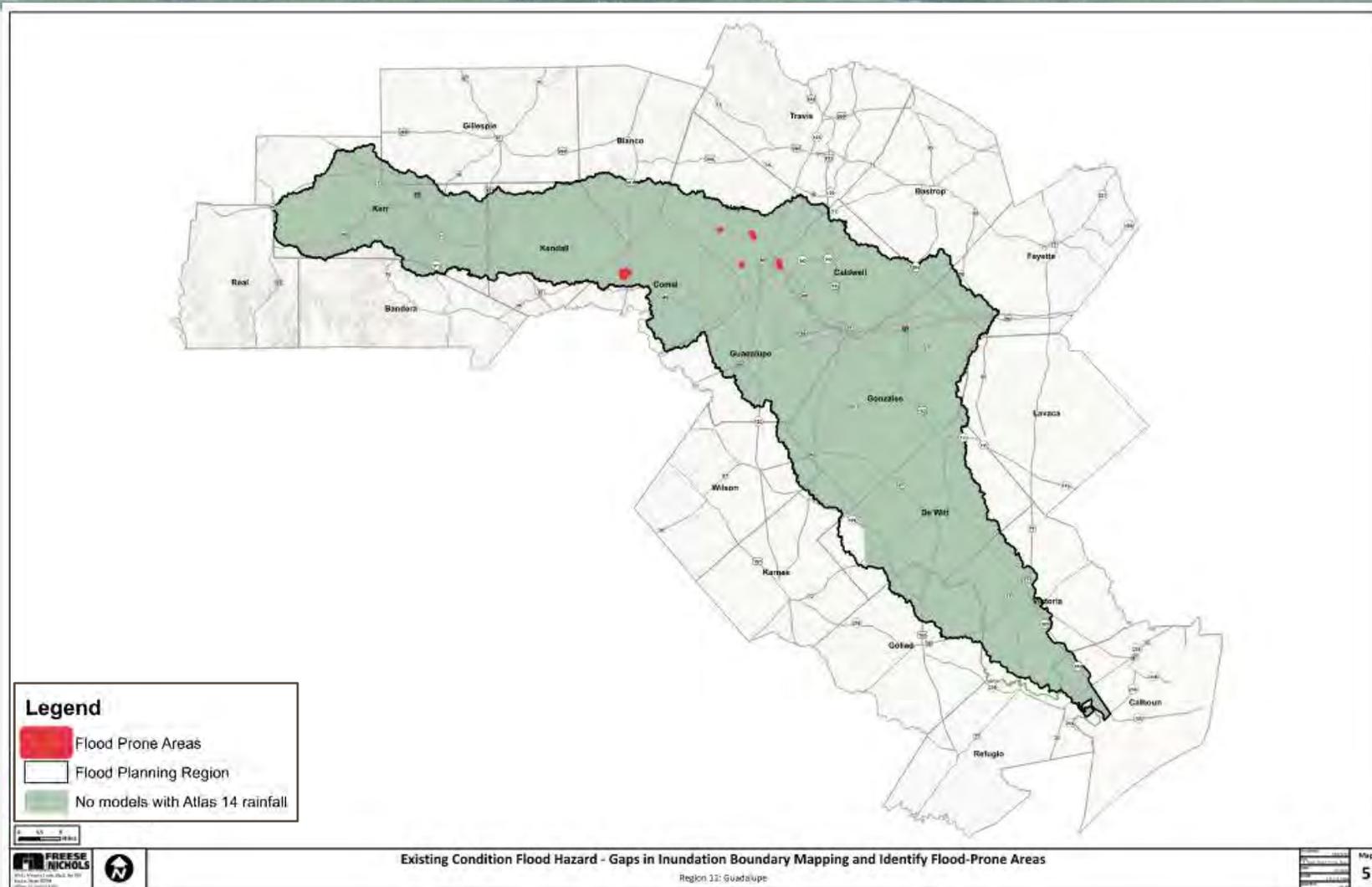
- National Flood Hazard Layer Detailed
 - Pending
 - Preliminary
 - Effective
- Base Level Engineering
- ~~National Flood Hazard Layer Approx.~~
- ~~First American Flood Data Services~~
- ~~Fathom~~



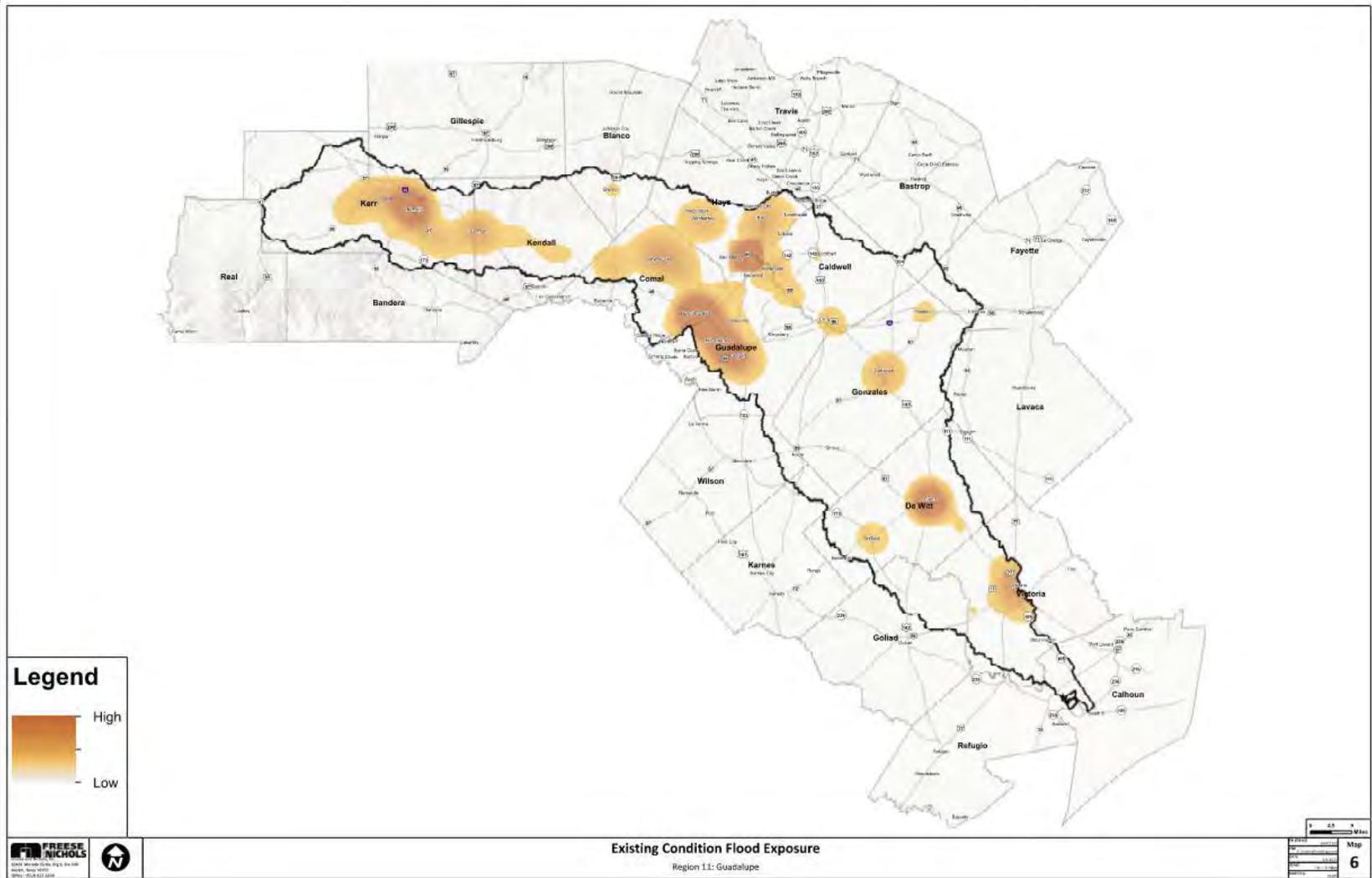
Map 4: Existing Condition Flood Hazard



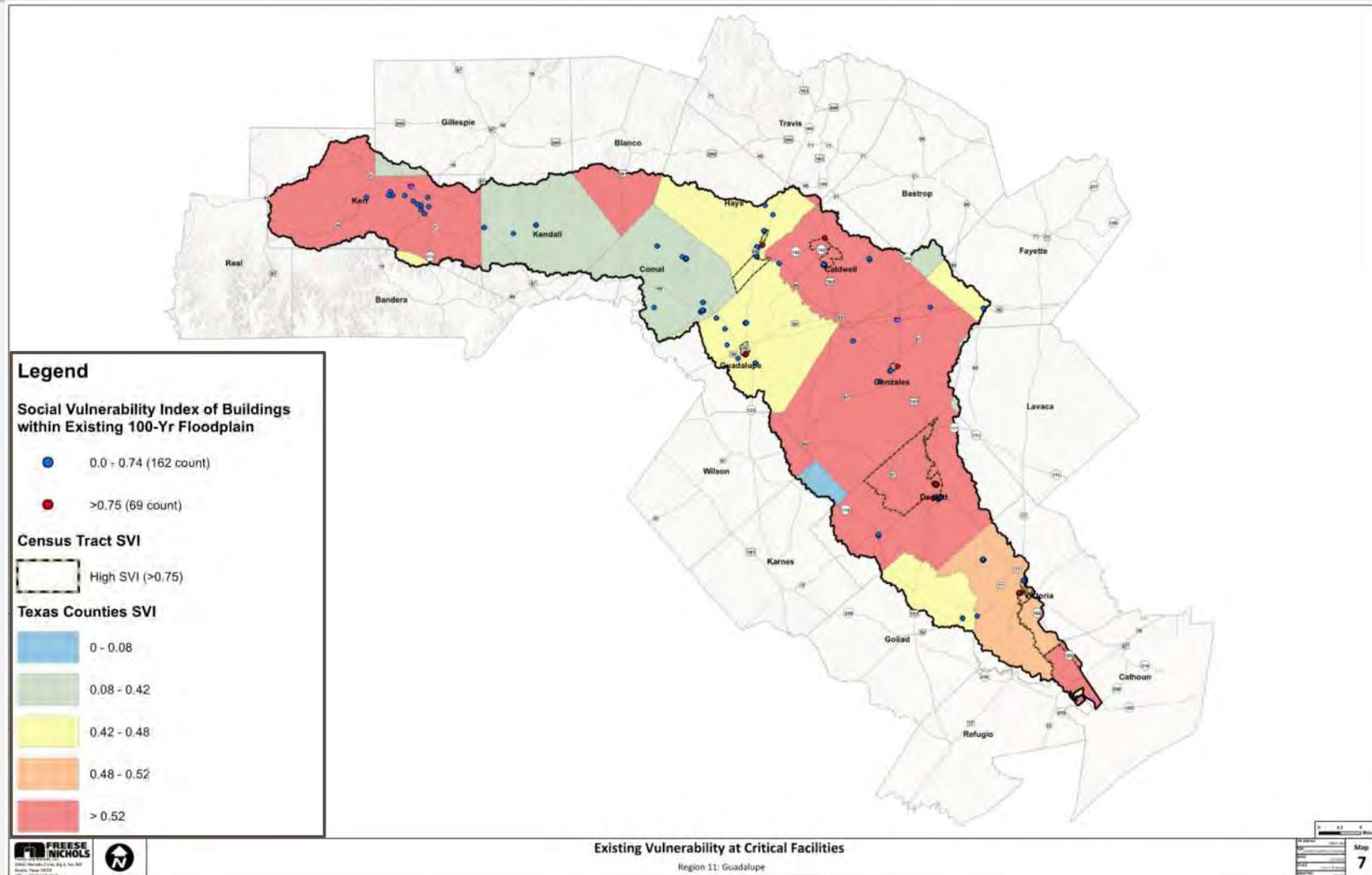
Map 5: Existing Condition Flood Hazard Gap and Flood Prone



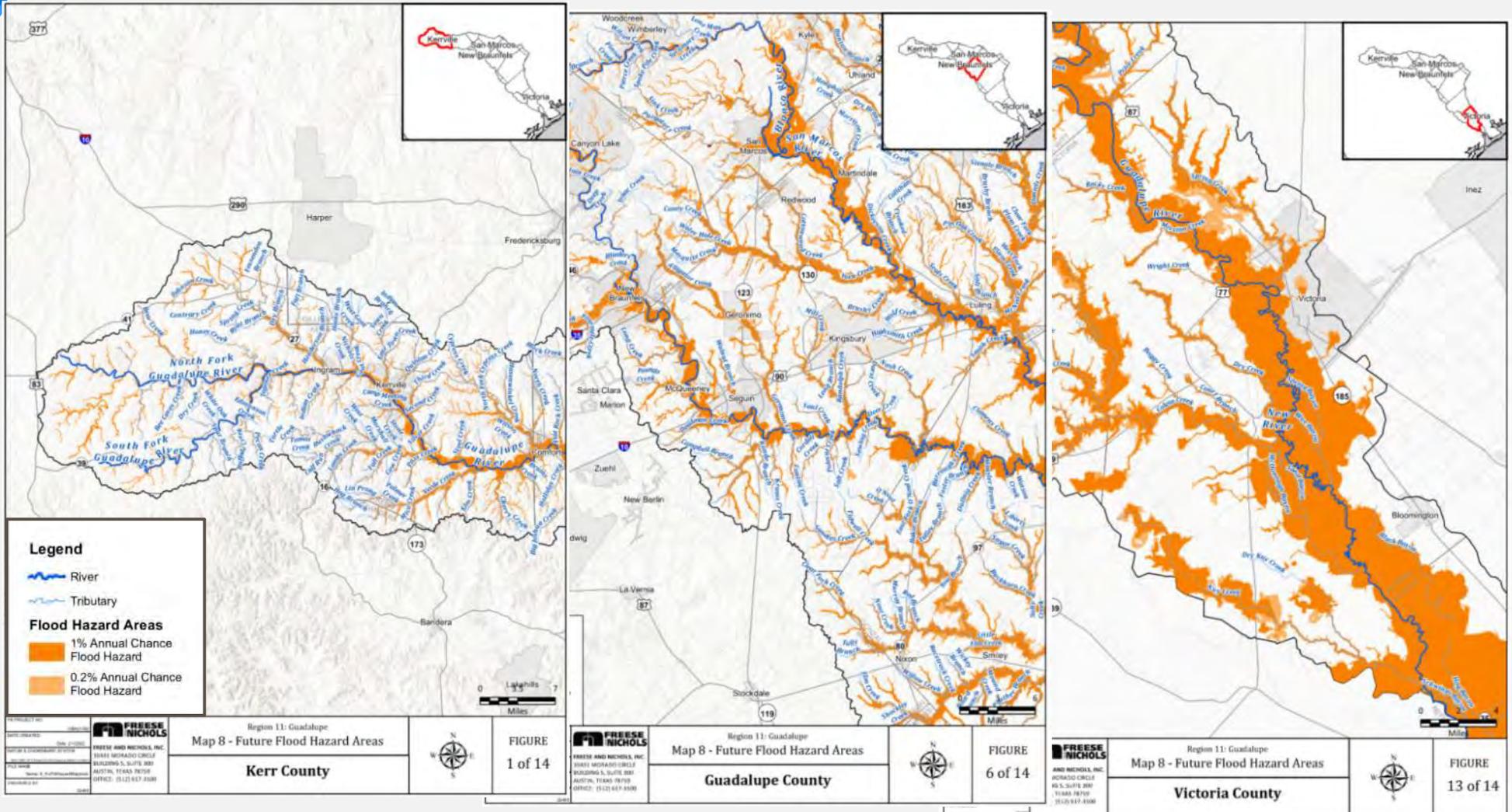
Map 6: Existing Condition Flood Exposure



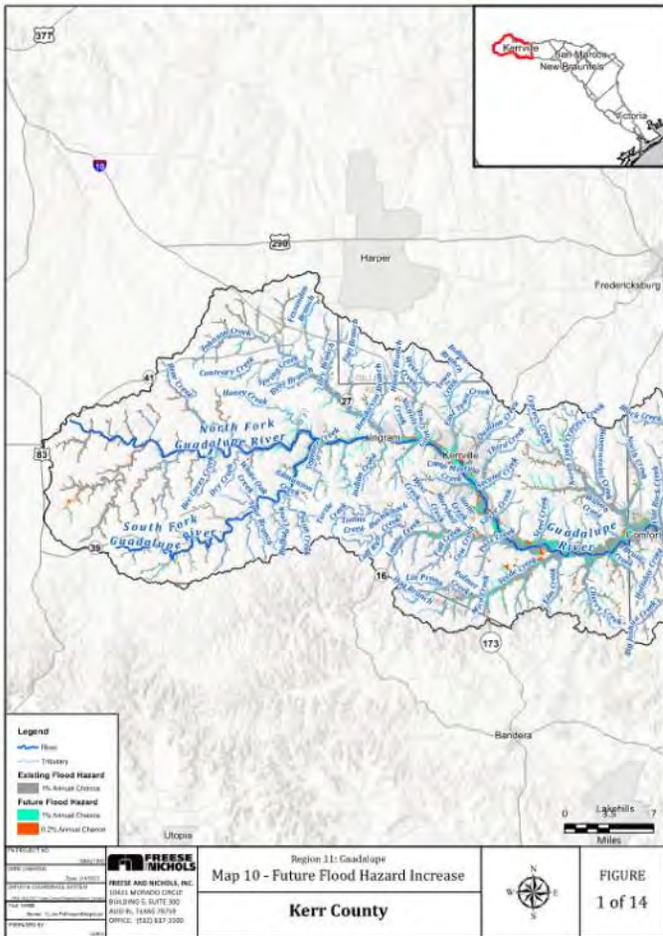
Map 7: Existing Condition Vulnerability and Critical Infrastructure



Map 8: Future Condition Flood Hazard



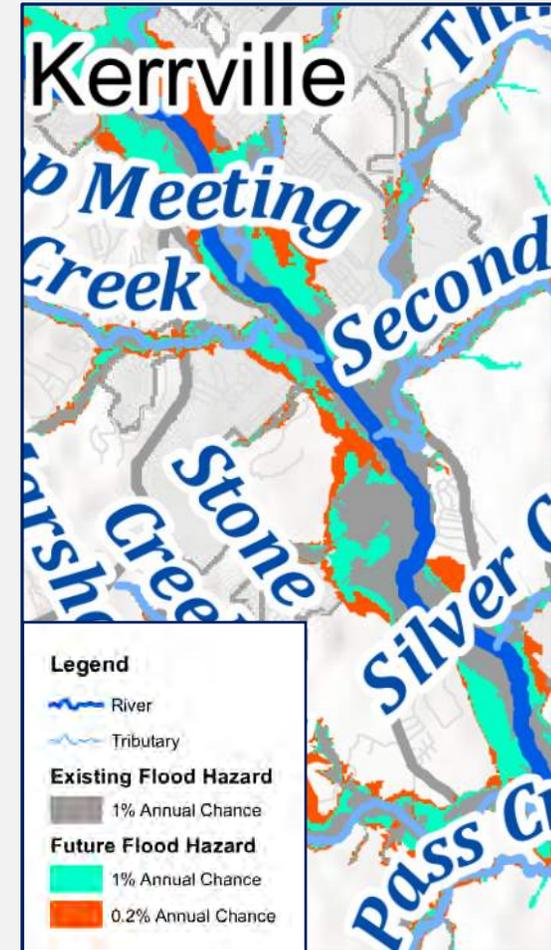
Map 8: Future Condition Flood Hazard



Landscape Scale

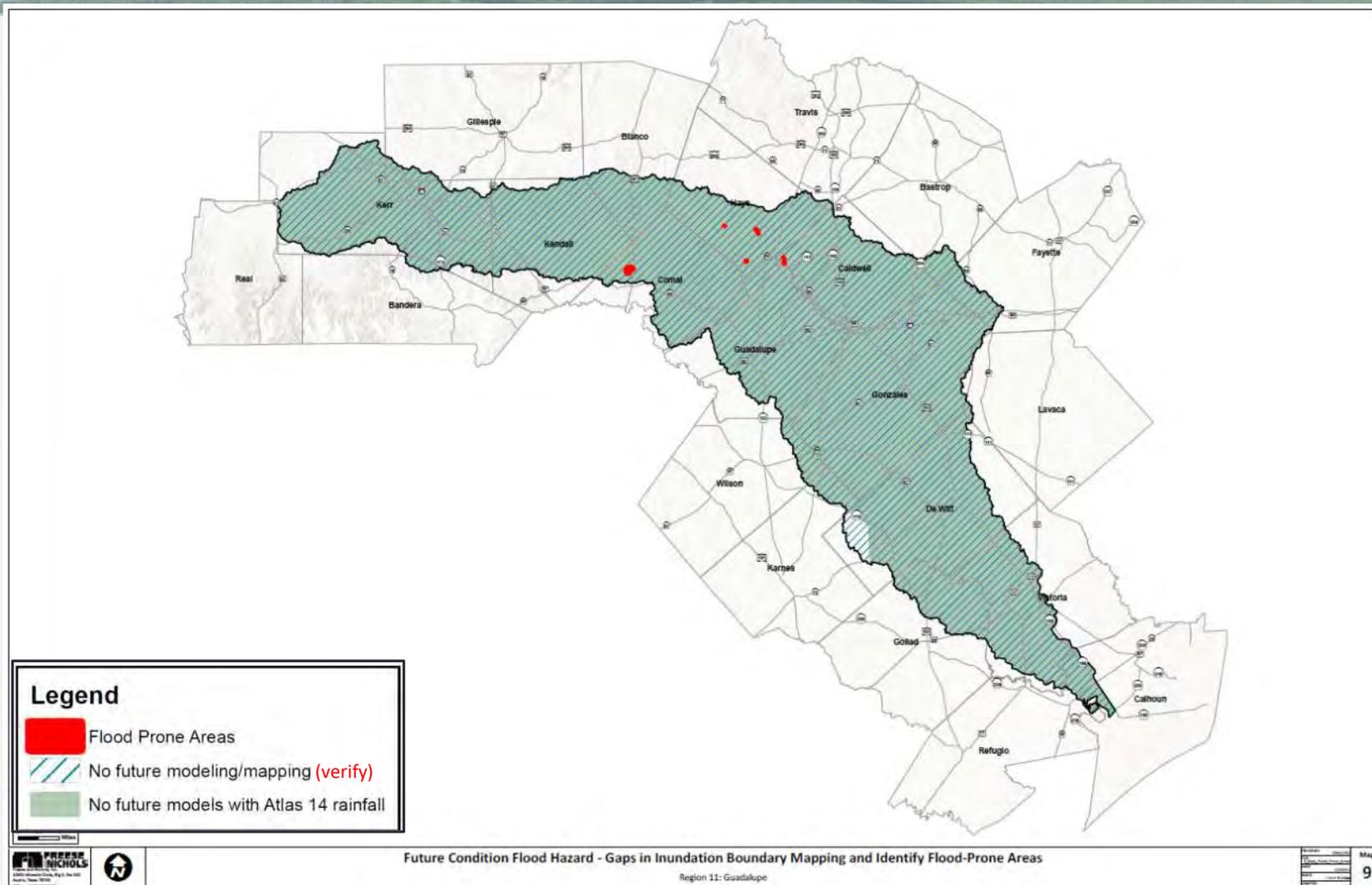


Existing

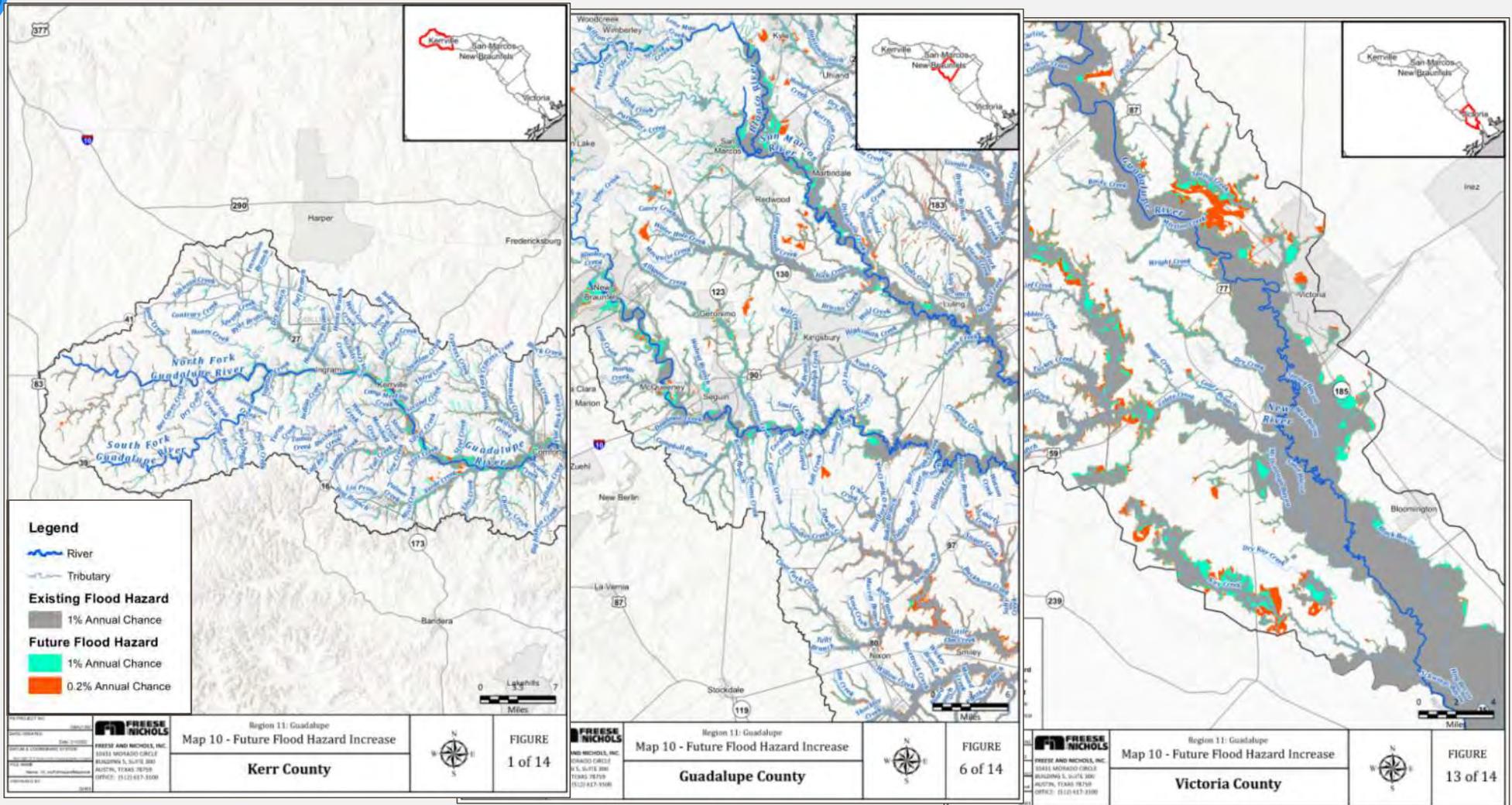


Future

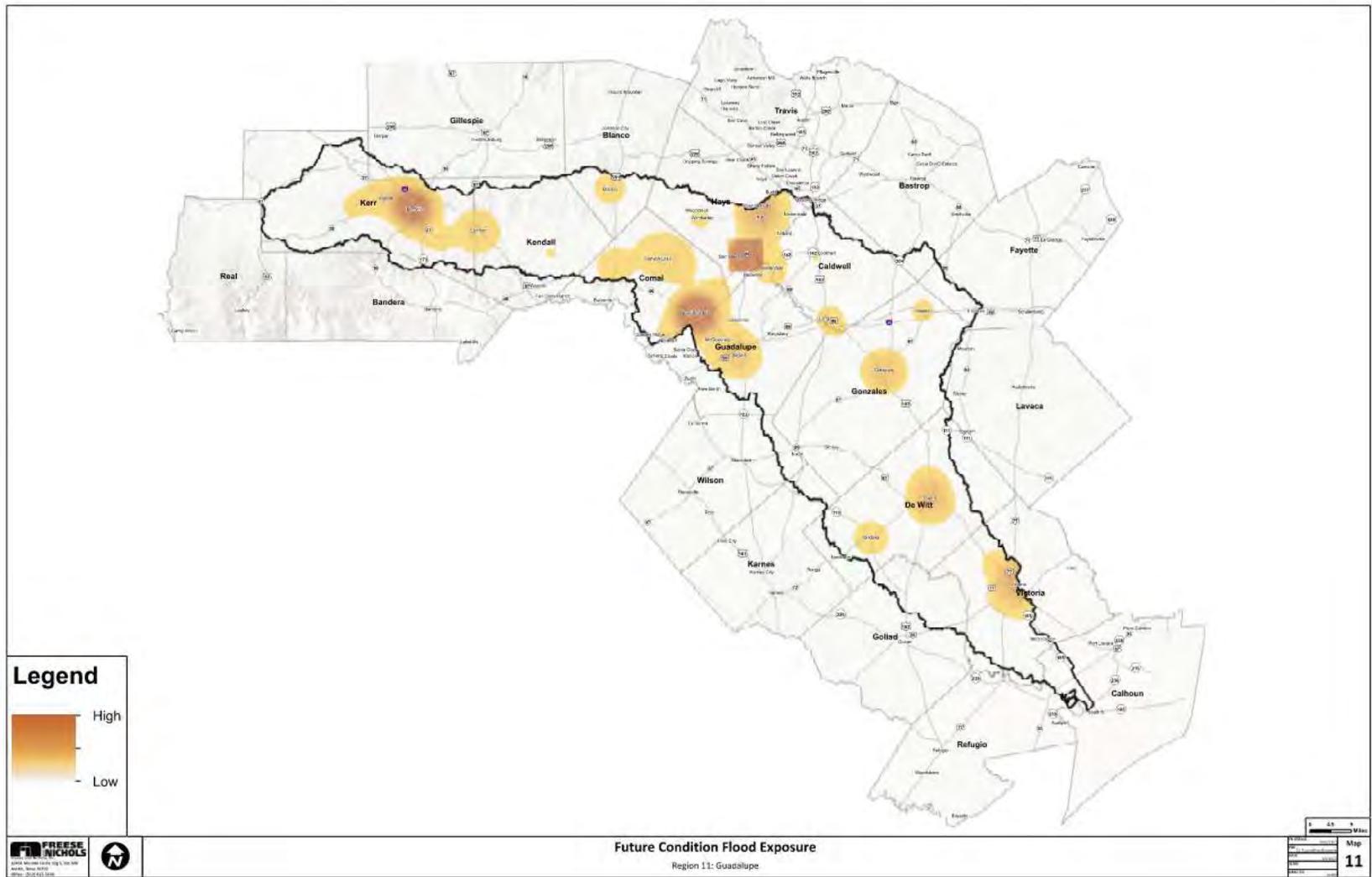
Map 9: Future Condition Flood Hazard Gap and Flood Prone



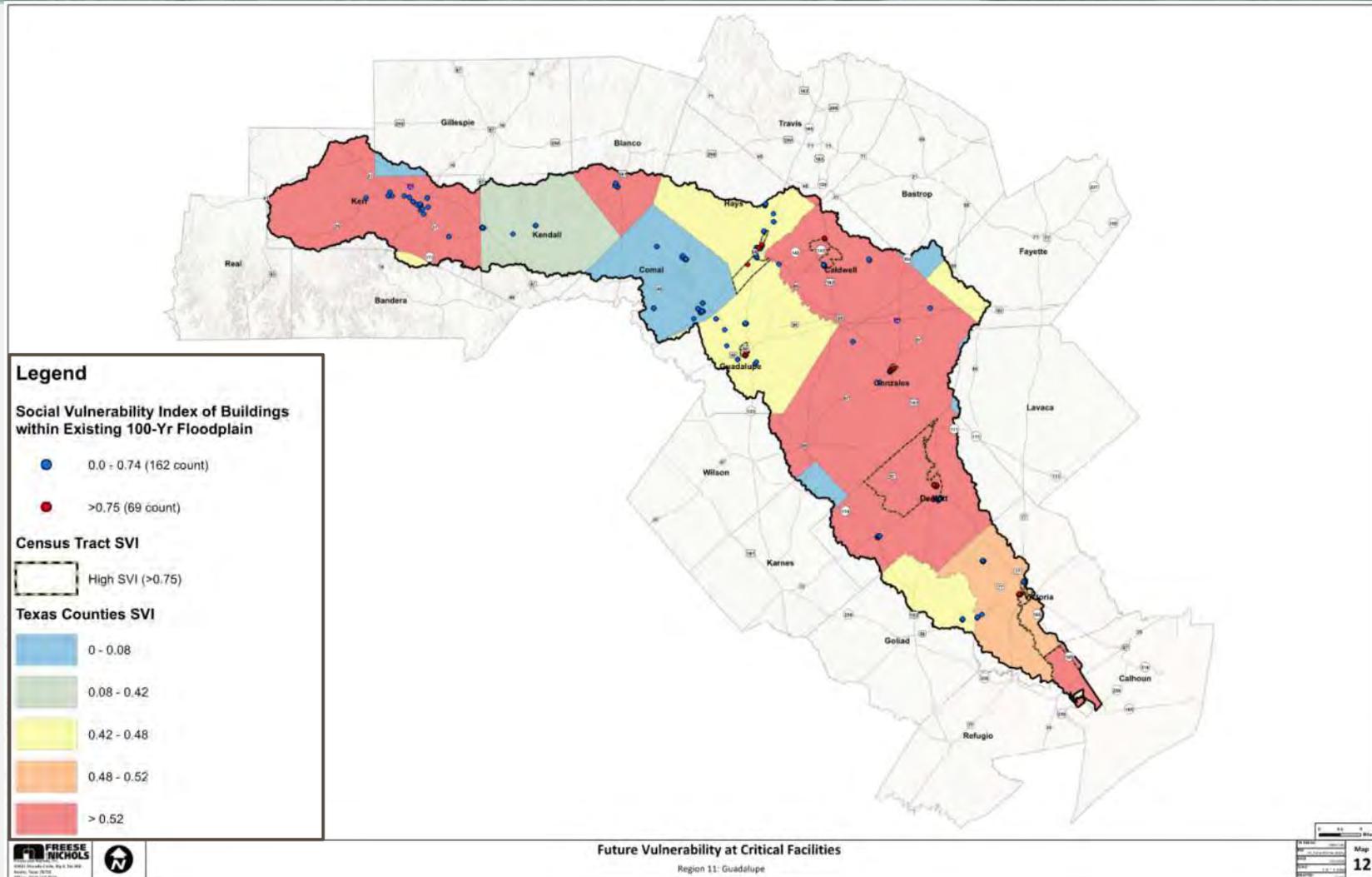
Map 10: Extent of Existing Flood Hazard Increase



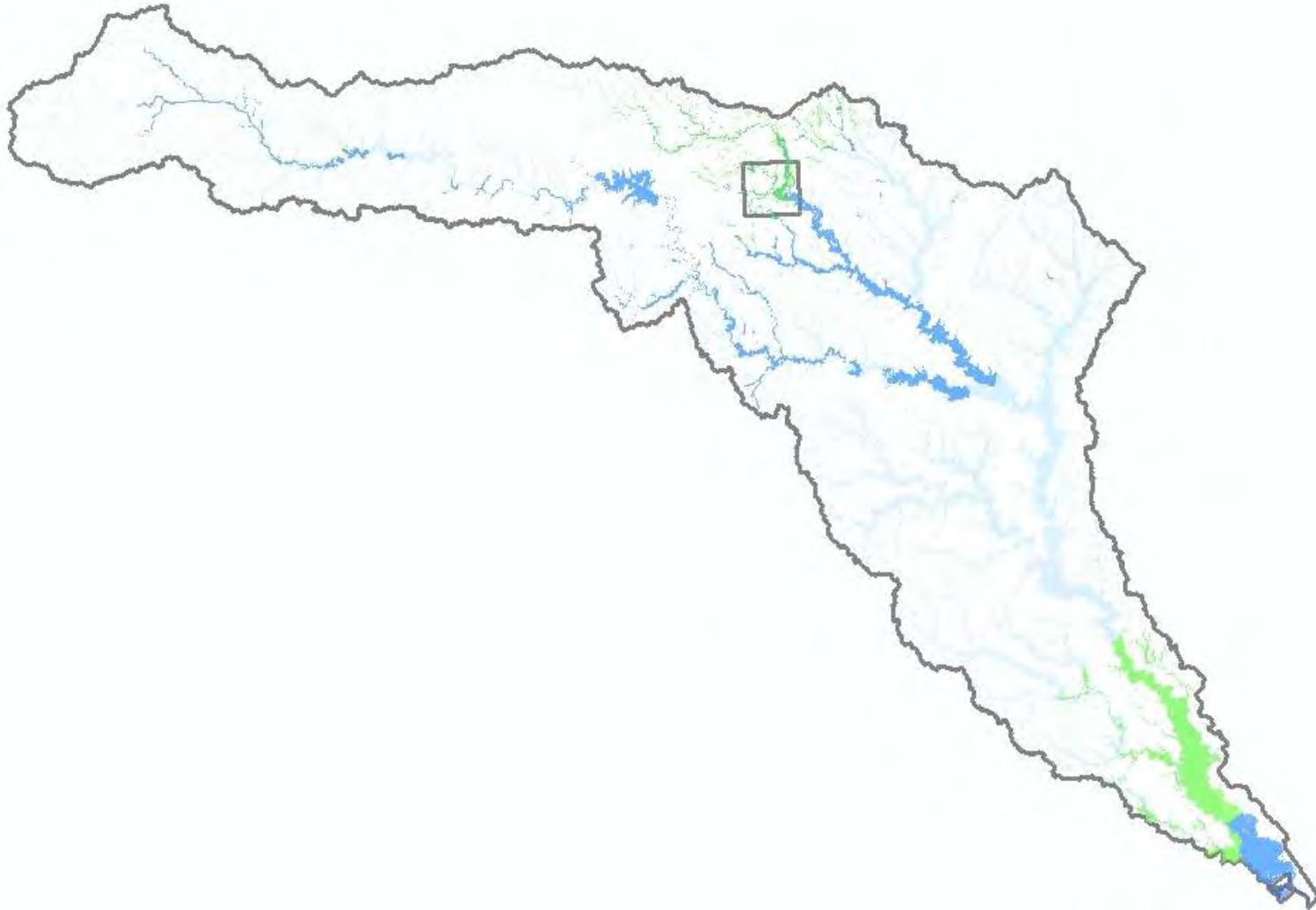
Map 11: Future Condition Flood Exposure



Map 12: Future Condition Vulnerability and Critical Infrastructure



Map 13: Model Availability

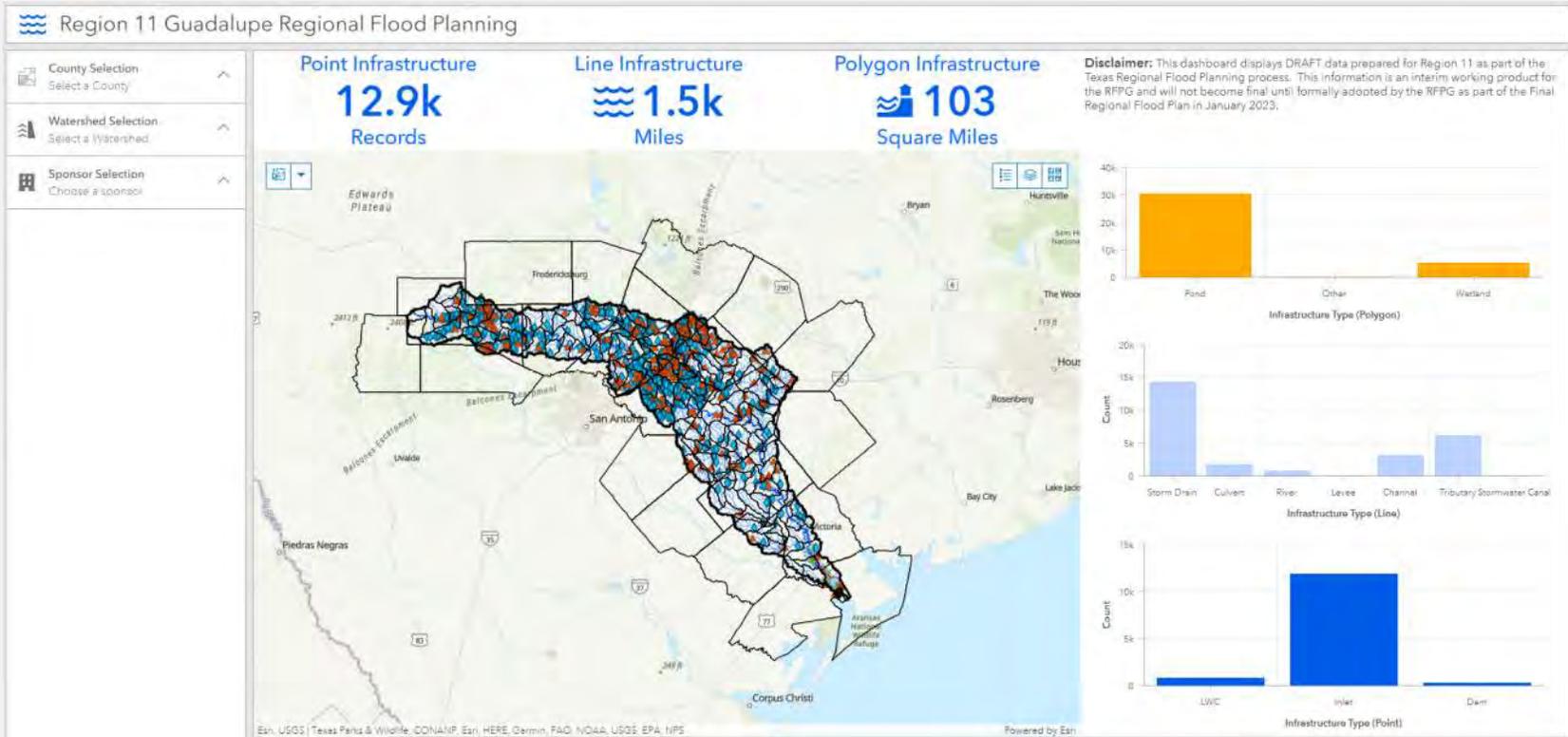




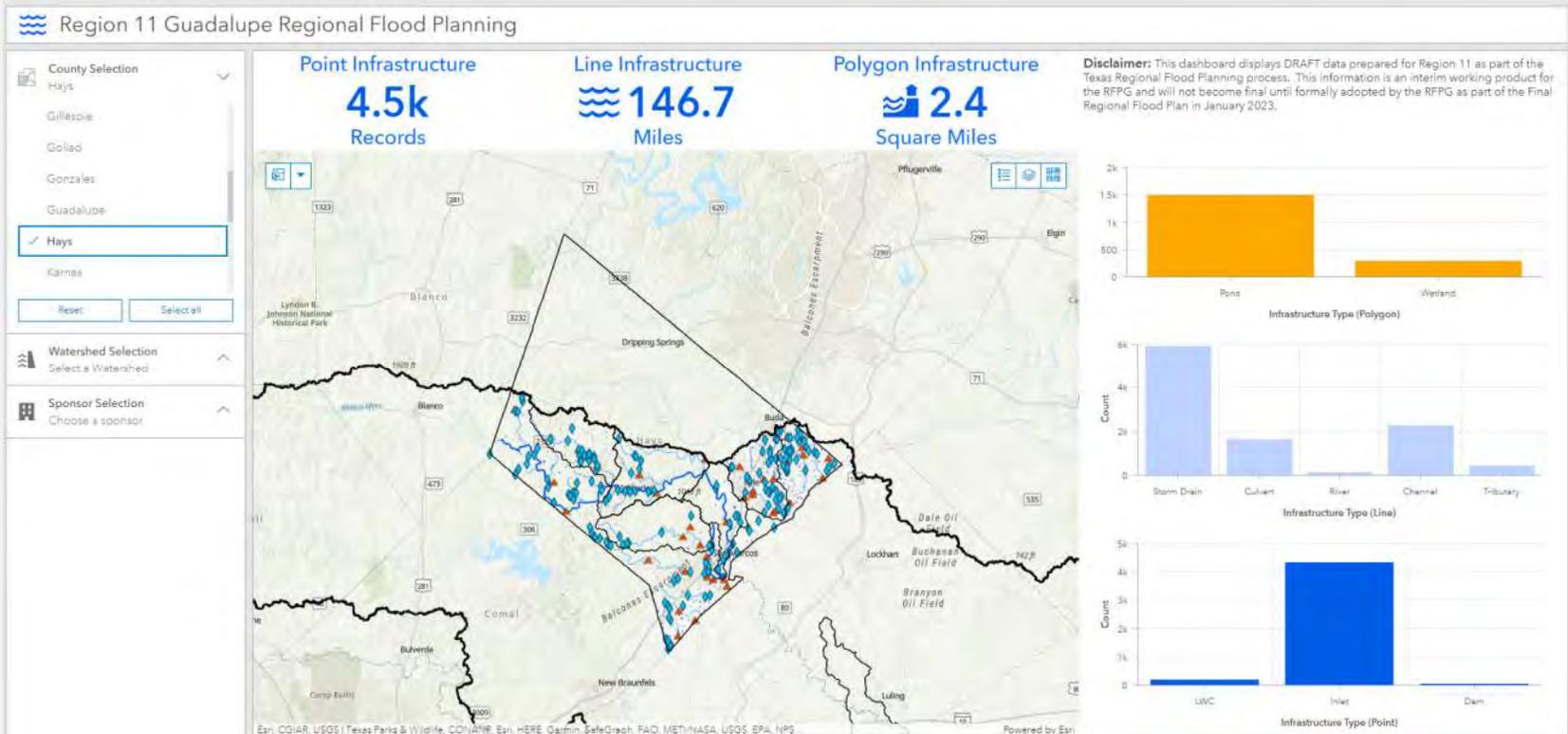
Task 4B Update

- Consolidated Preliminary FM Table by Sponsor
- Email to all stakeholders
 - Effort to validate and locate FM Action Items
- Followup Phone Calls and data requests

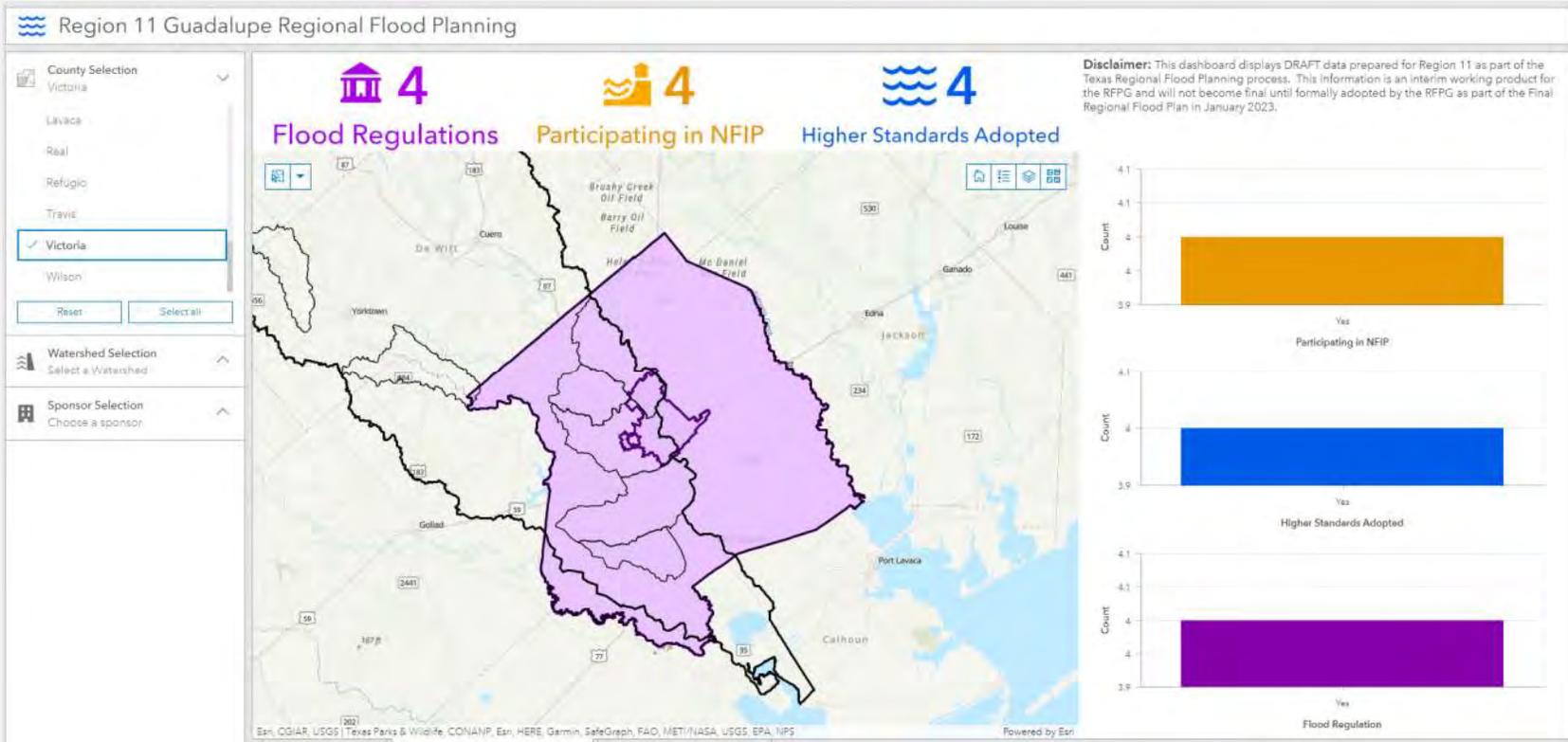
Guadalupe Dashboard (work in progress)



Guadalupe Dashboard (work in progress)



Guadalupe Dashboard (work in progress)



Guadalupe Dashboard (work in progress)

Region 11 Guadalupe Regional Flood Planning

County Selection
Select a County

- Lavaca
- Real
- Refugio
- Travis
- Victoria
- Wilson

Watershed Selection
Select a Watershed

Sponsor Selection
Choose a sponsor

Flood Management Evaluations

87
Count

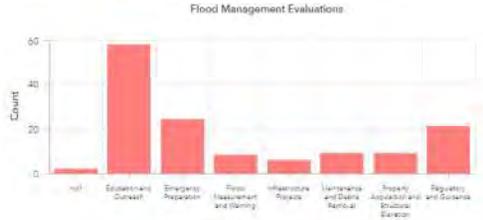
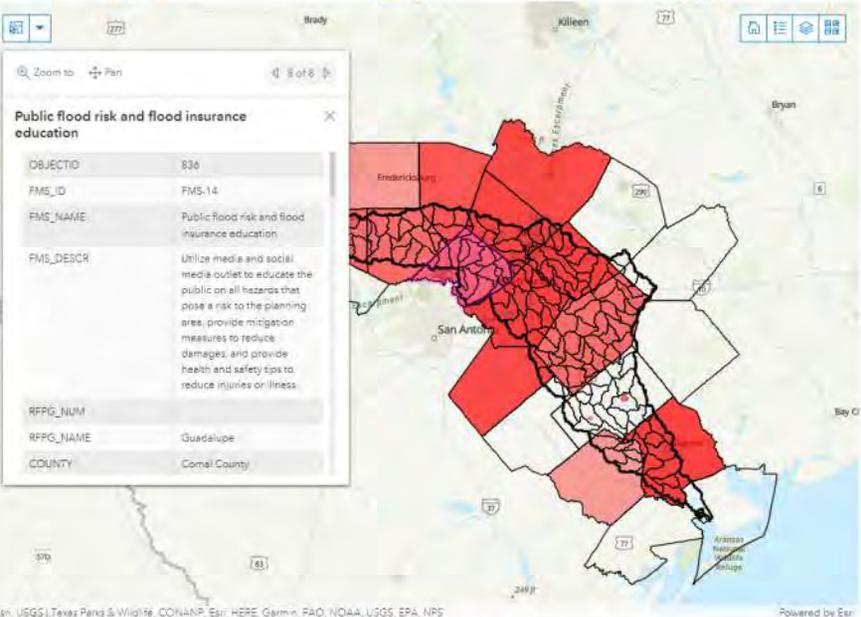
Flood Mitigation Projects

132
Count

Flood Management Strategies

137
Count

Disclaimer: This dashboard displays DRAFT data prepared for Region 11 as part of the Texas Regional Flood Planning process. This information is an interim working product for the RFPG and will not become final until formally adopted by the RFPG as part of the Final Regional Flood Plan in January 2023.





Look Ahead

Meeting	Milestone Goals
February	Present and Discuss: Task Updates; Technical Memo 2 possible approval; Next steps
March	Present and Discuss Technical Memo 2 (if needed); Submit TM#2 (March 7); Task 4B Update (FM Tables); Task 5 (FM evaluations); Draft Chapter 1 and 2 (tentative); Task 12 (tentative overview)
April	Present and Discuss: Task 4B (if needed); Task 5 Update; Task 7 (Draft Chapter); Task 8 (Ongoing Flood Management and Mitigation Policies); Task 9 (flood infrastructure finance); Task 12 (FMEs to be completed)
May	Present and Discuss: Task 3 (revisit goals); Task 5 Update; Task 6A/B (draft Chapter impacts of plan and contribution to water supply); Task 7 (draft Chapter); Task 8 (draft Chapter); Task 12 Update
June	Present and Discuss: Task 5, 8, and 9 (preliminary approval); Preliminary Draft Regional Plan ; Post preliminary plan for public review (30 prior to RFPG vote)
July	Present and approve Draft Regional Plan (early out); Task 12 update
August	Present and approve Draft Regional Plan (if needed); Task 12 update; August 7 submit Draft Plan to TWDB



**2023 REGIONAL FLOOD PLAN
TECHNICAL MEMORANDUM 02 (DRAFT)**

**REGION 11
GUADALUPE REGIONAL FLOOD
PLANNING GROUP**

February 4, 2022

2023 REGIONAL FLOOD PLAN – INTERIM TECHNICAL MEMORANDUM

PREPARED FOR:

Region 11 Guadalupe Regional Flood Planning Group

PREPARED BY:

Freese and Nichols, Inc.

In partnership with:

Blanton and Associates Inc.

Doucet and Associates Inc.

H2O Partners Inc.

Scheibe Consulting LLC

DRAFT

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF JEROME W SCANLON III, P.E., TEXAS NO. 82077 ON 2/9/2022. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

FREESE AND NICHOLS, INC.
TEXAS REGISTERED ENGINEERING FIRM F- 2144

Table of Contents

Purpose	1
Introduction	1
Existing and Future Condition Flood Risk Maps and Geodatabase	2
Existing and Future Condition Flood Gaps Models and Geodatabase	5
Where Models and Maps are Available to Evaluate FMSs and FMPs	5
Spatial Data Files	6
Attachment 1: Existing and Future Flood Hazards, Exposure, and Vulnerability Maps	1
Attachment 2: Existing and Future Flood Hazard Gaps	2
Attachment 3: Where models are available to evaluate potential FMSs and FMPs	3

DRAFT

1 **Purpose**

2 The administrative deadline for the submission of the Technical Memorandum, Task 4C, was January 7,
3 2022. On August 17, 2021 the Texas Water Development Board (TWDB) issued an extension of time to
4 submit Scope of Work items 4C.1.c-e. The deadline for these scope of work items was extended to March
5 7, 2022. The primary Technical Memorandum (Technical Memorandum Number 1) was submitted on
6 behalf of the Regional Flood Planning Group (RFPG) on December 17, 2021 and was determined to be
7 administratively complete on January 26, 2022.

8
9 Technical Memorandum Number 2 has been prepared to satisfy the requirements for Tasks 4C.1.c-e and
10 the relevant provisions of Title 31 of the Texas Administrative Code (TAC) Chapters 361-362, which serve
11 as the statute and rules that govern regional flood planning. It has been developed consistent with the
12 Technical Guidelines for Regional Flood Planning and additional guidance provided by the TWDB.

13
14 The contents of this memorandum, subject to non-substantive changes, were approved by the Guadalupe
15 Regional Flood Planning Group (RFPG) on February 9, 2022 at a meeting subject to public notice
16 requirements in accordance with 31 TAC §361.21(h).

17
18 **Introduction**

19 This memorandum is intended to demonstrate progress towards compiling the necessary technical
20 information and analyses needed to develop the Regional Flood Plan (RFP) and meet contract
21 requirements. Changes to the data and information presented in this report are anticipated and will be
22 incorporated into subsequent deliverables. The final RFP and State Flood Plan approved by the Regional
23 Flood Planning Group (RFPG) and the TWDB, respectively, will supersede all previous deliverables.

24
25 This Technical Memorandum is organized as a series of attachments for each set of data required by the
26 *Scope of Work*. The attachments to this report are summarized as follows:

- 27 a) **Attachment 1** - Geodatabase and associated maps associated with Task 4C.1.c, existing and
28 future condition flood risk.
- 29 b) **Attachment 2** - Geodatabase and associated maps associated with Task 4C.1.d, existing and future
30 condition flood risk gaps.
- 31 c) **Attachment 3** - Geodatabase and associated maps associated with Task 4C.1.e; identifying where
32 models are available to evaluate potential FMSs and FMPs.

33
34 Please note the maps in each attachment are presented in the order prescribed in TWDB’s guidance
35 documents and do not appear in sequential order for this memorandum. Additionally, a number of spatial
36 data files were submitted to support the tabular data and associated maps.

37

1

Table 1: GIS Feature Class Descriptions

Feature Class Name	Description	Deadline
ExFldHazard	Existing conditions inundation boundary for the 1.0% and 0.2% events	March 7, 2022
Fld_Map_Gaps	Gaps in inundation boundary mapping	March 7, 2022
ExFldExpPol / ExFldExpLn / ExFldExpPt / ExFldExpAll	Existing conditions flood exposure layer identifying people and places at risk for the 1.0% and 0.2% events	March 7, 2022
FutFldHazard	Future conditions inundation boundary for the 1.0% and 0.2% events	March 7, 2022
FutFldExpPol / FutFldExpLn / FutFldExpPt / FutFldExpAll	Future conditions flood exposure layer identifying people and places at risk for the 1.0% and 0.2% events	March 7, 2022

2

3

4 Existing and Future Condition Flood Risk Maps and Geodatabase

5 Existing Flood Hazard

6 To develop the flood risk mapping for the Regional Flood Plan, Region 11 began with the “floodplain quilt”
7 provided by the TWDB. The existing flood hazard quilt was “stitched” together from various sources of
8 data to provide a comprehensive map of statewide flood hazard information. The data come from sources
9 including but not limited to identified local flood studies to National Flood Hazard Layers to the Fathom
10 dataset. Upon review of the data, the RFGP decided to use the following data sets and hierarchy for
11 identify the existing flood hazard:

- 12 1. Local Studies
- 13 2. National Flood Hazard Layers
 - 14 a. Pending,
 - 15 b. Preliminary, and
 - 16 c. Effective
- 17 3. Base Level Engineering

18

19 Because of the coverage provided by these data sets the NFHL Zone A, First American Flood Data Service,
20 and Fathom Datasets were not used. **Figure 1** presents an overview of the flood hazard mapping and
21 datasets that were used to create the existing flood hazard maps.

22

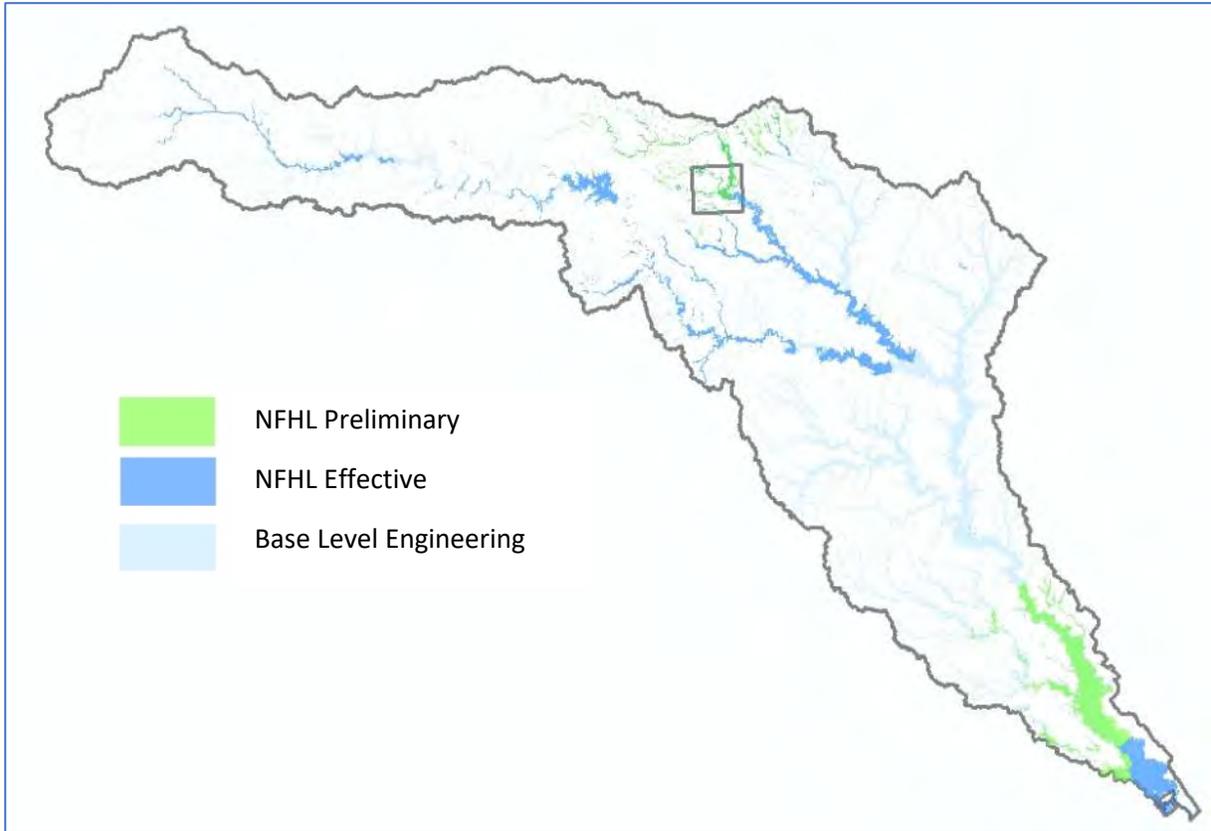


Figure 1 - Guadalupe (Region 11) Existing Condition Flood Hazard Data Sources

The draft existing condition flood hazard map was discussed and approved during the June 30, 2021 RFPG meeting and a web map was used to obtain feedback and comments from community and public stakeholders.

Future Flood Hazard

History has demonstrated that flood hazards tend to increase over time in populated areas due to projected increases in impervious cover, change in sea level and land subsidence, sedimentation in flood control structures, and other factors such as floodplain encroachment that result in increased or altered flood hazards.

TWDB provided four options for estimation of potential future condition flood risk. The options were discussed at the December 1, 2021 RFPG meeting and the planning group approved the use of Method 2 to develop the draft future condition flood hazard data. Method 2 uses the existing 0.2% annual chance floodplain as a proxy for the future 1% annual chance floodplain and adds a buffer to develop the future 0.2% floodplain. That buffer was generated based on the difference in the water surface elevations between the existing 1% and 0.2% floodplains. The Technical Consultant will compare results to known future condition models as the planning cycle continues. The Technical Consultant is also comparing the existing flood hazard zones to the potential future flood hazard zones to verify the buffering process was successful (potential future hazard zones greater than or equal to existing). If an area is identified where

1 the existing hazard zones are smaller than the potential future zones, that area will be reprocessed and,
 2 if needed, a horizontal buffer will be applied.

3
 4 It must be noted that the estimated changes in flood hazard extents are meant to represent the “30-year,
 5 no action” scenario for the purpose of estimating and evaluating the magnitude for potential future flood
 6 risk. This information will not be used for regulatory purposes such as local (municipal) floodplain
 7 management or by the Federal Emergency Management Agency (FEMA) or the National Flood Insurance
 8 Program (NFIP).

9
 10 Due to the varying ecoregions and topography, the Guadalupe region experiences various types of flood
 11 risk. The flood risk identified through this planning process, throughout the region, is primarily associated
 12 with riverine systems. A limited amount of coastal flood risk as identified by the National Flood Hazard
 13 Layer along the shore of Mission Lake, Haynes Bay, and the San Antonio Bay.

14
 15 On December 1, 2021, TWDB supplied the RFPG with the final buildings dataset to be used for the existing
 16 and future conditions flood exposure analysis. The draft results of the exposure analysis presents an
 17 estimation of the number of at-risk structures (buildings, roadways, critical facilities, etc.), population
 18 estimates, the length of impacted roadways and area of agricultural land contained within the existing
 19 condition and potential future condition flood hazard boundary. *Table 2* below provides a summary of the
 20 region’s flood exposure results.

21
 22 **Table 2: Draft Flood Exposure Results**

Flood Risk Condition	Number of At-Risk Buildings	Number of At-Risk Critical Facilities	Number of At-Risk Roadway Crossings (low water crossings)	Estimated At-Risk Daytime Population (based on building populations)	Impacted Agricultural Land (percent of at-risk land cover)
Existing Condition 1% Annual Chance (100-year)	TBD	TBD	TBD	TBD	TBD
Future Condition 1% Annual Chance (100-year)	TBD	TBD	TBD	TBD	TBD

23
 24 Maps showing draft existing condition and potential future condition flood risk, risk analysis and
 25 vulnerability analysis are provided in **Attachment 1**. Please note the maps are identified as outlined in the
 26 TWDB’s guidance documents and therefore do not appear in sequential order for this memorandum.

- 27
 28
 29
 30
 31
 32
- Map 4: Existing Condition Flood Hazard
 - Map 6: Existing Condition Flood Exposure
 - Map 7: Existing Condition Vulnerability and Critical Infrastructure
 - Map 8: Future Condition Flood Hazard
 - Map 10: Extent of Increase of Flood Hazard Compared to Existing Condition

- Map 11: Future Condition Flood Exposure
- Map 12: Future Condition Vulnerability and Critical Infrastructure

Associated geospatial files will be submitted electronically to the TWDB and include the following: 'ExFldHazard', 'ExFldExpPol', 'ExFldExpLn', 'ExFldExpPt', 'ExFldExpAll', 'FutFldHazard', 'FutFldExpPol', 'FutFldExpLn', 'FutFldExpPt', and 'FutFldExpAll'.

Existing and Future Condition Flood Gaps Models and Geodatabase

After the draft existing and future flood hazard maps were generated and stakeholder feedback processed, the Technical Consultant completed a preliminary gap analysis to determine known or "apparent" flood-prone areas that lack models/mapping and to identify areas where models/mapping existing but are outdated or considered unreliable. The existing and future gap analysis identified the following:

1. Outdated National Flood Hazard Layer data greater than 10 years old
2. Absence of detailed hydrologic and hydraulic models where base level engineering was used
3. Absence of modeling and mapping utilizing NOAA Atlas 14 rainfall data
4. Absence of future conditons modeling

Maps showing the draft existing condition and potential future condition flood gaps are provided in **Attachment 2**. As indicated above, the Technical Consultant will continue to verify the existing and future flood hazard layers and will update the draft gap analysis as the plan moves forward.

- Map 5: Existing Condition Flood Hazard Gaps and Flood-Prone Areas
- Map 9: Future Condition Flood Hazard Gaps and Flood Prone Areas

Associated geospatial files will be submitted electronically to the TWDB and include the following: 'Fld_Map_Gaps'

Where Models and Maps are Available to Evaluate FMSs and FMPs

Technical Memorandum Number 1 included a list of studies containing modeling data. These studies (local, FEMA NFHL, and Base Level Engineering) are included in the geodatabase to provide an overview of model-backed study areas for use in evaluating FMSs and FMPs. It should be noted that for use in developing an FMS or FMP most, if not all, of these models will require updates or enhancements. Those updates may include tasks such as updating base level engineering studies to add detail (hydrologic and hydraulic) or simply updating detailed studies to account for Atlas 14 rainfall.

Map 13 (Attachment 3) presents the locations where hydrologic and hydraulic models are available. As the planning process continues, the list of available models and maps will continue to be reviewed and updated.

1 **Spatial Data Files**

2 Several GIS spatial data files (feature classes) are included as an electronic deliverable that supports the
 3 tabular data presented in this memorandum. The table below summarizes these required layers and
 4 status as of the writing of this memorandum.

5

File #	Item Name	Description	Deadline and Status
1	Entities	Entities with flood-related authority	January 7, 2022 Complete
2	Watersheds	Watersheds	January 7, 2022 Complete
3-5	Existing Infrastructure	Existing natural flood mitigation features and constructed major flood infrastructure	January 7, 2022 Complete (pending future/additional data)
6	Proposed or Ongoing Flood Mitigation Projects	Proposed or ongoing flood mitigation projects	January 7, 2022 Ongoing
7	Existing Flood Hazard	Existing condition flood inundation boundary for 1.0% and 0.2% annual chance flood events	March 7, 2022 Draft complete
8	Flood Mapping Gaps	Gaps in inundation boundary mapping	March 7, 2022 Draft complete
9-12	Existing Flood Exposure	Existing conditions flood exposure layer identifying people and places at risk for the 1.0% and 0.2% events	March 7, 2022 Draft complete
13	Future Flood Hazard	Future condition flood inundation boundary for 1.0% and 0.2% annual chance flood events	March 7, 2022 Draft complete
14-17	Future Flood Exposure	Future conditions flood exposure layer identifying people and places at risk for the 1.0% and 0.2% events	March 7, 2022 Draft complete
18	Existing Floodplain Management Practices	Areas with existing floodplain management practices	January 7, 2022 Complete
19	Goals	Adopted (preliminary) flood mitigation and floodplain management goals	January 7, 2022 Complete (preliminary - pending additional data and information)
20	Streams	Streams relevant to FMS and FMPs, when applicable.	January 7, 2022 Complete – base data complete; ties to FME/S/P pending (not required)

File #	Item Name	Description	Deadline and Status
21, 22, 25	Flood Management Evaluations, Projects, Strategies	Preliminary FMEs, FMPs, and FMSs	January 7, 2022 Ongoing – preliminary lists based on existing studies/reports. Lists to be verified and refined through community outreach/discussions

1

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Attachment 1: Existing and Future Flood Hazards, Exposure, and Vulnerability Maps

- Map 4: Existing Condition Flood Hazard
- Map 6: Existing Condition Flood Exposure
- Map 7: Existing Condition Vulnerability and Critical Infrastructure
- Map 8: Future Condition Flood Hazard
- Map 10: Extent of Increase of Flood Hazard Compared to Existing Condition
- Map 11: Future Condition Flood Exposure
- Map 12: Future Condition Vulnerability and Critical Infrastructure

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Attachment 2: Existing and Future Flood Hazard Gaps

- Map 5: Existing Condition Flood Hazard Gaps and Flood-Prone Areas
- Map 9: Future Condition Flood Hazard Gaps and Flood Prone Areas

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Attachment 3: Where models are available to evaluate potential FMSs and FMPs

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Agenda Item 11

Consider date and agenda items for next meeting

Agenda Item 12

Public General Comments

Public Comments limited to 3 minutes per speaker

Agenda Item 13

Adjourn