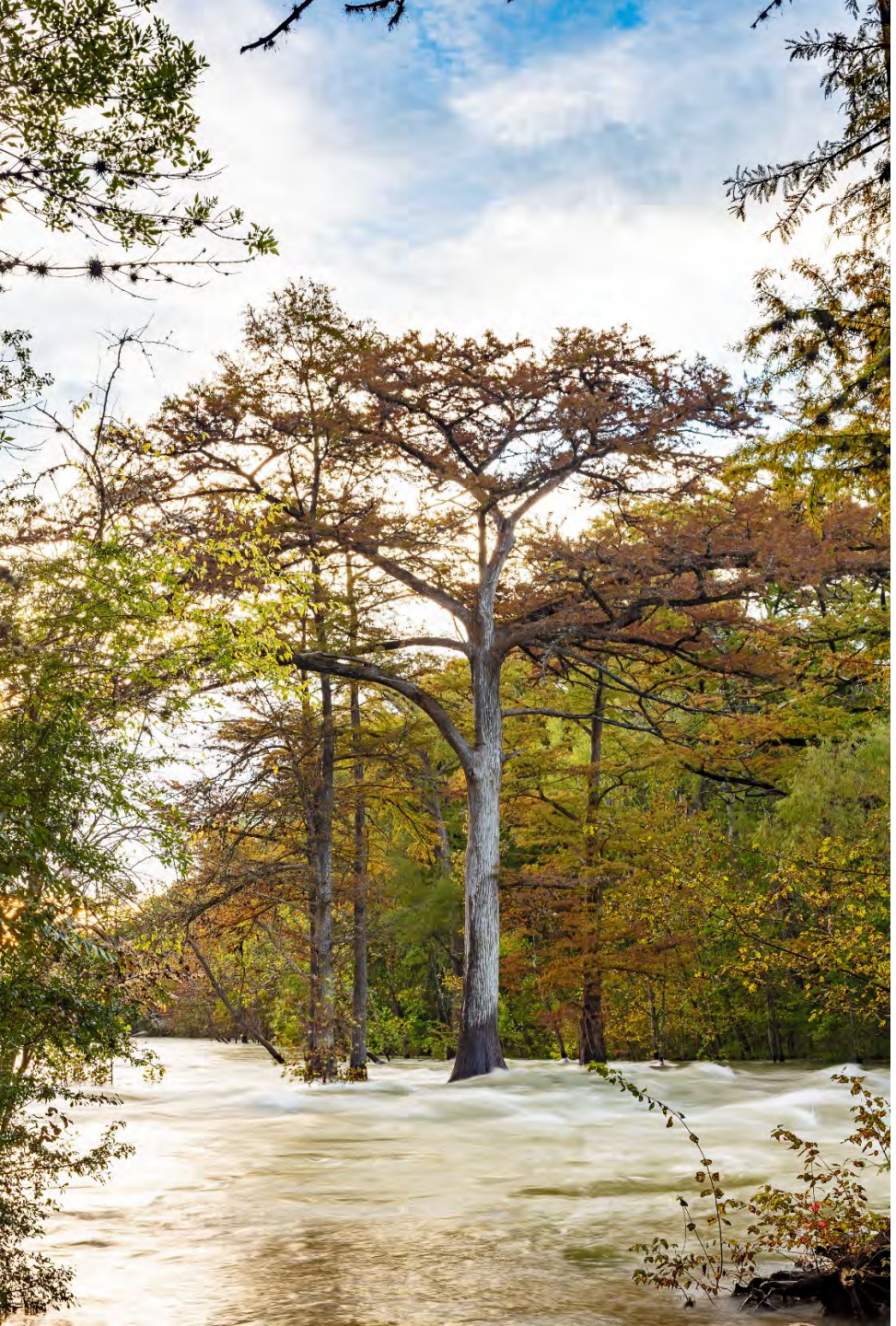


Region 11: Guadalupe
Regional Flood Planning Group Meeting

Wednesday, December 1, 2021
2:00pm

Agenda Item 1

Call to Order

1. Attendance
2. Sign-in sheets

Agenda Item 2

Welcome

Agenda Item 3

Approval of Meeting Minutes

1. Approval of meeting minutes from November 3, 2021 Region 11 RFPG Meeting

Meeting Minutes
Region 11 Guadalupe Regional Flood Planning Group Meeting
November 3, 2021 at 2:00 PM
Guadalupe-Blanco River Authority River Annex (905 Nolan Street, Seguin, TX 78155)
or
GoToWebinar Virtual Meeting

Roll Call:

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

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

Joel Klumpp Brittney Wortham-Teakell*	Texas Commission on Environmental Quality	
Don Durden	Public	
Suzanne Scott	Region 12 Liaison	
Patrick Brzozowski Scott Hartl*	Region 10 Liaison	

Quorum:
Quorum: **Yes**
Number of voting members or alternates representing voting members present: **12**
Number required for quorum per current voting positions of 15: **8**

Other Meeting Attendees:
Lauren Willis, GBRA (Facilitator)
Jay Scanlon, Freese & Nichols, Inc.
Adam Conner, Freese & Nichols, Inc.
Velma Danielson, Blanton & Associates
Vanessa Escobar, Blanton & Associates
Tom Hegemier, Doucet Engineers
Daniel Harris, Scheibe Consulting
James Bronikowski, TWDB
Reem Zoun, TWDB
Virginia Condie, San Marcos River Foundation
James Fancher
Keshav Gnawali, City of Kyle
Kathy Roecker, City of Kyle
Pratibha Sapkota, San Antonio River Authority
Dianne Wassenich
Joyce Yannuzzi, Senator Campbell's Office
Lisa Mairs
Daniel Meyer, Plum Creek Conservation District

All meeting materials are available for the public at: http://www.guadalupeRFPG.org

AGENDA ITEM NO. 1: Call to Order

Chairman Doug Miller called the meeting to order at 2:28 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 October 6, 2021 Region 11 RFPG Meeting

Chairman Miller opened discussion on approving the minutes from the October 6 Region 11 RFPG Meeting.

A motion was made by Ron Fieseler to approve the October 6, 2021 Region 11 RFPG Meeting minutes with the correction of names misspelled. John Johnston seconded the motion. The meeting minutes were approved by consensus.

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

Chairman Miller provided updates from the November 2nd statewide Regional Flood Planning Grant Amendment webinar hosted by the Texas Water Development Board (TWDB). The Executive Committee will review the RFPG member travel reimbursement costs.

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

Morgan White provided updates regarding the webinar held on grant contract amendments. Morgan will be out of the office until the beginning of the year with Ryke Moore being the TWDB contact.

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

Lauren Willis provided the RFPG with an updated contact list with Mr. Steven Fonville's contact information added.

AGENDA ITEM NO. 7: Discussion on Regional Flood Planning Grant Contract Amendment between TWDB and GBRA to incorporate additional funding provided by the legislature.

Jay Scanlon reviewed the additional scope of work added in the amendment and how the schedule is impacted. Lauren Willis discussed the budget between the additional scope of work categories.

AGENDA ITEM NO. 8: Discussion regarding Region 11 RFPG Technical Consultants work and schedule.

Velma Danielson updated the RFPG on public participation & outreach and reviewed the summary of data/information received to date by the technical consultants. Jay Scanlon discussed the technical memorandum and reviewed the regional flood plan schedule. Data was presented for the following; buildings in the 100-year floodplain, critical facilities in the 100-year floodplain, locations where roads flood, low water crossings, agricultural and ranchland at risk, communities not participating in NFIP, social vulnerability index (SVI), FEMA claims, current adequate mapping, and Hazard Mitigation Action Plants (HMAP) Participation. A preliminary list of potential Flood Management Strategies (FMS), Flood Management Evaluations (FME) and Flood Mitigation Projects (FMP) was presented.

AGENDA ITEM NO.9: Consider date and agenda items for next meeting

The next meeting will be held on December 1st at 2pm and will be held hybrid. The Executive Committee will meet at on December 1st at 12:30pm and will be held hybrid. The Executive Committee will review the RFPG member travel reimbursement costs associated with the grant contract amendment.

AGENDA ITEM NO. 10: Public General comments (Public comments limited to 3 minutes per speaker)

Doug Miller provided instructions for public comments. Two public comments were received.

1. Mr. Alan Montemayor – Chairman, Alamo Group of the Sierra Club spoke of Green Infrastructure and Nature Based Solutions being made a priority. Mr. Montemayor provided a written letter (Exhibit A).

2. Mrs. Virginia Condie – Executive Director, San Marcos River Foundation commented on two items (1) most of the San Marcos river miles aren't within the City limits making the floodplain management jurisdiction fall within the County. The county is having an issue with grazing practices and it would be nice for the counties to have more jurisdiction with regards to management of these issues and (2) there's an issue with breakaway structures being built or placed within the floodway. During this last high flow event (12,000 cfs) tents, picnic tables, tubes, port o'potties, etc. ended up in the river way.

AGENDA ITEM NO. 11: Adjourn

Brian Perkins made a motion to adjourn. The motion was seconded by John Johnston. The motion passed by unanimous consent.

The meeting adjourned at 3:49 PM by Doug Miller.

Approved by the Region 11 Guadalupe RFPG at a meeting held on December 1, 2021.

_____
Brian Perkins, SECRETARY

_____
Doug Miller, CHAIR

Agenda Item 4

Region 11 Guadalupe RFPG Chair Updates

Agenda Item 5

Texas Water Development Board Updates

Agenda Item 6

Guadalupe Region 11 RFPG Sponsor – GBRA Updates

Agenda Item 7

Update from Region 10 (Lower Colorado-Lavaca) and Region 12 (San Antonio) Liaisons

Agenda Item 8

Discussion and authorization for the voting planning member travel associated with the TWDB Contract Amendment 1 between TWDB and GBRA.

Agenda Item 9

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

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

Guadalupe Regional Flood Planning Group - Public Comment Tracking Matrix

For Public Meeting December 1, 2021

Comments received October 26, 2021 – November 19, 2021

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

Date Comment Received	Name/Affiliation of Commenter	Comment/Question	Respondent and Response Date
11/15/2021	Virginia Condie San Marcos River Foundation	**See attached photo series enclosed with commenter's email.** **From:** Virginia Condie <virginia@sanmarcosriver.org> **Sent:** Monday, November 15, 2021 2:49 PM **To:** Lauren Willis <lwillis@gbra.org> **Subject:** Fwd: Son's blue River video of rising water 12,000 cfs Hello Lauren! I'm sorry it took so long to send you the documentation about the debris issues we are having along the floodplain and flood way on the San Marcos River. I am going to forward you several emails with my photos, but this first one will show you approximately where the water was at 12,000 cfs on the San Marcos River. This is by no means a large flood on this river and you can see how high the water got. My next emails will show you 1) A normal water level at Son's Blue River in Prairie Lea on the San Marcos River 2) The items they normally have on their gravel bar 3) The items that were located in the flood waters 4) Some of the items that floated downstream in the small flood. My hope is that the flood board can help the counties prevent some of these issues for both the health of the river and the downstream neighbors. The potential for loss of life is concerning, along with the risk to the structural integrity of the downstream bridges due to the added materials in the river during high water. Please let me know if there is anything else you need from me or any of the downstream landowners. Thank you! -Virginia	Respondent: GBRA Staff (Lauren) Response Date: 11/16/21

11/10/2021	Bill Barker, Great Springs Project	**See attached letter enclosed with commenter's email.** **From:** Bill Barker <barker@greatspringsproject.org> **Sent:** Wednesday, November 10, 2021 3:22 PM **To:** Lauren Willis <lwillis@gbra.org> **Subject:** Great Springs Project (GSP) and the current Texas State Flood Planning effort. Ms. Willis, Please find attached a letter from the Great Springs Project regarding collaboration with the Region 11 Regional Flood Planning. Please let me know if you have any questions. Thank you for your attention to this matter. Bill Barker	Respondent: GBRA Staff (Lauren) Response Date: 11/11/21
11/6/2021	Doug Sethness, Flood Planning Group Member	From: Doug Sethness dsethness@reagan.com Sent: Saturday, November 6, 2021 10:30 AM To: Guadalupe Regional Flood Planning Group <comments@guadaluperfpg.org> Cc: Lauren Willis lwillis@gbra.org ; 'Jay Scanlon' JWS@freese.com ; Velma Danielson velma.danielson@blantonassociates.com ; 'Morgan White' Morgan.White@twdb.texas.gov Subject: RE: Follow up Answers to Questions from November 3 RFPG Meeting With reference to the question on the definition of LWC: 1. Is "overtopping" defined? For example, is it any amount of water across the travel way? 2. Where roads are used to channel water to a drainage location, is a road considered flooded with any amount of water across the travel way, whether from a 10-year event or less? I believe there needs to be some defining of terms to differentiate the typical LWC which would be commonly thought of as an at-grade dip in a road intended to allow	Respondent: FNI Staff (Jay) Response Date: 11/16/21

		passage of water over the roadway running across a recognized "stream" bed in rain events instead of building a bridge. There are also roads (mostly county and FMs) with curbs where water gets trapped and also areas where the road gets flooded from ponding water, both of which cause accidents but these areas are typically not thought of as low water crossings. Is the data we are using differentiating between these different "road flooding" conditions?	
11/3/2021	Alan Montemayor Alamo Group of Sierra Club	Written Public Comment Received at Nov 3rd Flood Planning Group Public Meeting**.** **See attached written comments.**	Respondent: GBRA Staff (Lauren) Response Date: 11/3/21

Photo series - Flood Debris at Son's Blue River in Prairie Lea on the San Marcos River

submitted by
Virginia Condie, San Marcos River Foundation

Prairie Lea Bridge at Sons during Flood 12,000 cfs

Prairie Lea Bridge at Sons during Flood 12,000 cfs

Prairie Lea Bridge at Sons during Flood 12,000 cfs

Evidence of debris at son's at 12,000cfs

Evidence of debris at son’s at 12,000cfs

Evidence of debris at son’s at 12,000cfs

Bulldozers in water after 12,000 cfs cleanup

Bulldozers in water after 12,000 cfs cleanup

How high 12,000 cfs was at Son’s

The Seeker Ranch is the adjacent downstream neighbor to Son's Blue River.
This item was found downstream on the ranch along with 2 port-o-potties.
The freon is a major concern that the River Foundation has with regards to this specific item.

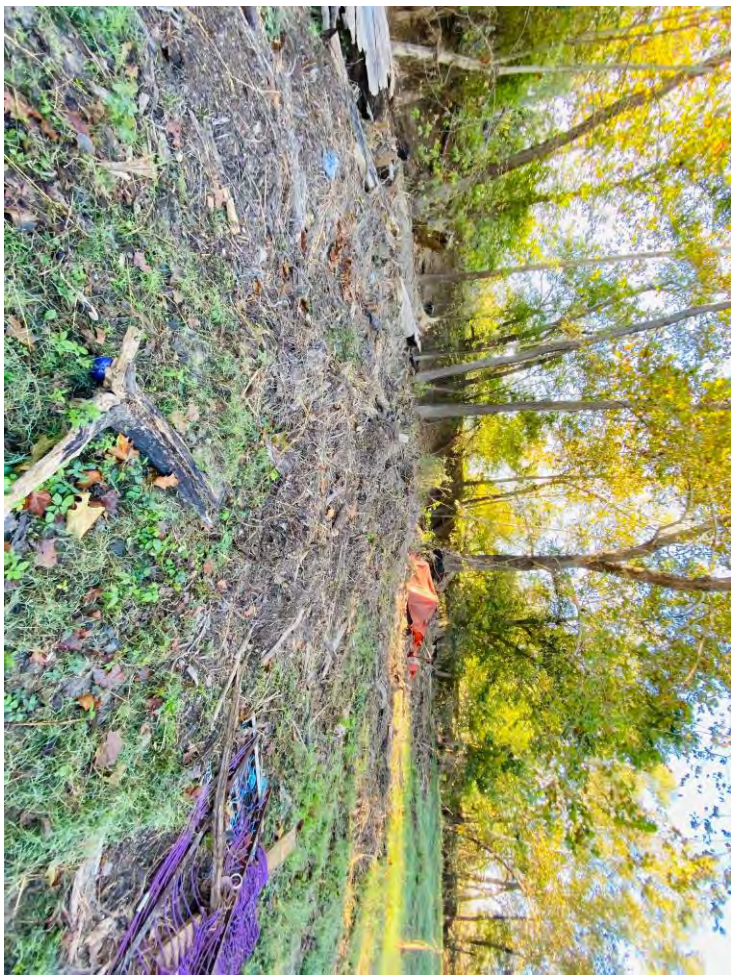
This is 1 of many tents that floated down to the Seeker Ranch.

Son’s trash at seeker ranch

Son’s trash at seeker ranch

Son’s trash at seeker ranch

Son’s trash at seeker ranch



Son’s trash at seeker ranch

Son’s trash at seeker ranch

Son’s trash at seeker ranch

Son’s trash at seeker ranch

Notice the hammock stand that is sideways. There is another picture of one in the water in a different email. You can see on a "normal" day at Son's Blue River that these are strewn all over the floodplain.

This small cabana is very concerning. These, too, are all over the Son's property.

Son’s trash at seeker ranch

This is not a very good picture, but is a "normal water" photo at Son's after the small flood a few weeks ago. You can see the hammock stands in this photo.

Everything in these photos is in the floodplain or flood way. This was a "normal water" day at Son's.

The first photo is a stack of usable tubes that were picked up at the Seeker Ranch. (They discarded the popped tubes they found.) The other 3 photos show Son's on a "normal water" day.

Written Public Comment Letter

submitted by
Bill Barker, Great Springs Project

November 10, 2021

Guadalupe-Blanco River Authority
Attn: Lauren Willis
lwillis@gbra.org
933 E. Court Street
Seguin, TX 78155

Dear Lauren,

This letter is to offer the collaboration of Great Springs Project (GSP) to the current Texas State Flood Planning effort.

The Great Springs Project is a 501(c)(3) organization formed in 2018 with the intent of conserving contiguous lands between San Antonio and Austin over Edwards Aquifer recharge and contributing zones as well as providing an active transportation trail connecting the four major springs in the corridor. The project will cross three of the TWDB Flood Planning Regions: Region 10 (Lower Colorado-Lavaca); Region 11 (Guadalupe); and Region 12 (San Antonio). The goal of GSP is to conserve an additional 50,000 acres of sensitive land in the corridor.

The goals the State Flood Planning effort and GSP appear to overlap. Specifically, GSP is already working in collaboration with entities in the corridor to protect natural resources, enhance recreational opportunities, and maximize funding opportunities.

By securing the conservation of additional recharge and contributing acreage, GSP will constrain impervious cover in the corridor thereby reducing stormwater runoff. As you know, swales and berms can be used to enhance the stormwater absorption without altering the natural character of the land. These improvements are best evaluated at the watershed level, and GSP would welcome input by the Flood Planning Regions. Similarly, storm water retention ponds are another possible part of a watershed flood plan.

Incorporation of active transportation trails in the green and gray infrastructure projects can provide better flood management as well as greatly increase the co-benefits of the regional flood planning. For example, trails can be part of stabilization of the creek ways and provide access to flood monitoring equipment. There is research to support the use of trails as linear fuel breaks and firefighter access for wildfire mitigation. Recent experience has reminded us that landscape destroyed by wildfire increase the likelihood of flooding.

Great Springs Project
PO Box 12331
Austin, Texas 78711

The trails provide excellent access to nature and the associated public health, aesthetic, cultural, educational, and recreational benefits. The collaboration of flood, land conservation, and trail planning can result in greater cost-effectiveness, funding opportunities, natural resource protection, and public benefits.

Thank you for your consideration and for this important flood planning work. Great Springs Project values the opportunity to collaborate with and be a resource to you.

We look forward to your response.

Sincerely,

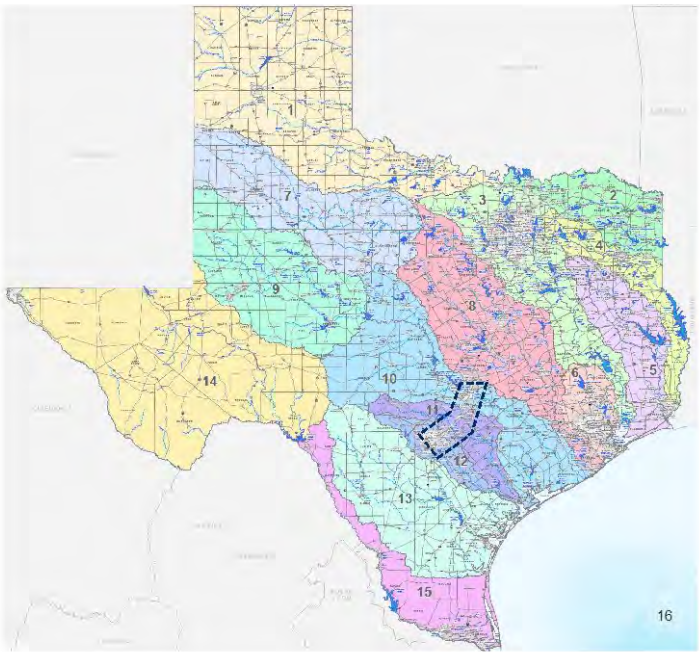
Bill Barker, FAICP, FITE
Regional Transportation Planning Director
Great Springs Project

Great Springs Project
PO Box 12331
Austin, Texas 78711

SB 8 CREATES 15 PLANNING REGIONS (BASED ON RIVER BASINS)

GREAT SPRINGS CROSSES THREE STUDY REGIONS

- Lower Colorado/Lavaca Rivers(Region 10)
- Guadalupe River (Region 11)
- San Antonio River (Region 12)



HALFF

Written Public Comments

Submitted by
Alan Montemayor, Alamo Group - Sierra Club

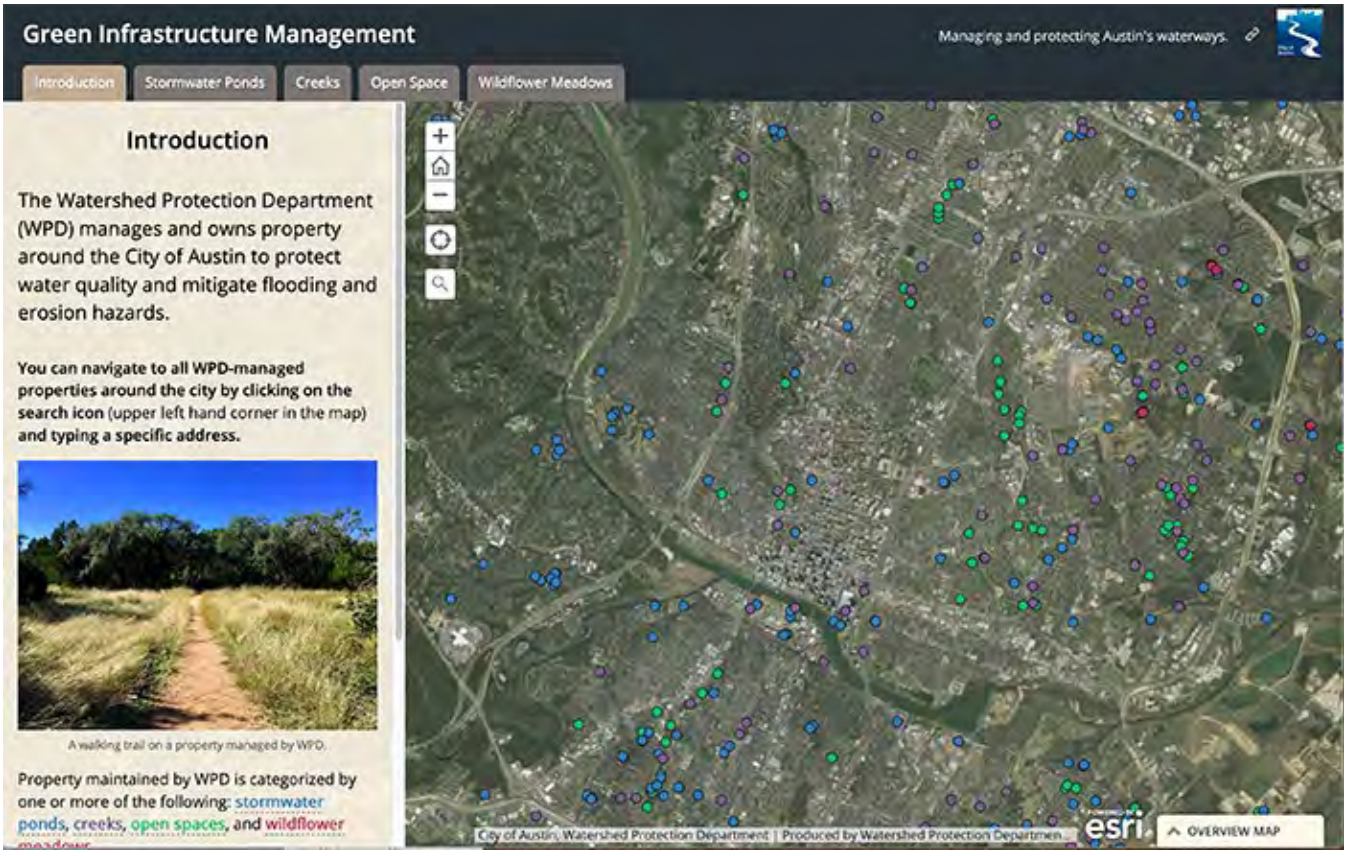
November 3, 2021

Guadalupe Regional Flood Planning Group Members,

The Alamo Group of the Sierra Club appreciates the work that the Guadalupe Regional Flood Planning Group has undertaken and requests that Green Infrastructure (GI) and Nature Based Solutions (NBS) be a priority not only in the discussions but also as projects are recommended to the State for funding.

Region 11 has long focused on flood control projects being placed within floodplains where concrete is often the preferred building material. It is time to modernize and use a watershed approach even if this requires modifying regulations. Applying GI/NBS for flood water management is a modern approach to keep floodwaters within our communities so our natural flood plains can sustain us as our climate changes and populations swell. Relying solely on traditional channel enlargement and grey infrastructure (concrete) to mitigate our flood water is irresponsible in our current state of radical climate swings. GI/NBS will provide much needed resiliency to meet these future climate change conditions.

Traditional concrete flood control channels create a concrete divide in the community, provide no ecological services to the area, increase local summer temperatures, transmit urban debris downstream, are eyesores and do nothing to mitigate floodwater quality. In addition, the production of this concrete releases approximately 1 ton of carbon dioxide for every ton of concrete.



Let us move forward in a more sustainable manner using GI/NBS in a watershed approach as shown in the image above.

Research has shown that a one-acre wetland can hold about three acre-feet of water, approximately 1 million gallons. Impervious concrete surfaces absorb and re-radiate heat while wetlands actually cool the surrounding environment due to evapotranspiration.

GI/NBS such as mini urban wetlands and regional rain gardens scattered throughout our city core would greatly reduce the urban heat island effect within our city that degrades the quality of life for our citizens and adds to the possibility of future drought.

GI/NBS are sustainable engineering practices that weave natural features or processes into the built environment to promote adaption and resilience. Such solutions use natural features and processes in efforts to combat climate change, reduce flood risks and improve water quality.

Research has shown that GI/NBS also offer significant monetary benefits beyond the small increase gained in tax base, especially when compared to long term maintenance and replacement costs. Other benefits include economic growth, green jobs, increased property values and improvement to public health.

The decisions you make and the projects you undertake will greatly affect the quality of life for citizens in the area. We ask that Green Infrastructure/Nature Based Solutions be a priority in the recommendations from this committee.

Thank You for your time and consideration,

Alan Montemayor

Chairman, Alamo Group of the Sierra Club

Region 11 Guadalupe

Regional Flood Planning Group Meeting

December 1, 2021

Item 9

Agenda

- Public Participation/Outreach Update
- Discuss/Potential Approval of Technical Memorandum
- Task 2B Future Conditions (Preliminary)
- Example Dashboard

Technical Memo No. 1

- Overview of written comments received
- Discussion

Task 2B Future Flood Risk Analysis

- Identify and Compile Outlook of Future Condition Flood Risk

DEVELOP FUTURE HAZARD QUILT

Future Condition Quilt

Future Developed Areas

COMPUTE EXPOSURE AND VULNERABILITY

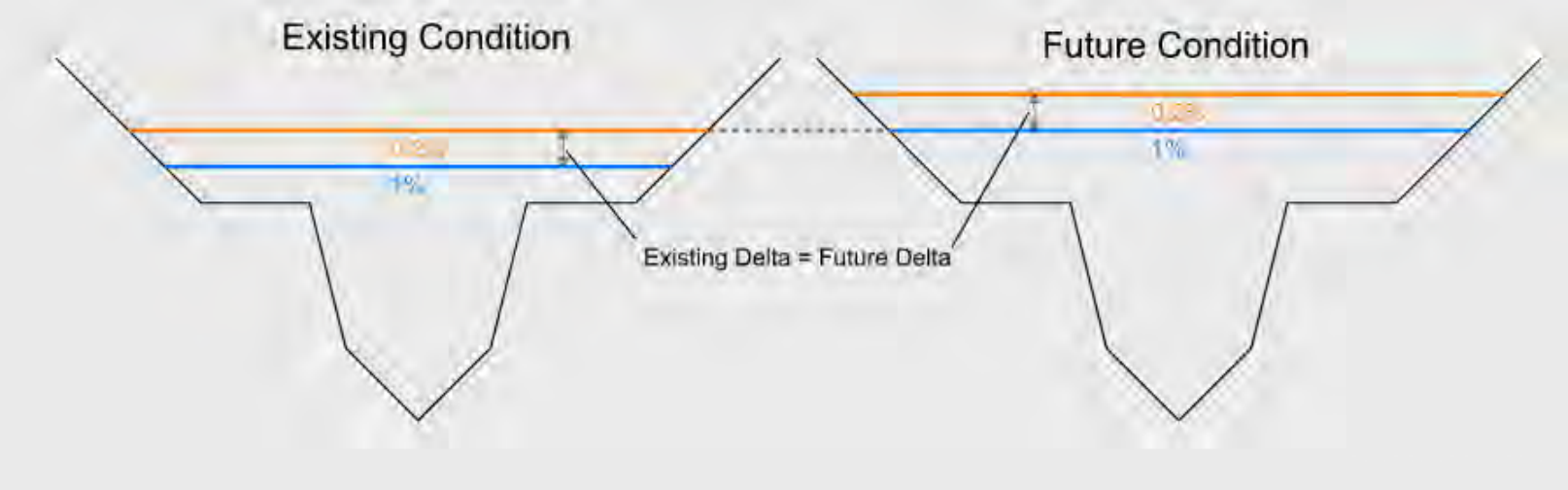
What is at Risk

Who is at Risk

What is the Impact

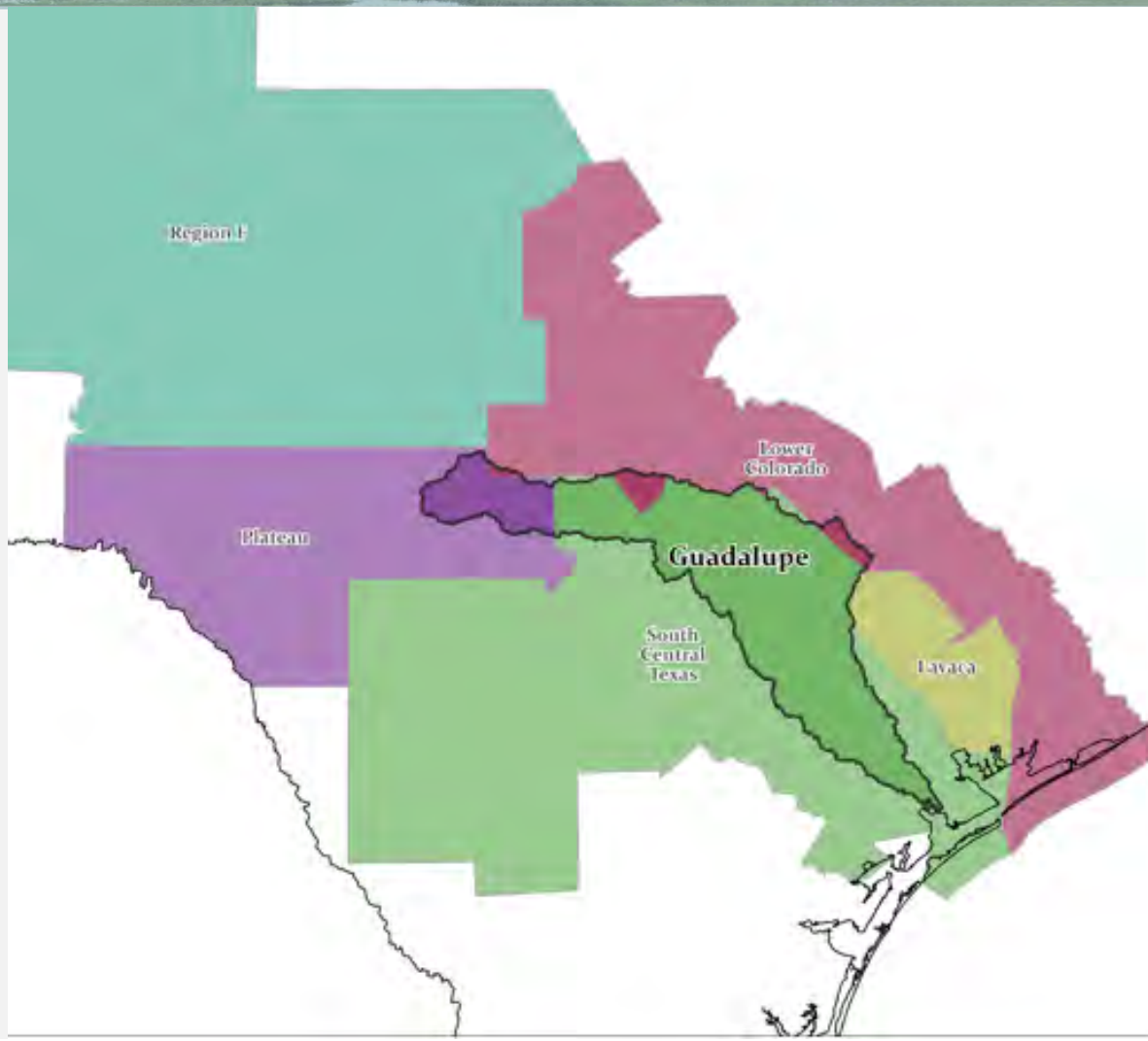
Task 2B Future Conditions

- **Define Future Condition Flood Hazard**
  - Use the existing 500-yr as proxy for future 100-yr (Method 2)
  - Future 500-yr still being discussed
    - Difference remains constant (buffer/offset)
    - Use population increase to tweak increases (Method 3 – combine 1 and 2)



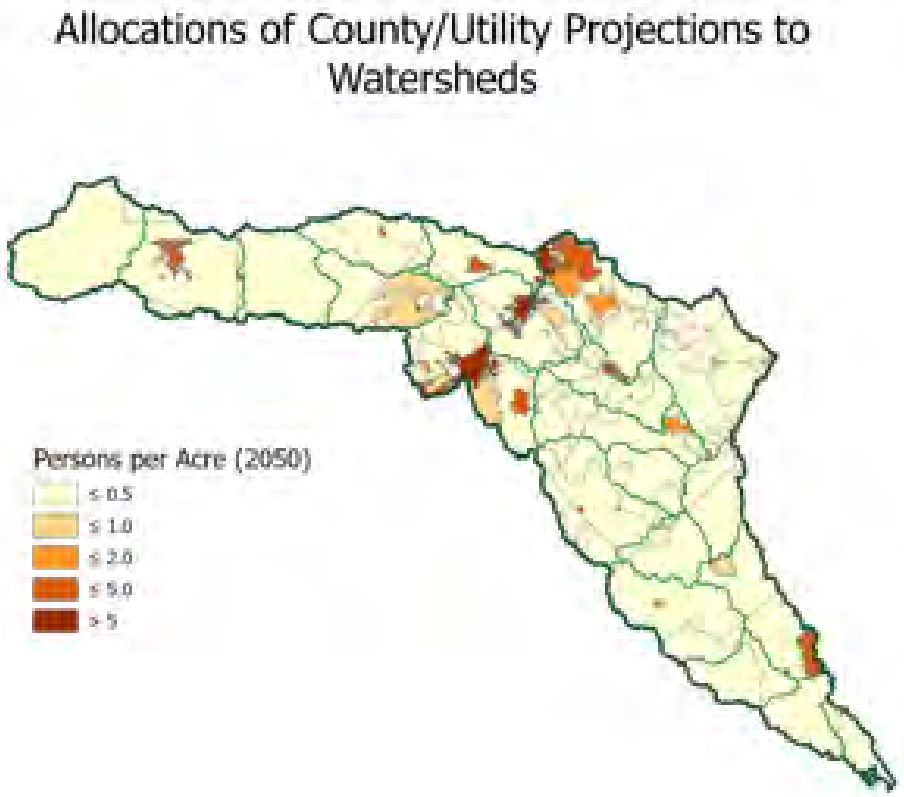
Task 2B Population Growth Projections

- Growth projected in 2022 State Water Plan
- Regional Flood Plans assessing at more localized level through 2050.

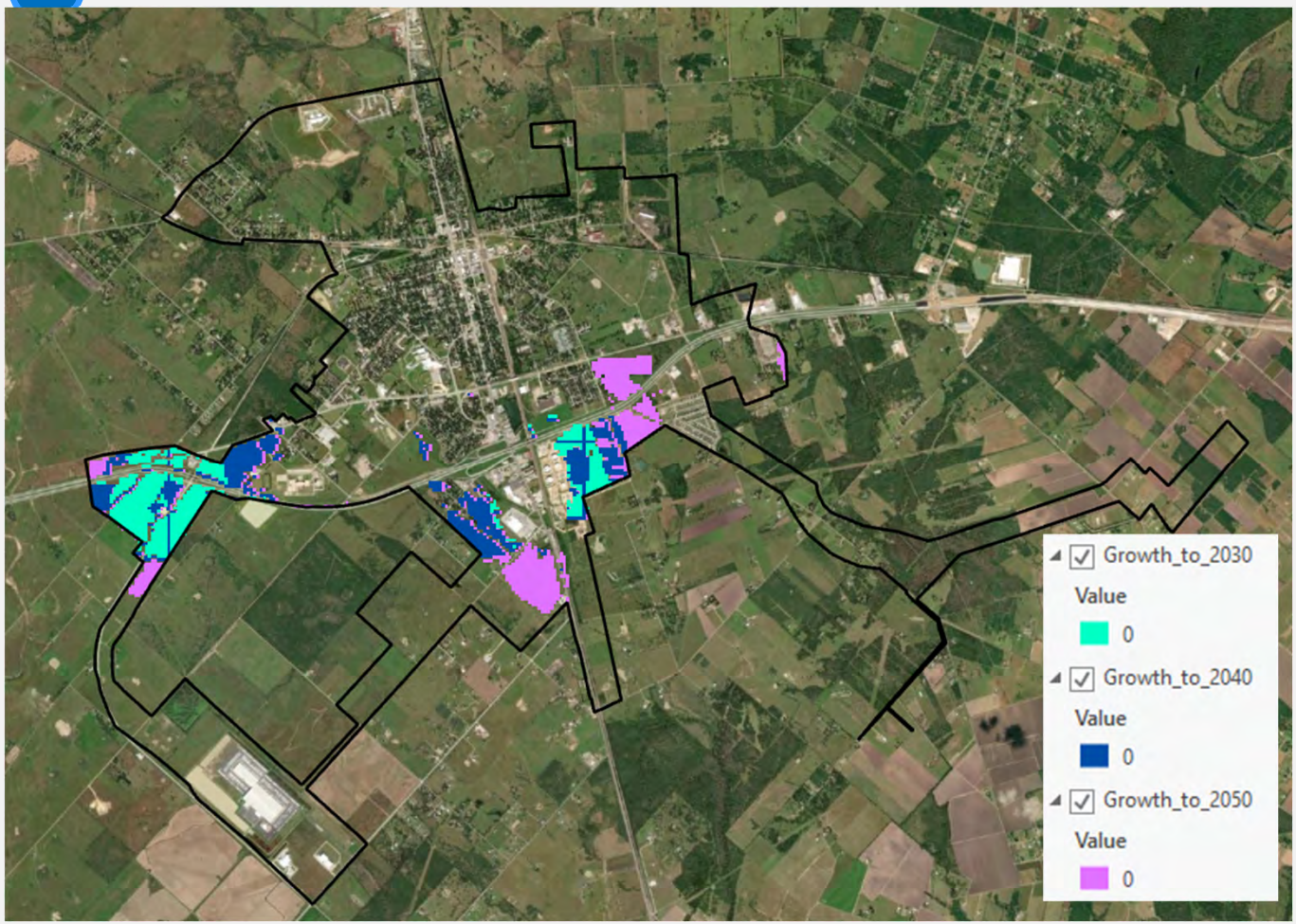


Task 2B Population Growth Projections

- Density allocations
- Water User Group (WUG):
  - public water systems over a certain size or groups of remaining population served by smaller systems, groups of systems, or domestic wells

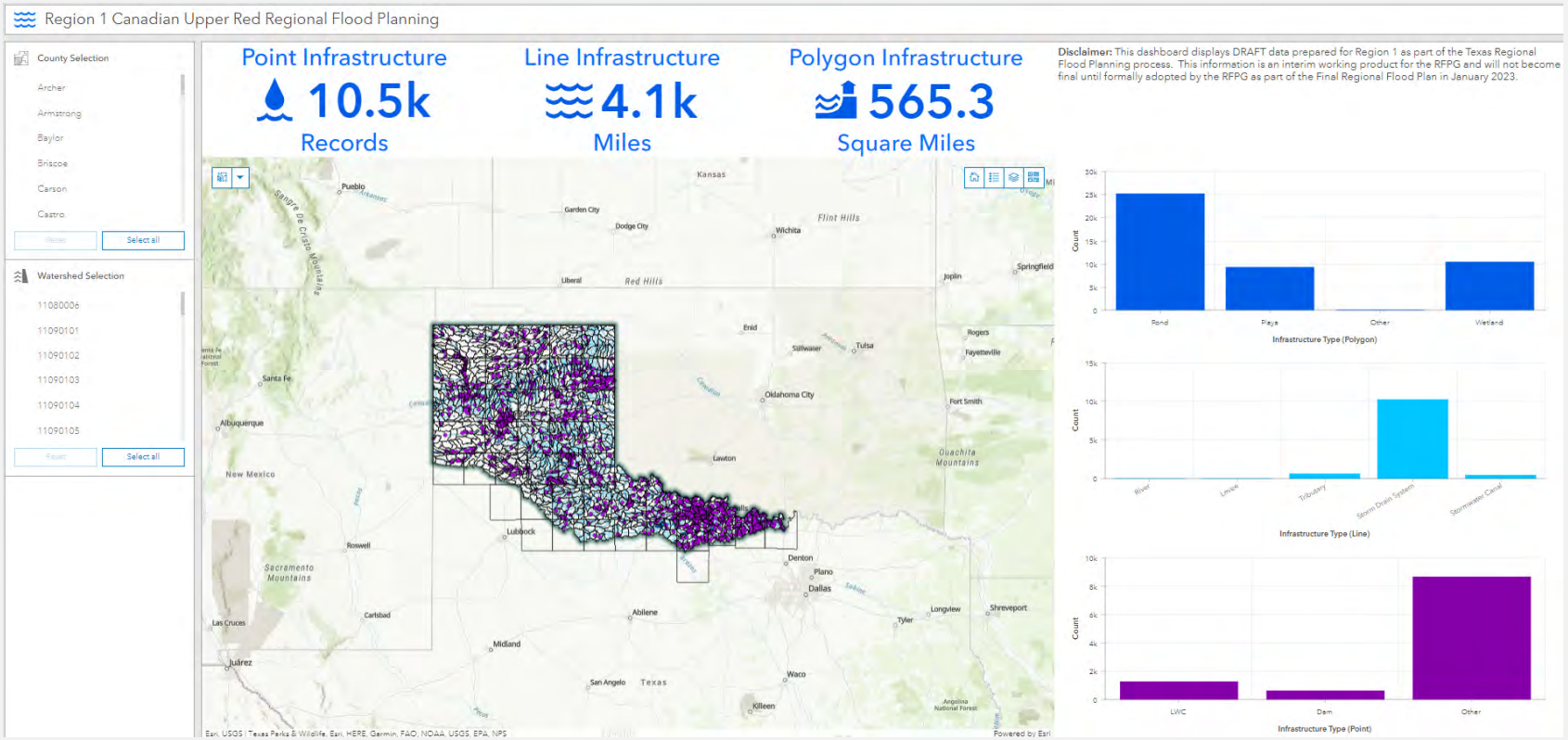


Task 2B Spatial Distribution of Growth by Decade

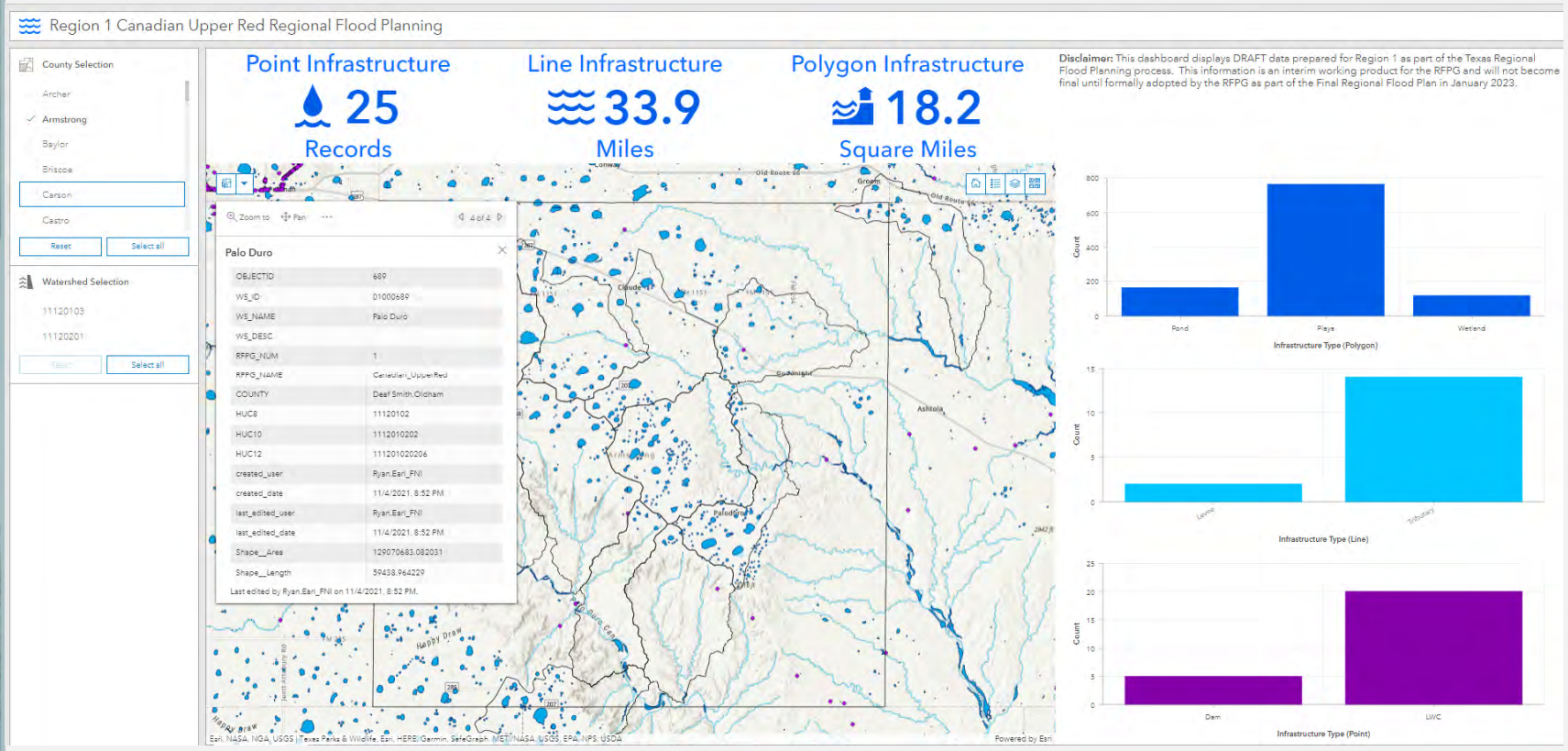


- Growth patterns based on:
  - Proximity to transportation corridors, existing and recent development
  - Existing floodplains, wetlands
  - Areas of no development such as floodways, lakes, parks, natural reserves

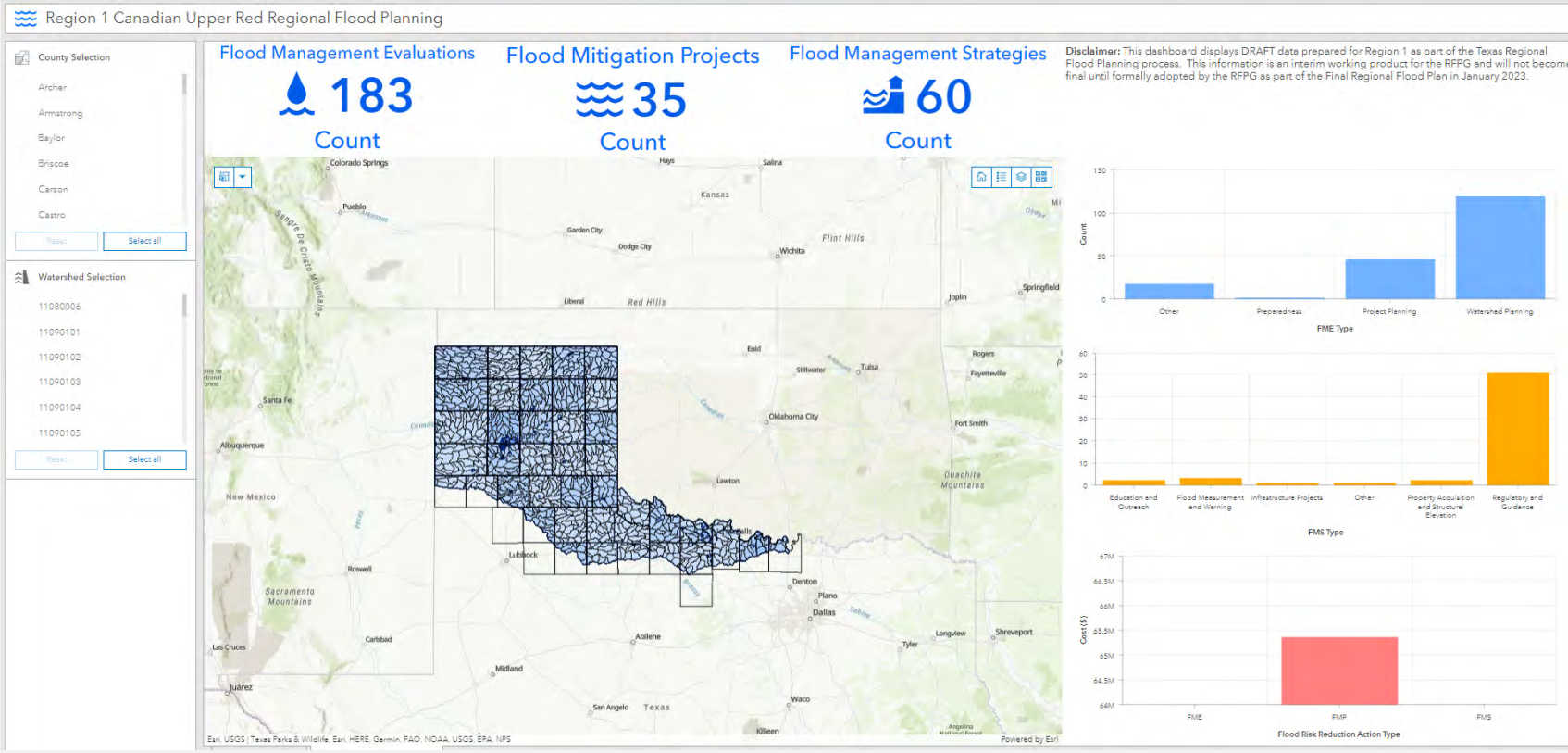
Sample Dashboard



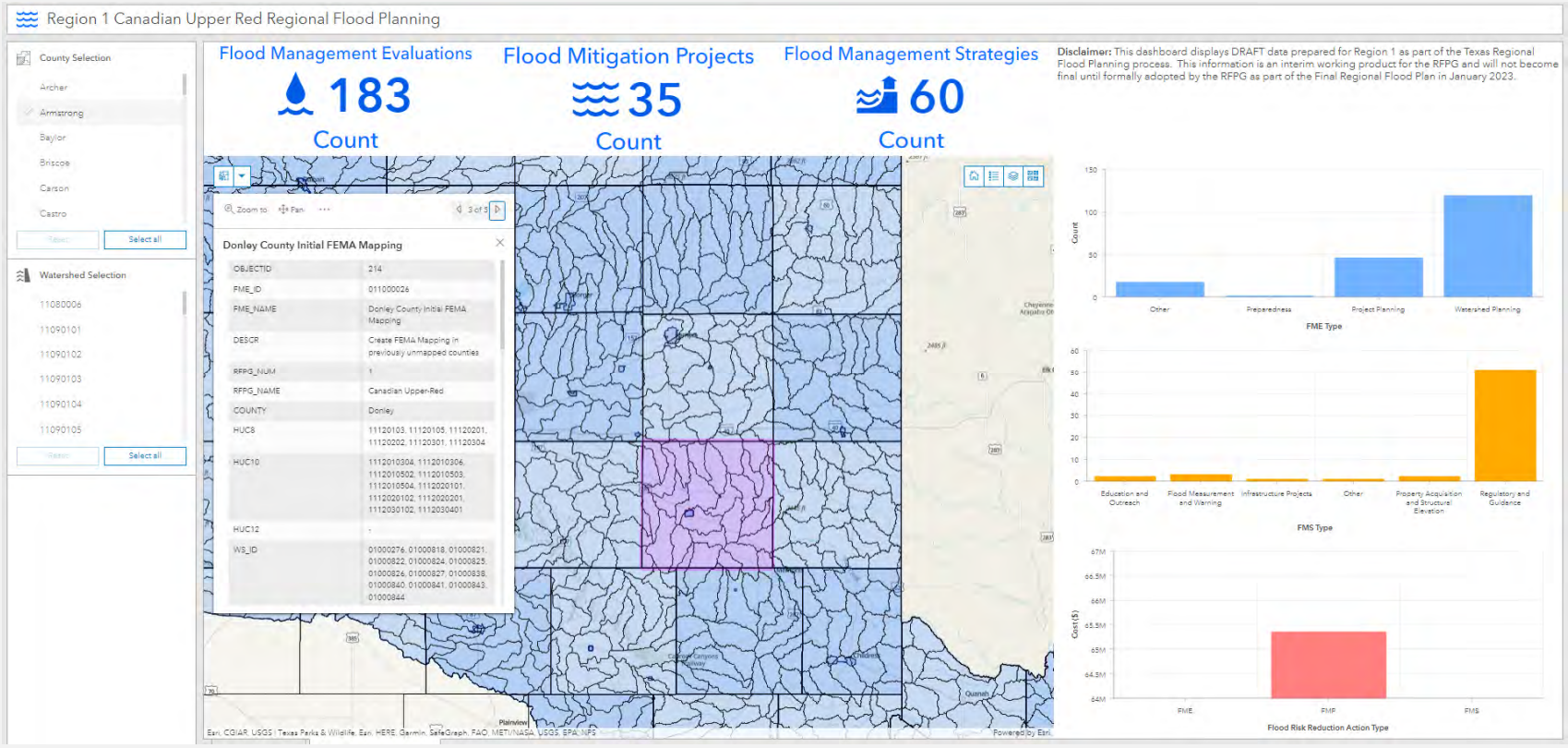
Sample Dashboard



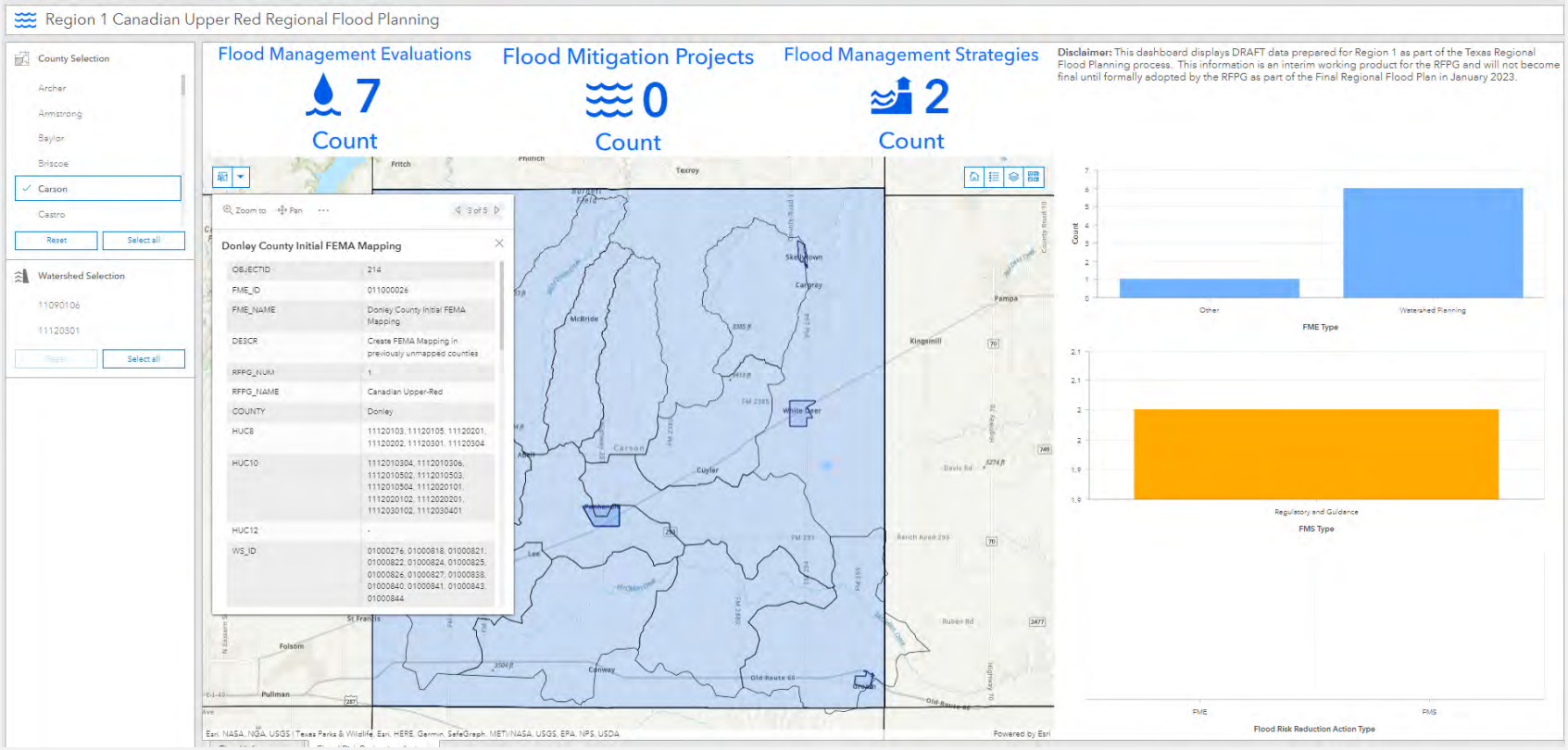
Sample Dashboard



Sample Dashboard



Sample Dashboard



Schedule

Meeting	Milestone Goals
~~May~~	~~Contracting & Introductions~~
~~June 2~~	~~Kickoff and Preplanning Meeting~~
~~June 30~~	~~**Task 1** Data Collection; **Task 2** Floodplain Map Review, **Task 3** Flood Policy/Goals Kickoff~~
~~August~~	~~**Task 1** Update; **Task 2** Update; **Task 3** Discussion; **Task 10** Outreach Plan; **Preplanning Meeting**~~
~~September~~	~~**Task 1** Prelim List; **Task 2** Update; **Task 3** Draft Goals; **Task 4** Screening~~
~~October~~	~~**Task 3** Approve Goals; **Task 4** Approve Screening~~
November	~~**Task 4A/B** FMP, FMS, FME Identification; **Task 4C** Preliminary Memo~~
December	**Task 4C** Draft Technical Memo; **Task 2B** Future Risk
January	**January 7, 2022** Tech Memo to TWDB

2023 REGIONAL FLOOD PLAN
INTERIM TECHNICAL MEMORANDUM 01

REGION 11
GUADALUPE REGIONAL FLOOD PLANNING GROUP

DRAFT – NOVEMBER 15, 2021

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 Associate 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 11/15/2021. 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

Technical Memorandum Number 1 has been prepared to satisfy the requirements for Task 4C as outlined in the Scope of Work and the relevant provisions of Title 31 of the Texas Administrative Code (TAC) Chapters 361-362, which serve as the statute and rules that govern regional flood planning. It has been developed consistent with the Technical Guidelines for Regional Flood Planning and additional guidance provided by the Texas Water Development Board (TWDB).

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

Introduction

In the wake of historic flooding in Texas, the 2019 Texas Legislature passed legislation to create Texas' first-ever regional and state flood planning process and to provide funding for investments in flood science and mapping efforts to support plan development. The legislature created a state flood planning framework and charged the TWDB with creating flood planning regions based on river basins and administering the required, ongoing work of flood planning. The Region 11 Guadalupe Regional Flood Planning Group (RFPG) was established by the TWDB on October 1, 2020. The flood planning region (FPR) is shown in **Figure 1**.

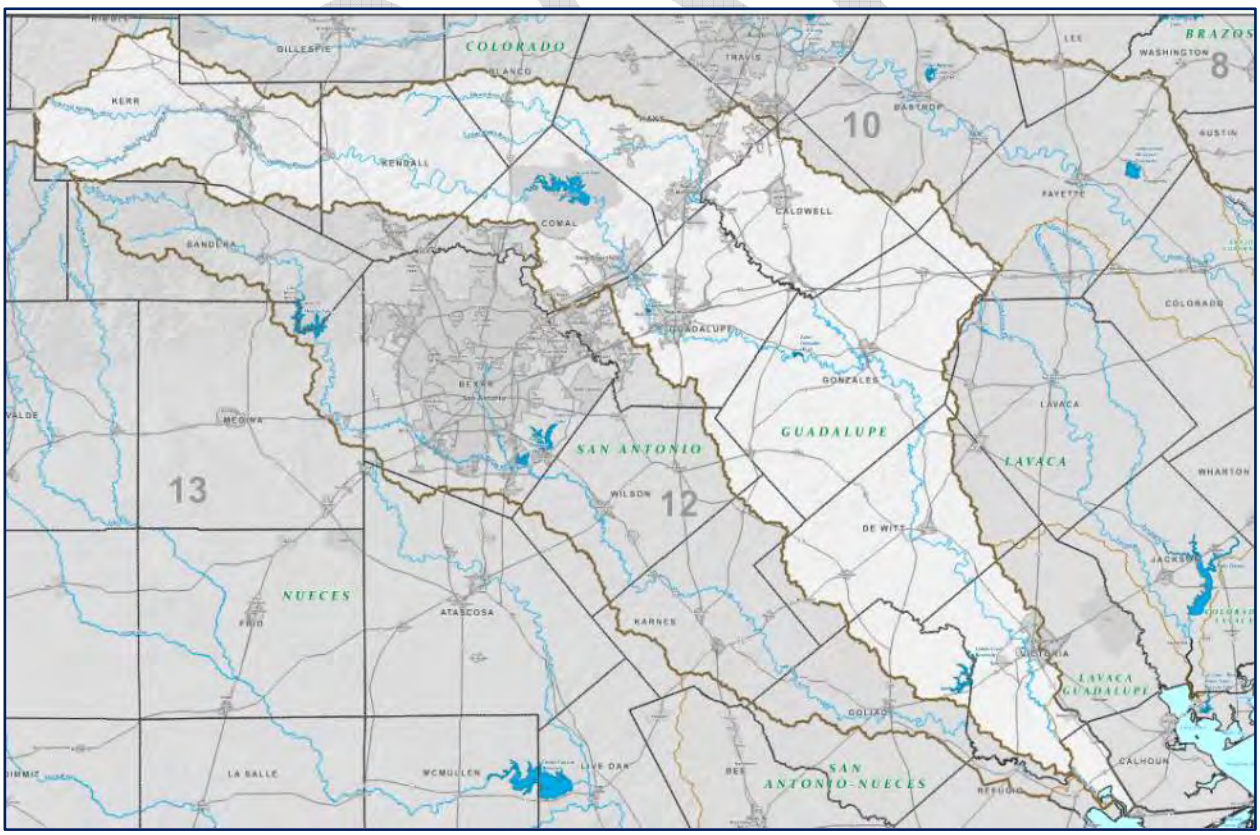


Figure 1 - Guadalupe (Region 11) Flood Planning Region

The Technical Memorandum includes select information in the Scope of Work and guidance documents provided by the TWDB that pertains to the following project tasks:

- Task 1: Planning Area Description
- Task 2: Flood Risk Analysis
- Task 3: Floodplain Management Practices and Flood Protection Goals
- Task 4: Assessment and Identification of Flood Mitigation Needs

This Technical Memorandum is organized as a series of attachments for each set of data required. In August 2021 the TWDB extended the deadline to submit certain portions of the Technical Memorandum deliverables, specifically those related to existing and future flood hazard and flood exposure. Those items are noted in the following section and will be submitted in Technical Memorandum Number 2, due March 7, 2022.

The attachments to this memorandum are summarized as follows:

- **Attachment 1** - List of existing political subdivisions within the FPR that have flood-related authorities or responsibilities.
- **Attachment 2** -List of previous flood studies considered by the RFPG to be relevant to development of the RFP.
- **Attachment 3** - List of available flood-related models that the RFPG considers of most value in developing its plan.
- **Attachemnt 4** - List of flood mitigation and floodplain management goals adopted by the RFPG per §361.36.
- **Attachemnt 5** - Documented process used by the RFPG to identify potentially feasible FMSs and FMPs.
- **Attachment 6** - List of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG.
- **Attachment 7** - List of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.

- Geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1.0% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined – **Not included, deadline extended to March 7, 2022**.
- Geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge **– Not included, deadline extended to March 7, 2022**.
- Geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available – **Not Included, Deadline extended to March 7, 2022**.

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

Table 1: Spatial Data Files

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 *Ongoing – internal draft complete*
8	*Flood Mapping Gaps*	*Gaps in inundation boundary mapping*	March 7, 2022 *Ongoing*
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 *Ongoing – internal draft complete*
13	*Future Flood Hazard*	*Future condition flood inundation boundary for 1.0% and 0.2% annual chance flood events*	March 7, 2022 *Ongoing*
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 *To be done*
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)
21, 22, 25	Flood Management Evaluations, Projects, Strategies	Preliminary FME's, FMP's, and FMS's	January 7, 2022 Ongoing – preliminary lists based on existing studies/reports. Lists to be verified and refined through community outreach/discussions

Attachment 1: List of Existing Political Subdivisions Within the RFPG that have Flood-Related Authority and Responsibility

The list of political subdivisions that have flood-related authority was developed using the Entities feature class. The feature class includes municipalities, counties, and councils of government boundary data from Texas Department of Transportation (TxDOT) datasets, as well as water district boundary data (flood control districts, utility districts, river authorities, drainage districts, etc.) maintained by the Texas Commission on Environmental Quality (TCEQ).

State guidelines for "Flood Protection Planning for Watersheds" define political subdivisions with flood related authority as cities, counties, districts or authorities created under Article III, Section 52, or Article XVI, Section 59, of the Texas Constitution, any other political subdivision of the state, any interstate compact commission to which the state is a party, and any nonprofit water supply corporation created and operating under Chapter 67. State law also provides for limited purpose Water Supply & Utility Districts, known variously as Municipal Utility Districts, Municipal Water Districts, Fresh Water Supply Districts, and Special Utility Districts (MUDs, MWDs, FWSDs, SUDs). These districts may be in or adjacent to cities or in the County and may be involved in the reclamation and drainage of overflowed land and other land needing drainage.

Of the political subdivisions referred to above, the majority are municipal or county governments, both of which enjoy broad authority to set policy to mitigate flood risk.

Table 1-1: List of Municipalities

Entity Name	*Entity Name*	*Entity Name*
Blanco	Kerrville	San Marcos
Buda*	Kyle*	Schertz*
Bulverde*	Lockhart	Seguin
Cibolo*	Luling	Spring Branch
Creedmoor*	Martindale	Uhland
Cuero	Mountain City*	Victoria
Flatonia*	Mustang Ridge*	Wimberley
Garden Ridge*	New Braunfels*	Woodcreek
Gonzales	Niederwald	Yorktown
Ingram	Nixon	
** Indicates municipalities that are partially within Region 11. Verify in which RFP(s) each is participating.*		

Table 1-2: List of Counties

Entity Name	*Entity Name*	*Entity Name*
Bandera*	Gillespie*	Kerr
Bastrop*	Goliad*	Lavaca*
Blanco	Gonzales	Real*
Caldwell	Guadalupe	Refugio*
Calhoun*	Hays	Travis*
Comal	Karnes*	Victoria
DeWitt	Kendall	Wilson*
Fayette*		
** Indicates counties that have most of the land mass outside the Region 11 boundary*		

Table 1-3: List of Other Entities

Bastrop County Water Control and Improvement District (1,2,3)
Comal County Water Improvement District (1, 1A)
Dewitt Country Drainage District 1
Fayette County Flood Control District
Gillespie County Water Control and Improvement District
Guadalupe Blanco River Authority
Guadalupe County Development Management District
Hays Water Control and Improvement District (1 and 2)
Kendall County Water Control and Improvement District (1, 2, 3, 4)
Upper Guadalupe River Authority
Victoria County Water Control and Improvement District (1,2)

Attachment 2: List of Previous Flood Studies to be Considered for Development of the RFP

Several types of previous flood studies were identified and are being consulted in the development of the regional plan. These include Flood Insurance Studies (FIS) prepared by FEMA, Hazard Mitigation Action Plans (HMAP) for various counties, and United States Army Corps of Engineers studies. In addition, local flood plans were identified using open-source research, a basin wide survey/call for data, and stakeholder outreach via email, public meetings, and phone calls. The types of local planning documents and studies identified include project or watershed specific studies, city-wide drainage masterplans, and capital improvement plans.

Relevant studies were defined by the Technical Consultant (TC) as those that either resulted in changes to the floodplain quilt or that were used to identify potential flood mitigation strategies or projects. The existing list, shown in **Table 2-1**, is anticipated to expand through the continuing outreach and data collection/review efforts of the TC Team and RFPG members.

Table 2-1: List of Previous Studies Relevant to the RFP

Tile	Study Area	Sponsor	Year
Bandera County Flood Insurance Study (FIS)	Bandera County	Federal Emergency Management Agency (FEMA)	2020
Bastrop County FIS	Bastrop County	FEMA	2016
Blanco County FIS	Blanco County	FEMA	1991
Blanco County Hazard Mitigation Plan	Blanco County, City of Johnson City	Blanco County	2016
Caldwell County FIS	Caldwell County	FEMA	2020
Caldwell County Flood Protection Planning	Caldwell County	Caldwell County	2020
Caldwell County Hazard Mitigation Action Plan	Caldwell County, City of Lockhart, City of Luling, City of Martindale, ESD #1, ESD #3, ESD #4, County Line Special Utility District, Lockhart ISD, Luling ISD, Martindale Water Supply Corporation, Maxwell Water Supply Corporation, and Plum Creek Conservation District	Caldwell County	2020
Hays Caldwell Water Treatment Plant Floodwall	Portion of Hays County	Canyon Regional WA	2020
Pipeline Bore Under Lake Dunlap	Lake Dunlap	Canyon Regional WA	2020
Calhoun County FIS	Calhoun County	FEMA	2018
Calhoun County Hazard Mitigation Plan	Calhoun County, City of Port Lavaca, City of Seadrift, and City of Point Comfort	Calhoun County	2017
Comal County FIS	Comal County	FEMA	2009
Comal County Hazard Mitigation Action Plan	Comal County, City of Bulverde, City of Garden Ridge, and City of New Braunfels	Comal County	2018
River Road Low Water Crossing Improvement	Comal County	Comal County Master WID	2020

Tile	Study Area	Sponsor	Year
Veramendi Regional Stormwater Detention Facility	Comal County	Comal County Master WID	2020
DeWitt County FIS	DeWitt County	FEMA	2011
DeWitt County Mitigation Action Plan	Unincorporated DeWitt County, City of Cuero, City of Nordheim, City of Yorktown, DeWitt County Drainage District	DeWitt County	2016
Flood Warning System & Stream Gage Network	DeWitt County	DeWitt County Drainage District #1	2020
Fayette County FIS	Fayette County	FEMA	2006
Fayette County Multi-Jurisdictional Hazard Mitigation Plan Update	Fayette County, City of Carmine, City of Flatonia, City of LaGrange	Texas Colorado River Floodplain Coalition	2011
Gillespie County FIS	Gillespie County	FEMA	2001
City of Fredericksburg and Gillespie County Hazard Mitigation Plan	The City of Fredericksburg and Gillespie County	The City of Fredericksburg and Gillespie County	2018
Goliad County FIS	Goliad County	FEMA	2010
Goliad County Hazard Mitigation Action Plan	Goliad County	Goliad County Emergency Management	2015*
Gonzales County FIS	Gonzales County	FEMA	2020
Gonzalez County Multi-Hazard Mitigation Plan	Gonzales County, City of Gonzales, City of Nixon, City of Smiley, and City of Waelder	Gonzales County	2018
Guadalupe County FIS	Guadalupe County	FEMA	2020
Guadalupe County Hazard Mitigation Action Plan	Guadalupe County, City of Cibolo, and City of Seguin	Guadalupe County	2021
Lake Dunlap Spillgate Replacement and Dam Armoring	Lake Dunlap	Guadalupe Blanco RA	2020
Lake McQueeney Spillgate Replacement and Dam Armoring	Lake McQueeney	Guadalupe Blanco RA	2020
Lake Placid Spillgate Replacement and Dam Armoring	Lake Placid	Guadalupe Blanco RA	2020
Hays County FIS	Hays County	FEMA	2005
Hays County Hazard Mitigation Plan	Hays County, Village of Bear Creek, City of Buda, City of Dripping Springs, City of Hays, City of Kyle, City of Mountain City, City of Niederwald, City of San Marcos, City of Uhland, City of Wimberley, and City of Woodcreek	Hays County	2017
Hays County Community Flood Mitigation	Hays County	Hays County	2020
Karnes County FIS	Karnes County	FEMA	2010
Karnes County Multi-Jurisdictional – Wilson County Multi-Jurisdictional Hazard Mitigation Action Plan	Karnes County, Wilson County, City of Floresville, City of La Vernia, City of Poth, City of Stockdale, Falls City, Karnes City, City of Kennedy, City of Runge, La Vernia ISD, and Karnes City ISD	Karnes County and Wilson County	2020

Tile	Study Area	Sponsor	Year
Flood Protection Planning Study	Karnes County	Karnes County	2020
Kendall County FIS	Kendall County	FEMA	2020
Kendall County Hazard Mitigation Plan	Kendall County, Lower Colorado River Authority, Pedernales Electric Cooperative, Bandera Electric Cooperative, Boerne Chamber of Commerce, Boerne Kendall County Economic Development Corporation, Comfort Floodplain Coalition, and Methodist Healthcare System	Kendall County	2017
Kerr County FIS	Kerr County	FEMA	2020
Kerr County Multi-Hazard Mitigation Plan	Center Point ISD, City of Ingram, City of Kerrville, Hunt ISD, Ingram ISD, Kerr County, Kerrville ISD, Schreiner University, Sid Peterson Memorial Hospital, and Upper Guadalupe River Authority	Kerr County	2018
Lavaca County FIS	Lavaca County	FEMA	2010
Lavaca County Hazard Mitigation Plan	Lavaca County, City of Hallettsville, City of Moulton, City of Shiner, City of Yoakum	Lavaca County	2018
Real County Hazard Mitigation Plan	Real County, City of Leaky, and City of Camp Wood	Real County	2012
Refugio County FIS	Refugio County	FEMA	2014
Refugio County Multi-Hazard Mitigation Plan	Refugio County, Town of Refugio, Town of Woodsboro, Refugio ISD, and Woodsboro ISD	Refugio County	2016
San Marcos Flood Protection Plan	San Marcos	San Marcos	2007
CDBG-DR Infrastructure Feasibility Study	San Marcos	San Marcos	2017
CDBG-DR Hydrology and Hydraulics Technical Memorandum	San Marcos	San Marcos	2017
2D Flood Mitigation Analysis Cottonwood Creek	San Marcos	San Marcos	2021
Briarwood and River Ridge Improvements	San Marcos	San Marcos	2020
Castle Forest Drainage Improvements	San Marcos	San Marcos	2020
Wallace Addition Offsite Drainage Improvements	San Marcos	San Marcos	2020
Travis County FIS	Travis County	FEMA	2020
Travis County Hazard Mitigation Plan	Travis County, City of Pflugerville, City of Sunset Valley, City of Manor, City of Lakeway, and Village of the Hills	Travis County	2017
City of Victoria FIS	City of Victoria	FEMA	1999
Storm Drainage Master Plan	City of Victoria	City of Victoria	2007
Kerr County Flood Warning System Preliminary Engineering Study	Kerr County	Kerr County	2016

Tile	Study Area	Sponsor	Year
New Braunfels Drainage Area Master Plan – Future Phases	New Braunfels	New Braunfels	2021
Drainage CIP List	New Braunfels	New Braunfels	2013
Landa Park Aquatics Center Parking Lot – Green Infrastructure Retrofit	New Braunfels	New Braunfels	2020
Victoria County FIS	Victoria County	FEMA	1998
Victoria County Hazard Mitigation Action Plan	Victoria County, City of Victoria, and Victoria ISD	Victoria County	2018
Annex 2 – TRN Interim Feasibility Study – Phase 2	Victoria County	Victoria County	2016
Wilson County FIS	Wilson County	FEMA	2010
Wimberley Flood Hazard/Risk Assessment Project	Wimberley	Wimberley	2020

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Attachment 3: Flood Related Models to be Considered for Development of the RFP

Flood-related models include large watershed studies for flood insurance studies by/for FEMA, river basin studies by USACE, as well as watershed and/or project specific models (prepared by local sponsors) will also be considered. The existing list, shown in **Table 3-1**, is likely to be revised based on continued review of data received as well as through the continuing outreach and data collection efforts of the TC Team and RFPG members.

Table 3-1: List of Models Relevant to the RFP

Tile	*Software*	*Study Area*	*Sponsor*	*Year*
Bandera County Flood Insurance Study (FIS)	HEC-HMS	Bandera County	FEMA	2020
Bandera County FIS	HEC-RAS	Bandera County	FEMA	2020
Bastrop County FIS	HEC-HMS	Bastrop County	FEMA	2016
Bastrop County FIS	HEC-RAS	Bastrop County	FEMA	2016
Blanco County FIS	HEC-HMS	Blanco County	FEMA	1991
Blanco County FIS	HEC-RAS	Blanco County	FEMA	1991
Caldwell County FIS	HEC-HMS	Caldwell County	FEMA	2020
Caldwell County FIS	HEC-RAS	Caldwell County	FEMA	2020
Calhoun County FIS	HEC-HMS	Calhoun County	FEMA	2018
Calhoun County FIS	HEC-RAS	Calhoun County	FEMA	2018
Comal County FIS	HEC-HMS	Comal County	FEMA	2009
Comal County FIS	HEC-RAS	Comal County	FEMA	2009
DeWitt County FIS	HEC-HMS	DeWitt County	FEMA	2011
DeWitt County FIS	HEC-RAS	DeWitt County	FEMA	2011
Fayette County FIS	HEC-HMS	Fayette County	FEMA	2006
Fayette County FIS	HEC-RAS	Fayette County	FEMA	2006
Gillespie County FIS	HEC-HMS	Gillespie County	FEMA	2001
Gillespie County FIS	HEC-RAS	Gillespie County	FEMA	2001
Goliad County FIS	HEC-HMS	Goliad County	FEMA	2010
Goliad County FIS	HEC-RAS	Goliad County	FEMA	2010
Gonzales County FIS	HEC-HMS	Gonzales County	FEMA	2020
Gonzales County FIS	HEC-RAS	Gonzales County	FEMA	2020
Guadalupe County FIS	HEC-HMS	Guadalupe County	FEMA	2020
Guadalupe County FIS	HEC-RAS	Guadalupe County	FEMA	2020
Hays County FIS	HEC-HMS	Hays County	FEMA	2005
Hays County FIS	HEC-RAS	Hays County	FEMA	2005
Karnes County FIS	HEC-HMS	Karnes County	FEMA	2010
Karnes County FIS	HEC-RAS	Karnes County	FEMA	2010
Kendall County FIS	HEC-HMS	Kendall County	FEMA	2020
Kendall County FIS	HEC-RAS	Kendall County	FEMA	2020
Kerr County FIS	HEC-HMS	Kerr County	FEMA	2020
Kerr County FIS	HEC-RAS	Kerr County	FEMA	2020
Lavaca County FIS	HEC-HMS	Lavaca County	FEMA	2010
Lavaca County FIS	HEC-RAS	Lavaca County	FEMA	2010
Refugio County FIS	HEC-HMS	Refugio County	FEMA	2014
Refugio County FIS	HEC-RAS	Refugio County	FEMA	2014
Travis County FIS	HEC-HMS	Travis County	FEMA	2020
Travis County FIS	HEC-RAS	Travis County	FEMA	2020

Tile	*Software*	*Study Area*	*Sponsor*	*Year*
City of Victoria FIS	HEC-HMS	City of Victoria	FEMA	1999
City of Victoria FIS	HEC-RAS	City of Victoria	FEMA	1999
Victoria County FIS	HEC-HMS	Victoria County	FEMA	1998
Victoria County FIS	HEC-RAS	Victoria County	FEMA	1998
Wilson County FIS	HEC-HMS	Wilson County	FEMA	2010
Wilson County FIS	HEC-RAS	Wilson County	FEMA	2010
Annex 1 – GBRA TRN Interim Feasibility Study – Phase 1 – Hydrologic Analysis	HEC-HMS	GBRA, Luling, and Woodcreek	GBRA Annex 1	2015
Annex 1 – GBRA TRN Interim Feasibility Study – Phase 1 – Hydraulic Analysis	HEC-RAS	GBRA, Luling, and Woodcreek	GBRA Annex 1	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 1 Hydrologic Analysis	HEC-HMS	Bear Creek, Bypass Creek, Cypress Creek, and Upper San Marcos Creek	GBRA Annex 2	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 1 Hydraulic Analysis	HEC-RAS	Bear Creek, Bypass Creek, Cypress Creek, Dry Bear Creek, Purgatory Creek, San Marcos Creek, and Willow Springs Creek	GBRA Annex 2	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 2 Hydrologic Analysis	HEC-HMS	Plum Creek	GBRA Annex 2	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 2 Hydraulic Analysis	HEC-RAS	Andrews Porter Creek, Boggy Creek, Brushy Creek (Trib 1, Trib 1A), Bunton Branch, Clear Fork Plum, Elm Creek, Mebane Creek, Plum Creek (Trib 1, Trib 2, and Trib 3), and Town Branch Creek	GBRA Annex 2	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 3 Hydrologic Analysis	HEC-HMS	Mays Creek, Peach Creek, and Spring Creek	GBRA Annex 2	2015
Annex 2 – GBRA TRN Interim Feasibility Study – Phase 2 – Tier 3 Hydraulic Analysis	HEC-RAS	Baldridge and Tribs, Mays Creek, Peach Creek, and Spring Creek	GBRA Annex 2	2015
Annex 3 – GBRA FPP Study – Phase 3 Final Report – Hydrologic Analysis	HEC-HMS	Cypress Trib 1, Loneman Smith, Plum Trib 3, Plum Trib 3, and Wilson Creek	GBRA Annex 3	2015
Annex 3 – GBRA FPP Study – Phase 3 Final Report – Hydraulic Analysis	HEC-RAS	Cypress Trib 1, Loneman Creek, Plum Trib 3, Smith Creek, Wilson Creek, and Zone A	GBRA Annex 3	2015

Attachment 4: Flood Mitigation and Floodplain Management Goals Adopted by the RFPG

Please see the attached memorandum dated October 20, 2021. The goals will be reviewed as the planning process continues and will be revised by the RFPG as needed based on additional information.

10431 Morado Circle, Suite 300 + Austin, Texas 78759 + 512-617-3100 + FAX 817-735-7491 www.freese.com

TO: Guadalupe River Regional Flood Planning Group (RFPG)

FROM: Tom Hegemier, Doucet and Assoc.; Jay Scanlon – Freese and Nichols, Inc.

SUBJECT: Recommendations for Adoption of Flood Mitigation and Floodplain Management Goals – UPDATED Per October 6, 2021 RFPG Meeting

DATE: 10/20/2021

PROJECT: Guadalupe Region 2023 Regional Flood Plan (FNI Project No. GBA21362)

Task 3B of the *Scope of Work* for the development of the Regional Flood Plan (RFP) requires the RFPG and its technical consultants to "identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the flood planning region." The RFPG will vote to establish goals by a simple majority of voting members present. Freese and Nichols (FNI) proposes the Planning Group discuss and adopt the goals at the October 6, 2021 RFPG meeting.

The proposed goals have been developed considering input from the RFPG provided at the regular RFPG meetings, as well as input from other regional stakeholders provided through the data collection survey. Prior RFPG meeting content related to Task 3B is summarized below:

- **June 30, 2021** – Introduction to floodplain management strategies and goals
- **August 4, 2021** – Interactive goal discussion and public meeting input on goals/strategies.
- **August/September 2021**- Continued public input on goals, strategies, concerns, potential projects via survey monkey, interactive map, and interaction with the project team.
- **September 8, 2021** – Presentation and discussion of draft floodplain management goals based upon previous RFPG input and responses to the RFPG survey
- **October 6, 2021** – Discussion of draft goals and input from the planning group.

The RFPG is required to prepare a general description and summary table of flood mitigation and floodplain management goals and description of residual risk associated with those goals. The goals are presented in **Table 11**, attached, using the template provided by TWDB.

Since the September 8 meeting, the TWDB underscored that the goals must be specific and achievable, with the key being specific so that implementation can be measured. The TWDB also noted that the Planning Group can refine the goals prior to the submittal of the RFP in 2022 so, as more data is gathered in the coming months, the Planning Group can modify the goals if necessary.

Adoption of Process

A draft of this memorandum was provided to the RFPG on September 27, 2021 for review and consideration in advance of the October RFPG meeting. The goals documented below incorporate minor revisions and was approved by the RFPG by a simple majority of voting members at the meeting held on October 6, 2021. Public Notice was given to meet the requirements of TAC 361.21(h)(2) and other applicable provisions.

Table 11: Regional Flood Plan Flood Mitigation and Floodplain Management Goals

Goal ID	Goal	Term of Goal	Target Year	Applicable to	Residual Risk	How Will the Goal Be Measured	Overarching Goal(s)	Associated Goal IDs
1001	Improve safety beyond minimal signage at 50% of low water crossings through automatic flood gates and/or flood level passed	Short Term (10-year)	2033	Flood planning region	50% of low water crossings have no change in flood risk	Number of low water crossings with safety improvements	Protect against loss of life and property (362.3.b.13-14)	1002
1002	Improve safety beyond minimal signage at 90% of low water crossings through automatic flood gates and/or flood level passed	Long Term (30-year)	2053	Flood planning region	10% of low water crossings have no change in flood risk	Number of low water crossings with safety improvements	Protect against loss of life and property (362.3.b.13-14)	1001
2001	Consider and incorporate nature-based practices (LID, green infrastructure, natural channel design) in 30% of Flood Mitigation Projects and Flood Management Strategies recommended in the Regional Flood Plan.	Short Term (10-year)	2033	Flood planning region	No change in flood risk; reduces impacts on the environment	Number of FMPs and FMSs implementing nature-based practices	Include strategies and projects that use nature-based features (362.3.b.17)	2002
2002	Consider and incorporate nature-based practices (LID, green infrastructure, natural channel design) in 50% of Flood Mitigation Projects and Flood Management Strategies recommended in the Regional Flood Plan.	Long Term (30-year)	2053	Flood planning region	No change in flood risk; reduces impacts on the environment	Number of FMPs and FMSs implementing nature-based practices	Include strategies and projects that use nature-based features (362.3.b.17)	2001
3001	Increase NFIP participation/adoption of higher standards to 30% of communities. *Communities = cities and counties*	Short Term (10-year)	2033	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of entities participating in NFIP; number of entities with equivalent standards	Protect against loss of life and property (362.3.b.13-14)	3002

Goal ID	Goal	Term of Goal	Target Year	Applicable to	Residual Risk	How Will the Goal Be Measured	Overarching Goal(s)	Associated Goal IDs
3002	Increase NFIP participation/adoption of higher standards to 60% of communities	Long Term (30-year)	2053	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction across the region will be <1%	Number of entities participating in NFIP; number of entities with equivalent standards	Protect against loss of life and property (362.3.b.13-14)	3001
4001	Increase high growth community CRS participation to 50% of all high growth communities. *High growth communities – cities and counties with a population greater than 10,000 people in 2030*	Short Term (10-year)	2033	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of entities participating in CRS.	Protect against loss of life and property (362.3.b.13-14)	4002
4002	Increase high growth community CRS participation to 75% of all high growth communities. *High growth communities – cities and counties with a population greater than 10,000 people in 2030*	Long Term (30-year)	2053	Flood planning region	Risk to existing structures does not increase due to better floodplain management practices; Annual flood risk to new construction in participating communities will be <1%	Number of entities participating in CRS.	Protect against loss of life and property (362.3.b.13-14)	4001
5001	Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 20%.	Short Term (10-year)	2033	Flood planning region	80% of identified structures will have an annual risk of flooding of >1%;	Number of structures removed from existing flood hazard layer	Protect against loss of life and property (362.3.b.13-14)	5002
5002	Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 50%.	Long Term (30-year)	2053	Flood planning region	50% of identified structures will have an annual risk of flooding of >1%;	Number of structures removed from existing flood hazard layer	Protect against loss of life and property (362.3.b.13-14)	5001

Goal ID	Goal	Term of Goal	Target Year	Applicable to	Residual Risk	How Will the Goal Be Measured	Overarching Goal(s)	Associated Goal IDs
6001	Increase percentage of communities with dedicated funding sources for operations & maintenance of storm drainage system to 35% of communities.	Short Term (10-year)	2033	Flood planning region	Entities without dedicated funding have no change in flood risk; entities with new funding sources have reduced risk as stormwater O&M and capital projects are implemented	Number of entities with dedicated funding sources for stormwater operations and maintenance	Protect against loss of life and property (362.3.b.13-14)	6002
6002	Increase percentage of communities with dedicated funding sources for operations & maintenance of storm drainage system to 60% of communities	Long Term (30-year)	2053	Flood planning region	Entities without dedicated funding have no change in flood risk; entities with new funding sources have reduced risk as stormwater O&M and capital projects are implemented	Number of entities with dedicated funding sources for stormwater operations and maintenance	Protect against loss of life and property (362.3.b.13-14)	6001

At the September 8, 2021, RFPG meeting, the planning group recommended but did not require that local governments adopt minimum standards before Flood Management Evaluations (FME), Flood Management Studies (FMS), and Flood Management Projects (FMP) for their community can be included in the 2022 regional flood plan.

End of Memorandum

Attachment 5: Documented Process used by the RFPG to Identify Potential FME's and Potentially Feasible FMS's and FMP's

Please see the attached memorandum dated October 20, 2021.

10431 Morado Circle, Suite 300 + Austin, Texas 78759 + 512-617-3100 + FAX 817-735-7491

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TO: Guadalupe River Regional Flood Planning Group (RFPG)

FROM: Jay Scanlon, PE, CFM – Freese and Nichols, Inc.

SUBJECT: Process for Identification and Selection of FMEs, FMPs, and FMSs

DATE: 10/20/2021

PROJECT: Guadalupe Region 11 2023 Regional Flood Plan (FNI Project No. GBA21362)

The Task 4 of the Scope of Work (SOW) for the development of the Regional Flood Plan requires the RFPG and technical consultant to identify, evaluate, and recommend Flood Management Evaluations (FMEs), Flood Mitigation Projects (FMPs), and Flood Management Strategies (FMSs) to be included in the RFP and the cumulative State Flood Plan (SFP). This includes developing a process for "identifying potential FMS and potentially feasible FMSs and FMPs." This memorandum is provided to document the proposed process for this task. Freese and Nichols (FNI) proposes the Planning Group discuss and adopt the process at the October RFPG meeting to be held on October 6, 2021.

The proposed process was introduced during the September 8, 2021, meeting of the Planning Group and RFPG member input regarding potential screening criteria was solicited through a separate survey.

Background

Identification and evaluation of FMEs, FMPs, and FMSs occurs under Task 4B, with recommendations being developed as part of Task 5. Each of these recommendations must tie back to the floodplain management goals adopted by the RFPG and must contribute to the assessment and mitigation of flood risk across the basin.

Figure 1 - Identification of FMEs, FMSs, and FMPs

FMEs, FMSs, and FMPs are broadly categorized as “flood risk reduction actions” (henceforth, “actions”) in the Technical Guidelines. During the first planning cycle it is anticipated that the distribution of recommended actions all likely to be weighted toward FMEs due to the lack of sufficiently complete or current flood studies. Unsurprisingly, not every conceivable FME can or will be recommended for inclusion in the plan. The RFPG and the Technical Consultant (TC) must decide which potential FMEs will be recommended in the RFP so that limited state and stakeholder resources can be directed efficiently and accordingly to implement those studies.

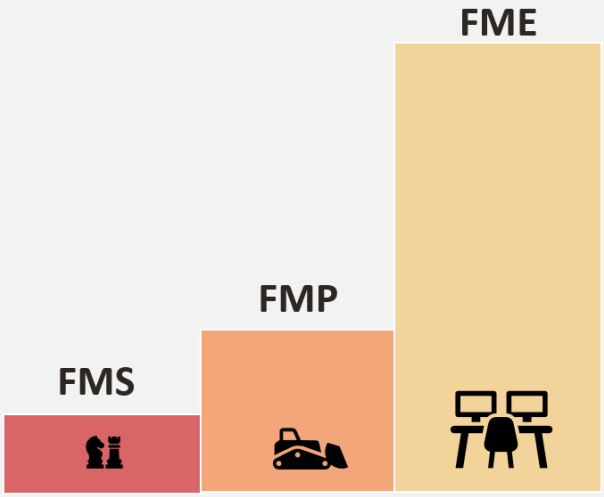


Figure 2 - Likely Flood Risk Reduction Action Distribution

Similarly, stakeholders will likely propose projects and strategies for managing flood risk that could be candidates for inclusion in the plan and eligible for state funding. Each FMP and FMS identified by the TC will be screened to determine if the FMP or FMS is potentially feasible. At a minimum, FMPs and FMSs must be developed in an adequate level of detail to furnish the required technical information and adhere to the minimum criteria set forth in the SOW, the Rules, and the Technical Guidelines.

For FMPs, these minimum criteria include having appropriate hydrologic and hydraulic (H&H) models required to evaluate the project that adhere to Mapping and Modeling Guidelines and a requirement that the FMP cause No Negative Impact on a neighboring area. These requirements must also be met for FMSs, as applicable. These standards are described in Section 3.5 and Section 3.6 of the Technical Guidelines.

Identification

Identification of potential FMEs and potentially feasible FMPs and FMSs begins with the development of the Flood Mitigation Needs Analysis (Task 4A). Generally, this task is meant to guide action evaluation and recommendation by highlighting:

- The areas with the greatest gaps in flood risk knowledge that should be considered for potential FMEs.
- The areas of greatest known flood risk and flood mitigation needs that should be considered for implementation of potentially feasible FMSs and FMPs.

FNI has developed a process for identifying areas of greatest need based on application of the minimum requirements outlined in the TWDB rules and guidance. The process is summarized in **Table 1**, below.

Table 1: Guidance for Assessment and Identification of Flood Mitigation Needs

Guidance	Factors to Consider
1. Most prone to flooding that threatens life and property	• Area overlapped by inundation mapping and/or included in any historical flooding record • Building footprints / polygons within flood hazard layer • Fully developed flood models (where available) • Low water crossings • Agricultural areas at risk of flooding
2. Locations, extent and performance of current floodplain management and land use policies and infrastructure	• Communities not participating in NFIP and/or without NFIP equivalent or higher standards • City / County design manuals • Community Rating Score (CRS) • Land use policies • Floodplain ordinance(s)
3. Inadequate inundation mapping	• No mapping • Presence of Fathom / BLE / FEMA Zone A flood risk data • Detailed FEMA models older than 10 years
4. No H&H models	• Communities with zero models • Communities with limited models
5. Emergency need	• Damaged or failing infrastructure • Other emergency conditions
6. Existing models, analysis, and flood risk mitigation plans	• Exclude flood mitigation plans already in implementation • Leverage existing models, analyses, and flood risk mitigation plans otherwise
7. Already identified and evaluated flood mitigation projects	• Exclude flood mitigation projects already in implementation • Leverage existing flood mitigation projects otherwise
8. Historic flooding events	• Disaster declarations • Flood insurance claim information • Other significant local events
9. Already implemented flood mitigation projects	• Exclude areas where flood mitigation projects have already been implemented unless significant residual risk remains
10. Additional other factors deemed relevant by RFPG	• Alignment with RFPG goals • Alignment with TWDB guidance principles

After identification of the areas of greatest flood mitigation need, the TC will review the available data to develop a list of potential flood risk reduction actions for addressing the needs in these areas. The data will include information compiled under previous tasks including:

- Data collection regarding existing flood infrastructure, flood projects currently in progress, and known flood mitigation needs (Task 1).
- Quantification of existing and future flood risk exposure and vulnerability (Tasks 2A and 2B).
- Goals and strategies adopted and/or recommended by the RFPG for addressing existing flood hazards and mitigating future flood risk (Tasks 3A and 3B); and,
- Stakeholder-provided input throughout the flood planning process.

It is anticipated that potential actions will be identified through the data analysis and input from stakeholders. The rules and SOW require FMSs and FMPs to be developed in a sufficient level of detail to be included in the RFP and recommended for state funding. It is not anticipated that the TC will have sufficient data, time, or budget to develop new FMSs and FMPs as part of this planning cycle. Rather, the list of potentially feasible FMSs and FMPs will be compiled based on contributions from the RFPG and

other regional stakeholders from sources such as previous flood studies, hazard mitigation action plans, drainage master plans, and capital improvement programs.

Evaluation

Once potential flood risk reduction actions are identified and categorized by the type of need as outlined in **Table 1**, a six-step screening process (**Figure 3**) will be used to determine if the actions, particularly FMSs and FMPs, have been developed in enough detail and include current technical data to meet the TWDB's minimum requirements for these action types as outlined in the Technical Guidelines.

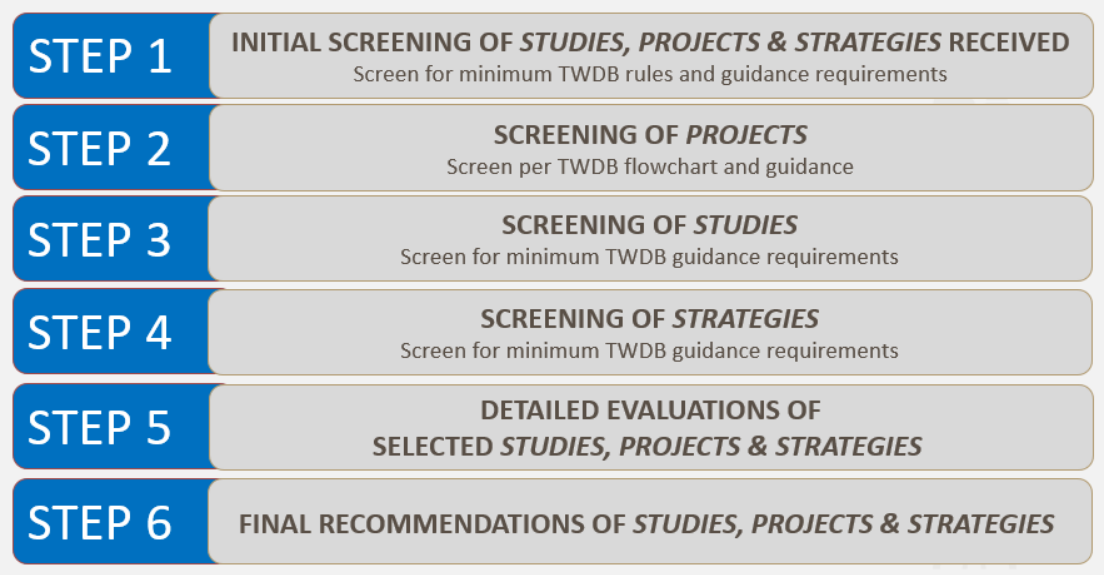


Figure 3 - Proposed Initial Screening Process

More detailed information regarding the six-step process, as presented at the September 8, 2021, RFPG meeting is attached. Based on a survey of the RFPG members, no additional screening criteria was added to Step 1 (initial screening) nor to Step 5 (detailed evaluations) for this planning cycle. Instead, the RFPG will encourage stakeholders to consider other requirements and will state that future planning cycles may include additional criteria for recommendation/inclusion.

Schedule

The process to identify and evaluate FMEs, FMPs, and FMSs must be approved by the RFPG and included in the Technical Memorandum (TM) submitted under Task 4C. The TWDB established a January 7, 2022, deadline for delivering the TM. The TWDB will review the TM and provide Notice to Proceed (NTP) on Task 5, after which the TC may begin the process of recommending FMEs and FMPs for inclusion in the RFP. The TWDB has not provided an anticipated date for issuance of NTP. As such, the schedule provided in **Table 2** below is the TC's proposed timeline of activities to meet the TM deadline and anticipated schedule of activities after NTP on Task 5.

Table 2: Proposed Timeline of Activities (tentative)

Flood Planning Process Activity	Anticipated Date
TC deliver Process for Identification and Evaluation of Potential FMEs and Potentially Feasible FMPs and FMSs TM to **RFPG** for review	September 27, 2021
RFPG vote to approve process at September meeting	October 6, 2021
TC present identified potential FMEs and potentially feasible FMPs and FMSs to **RFPG** at November meeting	November 3, 2021 (est.)
TC refine list of identified potential FMEs and potentially feasible FMPs and FMSs and deliver draft TM to **RFPG** for review	November 24, 2021
RFPG vote to approve and submit TM	December 2021 (date TBD)
TC deliver TM to **TWDB**	January 7, 2022
TWDB review TM; **TC** continue process to evaluate FMEs, FMPs, and FMSs	January 2022 – TBD
TWDB issue NTP on Task 5; **TC** to begin process of recommending FMEs, FMPs, and FMS for inclusion in RFP	TBD (after NTP by TWDB)

When reviewing and considering whether to approve drafts of the TM, the RFPG members should note that the TWDB has established the TM as a work-in-progress deliverable. The TWDB has further clarified that RFPGs can make changes to the content included in TM after the submittal deadline and "content of the draft and final versions of each regional flood plan will supersede all content included in any previous deliverables."

As such, the TM does not need to include the final list of potential flood risk reduction actions. Actions can be updated, added, or removed as additional flood risk information or other details are evaluated by the RFPG and TC and through future engagement with stakeholders.

Adoption of Process

A draft of this memorandum was provided to the RFPG on September 27, 2021 for review and consideration in advance of the October RFPG meeting. The goals documented below incorporate minor revisions and was approved by the RFPG by a simple majority of voting members at the meeting held on October 6, 2021. Public Notice was given to meet the requirements of TAC 361.21(h)(2) and other applicable provisions.

End of Memorandum

Attachment - Screening Process

Task 4B: Proposed Process

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	**SCREENING OF *STRATEGIES*** Screen for minimum TWDB guidance requirements
STEP 5	**DETAILED EVALUATIONS OF SELECTED *STUDIES, PROJECTS & STRATEGIES***
STEP 6	**FINAL RECOMMENDATIONS OF *STUDIES, PROJECTS & STRATEGIES***

Task 4B: Proposed Process

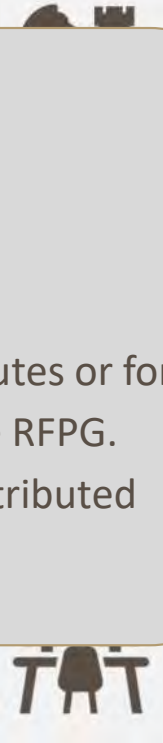
STEP 1

INITIAL SCREENING OF *STUDIES, PROJECTS & STRATEGIES* RECEIVED

Screen for minimum TWDB rules and guidance requirements

- Floodplain Management or Flood Mitigation Goal
- Emergency Need
- Drainage area greater or equal to 1 square mile*
- Reduces 100-yr (1% annual chance) flood risk

*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. Drainage area shall consider the total aggregate drainage area from distributed stormwater infrastructure system.



Task 4B: Proposed Process

STEP 2

SCREENING OF *PROJECTS*
Screen per TWDB flowchart and guidance

- Sufficient Data to Assess – modeling, mapping, reliable
- Net Negative Effect – 100-yr (1% ACE) inundation of structures and/or property
- Sufficient Detail – flood severity metrics, risk/damage reductions, capital and O&M costs, benefit/cost ratios, environmental benefits/impacts, implementation constraints, and others…

Task 4B: Proposed Process

STEP 3

SCREENING OF *STUDIES*

Screen for minimum TWDB guidance requirements

- Projects that do not have sufficient data/detail
- Planned evaluations provided by communities
- Other evaluation identified in Task 4A
- Screening
  - *With existing H/H – study mitigation alternative*
  - *Sensible*
  - *Reasonable planning level cost estimate*
  - *Identified Sponsor*
  - *Structures/population and Critical facilities at risk*
  - *Roadways at risk*
  - *Farm and Ranch land at risk*

Task 4B: Proposed Process

STEP 4

SCREENING OF *STRATEGIES*

Screen for minimum TWDB guidance requirements

- Proposed action that does not qualify as Project or Study
- Flexible
- Screening
  - *Planning level cost estimate*
  - *Identified Sponsor*
  - *Estimated flood risk and flood risk reduction*

Task 4B: Proposed Process

STEP 5

DETAILED EVALUATIONS OF SELECTED *STUDIES, PROJECTS & STRATEGIES*

- Benefit-Cost Ratio > 1.0
- Identified willing Sponsor(s)
- No known insurmountable implementation constraints (ROW, utility conflicts, permitting, etc.)
- **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?

Attachment 6: Potential FME's and Potentially Feasible FMP's and FMS's

Potential flood mitigation actions, including FMEs, FMPs, and FMSs, are outlined in **Tables 6-1 to 6-3** - identification, evaluation, and geolocation is ongoing. The initial list of potential actions was compiled from studies and reports identified in Attachment 2 above. The TC is continuing to review data and information received from community stakeholders and will include additional actions that have been provided for consideration. The TC will also continue to review the existing actions to determine if they are properly identified (FME, FMP, FMS) and if they are feasible flood mitigation actions. The initial list included about 900 potential actions with a significant number of those coming from county-wide Hazard Mitigation Action Plans. Because many of the counties that intersect the Region 11 boundary are not fully within the region, the TC team performed an initial screening to remove actions for entities outside the Region 11 boundary. Approximately 360 potential actions remained after the initial screening and based on existing descriptions and preliminary review.

The remaining actions were sorted into preliminary categories of potential FME's and potentially Feasible FMP's and FMS's. Initial geolocation was performed using city-wide or county-wide features – the categorizations and locations will be refined based on more detailed evaluations and TC discussions with potential sponsors. These actions will be compared to the results of the Task 4A Needs Assessment to identify other potential actions for consideration. Next steps include additional community outreach to: Verify/validate actions (have they been complete or are they still viable?); eliminate redundant actions; verify consistency in the initial categorization of actions; determine if more technical data is available for evaluations and reassess actions-based design maturity and technical detail available.

Table 6-1 lists the actions that have a preliminary categorization of Potential Flood Mitigation Evaluations (FME's). The types of FME's identified include project specific preliminary engineering reports, county-wide evaluations of low water crossings to develop targeted replacement/safety improvements, perform dam risk assessments, and developing flood risk reduction focused capital improvement plans and infrastructure improvement projects. It is anticipated that some of the items initially identified as an FME will be reclassified to achieve consistency among actions and that additional FME's will be identified in the Needs Assessment.

Table 6-2 presents a list of Potentially Feasible Flood Mitigation Projects (FMP's). The types of FMP's include a range of actions including site specific flood warnings barriers/gages/systems; identified low water/bridge replacement projects; and capital construction projects such as stormwater drainage systems, detention, and channel improvements. It is anticipated that this list will be reduced as actions are determined to be complete, no longer viable, are reclassified for consistency, or are reclassified as an FME due to a lack of sufficient details to move forward as a recommended FMP. The list could also grow if more detailed information is available from the stakeholders/potential sponsors.

Table 6-3 includes the list of Potentially Feasible Flood Management Strategies (FMS's). These were preliminarily organized into seven broad categories including Education and Outreach; Emergency Preparation; Flood Measurement and Warning; General Infrastructure Improvements Strategies; Maintenance and Debris Removal; Property Acquisition and Structural Elevation; and Regulatory and Guidance.

Table 6-1: Potential Flood Mitigation Evaluations (FME)

FME ID	FME Name	Description	Associated Goals (ID)	Communities	HUC8	HUC12s (primary)	Potential Sponsor
FME-1	Guadalupe County - Action #6	Marking and Placing electric gates at low water crossings.	4001, 4002	Guadalupe County	12100303	121003030301	Guadalupe County
FME-2	Detention on York Creek	The proposed dam height of 48 ft. and dam length of 4800 ft. will provide a maximum storage capacity of approximately 48130 ac-ft.	3001, 3002	Guadalupe County	12100303	121003030301	Guadalupe County
FME-3	Comal County -- Action #1	Develop evacuation and dam safety plan for coordination with USACE and dam reinforcement.	1001, 1001	Comal County	12100304	121003040105	Comal County
FME-5	Caldwell County -- Action #10	Replace antiquated bridges built before 1950. These bridges cannot support the weight of emergency vehicles. In addition, upgraded bridge infrastructure would reduce backwater flooding at undersized crossings.	5001, 5002	Caldwell County	12100202	121002020306	Caldwell County
FME-6	Caldwell County -- Action #12	Conduct studies to develop dam inundation maps and models for all dams that affect the Caldwell County Planning Area.	3001, 3002	Caldwell County	12100202	121002020306	Caldwell County
FME-7	ESD #1 -- Action #4	Develop a drainage and utility plan.	5001, 5002	ESD #1	12100202	121002020306	ESD #1
FME-8	ESD #3 -- Action #3	Identify flood-prone and repetitive loss properties through the Texas Water Development Board. Identify and implement actions to reduce or eliminate flooding at identified properties.	4001, 4002	ESD #3	12100202	121002020306	ESD #3
FME-9	ESD #3 -- Action #4	Upgrade river crossings throughout the district including but not limited to Scull Road Bridge.	1001, 1002	ESD #3	12100202	121002020306	ESD #3
FME-10	Kendall County - Action #4	Creation of a GIS map showing all low water crossing in the County and improve county flood risk assessment. Build site, make public, then educate public how to access and use.	1001, 1002, 5001, 5002	Kendall County	12090206	120902060203	Kendall County
FME-11	Construct New Storm Drainage Infrastructure	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.	3001, 3002	Hunts ISD	12090204	120902040104	Hunts ISD
FME-12	Construct Storm Drainage Infrastructure	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.	5001, 5002	Kerr County	12090204	120902040104	Kerr County
FME-13	Conduct Dam Integrity Study and Repair	This action will create a dam integrity study and identify repairs to be made to County dams as necessary.	3001, 3002	Kerr County	12090204	120902040104	Kerr County
FME-14	Construct New Storm Drainage Infrastructure	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.	4001, 4002	Kerr ISD	12090204	120902040104	Kerr ISD
FME-15	Dam Inundation Maps	Work with TCEQ to continue to develop inundation maps for all High Hazard dams.	1001, 1002	Hays County	12090205	120902050303	Hays County
FME-16	Community Rating System (CRS) Application and Community Rating System Participation Benefit Report for Jurisdictions	The County will pursue a CRS rating in order to provide discounts to flood policy holders.	4001, 4002	Hays County	12090205	120902050303	Hays County
FME-17	Onion Creek Watershed Study Floodplain and Mapping	Onion Creek Watershed Study Floodplain and Mapping	3001, 3002	Hays County	12090205	120902050303	Hays County
FME-18	Work with extension agent to develop a soil conservation plan	Provide information on proper land stewardship including diagram, soil map, assessment of vegetation and wildlife fuels, schedule for applying conservation practices; plan for operation and maintenance.	2001, 2002	Blanco County	12090201	120902010306	Blanco County
FME-19	Upgrade and raise low water crossing in various locations in the county	The low water crossings most frequently and most severely flooded will be assessed for elevated and improved (e.g., curbed and/or pedestrian walkways) roadways. Selection of locations will include consideration of frequency of flooding, height of water, etc.	1001, 1002	Blanco County	12090201	120902010306	Blanco County
FME-20	Review County's Floodplain Ordinance	Update county floodplain ordinance above minimum requirements. Will be implemented by action of Commissioners Court.	5001, 5002	Blanco County	12090201	120902010306	Blanco County
FME-21	Town of Refugio Hurricane Harvey HUD Mitigation Application	The Town of Refugio mitigation project proposes improvements to the drainage system and increases resiliency to the water and wastewater system affecting the entire Town.	5001, 5002	Refugio	12100303	121003030607	Refugio
FME-22	Refugio County Hurricane Harvey HUD Mitigation Application	Refugio County mitigation project proposes improvements to the drainage system and increases resiliency to the water system in the Town of Woodsboro.	5001, 5002	Refugio County	12100303	121003030607	Refugio County
FME-23	Channel and Bridge modifications on State Highway 87	The design modification consists of adding two additional piers to the right and left overbanks of the bridge.	3001, 3002, 5001, 5002	Victoria	12100204	121002040107	Victoria
FME-24	Detention Structure Located Upsteam of State Highway 87	The detention basin has a height of 11ft from crest to inlet structure. The dam has a capacity of 3700 ac-ft. Three culvert outlet structures are used for low flow and one overflow weir for high flow.	5001, 5002	Victoria	12100204	121002040107	Victoria
FME-25	Victoria County - Action #27	Engineering Studies to revise Flood Insurance Rate Maps (FIRMs) throughout the County to establish Base Flood Elevations (BFE) in areas that are currently identified as unstudied Zone AE.	3001, 3002	Victoria County	12100204	121002040107	Victoria County
FME-26	DeWitt County Action #1	Floodproof County Courthouse basement to reduce risk of flooding of Deed Record/critical assets	1001, 1002	DeWitt County	12100204	121002040202	DeWitt County
FME-27	DeWitt County Drainage District Action #2	Replace Thompson Bridge to eliminate center structural component that impedes conveyance of floodwaters, collects debris and large logs that contributes to flooding	5001, 5002	Dewitt County Drainage District	12100204	121002040202	Dewitt County Drainage District

FME ID	FME Name	Description	Associated Goals (ID)	Communities	HUC8	HUC12s (primary)	Potential Sponsor
FME-28	DeWitt County Drainage District Action #3	Install drop basket structure and reconstruct drainage channels to control flooding and erosion. Structure will assist in stabilizing banks and holding bottoms of channel on grade	3001, 3002	Dewitt County Drainage District	12100204	121002040202	Dewitt County Drainage District
FME-29	Construct New Storm Drainage Infrastructure	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.	1001, 1002	Center Point ISD	12100201	121002010206	Center Point ISD
FME-30	City of Cuero Action #2	Improve drainage and stormwater system to reduce drainage and flooding issues	1001, 1002, 5001, 5002	Cuero	12100204	121002040101	Cuero
FME-31	City of Cuero Action #3	Floodproof/retrofit older components of the Cuero Wastewater Treatment Plant subject to flooding	2001, 2002, 5001, 5002	Cuero	12100204	121002040101	Cuero
FME-32	City of Cuero Action #7	Retrofit or floodproof City Public Service Station currently under renovation. Facility will serve as secondary location for community offices and critical utility service data and equipment	5001, 5002	Cuero	12100204	121002040101	Cuero
FME-33	DeWitt County Action #4 (City of Nordheim)	Construct necessary barriers or berms to reduce impact of runoff from flash floods onto neighborhoods, streams and impacting community water wells from proposed Pilot Nob landfill	5001, 5002	DeWitt County, Nordheim	12100204	121002040202	DeWitt County, Nordheim
FME-34	City of Victoria - Action #8	Increase dimensions of drainage culverts in areas prone to flooding and/or drainage problems in various City locations.	4001, 4002	City of Victoria	12100204	121002040107	City of Victoria
FME-35	City of Victoria - Action #24	Rehabilitate, repair, or replace the City of Victoria's existing flood gates. Install additional flood gates as recommended by Engineering Study.	1001, 1002, 5001, 5002	City of Victoria	12100204	121002040107	City of Victoria
FME-36	City of Victoria - Action #25	Construct a storm water lift station in an area to be determined by an engineering study.	5001, 5002	City of Victoria	12100204	121002040107	City of Victoria
FME-37	City of Victoria - Action #26	Conduct engineering study to determine the need to rehabilitate, repair or replace the City of Victoria's existing flood gates. Also determine if additional gates are needed.	1001, 1002, 3001, 3002	City of Victoria	12100204	121002040107	City of Victoria
FME-38	Flood and Drainage Improvements	During several named and unnamed flooding events over the last decade, streets in the City of West Orange have become inundated with floodwaters and remained submerged for several days, preventing the safe evacuation of residents.	5001, 5002	Victoria	12100204	121002040107	Victoria
FME-39	Storm Ready Designation from National Weather Service	Application for designation that classifies community's level of preparedness for severe weather and storms.	5001, 5002	Wimberley	12100203	121002030203	Wimberley
FME-40	Watershed Review Tour for Private Dams	Plan for how to enforce flood damage prevention ordinance against encroachments in the floodway by inspecting for private dams that are not authorized and requirement of no-rise study when they are found to ensure neighbors are not at risk	5001, 5002	Wimberley	12100203	121002030203	Wimberley
FME-41	Create and Stormwater Master Plan	This action will develop and implement master plan to mitigate the flood hazard by defining priorities, policies, and strategies to address and remedy the drainage needs and challenges in Kerrville.	5001, 5002	Kernville	12100201	121002010206	Kernville
FME-42	City of Cibolo - Action #8; City of Seguin - Action #9	Evaluate access and road conditions for response vehicles. Develop and implement options to improve access and/or add redundant access routes in high-risk areas.	5001, 5002	Cibolo, Seguin	12100304	121003040203	Cibolo, Seguin
FME-43	City of Cibolo - Action #11; City of Seguin - Action #14	Undertake a comprehensive study of flood risk and reduction alternatives, with the assistance of the U.S.Army Corps of Engineers. Implement feasible alternatives for flood reduction.	5001, 5002	Cibolo, Seguin	12100304	121003040203	Cibolo, Seguin
FME-44	City of Seguin - Action #16	Increase drainage capacity; add stormwater detention and / or retention basins as deemed necessary to reduce flood risk.	5001, 5002	Seguin	12100202	121002020111	Seguin
FME-45	City of Seguin - Action #22	Implement a program to stabilize the riverbank at Max Starke Park along the banks of the Guadalupe River.	1001, 1002	Seguin	12100202	121002020111	Seguin
FME-46	City of Seguin - Action #29	Implement drainage improvements.	3001, 3002	Seguin	12100202	121002020111	Seguin
FME-47	City of Seguin - Action #30	Drainage improvements at low water crossings.	-	Seguin	12100202	121002020111	Seguin
FME-48	City of Seguin - Action #31	Drainage improvements and warning systems at low water crossings in ETJ Areas.	5001, 5002	Seguin	12100202	121002020111	Seguin
FME-49	Regional Detention Southwest of Seguin City Limits	The alternative consists of a 16 ft. tall detention structure with a 392 ac-ft detention capacity. The outflow control would consist of a culvert for low flow and an overflow weir for high flow.	1001, 1002	Seguin	12100202	121002020111	Seguin
FME-50	Culvert Improvements at Guadalupe River Dr.	The alternative consists of adding two additional 10 ft. by 10 ft. reinforced concrete box culverts on either side of the existing two- 10ft. by 10ft. box culverts.	5001, 5002	Seguin	12100202	121002020111	Seguin
FME-51	New Braunfels Drainage Area Master Plan Future Phases	New Braunfels Drainage Area Master Plan Future Phases	2001, 2002	New Braunfels	12100304	121003040203	New Braunfels
FME-52	Engineering review of City Hall	Contract a consultation from an engineer to review the new City Hall building to ensure its resiliency (modular building that holds community documents and archives)	4001, 4002	Niederwald	12100203	121002030402	Niederwald
FME-53	CFM Training and CFM Certification	Sending designated Floodplain Administrator to floodplain management courses and to test for Certification as a Certified Floodplain Manager	5001, 5002	Uhland	12100203	121002030401	Uhland
FME-54	Watershed Review Tour for Private Dams	Plan for how to enforce flood damage prevention ordinance against encroachments in the floodway by inspecting for private dams that are not authorized and requirement of no-rise study when they are found to ensure neighbors are not at risk	5001, 5002	Uhland	12100203	121002030401	Uhland

FME ID	FME Name	Description	Associated Goals (ID)	Communities	HUC8	HUC12s (primary)	Potential Sponsor
FME-55	Flood-proofing repetitive loss structure that has been identified by FEMA for the number of flood insurance claims	Flood-proofing repetitive loss structure that has been identified by FEMA for the number of flood insurance claims	1001, 1002	Mountain City	12090205	120902050405	Mountain City
FME-56	Encroachment audit to ensure that the floodway in the City limits does not have any unauthorized dams or obstructions on a quarterly basis	Creation of an encroachment audit program to perform quarterly audits to visually inspect and document any violations to the flood prevention ordinance in the form of waste, debris or unauthorized private dams in the floodplain/floodway	1001, 1002	Mountain City	12090205	120902050405	Mountain City
FME-57	Storm Ready Designation from National Weather Service	Application for designation that classifies community's level of preparedness for severe weather and storms.	5001, 5002	Woodcreek	12100203	121002030202	Woodcreek
FME-58	Watershed Review Tour for Private Dams	Plan for how to enforce flood damage prevention ordinance against encroachments in the floodway by inspecting for private dams that are not authorized and requirement of no-rise study when they are found	5001, 5002	Woodcreek	12100203	121002030202	Woodcreek
FME-59	Minimize dam failure risk	Ensuring structural and nonstructural measures are implemented to protect the integrity of the earthen fill dams; requiring that repairs are performed under the guidance of a qualified design professional.	1001, 1002	Buda	12090205	120902050406	Buda
FME-60	Review plans and resources to address risk posed by severe weather events	Continuing update of City's current plans and resources to address the risks posed by severe weather hazards focusing on potentially at-risk populations in the community	3001. 3002	Buda	12090205	120902050406	Buda
FME-61	Adopt City Structural Engineering Design Manual	Enhancement of City Structural Engineering Design manual to include increased drainage criteria and expansive soil compaction. The Engineering Design Manual is the enforced standard for structural development in the City of Kyle.	2001, 2002	Kyle	12090205	120902050405	Kyle
FME-62	Riparian Zone Sign GIS Layer	Enhancement on existing Parks program item that placed riparian zone signs in areas where park land vegetation is left natural. Action would map the points of the sign placement using GIS.	2001, 2002	Kyle	12090205	120902050405	Kyle
FME-63	Prepare and implement a prairie or woodland restoration plan for 1 or more of Kyle's park properties	Selection of a municipal park where all or a portion of the site may be restored to a natural grassland or woodland	5001, 5002	Kyle	12090205	120902050405	Kyle
FME-64	Flatonia - Action #5	Flood proof Waste Water Treatment Plant	3001, 3002	Flatonia	12100202	121002020303	Flatonia
FME-65	City of Lockhart -- Action #1	Enhance early warning systems	5001, 5002	Lockhart	12100203	121002030403	Lockhart
FME-66	City of Lockhart -- Action #4	Identify and implement Capital Improvements to Municipal Drainage System. Upgrade system to improve drainage capacity and reduce flood damages	3001, 3002	Lockhart	12100203	121002030403	Lockhart
FME-67	City of Lockhart -- Action #6	Undertake a comprehensive study of flood risk and reduction alternatives, with the assistance of the U.S. Army Corps of Engineers. Adopt or revise flood damage prevention ordinance to include flood risk areas identified in the study.	3001, 3002	Lockhart	12100203	121002030403	Lockhart
FME-68	Attend Advanced Local Floodplain Management Courses	Send certified member of staff to advanced courses.	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-69	Storm Ready Designation from National Weather Service	Application for designation that classifies community's level of preparedness for severe weather and storms	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-70	Adoption of Ordinance for Public Building Structural Engineering Reviews	Ordinance update to require any public facility building plan be structurally reviewed and enforce highest possible building code levels that increase resiliency against natural hazards.	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-71	Regional Detention/ Water Quality Strategy	Strategy design to mitigate drought and flooding by use of regional detention	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-72	2D Modeling of Purgatory Creek and Willow Springs Creek Overflow Area	2-Dimensional Modeling of the Purgatory Creek and Willow Springs Creek Overflow Area	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-73	Rio Vista PER	Rio Vista Drainage Improvement Project Preliminary Engineering Report	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-74	Castle Forest PER	Castle Forest Channel (CIP No. 680) Flood Risk Reduction Preliminary Engineering Report	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-75	CDBG-DR Report	CDBG-DR Infrastructure Feasibility Study	3001, 3002	San Marcos	12100203	121002030306	San Marcos
FME-76	CDBG-DR HnH Tech Memo	CDBG-DR Hydrology and Hydraulics Technical Memorandum		San Marcos	12100203	121002030306	San Marcos
FME-77	GBRA SMBR Alternatives Report	Lower Guadalupe River Basin GBRA Interim Feasibility Study Technical Report Notebook (TRN) Alternative Development	5001, 5002	San Marcos	12100203	121002030306	San Marcos
FME-78	Preliminary CWD 2D Mitigation Alts	2D Flood Mitigation Analysis Cottonwood Creek	5001, 5002	San Marcos	12100203	121002030306	San Marcos
FME-79	Purgatory Creek Channel Improvement Project PER	Purgatory Creek Channel Improvement Project Preliminary Engineering Report	5001, 5002	San Marcos	12100203	121002030306	San Marcos
FME-80	Sherwood Kingwood PER	Sherwood Drive and Kingwood Street Improvements Preliminary Engineering Report	5001, 5002	San Marcos	12100203	121002030306	San Marcos
FME-81	Wallace PER	Wallace Addition Offsite Drainage Improvement Project Preliminary Engineering Report	5001, 5002	San Marcos	12100203	121002030306	San Marcos
FME-82	Guad Regional Flood - Stormwater Features	Existing and Future project sites in a shapefile	5001, 5002	San Marcos	12100203	121002030306	San Marcos

FME ID	FME Name	Description	Associated Goals (ID)	Communities	HUC8	HUC12s (primary)	Potential Sponsor
FME-83	City of Martindale -- Action #1	Upgrade undersized stormwater drains and culverts.	5001, 5002	Martindale	12100203	121002030308	Martindale
FME-84	City of Luling -- Action #2	Upgrade undersized stormwater drains and culverts.	5001, 5002	Luling	12100203	121002030410	Luling
FME-85	Implement Drainage Projects to Upgrade Existing Drainage Infrastructure	This action proposes upgrading existing storm drainage infrastructure to reduce the potential impacts of future flood events.	5001, 5002	Ingram	12100201	121002010111	Ingram
FME-86	Construct New Storm Drainage Infrastructure	This action proposes constructing new storm drainage infrastructure to reduce the potential impacts of future flood events.	3002	Ingram ISD	12100201	121002010111	Ingram ISD
FME-87	Implement Drainage Projects to Upgrade Existing Drainage Infrastructure	This action proposes upgrading existing storm drainage infrastructure to reduce the potential impacts of future flood events.		Ingram ISD	12100201	121002010111	Ingram ISD

Table 6-2: Potentially Feasible Flood Mitigation Projects (FMP)

FMP ID	FMP Name	Description	Associated Goals (ID)	Communities	HUC12s (primary)	Potential Sponsor
FMP-1	Detention on Peach Creek	A 29 ft. high dam with a length of 5780 ft. would provide approximately 41,774 ac-ft of storage. This site would be able to store a large volume of water and greatly reduce the peak from the Peach Creek watershed.	1001, 1002	Gonzales County	121002040201	Gonzales County
FMP-2	Comal County -- Action #4	Acquire and install cameras at existing flood retarding structures.	1001, 1002	Comal County	121003040105	Comal County
FMP-3	Comal County -- Action #5	Harden/Improve SCS3 Dam.	5001, 5002	Comal County	121003040105	Comal County
FMP-4	Comal County -- Action #6	Create and implement a program for the removal of trees, shrubs, growth and debris from the Dry Comal Creek (unincorporated areas) to allow for better drainage and reduce flooding.	5001, 5002	Comal County	121003040105	Comal County
FMP-5	Comal County -- Action #7	Create and implement a program for the removal of flood debris from the Guadalupe River channel for adequate river flow and to remove health and safety hazards.	5001, 5002	Comal County	121003040105	Comal County
FMP-6	Comal County -- Action #8	Remediate repetitive losses along the Guadalupe River by acquiring flood damaged structures and converting acquired land to open(green) space.	2001, 2002	Comal County	121003040105	Comal County
FMP-7	Comal County -- Action #9	Upgrade low water crossings with larger culverts and elevated roadways where feasible. Acquire easement and/or right of ways adjacent to River Road for first responder access and helicopter landing zones during flood events that cutoff access to this area	1001, 1002	Comal County	121003040105	Comal County
FMP-8	Comal County -- Action #10	Purchase and install automated advanced warning systems at low water crossing throughout the county.	2002, 2002	Comal County	121003040105	Comal County
FMP-9	Comal County -- Action #11	Expand early warning system to include all hazards.	3001, 3002	Comal County	121003040105	Comal County
FMP-10	Comal County -- Action #17	Acquire and install stream gauges throughout the planning areas as needed.	5001, 5002	Comal County	121003040105	Comal County
FMP-11	Comal County -- Action #18	Design and construct 4 retention dams to assist in controlling flash flooding in municipalities and unincorporated areas of the county.	10,011,002	Comal County	121003040105	Comal County
FMP-12	Detention on Bear Creek	The proposed dam height of 85 ft. and dam length of 620 ft. will provide a maximum storage capacity of approximately 3,375 ac-ft.	10,011,002	Comal County	121003040105	Comal County
FMP-13	Flood Damage Prevention Order	Order No. 232 - Flood Damage Prevention Order	5001, 5002	Comal County	121003040105	Comal County
FMP-16	Caldwell County -- Action #9	Acquire and install remote sensors to monitor and transmit real-time information of low-water crossings flooding status.	1001, 1002	Caldwell County	121002020306	Caldwell County
FMP-17	ESD #3 -- Action #7	Acquire and install fixed barriers and warning lights at high flood hazard roadways.	1001, 1002	ESD #3	121002020306	ESD #3
FMP-18	ESD #3 -- Action #8	Acquire and install fixed barriers and warning lights at low water crossings.	1001, 1002	ESD #3	121002020306	ESD #3
FMP-19	Kendall County - Action #3	Purchase, build, and place hazardous warning signs, or auto barricades at low water crossings. Place auto barricades or permanent pull-out barricades at these locations so when auto sensed, a barricade would drop and close the roadway. If using the pull *	4001, 4002	Kendall County	120902060203	Kendall County
FMP-20	Installation of Mitigation Features for New Public Facilities to Ensure Soundness against Natural Hazards	Ensure new structures are structurally reinforced against natural hazards. To include, low-flow water units for drought, flood-proofing (if needed), wind resistant doors and windows, freeboard, bracing and bolting of sill plates, higher levels of soil compaction/	4001, 4002	Hays County	120902050303	Hays County
FMP-21	Acquisition or Elevation of Repetitive Loss Structures	Action to mitigate 38 identified properties with a total of 88 losses claimed for a total of $4 million from the NFIP.	5001, 5002	Hays County	120902050303	Hays County
FMP-22	Drainage Project along Willow Springs Creek between McCarty Lane and Hunter Road	Channel improvement and/or property acquisition project to reduce flood damages along Willow Springs Creek from McCarty Lane to Hunter Road.	1001, 1002	Hays County	120902050303	Hays County
FMP-23	Drainage Project along Willow Springs Creek between Hunter Rd and the Railroad	Detention project to reduce flood damages along Willow Springs Creek from Hunter Road to the railroad	1001, 1002	Hays County	120902050303	Hays County
FMP-24	Property Acquisition in Southeastern Hays County	Property acquisition project to mitigate repetitive loss flooding where drainage projects were analyzed and deemed ineffective for cost/ benefit reasons.	2001, 2002	Hays County	120902050303	Hays County
FMP-25	Hays County Drainage	Hays County is seeking to reduce the risk of Riverine Flooding and Storms to the health and safety of the 20,180 residents in the project service area. Of that total population, 11,825, or 58.6% meet the criteria for Low- and Moderate-Income benefit.	5001, 5002	Hays County	120902050303	Hays County
FMP-27	Patterson Road and Barton's Creek Bridge Upgrade	The wooden bridge is deficient and needs to be replaced. This installation upgrade would improve stormwater drainage capacity.	2001, 2002	Bastrop County	120701020108	Bastrop County
FMP-28	Install Reverse 911	Install Reverse 911 System. A call will be placed to all registered phones when severe weather is in the area.	5001, 5002	Blanco County	120701020108	Blanco County
FMP-29	Action 7: Obtain solar powered signs for 35 low water crossings (county-wide)	Flooding is a common problem in Gillespie County. There are 35 documented low water crossings in the county. Having these crossings protected by automatic signs would improve public safety in the county.	5001, 5002	Gillespie County	120902010301	Gillespie County
FMP-30	Maintain a program for clearing debris	Implement a program for clearing debris from drains and culverts and enact driveway permits. Periodic checks by road crews to ascertain that drains are open.	1001, 1002	Blanco County	120902010306	Blanco County

FMP ID	FMP Name	Description	Associated Goals (ID)	Communities	HUC12s (primary)	Potential Sponsor
FMP-31	Detention on the Blanco River (Benefits Hays County, Wimberley, and San Marcos)	The proposed dam height of 102 ft. and dam length of 1,840 ft. will provide a maximum storage capacity of approximately 1128 ac-ft.	5001, 5002	Blanco County	120902010306	Blanco County
FMP-32	Victoria County - Action #12	Improve drainage around County EOC and flood-proof facilities as necessary.	5001, 5002	Victoria County	121002040107	Victoria County
FMP-33	Karnes County Mitigation Application	The proposed Karnes County Flood Control & Drainage Improvement Project includes bridge, culvert, roadway, and drainage improvements at 32 stream crossings across the County. These crossings were identified by the Karnes County Road & Bridge Department	1001, 1002	Karnes County	121002040202	Karnes County
FMP-38	DeWitt County Drainage District Action #1	Remove large trees, logs, and debris from Thompson and Hells gate bridges and restore floodplain function of natural systems	2001, 2002	Dewitt County Drainage District	121002040101	Dewitt County Drainage District
FMP-40	Maxwell Water Supply Corporation – Action #3	Acquire and install fixed barriers and warning lights at low water crossings.	5001, 5002	Maxwell Water Supply Corporation	121002030308	Maxwell Water Supply Corporation
FMP-41	Create a Buyout Program for Repetitive Loss Properties	This action will develop and implement a program to buyout NFIP repetitive loss properties.	5001, 5002	City of Nixon	121002020504	City of Nixon
FMP-42	City of Waelder Harvey State Mitigation Competition	The scope of work includes constructing a regional detention pond on Baldridge Creek upstream of the City. The proposed pond would be located northwest of the City and would release runoff at a substantially lower flowrate, resulting in lower flood elevations	1001, 1002, 5001, 5002	City of Waelder	121002020304	City of Waelder
FMP-43	State Highway 97 Culvert and Downstream Channel Improvements	A combination of a 50 ft. bottom width channel modification with 3:1 side slopes downstream of SH 97 and the addition of two 10 foot by 10 foot concrete box culverts was determined to be the most effective flood mitigation solution for the area.	1001, 1002	City of Waelder	121002020304	City of Waelder
FMP-44	FM 1492 at Blanco River	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-45	Hidden Valley at Blanco River	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-46	Little Arkansas at Blanco River	Replace low water crossing	5001, 5002	Wimberley	121002030203	Wimberley
FMP-47	Valley Drive at Pierce Creek	Replace low water crossing	5001, 5002	Wimberley	121002030203	Wimberley
FMP-48	Flite Acres Road	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-49	FM 1492 at Pierce Creek	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-50	Wilson Creek at River Road	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-51	Green Acres Dr. at Fire Station	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-52	Leveritt's Loop	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-53	Spoke Hollow Dr. at Spoke Pile Creek	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-54	River Road at Western City Limit	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-55	Paradise Hills	Replace low water crossing	1001, 1002	Wimberley	121002030203	Wimberley
FMP-56	River Road	Reconstruct Roadway along Blanco River.	1001, 1002	Wimberley	121002030203	Wimberley
FMP-57	Little Ranches at Panther Creek	Reconstruct low water crossing & roadway	1001, 1002	Wimberley	121002030203	Wimberley
FMP-58	Hoots Holler	Reconstruct low water crossing & roadway	1001, 1002	Wimberley	121002030203	Wimberley
FMP-59	Acquisition or elevation of Repetitive Loss Properties	As of 09/2016, Wimberley has 12 repetitive loss properties that need mitigation to reduce the over $1.7 Million in payments that have been made.	1001, 1002	Wimberley	121002030203	Wimberley
FMP-60	Restriction on development along Blanco River	Specific ordinance that limits development along the river in an effort to mitigate loss of life and property	1001, 1002	Wimberley	121002030203	Wimberley
FMP-62	River Road	A proposed updated culvert geometry consists of 11 box culverts (10ft-12ft) and a raised finished deck elevation (3ft rise).	1001, 1002	Wimberley	121002030203	Wimberley
FMP-63	Pinto Trail	The Pinto Trail conceptual design solution intends to provide flood relief to the properties adjacent to the channel at risk of flooding and removing them from the localized 100-year floodplain for ultimate conditions. To minimize the potential for adverse impacts	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-64	Park Street Low Water Crossing	The conceptual design solutions explored opportunities to replace the low water crossing at Park Street at Quinlan Creek with a structure that provides minimum flood protection from the 50-year storm event.	1001, 1002	City of Kerrville	121002010206	City of Kerrville
FMP-65	First Street Low Water Crossing	The conceptual design solutions explored opportunities to replace the low water crossing at Park Street at Quinlan Creek with a structure that provides minimum flood protection from the 50-year storm event.	1001, 1002	City of Kerrville	121002010206	City of Kerrville
FMP-66	Fourth Street Low Water Crossing	The conceptual design solutions explored opportunities to replace the low water crossing at Park Street at Quinlan Creek with a structure that provides minimum flood protection from the 50-year storm event.	1001, 1002	City of Kerrville	121002010206	City of Kerrville

FMP ID	FMP Name	Description	Associated Goals (ID)	Communities	HUC12s (primary)	Potential Sponsor
FMP-67	Spring Street - Erosion at Outfall	An existing 54"" RCP storm drain discharges into an existing rock-filled gabion channel that then flows down a steep drop off plunging into the Guadalupe River. The existing gabion mattress has failed and the earthen channel bank is at risk of further incision	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-68	Hill Country Drive at SH 16	The proposed solutions for this project are divided into two phases. Phase 1 consists of raising the roadway profile and regrading Hill Country Drive by approximately 11 inches while adding positive slope toward the existing two 36"" CMP pipes.	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-69	Clay Street (Schreiner to SH27) & Kroc Center Detention Pond and Spillway Outfall	Proposed improvements consist of reconfiguring and reconstructing the existing Kroc Center outlet structure to directly discharge into a proposed storm drain system to prevent the pond from directly releasing into the street. Clay Street drainage improvements	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-70	Take It Easy Channel	Take It Easy Channel proposed improvements are intended to primarily stabilize the nearly vertical channel bank side slopes from further erosion placing the adjacent RV park and residential neighborhood at risk and to provide improved conveyance	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-71	Lois Street (between Woodlawn and Ox)	The proposed conceptual solution is intended to address the frequent flooding on Lois Street and the slow draining channel between Junction Highway and Lois Street. Proposed channel improvements are intended to effectively pass a 25-year frequency storm	1001, 1002	City of Kerrville	121002010206	City of Kerrville
FMP-72	Harper Street between Culberson Avenue and Lewis Avenue	Proposed design at Harper Street is intended to relieve localized flooding and excessive ponding that occurs throughout Harper Street. A proposed storm drain system is intended to capture up to the 25-year storm event under ultimate conditions	3001, 3002	City of Kerrville	121002010206	City of Kerrville
FMP-73	Circle Avenue Drainage Channel	Proposed conceptual solution is recommended to alleviate sedimentation and erosion issues at the intersection of Culberson Avenue and Circle Avenue. Vertical elevation drops 40 feet over 300 foot channel length which results in high velocity flow	1001, 1002	City of Kerrville	121002010206	City of Kerrville
FMP-74	Jack Drive - Undersized Inlet	The proposed storm drain pipe system has been designed to collect runoff for up to the 25-year storm event with excess flow conveyed by surface drainage. The proposed system will capture runoff at Jack Drive via a 42"" RCP storm drain with jack and bore	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-75	Intersection of Coronado Drive and Junction Highway	Conceptual solution is intended to alleviate street ponding and nuisance flooding at Coronado Drive north of Junction Highway. The proposed solution has been sized to convey the 25-year storm event under ultimate conditions by constructing a trench drain	5001, 5002	City of Kerrville	121002010206	City of Kerrville
FMP-76	Seguin Citywide Drainage Project	The City of Seguin is seeking funding for 4 priority drainage projects that would greatly improve the safety of their 25,520 residents. North Guadalupe, North Heideke, Mays Creek and Walnut Branch.	5001, 5002	City of Seguin	121002020111	City of Seguin
FMP-77	City of Seguin - Action #17	Flood-proof sewage treatment plants in flood hazard / low-lying areas.	3001, 3002	Seguin	121002020111	Seguin
FMP-78	Bulverde -- Action #4	Replace existing culverts with larger ones, improve drainage channels; clear out existing drainage channels; survey and remove hazardous trees from drainage systems.	5001, 5002	Bulverde	121003040105	Bulverde
FMP-79	Bulverde -- Action #5	Elevate some segments of roadways in various portions of the community to address localized flooding issues.	5001, 5002	Bulverde	121003040105	Bulverde
FMP-80	New Braunfels -- Action #1	Remediate repetitive losses along the Guadalupe River by acquiring flood damaged structures and converting acquired land to open(green)space.	5001, 5002	New Braunfels	121003040203	New Braunfels
FMP-81	New Braunfels -- Action #2	Elevate Goodwin Lane at Alligator Creek to prevent roadway inundation during rain events	5001, 5002	New Braunfels	121003040203	New Braunfels
FMP-82	New Braunfels -- Action #3	Elevate Live Oak Avenue at the Dry Comal to prevent roadway inundation during rain events.	1001, 1002	New Braunfels	121003040203	New Braunfels
FMP-83	New Braunfels -- Action #4	Identify and install stream and rain gauges at critical sites in the Comal and Guadalupe River watersheds.	5001, 5002	New Braunfels	121003040203	New Braunfels
FMP-88	Residential Development Permit Enhancement for Flood Mitigation	Improve residential building permit to clarify floodplain information and reference required elevation certificates for development in Special Flood Hazard Area.	3001, 3002	Niederwald	121002030402	Niederwald
FMP-89	Uhland Mitigation Application	The proposed project will mitigate against flooding by increasing the capacity of drainage routes to contain the storm water. Proposed drainage improvements will reduce flood waters backing up into the City.	5001, 5002	Uhland	121002030401	Uhland
FMP-90	Regional Detention South of Mountain Crest Drive	The alternative consists of a 20 ft. tall detention structure with a 175 ac-ft detention capacity. The outflow control would consist of culverts for low flow and an overflow weir for high flow.	1001, 1002	Woodcreek	121002030202	Woodcreek
FMP-91	Improvements to Brookside Drive Culvert Crossing	The culvert opening will be increased to three 36” concrete pipes to match the culvert capacity just downstream at Brook Meadow Dr. and also involve some minimal re-grading of the stream flowline.	1001, 1002	Woodcreek	121002030202	Woodcreek
FMP-92	Nuisance flooding near Overbrook Court - Brookmeadow Dr Ditch	The proposed alternative consists of a rip rap ditch along the south side of Brookmeadow Drive, under Overbrook Court and down to Hog Creek. The capacity of the ditch would be enough to hold the most frequent flows	5001, 5002	Woodcreek	121002030202	Woodcreek
FMP-93	Nuisance flooding near Overbrook Court - Golf Course Rain Gardens	Rain gardens consist of vegetated strips underlain by bio-filtration media. It will be approximately 100 feet long and contain up to a 4 foot depth of bio-filtration media.	1001, 1002	Woodcreek	121002030202	Woodcreek
FMP-94	Reduce flood losses in West Goforth Rd, Buda Fire Station/FM 2770, and Bluff St Drainage Project Area	Up-sizing and improving existing channel and culverts along West Goforth Road and the Union Pacific Railroad line; constructing a relief channel from Buda Fire Station under FM 2770 to the Onion Creek main channel stem. (November 11, 2016 Preliminary Engineering Report)	2001, 2002	Buda	120902050406	Buda

FMP ID	FMP Name	Description	Associated Goals (ID)	Communities	HUC12s (primary)	Potential Sponsor
FMP-95	Reduce flood losses in Houston Street Drainage Project Area	Improving Railroad Branch and Old Town North tributaries from East Street to Rose Street. (November 11, 2016 Preliminary Engineering Report	1001, 1002	Buda	120902050406	Buda
FMP-96	Reduce flood losses in Oxbow Subdivision Drainage Project Area	Up-sizing existing culverts at Remuda Trail, Oxbow Trail, and Bullwhip Pass; and up-sizing the existing channel from upstream of Bullwhip Pass to upper limits of Coves at Cimarron Pond. (November 11, 2016 Preliminary Engineering Report	1001, 1002	Buda	120902050406	Buda
FMP-97	Reduce flood losses through construction of a permanent Flood Early Warning System (FEWS) installation at the Onion Creek Bridge on RM 967	Monitoring of precipitation, stream levels, and water rise at low water crossings at the designated project location 24 hours a day, 365 days a year.	1001, 1002	Buda	120902050406	Buda
FMP-98	Reduce flood losses through construction of a permanent Flood Early Warning System (FEWS) installation at Cole Springs Road and RM 967	Monitoring of precipitation, stream levels, and water rise at low water crossings at the designated project location 24 hours a day, 365 days a year.	1001, 1002	Buda	120902050406	Buda
FMP-99	Reduce flood losses through construction of a permanent Flood Early Warning System (FEWS) installation at the Garlic Creek Culvert on RM 967	Monitoring of precipitation, stream levels, and water rise at low water crossings at the designated project location 24 hours a day, 365 days a year.	1001, 1002	Buda	120902050406	Buda
FMP-100	Reduce flood losses through construction of a permanent Flood Early Warning System (FEWS) installation on Bluff Street south of RM 967	Monitoring of precipitation, stream levels, and water rise at low water crossings at the designated project location 24 hours a day, 365 days a year.	1001, 1002	Buda	120902050406	Buda
FMP-101	Reduce flood losses through construction of a permanent Flood Early Warning System (FEWS) installation at Main Street at Bradfield Park	Monitoring of precipitation, stream levels, and water rise at low water crossings at the designated project location 24 hours a day, 365 days a year.	1001, 1002	Buda	120902050406	Buda
FMP-102	Water Improvements Stagecoach, Scott Street, Opal Street	Phase I to a project that involves the construction of a new 12” water line along Stagecoach. This line is essential to eliminate an existing, small, undersized line that has already reached capacity. The new line will add fire protection where there cur*	1001, 1002	Kyle	120902050405	Kyle
FMP-103	Engineering & Easement of Lehman Road	This reconstruction to a 2 lane road with an additional turn lane and a bridge over Plum Creek will minimize road closures due to rising water.	1001, 1002	Kyle	120902050405	Kyle
FMP-104	Engineering & Easement- N. Burleson Street	This reconstruction of a 2 lane roadway will include drainage improvements that will enhance land use in the area.	1001, 1002	Kyle	120902050405	Kyle
FMP-105	Acquire parcels for the assembly of interconnected greenways	For improved drainage and public recreation, this project also called a Riparian Corridor Land Assembly will be a project that interconnects greenways into a trail system that connects across Kyle	1001, 1002	Kyle	120902050405	Kyle
FMP-106	Plum Creek Tributary 3 - Arbor Knot Drive	A proposed culvert improvement has been developed to convey a 1% ACE event. The proposed culvert improvement is to add one additional 8ft x 4ft culvert totaling three culverts at this location, and raising the finished deck elevation by 0.5ft.	1001, 1002	Kyle	120902050405	Kyle
FMP-107	Plum Creek Tributary 4 - Sledge Road	The proposed culvert improvement resulted in eight (7ft x 4ft) box culverts, needed to clear the roadway and to alleviate additional backwater flooding.	1001, 1002	Kyle	120902050405	Kyle
FMP-108	Plum Creek Tributary 4 - FM 150	Bridge improvement which will increase the mouth opening and raise the deck level.	1001, 1002	Kyle	120902050405	Kyle
FMP-109	80ft Channel Modification and Additional Culvert	This project consists of channel modifications and an additional culvert. The channel will have 4:1 side slopes and an additional 12 ft x 6 ft culvert is added.	1001, 1002	Kyle	120902050405	Kyle
FMP-110	65ft Channel Modification with Additional Culvert	The channel modifications consists of 65-ft bottom width channel modifications with 4:1 side slopes spanning from the North I-35 frontage road down past Goforth Road to Kym Way.	5001, 5002	Kyle	120902050405	Kyle
FMP-111	Detention Pond upstream of IH35	This project consists of a detention pond between the railroad track and the South bound I-35 frontage road. Under this proposed alternative a 13-ft high dam wall would be placed on Plum Creek near Kyle Center Drive.	3001, 3002	Kyle	120902050405	Kyle
FMP-112	Install Embankment Treatment to Tinsley Creek from St. Andrew to the Sewer Plant.	This action will upgrade aging infrastructure that was overwhelmed during Hurricane Harvey. Projects will include but aren't limited to replacing box culvert bridges, replacing box culvert bridges with clear span bridges, and relocating utilities	1001, 1002	City of Gonzales	121002020207	City of Gonzales

FMP ID	FMP Name	Description	Associated Goals (ID)	Communities	HUC12s (primary)	Potential Sponsor
FMP-113	City of Gonzales Tinsley Creek Flood Mitigation Project	The proposed improvements along Tinsley Creek include replacing a low water crossing at Johnson Street with 6-8x5 culverts, adding 4-36" culverts under Johnson Street between Tinsley Creek and St. Andrew Street, and replacing box culvert crossings	5001, 5002	City of Gonzales	121002020207	City of Gonzales
FMP-114	Create a Buyout Program for Repetitive Loss Properties	This action will develop and implement a program to buyout NFIP repetitive loss properties.	5001, 5002	Gonzales County, City of Gonzales, City of Smiley	121002020207	Gonzales County, City of Gonzales, City of Smiley
FMP-115	Flatonia WWTP	The City of Flatonia is proposing a new 0.750 MGD mechanical wastewater treatment plant. The plant will be located just south of the existing pond system WWTP. The new WWTP will be designed to avoid inundation from Big Five Mile Creek and overflows	5001, 5002	City of Flatonia	121002020303	City of Flatonia
FMP-116	Flatonia Drainage Project	Culvert and drainage ditch improvements are proposed from just south of the Union Pacific Railroad at US 90 to the north side frontage road of I-10. Culvert improvements include either replacing existing culverts or adding additional culverts	5001, 5002	City of Flatonia	121002020303	City of Flatonia
FMP-117	Acquisition or Elevation of Repetitive Loss Properties	As of 09/2016, San Marcos has 110 RL properties that need mitigation to reduce the over $9.1 million in payments that have been made.	5001, 5002	San Marcos	121002030306	San Marcos
FMP-118	Increase of Warning Signs and Barricades at Low Water Crossings	Increase number of barricades for low water crossings, as Phase 2 of the Action Item that was previously completed.	5001, 5002	San Marcos	121002030306	San Marcos
FMP-119	Improve Flood Warning Systems	Enhancing stream flow gage network by increasing number of gages throughout community by at least six	1001, 1002	San Marcos	121002030306	San Marcos
FMP-120	Sessom Creek Improvements	Existing CIP project that would improve drainage off Sessom Creek	5001, 5002	San Marcos	121002030306	San Marcos
FMP-121	Extension of River Ridge Parkway West	Action R11 of the San Marcos Transportation Plan, this action will increase the ability to divert traffic during flooding events	-	San Marcos	121002030306	San Marcos
FMP-122	Land Conservation for Aquifer Recharge	The preservation of land in flood-prone areas and in the 1% floodplain will help mitigate flooding by reducing the amount of impervious surfaces and allowing more recharge and infiltration of water during rain events.	-	San Marcos	121002030306	San Marcos
FMP-126	San Marcos Flood Protection Plan	San Marcos Flood Protection Plan	1001, 1002	San Marcos	121002030306	San Marcos
FMP-127	Briarwood and River Ridge Improvements Project	Briarwood and River Ridge Improvements Project	1001, 1002	San Marcos	121002030306	San Marcos
FMP-129	Garden Ridge -- Action #1	Design and implement program to clean and clear debris and overgrown vegetation from the drainage system.	5001, 5002	Garden Ridge	121003040201	Garden Ridge
FMP-130	Garden Ridge -- Action #4	Complete final phase of drainage infrastructure upgrades.	5001, 5002	Garden Ridge	121003040201	Garden Ridge
FMP-131	City of Martindale -- Action #2	Acquire and install fixed barriers and warning lights at high flood hazard roadways.	5001, 5002	Martindale	121002030308	Martindale
FMP-132	City of Luling -- Action #1	Acquire and install fixed barriers and warning lights at high flood hazard roadways.	3001, 3002	Luling	121002030410	Luling

Table 6-3: Potentially Feasible Flood Management Strategies (FMS)

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-1	Public flood risk and flood insurance education	This action will create a program to educate the public about specific mitigation actions for hazards, including but not limited to Participating in the National Flood Insurance Program	3001, 4001	Gonzales County, City of Gonzales, City of Smiley	1210020402	Education and Outreach	Gonzales County, City of Gonzales, City of Smiley
FMS-2	Public flood risk and flood insurance education	This action will create a program designed to educate the public about the NFIP program and increase local participation.	3001, 4001	Gonzales County, City of Gonzales, City of Smiley	1210020402	Education and Outreach	Gonzales County, City of Gonzales, City of Smiley
FMS-3	Public flood risk and flood insurance education	Undertake an initiative to increase the number of flood insurance policies.	3001, 4001	Cibolo, Seguin	1210030303	Education and Outreach	Cibolo, Seguin
FMS-4	Public flood risk and flood insurance education	Implement a flood awareness program by providing FEMA/NFIP materials to mortgage lenders, real estate agents and insurance agents and place them in local libraries.	3001, 4001	Cibolo, Seguin	1210030303	Education and Outreach	Cibolo, Seguin
FMS-5	Provide safe ingress and egress	Provide/construct additional means of access into single-entry neighborhoods; Update subdivision codes for a higher level of ingress and egress.	3001, 4001	Cibolo, Seguin	1210030303	Infrastructure Projects	Cibolo, Seguin
FMS-6	Adopt "green infrastructure" requirements	Establish, adopt, and implement a "green infrastructure" program for parks, nature preserves, greenbelts, etc.	3001, 4001	Cibolo, Seguin	1210030303	Regulatory and Guidance	Cibolo, Seguin
FMS-7	Public flood risk and flood insurance education	Educate community on the flood risk in their neighborhoods, the dangers of flooding, driving through flood waters, and risk reduction methods to protect lives and property.	3001, 4001	Guadalupe County	1210030303	Education and Outreach	Guadalupe County
FMS-8	Develop stream monitoring and maintenance program	Implement stream restoration/channelization program to ensure adequate drainage/diversion of stormwater.	3001, 4001	Guadalupe County	1210030303	Maintenance and Debris Removal	Guadalupe County
FMS-9	Voluntary repetitive loss buyouts	Develop a land acquisition program in flood hazard areas. Acquire and demolish repetitive loss properties. Acquire high risk vacant land and maintain as open space.	3001, 4001	Guadalupe County	1210030303	Property Acquisition and Structural Elevation	Guadalupe County
FMS-10	Adopt "green infrastructure" requirements	Retain and maintain natural vegetation in stormwater channels.	3001, 4001	Guadalupe County	1210030303	Regulatory and Guidance	Guadalupe County
FMS-11	Strengthen flood protection regulations	Adopt on-site retention basin program in conjunction with development to address excessive stormwater / firefighting water source.	3001, 4001	Guadalupe County	1210030303	Regulatory and Guidance	Guadalupe County
FMS-12	Install flood warning signs, lights, gates, and/or gages	Educate community on the dangers of low water crossings through the installation of warning signs and promotion of "Turn Around, Don't Drown" Program.	1001	Guadalupe County -- County Wide	1210030303	Flood Measurement and Warning	Guadalupe County -- County Wide
FMS-13	Improve stormwater conveyance systems and targeted low water crossings (road crossing, culverts, bridges)	Upgrade undersized stormwater drains and culverts.	5001	Guadalupe County -- County Wide	1210030303	Infrastructure Projects	Guadalupe County -- County Wide
FMS-14	Public flood risk and flood insurance education	Utilize media and social media outlet to educate the public on all hazards that pose a risk to the planning area, provide mitigation measures to reduce damages, and provide health and safety tips to reduce injuries or illness.	3001, 4001	Comal County	1210030401	Education and Outreach	Comal County
FMS-15	Strengthen flood protection regulations	Adopt land use restrictions to limit development in high risk areas.	1001	Comal County	1210030401	Regulatory and Guidance	Comal County
FMS-16	Public flood risk and flood insurance education	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages.	1001, 5001	Caldwell County, Cities of Lockhart, Luling, Mart*	1210020203	Education and Outreach	Caldwell County, Cities of Lockhart, Luling, Mart*
FMS-17	Public flood risk and flood insurance education	Implement education and awareness program utilizing district meetings, social media, bulletins, flyers, etc. to educate area residents of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages	3001	ESD #1	1210020203	Education and Outreach	ESD #1
FMS-18	Install flood warning signs, lights, gates, and/or gages	Educate community on the dangers of low water crossings through the installation of warning signs and promotion of Turn Around, Don't Drown Program.	3001	ESD #1	1210020203	Flood Measurement and Warning	ESD #1
FMS-19	Public flood risk and flood insurance education	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities and property damages.	3001	ESD #3	1210020203	Education and Outreach	ESD #3
FMS-20	Develop stream monitoring and maintenance program	Adopt and implement a program for clearing debris from bridges, drains and culverts.	3001	ESD #3	1210020203	Maintenance and Debris Removal	ESD #3
FMS-21	Public flood risk and flood insurance education	Implement education and awareness program utilizing district meetings, social media, bulletins, flyers, etc. to educate area residents of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages	1001	ESD #4	1210020203	Education and Outreach	ESD #4

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-22	Public flood risk and flood insurance education	Implement education and awareness program utilizing district meetings, social media, bulletins, flyers, etc. to educate area residents of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages	1001	Plum Creek Conservation District	1210020203	Education and Outreach	Plum Creek Conservation District
FMS-23	Install flood warning signs, lights, gates, and/or gages	Provide early warning and post event information. Either purchase or encourage citizens to purchase NOAA All Hazard Radios for early warning and post-event information for public, businesses, schools, event venues.	3001	Kendall County	1209020601	Flood Measurement and Warning	Kendall County
FMS-24	Strengthen flood protection regulations	Strengthen subdivision rules and regulations to encourage higher densities only outside of known hazard areas and stronger construction standards to mitigate against hazards including wind, hail, wildfire, and flood. As development rules and regulations	3001	Kendall County	1209020601	Regulatory and Guidance	Kendall County
FMS-25	Install flood warning signs, lights, gates, and/or gages	This action proposes a local flood warning system to reduce the potential impacts of future flood events.	3001	Kerr County	1209020401	Flood Measurement and Warning	Kerr County
FMS-26	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include County website, social media and public education program	5001	Hays County	1209020503	Education and Outreach	Hays County
FMS-27	Public flood risk and flood insurance education	Flood Insurance Information Campaign (previously action 2 in 2011 plan, modified)	5001	Hays County	1209020503	Education and Outreach	Hays County
FMS-28	Public flood risk and flood insurance education	Send members of the staff or elected official to training in order to receive advanced training modules in floodplain administration.	3001	Hays County	1209020503	Education and Outreach	Hays County
FMS-29	Improve emergency preparedness	Application preparation and submission for StormReady designation from the National Weather Service that attests to the community's level of preparedness for severe weather.	5001	Hays County	1209020503	Emergency Preparation	Hays County
FMS-30	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits. Possible construction of new roads to provide alternate routes for evacuation for areas that have limited or hazardous points of ingress/egress	3001	Hays County	1209020503	Emergency Preparation	Hays County
FMS-31	Public flood risk and flood insurance education	Educating people about the exact nature of the hazards present in the environment is the first and most important step in helping to mitigate against these hazards. Knowing what the threat is and how to counter that threat is the best, least expensive way	3001	Gillespie County	1209020103	Education and Outreach	Gillespie County
FMS-32	Public flood risk and flood insurance education	Use the county website and public booth to educate homeowners about how to mitigate damage to their homes from natural hazards.	3001	Blanco County	1209020103	Education and Outreach	Blanco County
FMS-33	Improve emergency preparedness	Monthly meetings of county emergency personnel. Desktop exercises and drills.	5001	Blanco County	1209020103	Emergency Preparation	Blanco County
FMS-34	Improve emergency preparedness	Purchase NOAA All-hazard radios for residents to know about weather events.	2001	Blanco County	1209020103	Emergency Preparation	Blanco County
FMS-35	Public flood risk and flood insurance education	Distribute flyers to addresses in or near the floodplain to educate citizens on risk, flood insurance, and mitigation measures to reduce risk of flood.	3001	Travis County	1209020502	Education and Outreach	Travis County
FMS-36	Public flood risk and flood insurance education	Presentations to neighborhood organizations. Targeted to specific risk areas, such as flood-prone neighborhoods or near low water crossings. Educate residents on natural hazard risks and mitigation measures to reduce risk.	1001	Travis County	1209020502	Education and Outreach	Travis County
FMS-37	Identify and raise targeted structures	Identify and prioritize structures for elevation as flood mitigation. Elevate flood prone structures throughout unincorporated Travis County.	2001	Travis County	1209020502	Property Acquisition and Structural Elevation	Travis County
FMS-38	Public flood risk and flood insurance education	Increase public awareness of all hazards and hazardous areas. Distribute public awareness information regarding natural hazards, including SFHAs, along with potential mitigation measures that can reduce risk of damages and injuries.	3001	Travis County, Lakeway, Manor, Pflugerville, The *	1209020502	Education and Outreach	Travis County, Lakeway, Manor, Pflugerville, The *
FMS-39	Public flood risk and flood insurance education	This action will create a program to educate the public about specific mitigation actions for hazards, including but no limited to participating in the National Flood Insurance Program.	3001	Goliad County	1210020404	Education and Outreach	Goliad County
FMS-40	Improve stormwater conveyance systems and targeted low water crossings (road crossing, culverts, bridges)	Increase dimensions of drainage culverts in areas prone to flooding and/or drainage problems, in various county locations.	1001	Victoria County	1210020404	Infrastructure Projects	Victoria County
FMS-41	Improve stormwater conveyance systems and targeted low water crossings (road crossing, culverts, bridges)	Raise various County bridges above current BFE levels to include such improvements as: box culverts, wingback walls, rip rap, channelization, and road base improvement.	5001	Victoria County	1210020404	Infrastructure Projects	Victoria County
FMS-42	Develop stream monitoring and maintenance program	Implement a stream restoration/channelization program to ensure adequate drainage/diversion of storm water, throughout various county low water crossings, streambeds, creek sheds, tributaries, and riverine areas.	3001	Victoria County	1210020404	Maintenance and Debris Removal	Victoria County

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-43	Voluntary repetitive loss buyouts	Implement a voluntary acquisition program for repetitive flood properties.	3001	Victoria County	1210020404	Property Acquisition and Structural Elevation	Victoria County
FMS-44	Strengthen flood protection regulations	Conduct study for the development and implementation of county wide planning & development standards, sub-division rules, infrastructure rules and building / construction codes.	-	Victoria County	1210020404	Regulatory and Guidance	Victoria County
FMS-45	Public flood risk and flood insurance education	Implement a flood awareness program. Educate students on flood mitigation actions to employ at home and ways to protect lives and property.	3001	Victoria ISD	1210020404	Education and Outreach	Victoria ISD
FMS-46	Install flood warning signs, lights, gates, and/or gages	Install gates at low water crossings on county roads repeatedly resulting in road closure due to rapid rising flood waters	3001	Wilson County	1210030103	Flood Measurement and Warning	Wilson County
FMS-47	Improve stormwater conveyance systems and targeted low water crossings (road crossing, culverts, bridges)	Upgrade infrastructure at low water crossings to provide unimpeded access during 100 year base flood event to facilitate evacuation and response by emergency vehicles	-	Wilson County	1210030103	Infrastructure Projects	Wilson County
FMS-48	Voluntary repetitive loss buyouts	Acquire flooded structures to remove them out of the SFHA and restrict future structures from development on site. Consider the establishment of a voluntary "acquisition and demolition program", acquisition and structure relocation program"	5001	Wilson County	1210030103	Property Acquisition and Structural Elevation	Wilson County
FMS-49	Improve emergency preparedness	Develop flood hazard information by collecting information, high water marks, and conduct engineering studies to develop the 100 year and 500 year flood elevation levels	3001	Wilson County	1210030103		Wilson County
FMS-50	Install flood warning signs, lights, gates, and/or gages	This action proposes a local flood warning system to reduce the potential impacts of future flood events.	3001	Upper Guadalupe River Authority	1209020401	Flood Measurement and Warning	Upper Guadalupe River Authority
FMS-51	Public flood risk and flood insurance education	Implement a program to educate residents on responding to alerts/information disseminated through the countywide I-Info alert system in order to take actions to mitigate disaster event and/or protect people and property	2001	DeWitt County, Cities of Cuero, Yorktown, Nordhei*	1210020401	Education and Outreach	DeWitt County, Cities of Cuero, Yorktown, Nordhei*
FMS-52	Public flood risk and flood insurance education	Develop and promote program on flood mitigation techniques to reduce flood risk through education and awareness; promote purchase of flood insurance through outreach	3001	DeWitt County, Cuero, Yorktown	1210020401	Education and Outreach	DeWitt County, Cuero, Yorktown
FMS-53	Public flood risk and flood insurance education	Educate community through social media and other communication channels regarding boil water notifications following a flood event	3001	Maxwell Water Supply Corporation	1210020302	Education and Outreach	Maxwell Water Supply Corporation
FMS-54	Public flood risk and flood insurance education	This action will create a program to educate the public about specific mitigation actions for hazards, including but not limited to Participating in the National Flood Insurance Program	1001	City of Nixon	1210020205	Education and Outreach	City of Nixon
FMS-55	Public flood risk and flood insurance education	This action will create a program designed to educate the public about the NFIP program and increase local participation.	3001	City of Nixon	1210020205	Education and Outreach	City of Nixon
FMS-56	Improve emergency preparedness	The WWTP lift station and 8th Avenue lift station are the two oldest stations within the City. Both have experienced inundation and caused overflows as a result of stormwater inflow into the wastewater system.	3001	City of Nixon	1210020205		City of Nixon
FMS-57	Public flood risk and flood insurance education	This action will create a program to educate the public about specific mitigation actions for hazards, including but not limited to Participating in the National Flood Insurance Program	3001	City of Waelder	1210020203	Education and Outreach	City of Waelder
FMS-58	Public flood risk and flood insurance education	This action will create a program designed to educate the public about the NFIP program and increase local participation.	1001, 3001	City of Waelder	1210020203	Education and Outreach	City of Waelder
FMS-59	Voluntary repetitive loss buyouts	This action will develop and implement a program to buyout NFIP repetitive loss properties.	2001	City of Waelder	1210020203	Property Acquisition and Structural Elevation	City of Waelder
FMS-60	Develop stream monitoring and maintenance program	Implement a stream restoration/channelization program to ensure adequate drainage/diversion of storm water, throughout various City low water crossings, streambeds, creek sheds, tributaries, and riverine areas.	5001	City of Victoria	1210020404	Maintenance and Debris Removal	City of Victoria
FMS-61	Voluntary repetitive loss buyouts	Implement a voluntary acquisition program for repetitive flood properties.	5001	City of Victoria	1210020404	Property Acquisition and Structural Elevation	City of Victoria
FMS-62	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include City website, social media, and public education programs	3001	Wimberley	1210020302	Education and Outreach	Wimberley
FMS-63	Public flood risk and flood insurance education	Placing National Flood Insurance Program information brochures in City Hall	2001	Wimberley	1210020302	Education and Outreach	Wimberley

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-64	Public flood risk and flood insurance education	Send certified member of staff to advanced courses.	3001	Wimberley	1210020302	Education and Outreach	Wimberley
FMS-65	Improve emergency preparedness	Purchasing equipment and training personnel to improve local and Countywide emergency communication. Utilize system to provide information on hazards and community guidance on accessing emergency resources	3001	Wimberley	1210020302	Emergency Preparation	Wimberley
FMS-66	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits for leaving the community.	3001	Wimberley	1210020302	Emergency Preparation	Wimberley
FMS-67	Strengthen flood protection regulations	Adopt 2 foot freeboard in existing ordinance for new development and substantial repairs	3001, 4001	Wimberley	1210020302	Regulatory and Guidance	Wimberley
FMS-68	Strengthen flood protection regulations	The City of Kerrville will re-evaluate all existing floodplain construction restrictions to identify strengths and weaknesses in order to produce a standalone floodplain development restriction ordinance, update its existing flood damage prevention ordinance	3001	Kernville	1210020102	Regulatory and Guidance	Kernville
FMS-69	Develop stream monitoring and maintenance program	Implement stream restoration/channelization program to ensure adequate drainage/diversion of stormwater.	1001	Cibolo	1210030402	Maintenance and Debris Removal	Cibolo
FMS-70	NFIP Participation	Join the Community Rating System program.	3001	Cibolo	1210030402	Regulatory and Guidance	Cibolo
FMS-71	NFIP Participation	Join the National Flood Insurance Program (NFIP).	2001	Cibolo	1210030402	Regulatory and Guidance	Cibolo
FMS-72	Strengthen flood protection regulations	Restrict future development in high risk areas.	5001	Cibolo	1210030402	Regulatory and Guidance	Cibolo
FMS-73	Strengthen flood protection regulations	Prohibit animal shelters in known hazard areas.	3001	Cibolo	1210030402	Regulatory and Guidance	Cibolo
FMS-74	Strengthen flood protection regulations	Adopt on-site retention basin program in conjunction with development to address excessive stormwater / firefighting water source.	3001	Cibolo	1210030402	Regulatory and Guidance	Cibolo
FMS-75	Install flood warning signs, lights, gates, and/or gages	Place flooded area warning lights to prevent unnecessary traffic in flooded areas.	3001	Seguin	1210020201	Flood Measurement and Warning	Seguin
FMS-76	Install flood warning signs, lights, gates, and/or gages	Place automatic flood gates with vehicle detection on inside of flooded area to allow for egress.	2001	Seguin	1210020201	Flood Measurement and Warning	Seguin
FMS-77	Adopt "green infrastructure" requirements	Add thick vegetation on public lands along river banks.	3001	Seguin	1210020201	Infrastructure Projects	Seguin
FMS-78	Open space preservation	Acquire and preserve open spaces adjacent to floodplain areas.	3001	Seguin	1210020201	Property Acquisition and Structural Elevation	Seguin
FMS-79	Voluntary repetitive loss buyouts	Develop an acquisition and elevation program in flood hazard areas. Elevate or acquire and demolish repetitive loss properties. Acquire high risk vacant land and maintain as open space. Increase development standards in high risk areas.	3001	Seguin	1210020201	Property Acquisition and Structural Elevation	Seguin
FMS-80	Strengthen flood protection regulations	Restrict future development in high risk areas.	2001	Seguin	1210020201	Regulatory and Guidance	Seguin
FMS-81	Strengthen flood protection regulations	Increase regional detention, Channel & Drainage System Improvements.	3001	Seguin	1210020201	Regulatory and Guidance	Seguin
FMS-82	Public flood risk and flood insurance education	Implement education and awareness program utilizing media, social media, signage, bulletins, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages.	3001	Bulverde	1210030401	Education and Outreach	Bulverde
FMS-83	Adopt "green infrastructure" requirements	Adopt and implement a "green infrastructure" program for parks, nature preserves and greenbelts throughout the city.	3001	Bulverde	1210030401	Regulatory and Guidance	Bulverde
FMS-84	Strengthen flood protection regulations	Strengthen zoning ordinance to limit development in known high hazard areas.	3001	Bulverde	1210030401	Regulatory and Guidance	Bulverde
FMS-85	Public flood risk and flood insurance education	Creating a resource page on City website to promote information about the hazards that exist in the community and how to take mitigation actions at the individual level	1001	Niederwald	1210020304	Education and Outreach	Niederwald
FMS-86	Public flood risk and flood insurance education	Opening Social Media accounts from multiple outlets to control emergency messaging and alerts for the community. No other communication methods are in place at the current time, besides County resources.	3001	Niederwald	1210020304	Education and Outreach	Niederwald
FMS-87	Public flood risk and flood insurance education	Promote the flood insurance program to lessen the number of structures uninsured from flood loss by providing citizens access to brochures about the NFIP at the local City Hall and links to resources on website	1001	Niederwald	1210020304	Education and Outreach	Niederwald
FMS-88	Public flood risk and flood insurance education	Send member of the staff or elected official to training in order to become a Certified Floodplain Manager	3001	Niederwald	1210020304	Education and Outreach	Niederwald

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-89	Improve emergency preparedness	Installation of permanent weather radio and weather station at City of Niederwald structures, with back-up power source. Create phone tree with volunteer responsibilities for non-critical hazard call down messaging, such as drought alerts	3001	Niederwald	1210020304	Emergency Preparation	Niederwald
FMS-90	Improve emergency preparedness	Application preparation and submission for StormReady designation from the National Weather Service that attests to the community's level of preparedness for severe winter.	3001	Niederwald	1210020304	Emergency Preparation	Niederwald
FMS-91	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits.	5001	Niederwald	1210020304	Emergency Preparation	Niederwald
FMS-92	Improve emergency preparedness	Coordination with the US Army Corps of Engineers to participate in a tabletop exercise that provides the community leaders with insight on the USACE emergency procedures and evacuation plan.	3001	Niederwald	1210020304	Emergency Preparation	Niederwald
FMS-93	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include City website, and public education programs. Provide link*	3001	Uhland	1210020304	Education and Outreach	Uhland
FMS-94	Public flood risk and flood insurance education	Placing National Flood Insurance Program information brochures in City Hall	3001	Uhland	1210020304	Education and Outreach	Uhland
FMS-95	Improve emergency preparedness	Purchase of permanent weather radio and weather station equipment for all public facilities with back-up power source. Establishment of a community phone tree to be the manual process for reaching residents for times that standard technology fails.	3001	Uhland	1210020304	Emergency Preparation	Uhland
FMS-96	Improve emergency preparedness	Application for designation that classifies community's level of preparedness for severe weather and storms.	3001	Uhland	1210020304	Emergency Preparation	Uhland
FMS-97	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits for leaving the community. There are only 2 points of entry/ exit and all 3 flood.	3001	Uhland	1210020304	Emergency Preparation	Uhland
FMS-98	Public flood risk and flood insurance education	Increase public awareness of hazard mitigation	3001, 4001	Mountain City	1209020504	Education and Outreach	Mountain City
FMS-99	Public flood risk and flood insurance education	Public education workshops that feature experts from various fields that can provide advice on measures that can mitigate	3001	Mountain City	1209020504	Education and Outreach	Mountain City
FMS-100	Public flood risk and flood insurance education	Placing National Flood Insurance Program information brochures in City Hall.	3001	Mountain City	1209020504	Education and Outreach	Mountain City
FMS-101	Public flood risk and flood insurance education	Send member of the staff or elected official to training in order to become a Certified Floodplain Manager.	3001	Mountain City	1209020504	Education and Outreach	Mountain City
FMS-102	Improve emergency preparedness	Continue existing City directory program and add phone tree responsibilities for non-critical hazard call down messaging, such as drought alerts	3001, 4001	Mountain City	1209020504	Emergency Preparation	Mountain City
FMS-103	Improve emergency preparedness	Application preparation and submission for StormReady designation from the National Weather Service that attests to the community's level of preparedness for severe weather.	3001	Mountain City	1209020504	Emergency Preparation	Mountain City
FMS-104	Improve emergency preparedness	Creation of a formal evacuation plan that would provide residents with procedures for receiving evacuation messaging, evacuating the community, alternate routes and repatriation procedures for returning to the community safely.	3001	Mountain City	1209020504	Emergency Preparation	Mountain City
FMS-105	Strengthen flood protection regulations	Create a plan to review the ordinance every 5 years and if possible, adopt 1 foot of freeboard in existing ordinance for new development and substantial repairs and also to include a field that requires City staff to check Flood Insurance Rate Maps …..	3001, 4001	Mountain City	1209020504	Regulatory and Guidance	Mountain City
FMS-106	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include City website, social media and public education programs.	3001	Woodcreek	1210020302	Education and Outreach	Woodcreek
FMS-107	Public flood risk and flood insurance education	Placing National Flood Insurance Program information brochures in City Hall.	3001	Woodcreek	1210020302	Education and Outreach	Woodcreek
FMS-108	Public flood risk and flood insurance education	Send designated floodplain administrator to attend floodplain management courses and to test for certification as a Certified Floodplain Manager	3001	Woodcreek	1210020302	Education and Outreach	Woodcreek
FMS-109	Improve emergency preparedness	Provide a secondary means of communication from an LCRA system for members of the City staff in the event of cell phone network unavailability (common during disasters).	3001, 4001	Woodcreek	1210020302	Emergency Preparation	Woodcreek
FMS-110	Improve emergency preparedness	Establishment of a community promotion for enrollment in CAPCOG's reverse calling system. The community currently has a system for texts and email	3001, 4001	Woodcreek	1210020302	Emergency Preparation	Woodcreek
FMS-111	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits for the community.	3001, 4001	Woodcreek	1210020302	Emergency Preparation	Woodcreek
FMS-112	Develop stream monitoring and maintenance program	Remove large trees and debris along area waterways and restore floodplain function of natural systems	3001	Yorktown	1210020402	Maintenance and Debris Removal	Yorktown

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-113	Public flood risk and flood insurance education	Provide training for local floodplain administrators and Certified Floodplain Managers	3001	Buda	1209020504	Education and Outreach	Buda
FMS-114	Public flood risk and flood insurance education	Promoting the importance of flood insurance as a part of the development permitting process; promoting the NFIP through brochure distribution, City website, and press releases.	3001	Buda	1209020504	Education and Outreach	Buda
FMS-115	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include City website, social media, and public education programs*	3001	Buda	1209020504	Education and Outreach	Buda
FMS-116	Public flood risk and flood insurance education	Ensuring that the community members are aware of and understand notification and evacuation plans related to natural hazards.	3001	Buda	1209020504	Education and Outreach	Buda
FMS-117	Improve emergency preparedness	Improve emergency communication/ warning systems (Buda 2030 Comprehensive Plan Action Items PS-1.1, PS-1.2, & PS-1.3)	3001	Buda	1209020504	Emergency Preparation	Buda
FMS-118	Improve emergency preparedness	Voluntary, targeted buyouts for 1 or more affected properties. (November 11, 2016 Preliminary Engineering Report	3001	Buda	1209020504	Property Acquisition and Structural Elevation	Buda
FMS-119	Public flood risk and flood insurance education	Promote the flood insurance program to lessen the number of structures uninsured from flood loss by providing citizens access to brochures about the NFIP at the local City Hall and links to resources on website.	3001	Kyle	1209020504	Education and Outreach	Kyle
FMS-120	Public flood risk and flood insurance education	Increasing public awareness of natural hazards and hazardous areas; distributing public awareness information regarding hazards and potential mitigation measures. Promotional sources would include City website, social media and public education programs.	3001	Kyle	1209020504	Education and Outreach	Kyle
FMS-121	Public flood risk and flood insurance education	Send member of the staff or elected official to training in order to become a received advanced floodplain management training.	3001, 4001	Kyle	1209020504	Education and Outreach	Kyle
FMS-122	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits.	3001	Kyle	1209020504	Emergency Preparation	Kyle
FMS-123	Improve emergency preparedness	Coordination dam owners to provide the City with disaster procedures and evacuation plans associated with dam failure	3001	Kyle	1209020504	Emergency Preparation	Kyle
FMS-124	Develop stream monitoring and maintenance program	Implement maintenance program for drainage, including waterways, culverts, and bridges.	3001	Flatonia	1210020203	Maintenance and Debris Removal	Flatonia
FMS-125	Public flood risk and flood insurance education	Utilize media and social media outlets to educate the public on all hazards that pose a risk to the city, provide mitigation measures to reduce damages, and provide health and safety tips to reduce injuries or illness.	3001	Garden Ridge	1210020203	Education and Outreach	Garden Ridge
FMS-126	Public flood risk and flood insurance education	Implement education and awareness program utilizing classrooms, social media, bulletins, flyers, etc. to educate students, parents and area residents of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damage	3001	Lockhart ISD	1210020304	Education and Outreach	Lockhart ISD
FMS-127	Public flood risk and flood insurance education	Increase Public Awareness of Hazard Mitigation	3001	San Marcos	1210020302	Education and Outreach	San Marcos
FMS-128	Public flood risk and flood insurance education	Placing National Flood Insurance Program information brochures in City Hall	3001	San Marcos	1210020302	Education and Outreach	San Marcos
FMS-129	Improve emergency preparedness	Documentation of an evacuation plan that includes multiple exits for leaving the community.	3001	San Marcos	1210020302	Emergency Preparation	San Marcos
FMS-130	Improve emergency preparedness	Coordination with dam custodians in order to exercise evacuation and emergency procedures/ Make inundation maps public.	3001	San Marcos	1210020302	Emergency Preparation	San Marcos
FMS-131	Strengthen flood protection regulations	Ordinance update to require any public facility location be reviewed against hazard area layers in order to require location selections consider the safest possible locations, with applicable mitigation standards required during development permitting	3001	San Marcos	1210020302	Regulatory and Guidance	San Marcos
FMS-132	Strengthen flood protection regulations	Ordinance No. 2016-50	3001	San Marcos	1210020302	Regulatory and Guidance	San Marcos
FMS-133	Develop stream monitoring and maintenance program	Debris Removal. Floods leave a significant amount of organic matter behind such as trees, limbs, and shrubs that reduce drainage capacity and turn into a fire hazard over time.	3001	Martindale	1210020303	Maintenance and Debris Removal	Martindale
FMS-134	Public flood risk and flood insurance education	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages within the district.	3001	Martindale Water Supply Corporation	1210020303	Education and Outreach	Martindale Water Supply Corporation
FMS-135	Public flood risk and flood insurance education	Implement education and awareness program utilizing classrooms, social media, bulletins, flyers, etc. to educated students, faculty, parents and area residents of hazards that can threaten the area and mitigation measures	3001	Luling ISD	1210020304	Education and Outreach	Luling ISD
FMS-136	Develop stream monitoring and maintenance program	This action will develop and implement a debris reduction program to minimize riverine erosion caused by debris buildups that can alter the flow and shape of local river and stream channels.	3001	Ingram	1210020102	Maintenance and Debris Removal	Ingram

FMS ID	FMS Name	Description	Associated Goals (ID)	Communities	HUC10s	Project Type	Potential Sponsor
FMS-137	Strengthen flood protection regulations	The City of Ingram will re-evaluate all relevant ordinances including but not limited to its: Abandoned or Junked Vehicle Ordinance, Culverts Ordinance, Fire Prevention Ordinance, Flood Damage Prevention Ordinance, Historic Preservation Ordinance	3001	Ingram	1210020102	Regulatory and Guidance	Ingram

Attachment 7: List of FMS's and FMP's Identified but Determined to be Infeasible

At this time, no identified FMSs or FMPs have been determined to be infeasible. The feasibility assessment will be performed through continuing efforts on Task 4B and Task 5.

End of Memorandum

Agenda Item 10

Consider date and agenda items for next meeting

Agenda Item 11

Public General Comments

Public Comments limited to 3 minutes per speaker

Agenda Item 12

Adjourn